Appendix C7

Report: *Meadowbank Gold Mine Project 2008 Wildlife Monitoring Summary Report*

MEADOWBANK GOLD PROJECT

2008 WILDLIFE MONITORING SUMMARY REPORT

March 2009

MEADOWBANK GOLD MINE PROJECT

2008 WILDLIFE MONITORING SUMMARY REPORT

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Gebauer & Associates
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MARCH 2009

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DESCRIPTION OF SUPPORTING DOCUMENTATION

Agnico-Eagle Mines Ltd. (Agnico-Eagle), current owner and operator of the Agnico-Eagle Meadowbank Gold Mine Project (the “project”), continues to address and manage wildlife-related responsibilities in consortium with Gebauer and Associates Ltd. (Gebauer and Associates). The Meadowbank Gold Mine property is located in the Kivalliq region of Nunavut, approximately 70 km north of the Hamlet of Baker Lake on Inuit-owned surface lands. Prior to its acquisition by Agnico-Eagle, Cumberland Resources Ltd. actively explored the Meadowbank area between 1995 and 2005. Engineering and environmental baseline studies as well as community consultations paralleled these exploration programs and were integrated to form the basis of the current project design.

The project is subject to the environmental review and related licensing and permitting processes established by Part 5 of the Nunavut Land Claims Agreement. The following steps were completed as components of the Environmental Impact Assessment (EIA) for the Meadowbank Gold Mine Project.

1. Determined the Valued Ecosystem Components (VECs) (i.e., air quality, noise, water quality, surface water quantity and distribution, permafrost, fish populations, fish habitat, ungulates, predatory mammals, small mammals, raptors, waterfowl, and other breeding birds) and Valued Socio-Economic Components (VSECs) (i.e., employment, training and business opportunities, traditional ways of life, individual and community wellness, infrastructure and social services, and sites of heritage significance) based on detailed discussions with stakeholders, public meetings, traditional knowledge, and the experience of other mines in the north.

2. Conducted baseline studies for each VEC and compared the results with information gained through traditional knowledge studies (refer to Column 1 on the following page for a list of baseline reports).

3. Used the baseline and traditional knowledge studies to determine the key potential project interactions and impacts for each VEC (refer to Column 2 for a list of EIA reports).

4. Developed preliminary mitigation strategies for key potential interactions and proposed contingency plans to mitigate unforeseen impacts by applying the precautionary principle (refer to Column 3 for a list of management plans).

5. Developed long-term monitoring programs to identify residual effects and areas in which mitigation measures may be non-compliant, requiring further refinement. These mitigation and monitoring procedures are integrated into all stages of project development and assist in identifying how natural changes in the environment can be distinguished from potential project-related impacts (monitoring plans are also included in Column 4 and 5).

6. Produced and submitted an Environmental Impact Statement (EIS) report to Nunavut Impact Review Board (NIRB) in October 2005.

As illustrated on the following page, these reports were part of the documentation series that has been produced during this six-stage EIA process**.**

EIA DOCUMENTATION ORGANIZATION CHART

Project Description Report
Main Contributor: Cumberland Resources
Reviewer: All Consultants

ENVIRONMENTAL IMPACT STATEMENT

Project Alternatives
Main Contributor: Lynton Gormley, AMEC Americas
Reviewer: Brad Thiele, Cumberland Resources; Golder Associates Ltd.

Baseline Reports

Aquatic Ecosystem
Main Contributor: Randy Baker, Azimuth Consulting
Reviewer: Mike Lawrence, North-South Consulting

Fish Habitat
Main Contributor: Randy Baker, Azimuth Consulting
Reviewer: Mike Lawrence, North-South Consulting

Terrestrial Ecosystem
Main Contributor: Martin Gebauer, Gebauer & Associates
Reviewer: Ben Hubert , Hubert & Associates

Physical Ecosystem
Main Contributor: BGC Engineering
Reviewer: Golder Associates Ltd.

Socioeconomic
Main Contributor: Robert Hornal
Reviewer: Susan Ross, Golder Associates Ltd.

Archaeology
Main Contributor: Deborah Webster
Reviewer: Gloria Fedirchuk, FMA Heritage Resource Consultants

Traditional Knowledge (TK)
Main Contributor: Darlene Hughes, IBIS Group, Inc.
Reviewer: Tom & Hattie Mannik

Impact Assessments

Aquatic Ecosystem/Fish Habitat
Main Contributor: Randy Baker, Azimuth Consulting
Reviewer: Mike Lawrence, North-South Consulting

Cumulative Effects (CEA)
Main Contributor: Ly-Shu Ramos, AMEC Americas
Reviewer: Robert Hornal, Hornal & Associates

Terrestrial Ecosystem
Main Contributor: Martin Gebauer, Gebauer & Associates
Reviewer: Ben Hubert, Hubert & Associates

Physical Ecosystem
Main Contributor: BGC Engineering Ltd.
Reviewer: Golder, Azimuth, AMEC

Socioeconomic & Archaeology
Main Contributor: Susan Ross, Golder Associates Ltd.
Reviewer: George Hegmann, AXYS Environmental Consulting

Noise
Main Contributor: Richard Palczynski, AMEC Americas
Reviewer: Bob Humphries, Levelton Engineering

Air Quality
Main Contributor: Richard Palczynski, AMEC Americas
Reviewer: Levelton Engineering

Management & Monitoring Plans

Aquatic Effects Management Program (AEMP)
Main Contributor: Randy Baker, Azimuth Consulting
Reviewer: Mike Lawrence, North-South Consulting

Metal Mining Effluent Regulations (MMER)
Main Contributor: Randy Baker, Azimuth Consulting
Reviewer: Mike Lawrence, North-South Consulting

Terrestrial Ecosystem
Main Contributor: Martin Gebauer, Gebauer & Associates
Reviewer: Ben Hubert , Hubert & Associates

No-Net-Loss of Habitat (NNL)
Main Contributor: Randy Baker, Azimuth
Reviewer: Mike Lawrence, North-South Consulting

Socioeconomic & Archaeology
Main Contributor: Susan Ross, Golder Associates Ltd.
Reviewer: Robert Hornal, Hornal & Associates

Mine Waste & Water
Main Contributor: Golder Associates Ltd..
Reviewer: BGC Engineering Ltd.

Air Quality & Noise
Main Contributor: Richard Palczynski, AMEC Americas
Reviewer: Bob Humphries, Levelton

Access & Air Traffic
Main Contributor: Raj Anand, Cumberland Resources
Reviewer: Alistair Kent, Gartner Lee

Reclamation & Closure
Main Contributor: Golder Associates Ltd..
Reviewer: BGC Engineering Ltd.

Emergency Response
Main Contributor: Darlene Hughes, IBIS Group, Inc.
Reviewer: Cumberland Resources

Hazardous Materials
Main Contributor: Darlene Hughes, IBIS Group, Inc.
Reviewer: Cumberland Resources

Spill Contingency
Main Contributor: Darlene Hughes, IBIS Group, Inc.
Reviewer: Cumberland Resources

Occupational Health & Safety
Main Contributor: Darlene Hughes, IBIS Group, Inc.
Reviewer: Ted Rutherglen, Cumberland Resources

Human Resources
Main Contributor: Ted Rutherglen, Cumberland Resources
Reviewer: Cumberland Resources

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
100°W
80°W
Arctic Ocean
Alert
Ellesmere Island Nat. Park
CANADA
Ellesmere Island
Grise Fiord
Polaris
Resolute
Baffin Bay
Nanisivik
Pond Inlet
Arctic Bay
Clyde River
Davis Strait
Victoria Island
NUNAVUT
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)
Foxe Basin
Bathurst Inlet
Jericho
George Lake
Repulse Bay
IQALUIT
Lupin
Meadowbank Gold Project
Ekati
Diavik
Cape Dorset
Kimmirut (Lake Harbour)
Coral Harbour
Hudson Strait
Baker Lake
Chesterfield Inlet
Northwest Territories
Rankin Inlet
Whale Cove
Arviat
Cullaton Lake / Shear Lake
Quebec
Alberta
Saskatchewan
Hudson Bay
Manitoba
Churchill
Ontario
0
250
500
Kilometres
Prepared for:
AGNICO-EAGLE
By:
Caslys Consulting Ltd.

SECTION 1 • EXECUTIVE SUMMARY

This report represents the third 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 is expected to be operational for ten years. An extended mine life is possible 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 purpose of the 2008 Wildlife Monitoring Summary Report is to summarize the 2008 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 area through the interpretation of accumulative monitoring datasets. Construction activities in 2008 were limited primarily to completion of the AWPAR, exploration camp infrastructure upgrades and limited principal mine site construction (consisting predominantly of preliminary clearing / earth works). The majority of mine construction will occur in 2009, followed by the onset of mine operations in early 2010. Given the limited construction activities at the mine site in 2008, the analysis of potential mine-related changes in this year's report was predominantly limited to interactions along the AWPAR. Bird transect surveys along the AWPAR and breeding bird plots conducted at mine site areas under construction and reference areas allowed for a preliminary assessment of potential mine-related effects. The remainder of the report focuses on identifying natural variability in wildlife observations, identifying prospective trends and determining whether reference / control and mine site sampling areas are comparable under pre-operational mine conditions. As well, the report serves to verify the effectiveness of implemented mitigation measures and the need, if any, for adaptive management strategies.

The accumulative datasets suggest marginal increases in Caribou (*Rangifer tarandus*) abundance and significant increases in Muskox (*Ovibos moschatus*) abundance within the Meadowbank Regional Study Area (RSA). Caribou numbers within the Meadowbank RSA appear to fluctuate widely from season to season and from year to year. In general, few Caribou are seen in the summer calving period, while larger migratory groups move through the area from mid-August through October. Considerable numbers of Caribou often remain through the winter within the RSA. Muskox have been regularly observed in low densities during the RSA aerial surveys in all seasons. Waterfowl do not nest in great numbers, but large numbers of geese, primarily Snow Goose (*Chen caerulescens*), are observed during the May and September migratory periods. Previous years suggested a decline in Canada Goose (*Branta canadensis*) and Snow Goose since 2002; however, following the addition of the 2008 data, abundance does not appear to be influenced by year or season, exemplifying the need for adequate data prior to making definitive conclusions. Annual variation in waterfowl abundance may be the result of natural cyclical trends influenced by predator-prey interactions, variation in seasonal migration patterns, global warming, anthropogenic disturbances, or a combination of factors. As a result, data must be interpreted cautiously until sufficiently robust to analyze for trends and causative factors with statistical confidence.

Preliminary analyses of breeding bird plots suggest that mine-related construction activities to date are not affecting community metrics (abundance, evenness and diversity). Data from the bird transect surveys is not yet robust enough to identify natural and mine-related trends. In 2007, roaded transects appeared to coincide with a higher species diversity. This effect was less apparent in 2008, and may be the result of increased sightability, survey intensity, survey timing or the creation of edge habitat. Similarly, data from waterfowl surveys is not yet robust enough to successfully determine trends; however, within 200 metres of the AWPAR, nesting waterfowl continued to be observed at a frequency similar to 2007. Ongoing surveys will continue to improve the confidence in describing trends in all wildlife populations and ultimately whether mine-related impacts are occurring.

2008 marked the second year for the hunter harvest study, which was strategically revised at the end of 2007 as a result of the generally low participation rates. In 2008, participation increased markedly, providing sufficient data to identify preliminary hunting trends within the study area. Results suggest a significant increase in Caribou hunting along the AWPAR in 2008 with the highest concentration of kills often less than 5 kilometres from the road. With the inclusion of the 2008 data, it is increasingly apparent that certain hunters are preferentially using the AWPAR to readily access remote areas north of Baker Lake. This trend may have implications with respect to Caribou migration routes and may influence Caribou availability for other hunters if populations are directed further north as a result of increased hunting pressure.

Radio-collaring data from nine Caribou collared in May 2008 is presented in this report. Agnico-Eagle, in cooperation with the Government of Nunavut Department of Environment (GNDoE) has committed to expanding the radio-collaring program to supplant the RSA and LSA studies, which have been suspended indefinitely as a precautionary measure due to potential disturbances to Caribou from low-flying survey aircraft. With additional years of data and as additional Caribou are collared, home range and habitat use by season can be mapped with increasing certainty. The 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.

Additional soil and vegetation sampling was conducted in 2008 as a component of Environmental Health Monitoring Program. Analytical data has been added to data from 2005 to provide a comprehensive baseline dataset whereby changes in contaminant exposure to wildlife populations during mine operations can be evaluated.

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 existing monitoring programs to date indicate that monitoring programs, with some minor modifications, 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, 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 third[2] of a series of annual Wildlife Monitoring Summary Reports for the project. The purpose of this report is to summarize the 2008 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.

Construction of the AWPAR was successfully completed in March 2008. In addition, numerous Meadowbank camp infrastructure upgrades were completed over the course of 2008. However, as of December 2008, principal mine construction was relatively limited and is currently scheduled to continue throughout 2009, followed by the onset of mine operations in early 2010. Given the limited construction activities at the mine site in 2008, the analysis of potential mine-related changes in this year's report was predominantly limited to interactions along the AWPAR; however, breeding bird plots conducted in 2008 at the mine site areas under construction and reference areas allowed for a preliminary assessment of potential mine-related effects. The remainder of the report focuses on identifying natural variability in wildlife observations, identifying prospective trends, and determining whether reference / control and mine site sampling areas are comparable under pre-operational mine conditions. As well, the report attempts to verify the effectiveness of implemented mitigation measures and the need, if any, for adaptive management strategies.

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 estimated 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 will provide the primary means of mine site access and re-supply, while on-site mine access roads will connect open pit areas to ancillary

[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.

facilities. On-site facilities are scheduled to 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 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 APPROACH OF MONITORING PROGRAM

Wildlife monitoring is an essential tool to protect wildlife resources utilizing areas associated with the Meadowbank Gold Mine Project. Because of some uncertainties associated with impact prediction and the effectiveness of mitigation, monitoring serves to facilitate the verification of conclusions in the EIA as well as to fine-tune and refine mitigation measures, where necessary, and to document significant impacts on abundance and distribution of wildlife populations. Several variables that define the well-being of wildlife populations are currently being monitored. A summary of the general approach is provided in Section 2.4. Specific monitoring initiatives for wildlife VECs are discussed in detail in Section 3 of this report and are also described 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 (i.e., % cover within the Local Site Area [LSA]; habitat loss relative to availability in the LSA) of all ELC habitat units will be assessed on an annual basis during the principal construction, operation and decommissioning phases of the mine. Currently, joint ELC analysis of the mine site and AWPAR is scheduled for inclusion in the 2009 Wildlife Monitoring Summary Report, given that principal mine site construction was minimal as of the end of December 2008.

Once mine site construction has been completed, extent of habitat loss at the mine site and ancillary facilities will be identified and mapped from ground investigations and aerial surveys. 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 (although likely to a lesser extent due to their slower propagation rates observed in experiments at northern mines).

2.3.2 Wildlife Distribution

Various on-going monitoring programs have been established to assess the distribution of wildlife within the LSA and Regional Site Area (RSA); however, because many species using the area are ambulatory, migratory and/or transient, 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 Abundance

Wildlife abundance is anticipated to be a more accurate deterministic predictor of the potential effects of mine-related activities on wildlife using the area in comparison to wildlife distribution. Both increases and decreases in population size 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). 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 first year of mine site operation in 2011.

2.3.5 Adaptive Management

Within each wildlife mitigation approach or method, there is a certain level of uncertainty or unpredictability. The general purpose of monitoring is to determine if implemented mitigation measures have been successful. Residual effects are those effects that persist after mitigation measures have been implemented as intended. For example, it may be determined that waste management practices are not effective in keeping predatory mammals away from the mine site. The residual effect would be that predatory mammals continue to return to the mine site, increasing the risk that animals would need to be destroyed. Adaptive management measures would be implemented, such as reducing the availability of animal attractants at the landfills, wrapping sewage lines with steel, and enhancing metal skirting around the base of buildings, to reduce potentially unacceptable impacts. Adaptive management is an ongoing process that evolves throughout the life of the mine as better and more effective ideas 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

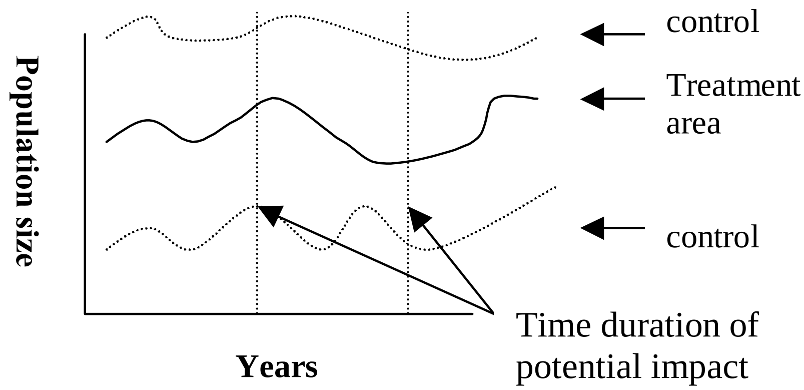
Monitoring programs serve to evaluate mitigation measures on a predetermined basis to evaluate their effectiveness and will be modified, if necessary, to meet the objective of the mitigation strategy set out in the TEMP. For example, the effectiveness of the environmental awareness program can be monitored and enforced on a daily basis (e.g., speed limits, harassing wildlife), if necessary, or on a monthly or semi-annual basis and adjustments can be made, where necessary. Feedback may be solicited from mine employees, residents of Baker Lake, or recommendations made by monitoring officers who visit the mine site on a regular basis. Incentives or disincentives may need to be enforced more vigorously to facilitate compliance.

Monitoring measures also serve to evaluate the effectiveness of implemented mitigation measures against impact predictions (i.e., hypotheses) and baseline conditions. For example, schedules for meeting objectives may be unrealistic, and adjustments can be made.

An 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 scheduled to monitor wildlife presence in close proximity to mine facilities on a daily basis once the mine site has been constructed (discussed in detail in Section 3.8), particularly in the vicinity of potential contaminant sources such as the tailings facility. Where there are perceived unacceptable risks to wildlife, mitigation actions will be undertaken to avert animals from the contaminant source.

2.4.2 Overview of Statistical Approach and Objectives

A fundamental objective of the TEMP is to identify unanticipated impacts of the Meadowbank Gold Mine Project on terrestrial wildlife species. The basic statistical design used to analyze data involves the use of treatment and control areas (refer to diagram below). Controls are spatial and temporal. Spatial controls are those areas considered to be far enough from mine operations that the mine site has no impact on wildlife species, providing a reference to natural variability that may be occurring in the population independent of mine impacts (e.g., due to unrelated factors such as global warming). Additionally, temporal controls (monitoring prior to and after impact) will be used in treatment and control areas to allow direct assessment of impact in treatment areas compared to reference control sites. This type of design has been termed the Before and After Controlled Impact (BACI) design (Underwood 1994; Underwood 1997).



A diagram of potential changes in control and treatment sites during a monitoring project. Monitoring occurs in spatial control areas as well as prior to, during, and post impact to allow separation of spatial and temporal variation from hypothesized impacts.

A variety of statistical methods can be used with BACI data. The most general approach is an analysis of variance design (ANOVA) (Underwood 1997) in which data is grouped by treatment, control and before, during, and after potential impact. For some species, such as Caribou, the spatial scale of the population may make it difficult to define control and treatment areas. In this case, monitoring is conducted across a large enough scale that it can be assumed that part of the study area will not be impacted by mine sites. An analysis of covariance analysis (ANCOVA) (Milliken and Johnson 2002) is then used with distance from mine site of observations as a covariate. The distance from mine site when a potential impact occurs is then estimated by the statistical model (Boulanger et al. 2004), which results in the impact zone being estimated rather than subjectively determined.

Modern, statistical mark-recapture programs (Note: not referring to physically marking wildlife and recapturing) such as MARK (White and Burnham 1999) allows the consideration of both individual, temporal, or group covariates for the analysis of data (White et al. 2002), making it possible to analyze mark-recapture data using the BACI design.

Another important attribute of monitoring is the estimation of process variation from longer time series data. Estimates of population size and related parameters from field data contain both sampling variation and process variation (Thompson et al. 1998). Sampling variation occurs because a small sample size of the total population is being sampled in any one survey. Of greater importance is process variation, which is the natural variability in population size or related parameters over time. If longer time series (i.e., 10 years) of data are collected, then it is possible to separate these two sources of variation in program MARK (White et al. 2002) or using the methods of Burnham et al. (1987). Precision (i.e., smaller confidence intervals on predictions) of the estimate is improved since sampling variation is removed.

2.5 OBJECTIVES OF THE 2008 WILDLIFE MONITORING SUMMARY REPORT

As in previous years, the primary objectives of the 2008 Wildlife Monitoring Summary Report consist of the following:

1. assessing the accuracy of uncertain, weak, and/or significant impact predictions made in the EIS in the context of the wildlife management plan effectiveness;
2. developing and maintaining an adaptive monitoring strategy 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; and
3. where monitoring activities identify unacceptable project-related impacts to the distribution, abundance, integrity, health and/or viability of vegetation communities or wildlife populations, fine-tune existing mitigation measures and/or develop an adaptive management approach (i.e., further mitigation measures) necessary to alleviate the impact.

The annual Wildlife Monitoring Summary Report is provided by March each year, and serves to summarize the monitoring activities and results of the previous calendar year. The summary report discusses the accuracy of predictions of the impact of the project on the various wildlife VECs, the success of mitigation measures, new measures taken through the adaptive management approach, results of monitoring activities, and recommendations for mitigation and monitoring activities in the current year. An attempt is made to distinguish between project-related changes and natural variation in wildlife populations. Although this analysis is inherently challenging due to the limited scope of monitoring programs and limited knowledge on wildlife populations in the Arctic, mine-related data and data from other sources are assessed and statistically analyzed to investigate possible changes and trends.

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

2.6 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 2.1). 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 2.1). The AWPAR LSA consists of a 3 km wide corridor centred on the AWPAR between Baker Lake and Meadowbank camp (Figure 2.1).

2.7 JUSTIFICATION FOR REGIONAL STUDY AREA SIZE

The size of the RSA (5,106 km^2) was derived through consideration of the following factors:

1. practical size for ongoing aerial surveys (eight per year);
2. size of RSAs established at other mines. Size of RSAs at Jericho (900 km^2), Ekati (1,600 km^2), and Doris North (3,700 km^2) were all considerably smaller, despite the fact

that these mines were situated in areas with recognized higher wildlife values than at the Meadowbank Mine site;

3. large RSA associated with the AWPAR. A large RSA (e.g., the 100 x 100 km = 10,000 km^2 used during baseline surveys) was both expensive and time-consuming (i.e., 2 to 3 days), resulting in potential for bias if unpredictable weather conditions delayed complete coverage of the survey area. The current RSA could be completed in one day; and,

4. sufficiently large to effectively determine natural changes in Caribou populations, which are extremely wide-ranging and comprised of a number of distinct herds.

To supplement the monitoring programs and to better establish potentially occurring natural changes in Caribou populations, a five-year radio-collaring program has been implemented in collaboration with the Government of Nunavut Department of the Environment (GNDoE) (refer to Section 3.11 for additional details). Data from this program, as well as existing radio-collaring programs for the Beverly, Lorillard, Wager Bay and Qamanirjuaq herds, will provide valuable information on natural changes in Caribou populations in the region.

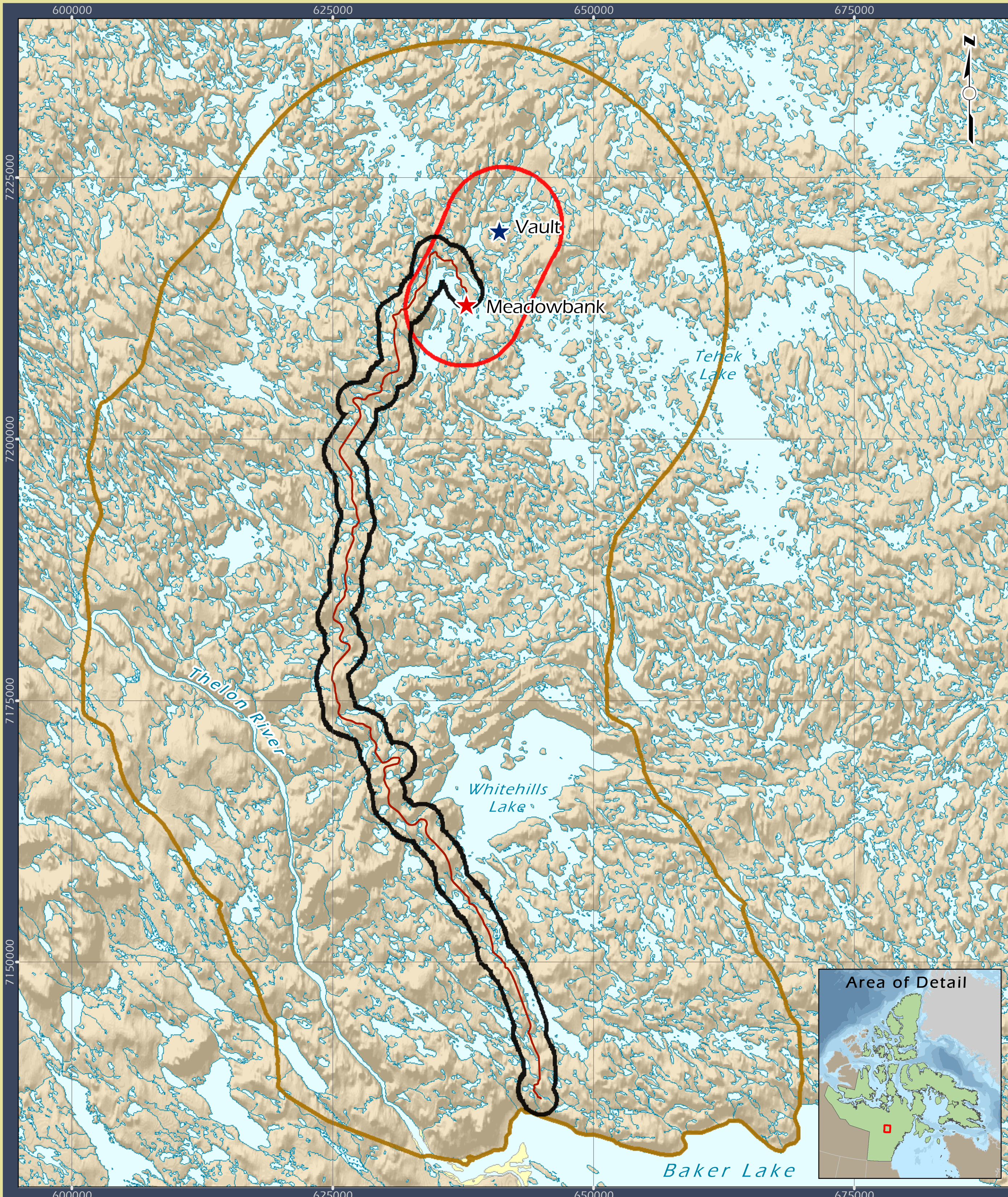
2.8 INUIT INVOLVEMENT

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 below.

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)	2
LSA Aerial Survey	1999, 2002-2008 (8)	2
Breeding Bird Plots	2003-2008 (6)	2 to 3
Breeding Bird Transects	2005-2008 (4)	2
Waterfowl Nest Surveys	2004-2008 (5)	1 to 2
Raptor Nest Surveys	2004-2007 (4)	1 to 2
Access Road Ground Surveys	2004-2008 (5)	3 to 4
Habitat Mapping	2004-2005	1 to 2
Phenology Plots	2003-2005	2

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



Legend

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

0 5 10 15 20

Kilometres

Projection: UTM Zone 14 NAD83

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

Figure 2.1: 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 is to be mapped annually during the principal construction and operation phases of the mine site using a combination of aerial surveys, photography, ground-truthing (with the aid of GPS), and possibly satellite imagery. The purpose of monitoring habitat disturbance is to compare the disturbance of vegetated areas during construction and operation to baseline conditions (i.e., ELC from supervised classification conducted in 2005; refer to the Terrestrial Ecosystem Baseline Report for details) and to predict loss or degradation of vegetated habitat areas.

The habitat mapping monitoring plan was developed to describe the overall area of different ELC units lost due to mine construction activities, and includes 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 will occur predominantly in 2009. On the basis of the revised construction schedule, ELC analysis was tentatively rescheduled to 2009, and will include footprint effects of the mine site and ancillary facilities (including the AWPAR). It was determined that ELC analysis following significant 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 RSA AERIAL SURVEY

3.2.1 Survey Methodology

Aerial surveys have been conducted in the Meadowbank area since 1999. Earlier surveys (i.e., 1999 to 2004) were conducted within a large RSA (100 x 100 km = 10,000 km^2), while subsequent surveys (i.e., 2005 to 2008) were conducted in a smaller area (i.e., 5,106 km^2 – refer to Section 2.6 for description of boundaries). The smaller survey area established in 2005 was considered a more manageable size from a regular monitoring perspective (refer to Section 2.7 for justification for RSA size).

Since 1999, a total of 34 aerial surveys have been conducted: 1999 (1), 2002 (2), 2003 (1), 2004 (4), 2005 (4), 2006 (7), 2007 (7) and 2008 (8). The timing of surveys is provided in Table 3.1.

In 2008, two surveys were scheduled to be conducted in each of four “Caribou seasons”: Winter (October to March), Spring Migration (April to May), Summer (June to July), and Fall Migration (August to September). As a result of scheduling constraints, one of the summer surveys was deferred to September and remaining fall surveys were rescheduled for October.

Table 3.1: Summary of RSA Aerial Surveys Conducted within the Meadowbank RSA between 1999 and 2008.

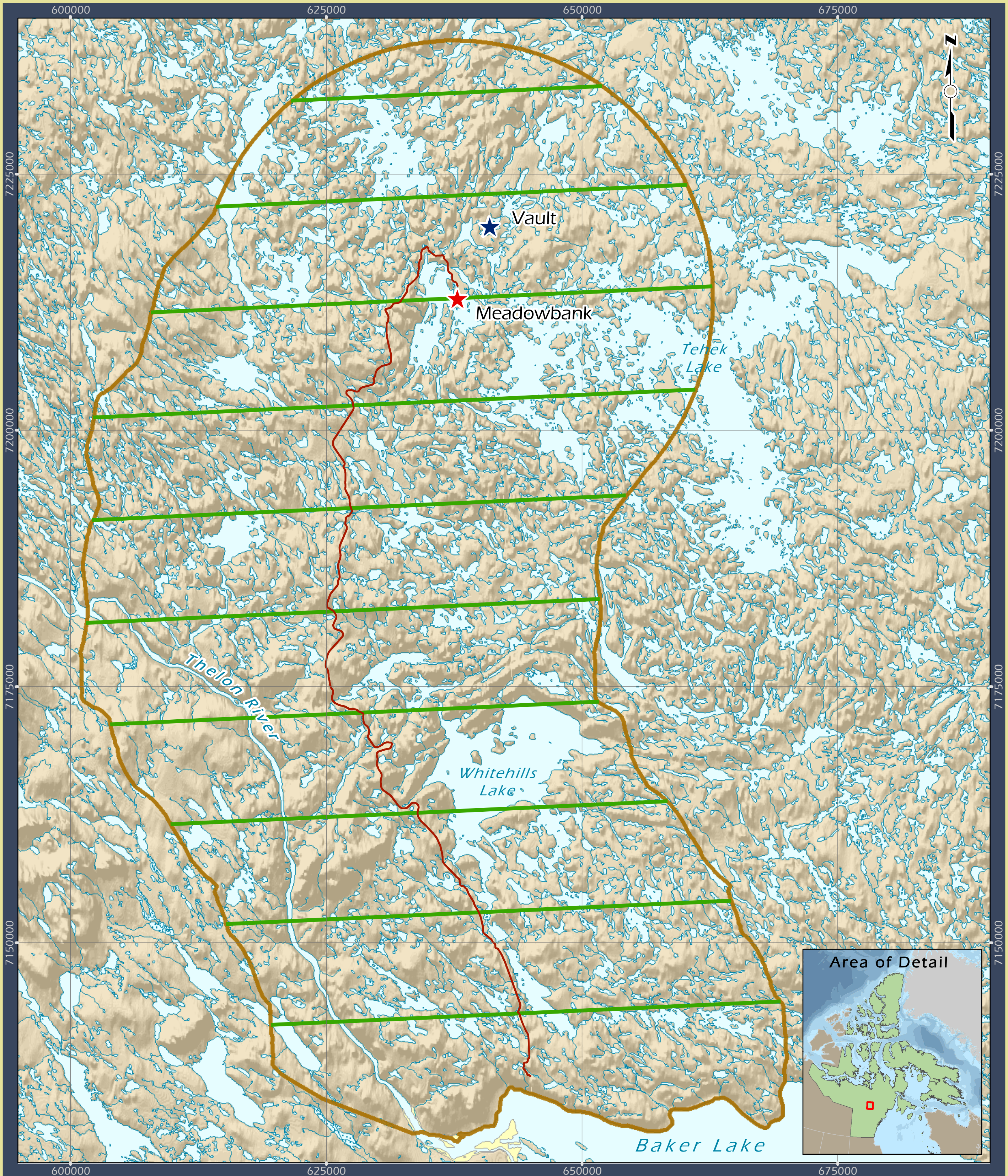
Survey #	Season	Date
1	Spring	29 May to 01 June 1999
2	Summer	27 to 30 July 2002
3	Fall	13 to 15 September 2002
4	Winter	28 to 30 March 2003
5	Winter	24 to 26 February 2004
6	Spring	23 to 25 April 2004
7	Summer	21 to 22 June 2004
8	Fall	29 to 30 August 2004
9	Spring	01 May 2005
10	Summer	27 June 2005
11	Fall	18 August 2005
12	Winter	25 October 2005
13	Spring	23 March 2006
14	Spring	19 April 2006
15	Spring	19 May 2006
16	Summer	17 June 2006
17	Summer	22 July 2006
18	Fall	03 September 2006
19	Fall	26 September 2006
20	Winter	30 March 2007
21	Spring	25 April 2007
22	Spring	19 May 2007
23	Summer	20 June 2007
24	Summer	06 July 2007
25	Fall	17 August 2007
26	Fall	18 September 2007
27	Winter	27 February 2008
28	Winter	27 March 2008
29	Spring	02 May 2008
30	Spring	22 May 2008
31	Summer	23 July 2008
32	Fall	11 September 2008
33	Fall	04 October 2008
34	Fall	28 October 2008

Between 2006 and 2008 (during construction of ancillary facilities and the onset of mine site construction), aerial surveys of the RSA have been scheduled eight times per year (weather permitting). Aerial surveys were scheduled to continue for at least the first three years of operation; however, following discussions with Mr. Mitch Campbell, a biologist working for the GNDoE, RSA surveys were suspended indefinitely as a precautionary measure, based on concerns regarding potential Caribou disturbances as a result of aircraft noise. In subsequent years, RSA surveys will be supplanted by additional AWPAR surveys (Section 3.9) and an augmented Caribou radio-collaring program (Section 3.11).

The RSA survey methodology involves orienting ten transects (i.e., ~ 50 km in length and spaced every 10 km) perpendicular to the AWPAR in order to better determine whether Caribou or Muskox are using all habitats (both near and far) at similar levels (refer to Figure 3.1). The aerial survey route has remained consistent across years. With an effective viewing or survey distance of 1,000 m (i.e., 500 m on each side of the aircraft) at 150 m above ground level (agl), approximately 10% of the RSA is covered during the survey.

Prior to each aerial survey, weather conditions are documented and the helicopter or aircraft windows and/or wing struts are calibrated to the proper transect strip width of 1,000 m (includes putting a piece of tape on the window for each observer). All animals observed below the tape on the window are considered to be within the transect (i.e., within 500 m of the aircraft). Observations above the tape, and; therefore, outside the 1,000 m study area, were not included in any of the statistical analyses. Flight altitude and ground speed averaged approximately 150 m agl and 130 kph, respectively. A minimum of three observers participate on each survey: the pilot, a navigator / observer, and an observer on the pilot's side of the aircraft. The pilot concentrates on maintaining altitude, ground speed, and staying on transect. The navigator/observer assists the pilot in staying on track, plotting individual observations on a map, collecting waypoints for each observation, and reporting animals on his side of the aircraft. The second observer communicates observations for the navigator to record.

The GPS locations of all wildlife sightings or observations of clearly identifiable wildlife sign (e.g., dens, nests, Caribou craters) are recorded. At a minimum, the number of individuals are recorded and, if possible, information on sex and age class. The sex and age of ungulates is determined by a number of distinctive factors including size, coloring, and antler size and growth. Aerial observers are experienced in determining the sex and age of ungulates, but each employee also receives specific training on how to determine distinctive features related to sex and age under aerial survey conditions.



Legend

- All-Weather Private Access Road
- Aerial Survey Transects
- Regional Study Area

0 5 10 15 20

Kilometres

Projection: UTM Zone 14 NAD83

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

Figure 3.1: Aerial Survey Transects in the RSA

Meadowbank Gold Project

Prepared for: AGNICO-EAGLE

By: Caslys Consulting Ltd.

The start and end coordinates of the 10 transect lines within the RSA are provided in Table 3.2.

Table 3.2: Start and End UTM Coordinates (NAD 83) of Aerial Transects within the RSA.

	West End of Transect		East End of Transect	
#	Easting UTM	Northing UTM	Easting UTM	Northing UTM
1	14W 0619578	7141999	14W 0669412	7144299
2	14W 0615189	7151814	14W 0664578	7154110
3	14W 0609774	7161587	14W 0658376	7163831
4	14W 0603894	7171322	14W 0651651	7173528
5	14W 0601524	7181218	14W 0651741	7183539
6	14W 0602122	7191251	14W 0654271	7193663
7	14W 0602221	7201261	14W 0661086	7203986
8	14W 0607878	7211528	14W 0662735	7214070
9	14W 0614200	7221827	14W 0660228	7223961
10	14W 0621537	7232173	14W 0651962	7233585

3.2.2 Statistical Approach

The prime objective of RSA analyses was to obtain population estimates for the study areas for focal species. In addition, seasonal and yearly trends in the datasets were explored. Finally, the LSA and RSA areas were compared in terms of focal species densities.

3.2.2.1 Data Screening

Only data from animals sighted within the 1,000 m (1 km) wide transect strip were included in analyses. Data from sighting of tracks and trails of ungulates were not included. Additionally, it was assumed that if a species was sighted in a given season then it was possible for it to be sighted in other seasons. Using this assumption, zero (0) counts were filled in to the dataset for some species and season combinations, which took into account the fact that it was only possible to see some species such as waterfowl in non-winter months.

3.2.2.2 Estimates of Population Size for RSA

The population size of wildlife in the RSA area was estimated using data from the 10 aerial transects surveyed. Only data from the “monitoring RSA” was included. Population size and variance were estimated using strip transect formulas found in Krebs (1998). The total area surveyed by transects was 488 km^2 amounting to 9.5% of the RSA area being covered by transects.

One issue was that 19.4% of the RSA was composed of lakes and other bodies of water (i.e., 989 km^2 of the 5,106 km^2 total area). This factor had a potential to artificially skew comparative results of ungulate densities between terrestrial and seasonally aquatic areas since ungulates do not use water bodies during the open-water season when the majority of surveys were conducted. To account for this, only terrestrial land area was used to estimate densities of ungulates on transects and the study area for non-winter months. The full area was used for winter months since it was possible for ungulates to traverse frozen lakes. Waterfowl analyses were based on total land area since waterfowl were often seen flying during surveys.

3.2.2.3 Estimation of Population Trend for Focal Species

Trends in RSA population size by season and year were assessed for Caribou, Muskox and waterfowl (Canada Goose, Greater White-fronted Goose [*Anser albifrons*], and Snow Goose) using counts from the transect surveys. Counts rather than estimates were used for the following reasons: 1) estimation of population size for the entire RSA involves multiplying the count of animals by a constant factor; therefore, trends using counts or estimates will be similar; 2) the Meadowbank data contained zero (0) counts for some species suggesting they were in low abundance. This created bimodal distributions typical of counts of species with low densities. The type of analysis for these data was negative binomial regression, which is well suited for data with zero counts as well as higher counts that occurs when data is spatially or temporally clumped (White and Bennetts 1996). A negative binomial regression model in SAS PROC GENMOD was utilized for analyses (SAS Institute, 2000). This basic model uses count of the animal as the dependent variable and season, year, and a season **x** year interaction term as predictors.

3.2.2.4 Caribou Herd Composition

Where possible, the composition of individuals within Caribou groups was noted during the survey. The proportion of bulls, cows, yearling, and calves was evaluated for each season. Variance was estimated by bootstrap methods or the variance of mean proportions from survey dates (dependant on sample size). To increase replicate sample sizes, surveys dates rather than surveys was used as the sample unit to estimate variances.

3.2.2.5 Comparison of RSA and LSA Areas

Densities of key wildlife species were estimated from the RSA and LSA surveys to allow for standardized comparisons of wildlife population areas. Densities for the RSA area were estimated as the number of animals counted in transects divided by the area sampled by transects for each survey date. In contrast, densities for the LSA were simply the count of animals divided by the LSA area. Densities of ungulate species were based upon land area with water bodies excluded for non-winter months. Differences in densities were then compared using a general linear model (Underwood 1997; SAS Institute 2000) with season, study area, year, and study area **x** year as predictor variables. Density was log-transformed to help meet the assumption of normality of response variables (Zar 1996).

3.2.3 Mapping

For presentation purposes, an interpolative technique called Inverse Distance Weighting (IDW) was used. IDW has been used to map large scale data collection efforts such as the North American Breeding Bird Survey (Sauer 2003) as well as Arctic waterfowl surveys (Alisauskas 1997; Hines et al.

2004; Fournier and Hines 2005; Raven and Dickson 2006). Details on the IDW methodology, in addition to those described below are provided in Hines et al. (2004).

Distribution maps were developed to graphically summarize the RSA survey data. The distribution maps were generated through interpolation, which provided an estimate of the number of animals present at unsampled locations based on the known values gathered at surrounding locations. This type of analysis generates a surface consisting of cells each with an attribute, in this case, population density. In this study, the IDW technique was used within ArcMap's Spatial Analyst extension. IDW is an effective means of interpolating scattered data points by assuming that the resulting interpolated surface should be influenced most by the nearby points and less by more distant points. Values are estimated by calculating a weighted average (i.e., the further a sampled point is from the cell being evaluated the less weight it has in the calculation of the cell's value).

The analysis requires that a series of parameters be defined. The parameters, along with a description and the settings used are summarized in Table 3.3.

Table 3.3: IDW Analysis Parameters.

Parameter	Description	Settings
Z Value Field	The Z value is the attribute being used to derive the interpolated surface.	The population attribute stored in the field Number_.
Power	The higher the Power value, the greater the influence of values closest to the interpolated point. The most common value for the Power parameter is 2.	A value of 2 was selected.
Search radius type	The search radius can be either variable or a fixed distance.	As the sample points were not evenly distributed, a variable search radius was used that assessed the data points nearest to the particular cell of interest.
Search radius setting	The search radius setting specifies either the maximum distance of a fixed radius search or the number of points for a variable type.	The number of points considered in each of the analyses was 12.
Output cell size	The resolution (or cell size) of the grid (the surface) resulting from the analysis.	An out cell size of 100 m^2 was specified resulting in a population density of animals per hectare.

The resulting surfaces were themed by the population density attribute and overlaid on a base map of the RSA to develop the figures. The density bins used to classify the data were: Caribou and waterfowl: 0; 1 - 5; 5 - 10; 10 – 15; 15 – 20; and > 20. Muskox: 0; 1 - 2; 2 - 4; 4 - 6; 6 - 8; and >8.

3.3 LSA AERIAL SURVEY

3.3.1 Survey Methodology

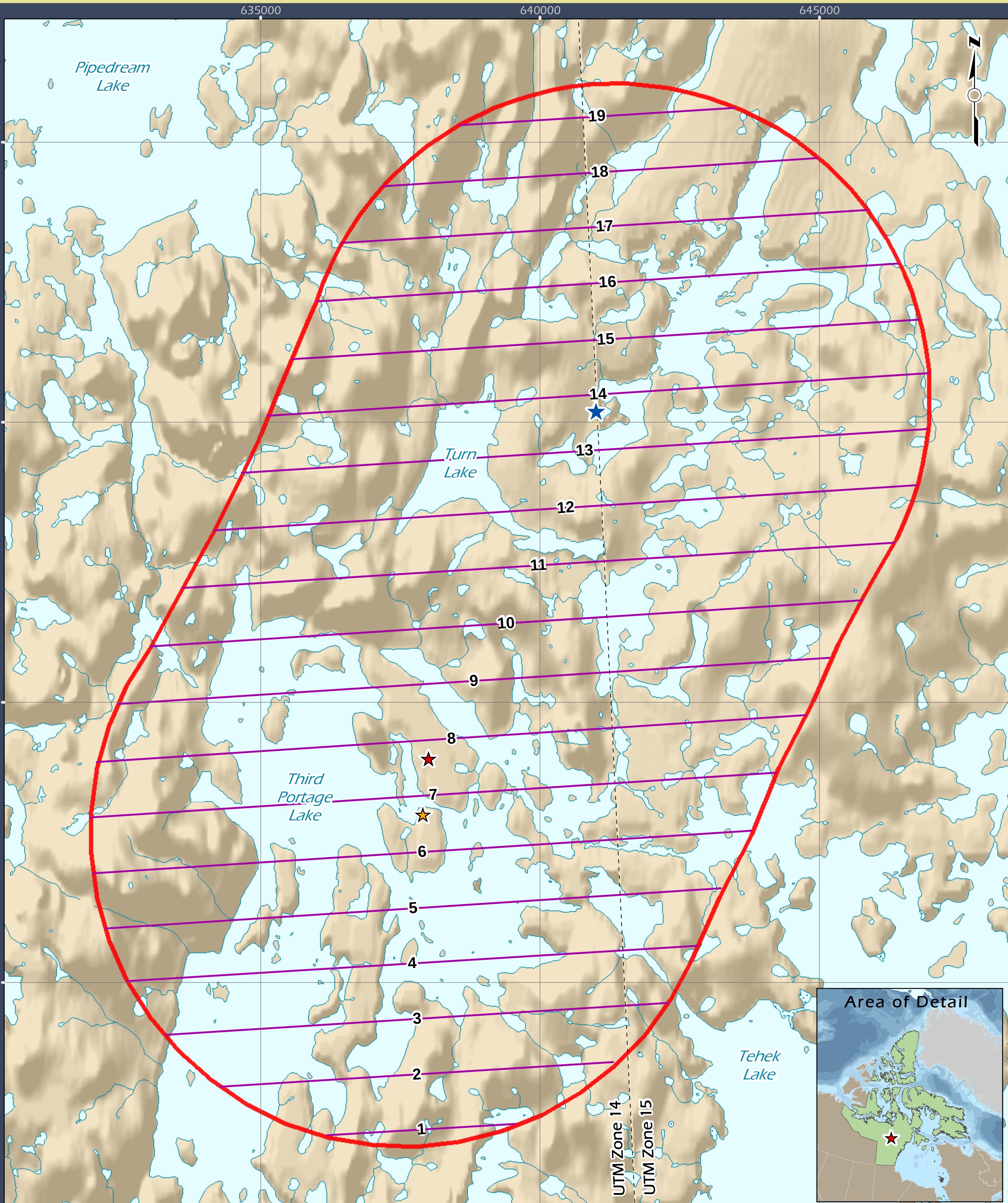
Aerial surveys of the LSA have been conducted intermittently since 2002. As with the RSA surveys, LSA surveys were scheduled to continue for at least the first three years of operation; however, following discussions with Mr. Mitch Campbell, a biologist working for the GNDoE, LSA surveys were suspended indefinitely as a precautionary measure, based on concerns regarding potential caribou disturbances as a result of aircraft noise. In subsequent years, LSA surveys will be supplanted by additional AWPAR surveys (Section 3.9) and an augmented Caribou radio-collaring program (Section 3.11).

Since 1999, a total of 21 aerial surveys have been conducted: 2002 (1), 2003 (3), 2004 (4), 2005 (2), 2006 (6), 2007 (5) and 2008 (1). The timing of surveys is provided in Table 3.4.

Table 3.4: Summary of LSA Aerial Surveys Conducted within the Meadowbank RSA from 2002-2008.

Survey #	Season	Date
1	Fall	21 September 2002
2	Spring	02 April 2003
3	Summer	19 June 2003
4	Fall	11 September 2003
5	Winter	26 February 2004
6	Spring	22 April 2004
7	Summer	18 June 2004
8	Fall	27 August 2004
9	Spring	03 May 2005
10	Summer	20 July 2005
11	Winter	25 March 2006
12	Spring	21 April 2006
13	Spring	20 May 2006
14	Summer	21 June 2006
15	Fall	04 September 2006
16	Fall	27 September 2006
17	Spring	01 April 2007
18	Summer	15 June 2007
19	Summer	26 June 2007
20	Summer	06 July 2007
21	Fall	20 September 2007
22	Summer	02 July 2008

Survey protocols for the LSA are similar to those described for the RSA above. The aerial survey route consists of 19 transects spaced at 1 km intervals across the entire LSA (refer to Figure 3.2). With an effective viewing or survey distance of 1,000 m (i.e., 500 m on each side of the aircraft), the entire LSA is covered during the surveys.



Legend

- Vault
- Meadowbank North Camp
- Meadowbank South Camp
- Local Study Area
- LSA Aerial Wildlife Survey Route

0 1 2 3 4

Kilometres

Projection: UTM Zone 14 NAD83

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

Figure 3.2: Aerial Survey Transects in the LSA

Meadowbank Gold Project

Prepared for: AGNICO-EAGLE

By: Caslys Consulting Ltd.

The start and end coordinates of the 19 transect lines within the LSA are provided in Table 3.5.

Table 3.5: Start and End UTM Coordinates (NAD 83) of Aerial Transects within the LSA.

	West End of Transect			East End of Transect		
Transect #	**Zone**	**Easting UTM**	**Northing UTM**	**Zone**	**Easting UTM**	**Northing UTM**
1	14W	636190	7207271	14W	639559	7207477
2	14W	634278	7208139	14W	641309	7208580
3	14W	633307	7209066	15W	359228	7209567
4	14W	632616	7210022	15W	359836	7210529
5	14W	632219	7210963	15W	360359	7211513
6	14W	631998	7211949	15W	360998	7212486
7	14W	631954	7212949	15W	361535	7213470
8	14W	632072	7213934	15W	362160	7214444
9	14W	632454	7214972	15W	362681	7215423
10	14W	633022	7215999	15W	363358	7216390
11	14W	633610	7217044	15W	364027	7217360
12	14W	634169	7218073	15W	364537	7218343
13	14W	634664	7219100	15W	364814	7219321
14	14W	635120	7220115	15W	364938	7220314
15	14W	635561	7221130	15W	364853	7221283
16	14W	636002	7222159	15W	364582	7222313
17	14W	636458	7223204	15W	364116	7223318
18	14W	637179	7224215	15W	363310	7224322
19	14W	638561	7225304	15W	361917	7225356

3.3.2 Statistical Approach

3.3.2.1 Data Screening

Data screening techniques are the same as for the RSA described in Section 3.2.2.1.

3.3.2.2 Estimates of Population Size for LSA

The population size of wildlife on the LSA area was estimated using data from the 19 aerial transects surveyed. As with the RSA, population size and variance were estimated using strip transect formulas found in Krebs (1998). The entire LSA was sampled during aerial surveys; therefore, estimates were simply the count of animals observed.

One issue was that 30.8% of the LSA was composed of lakes and other bodies of water (i.e., 60 km^2 of the 194 km^2 total area), which had a potential to artificially skew comparative results of ungulate densities between terrestrial and seasonally aquatic areas since ungulates do not use water bodies during the open-water season when the majority of surveys were conducted. To account for this, only terrestrial land area was used to estimate densities of ungulates on transects and the study area for non-winter months. The full area was used for winter months since it was possible for ungulates to traverse frozen waterbodies. Waterfowl analyses were based on total land area since waterfowl was often seen flying during surveys.

3.3.2.3 Estimation of Population Trends for Focal Species

Trends in LSA population size by season and year were assessed for Caribou, Muskox and waterfowl (Canada Goose, Greater White-fronted Goose, and Snow Goose) using counts from the transect surveys. Methodologies are similar to those outlined for the RSA in Section 3.2.2.2.

3.3.2.4 Comparison of RSA and LSA Areas

Refer to Section 3.2.2.5 for a detailed comparison of RSA and LSA areas.

3.4 BREEDING BIRD PLOTS

3.4.1 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[3] (refer to Figures 3.3, 3.4, and 3.5). 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 years of operation. Thereafter, consideration will be given to revising the frequency of surveys following a review of the results of the surveys. Surveys in 2008 represent the sixth year (2003-2008) that breeding bird plots have been conducted at the mine site (refer to Table 3.6 for years each PRISM plot has been surveyed). Breeding bird plots within the reference / control area have been conducted in 2005, 2006, 2007 and 2008. Dates of mine site and reference / control area surveys are provided in Table 3.6 and Table 3.7, respectively.

[3] Effectively, a study control used for comparative purposes.

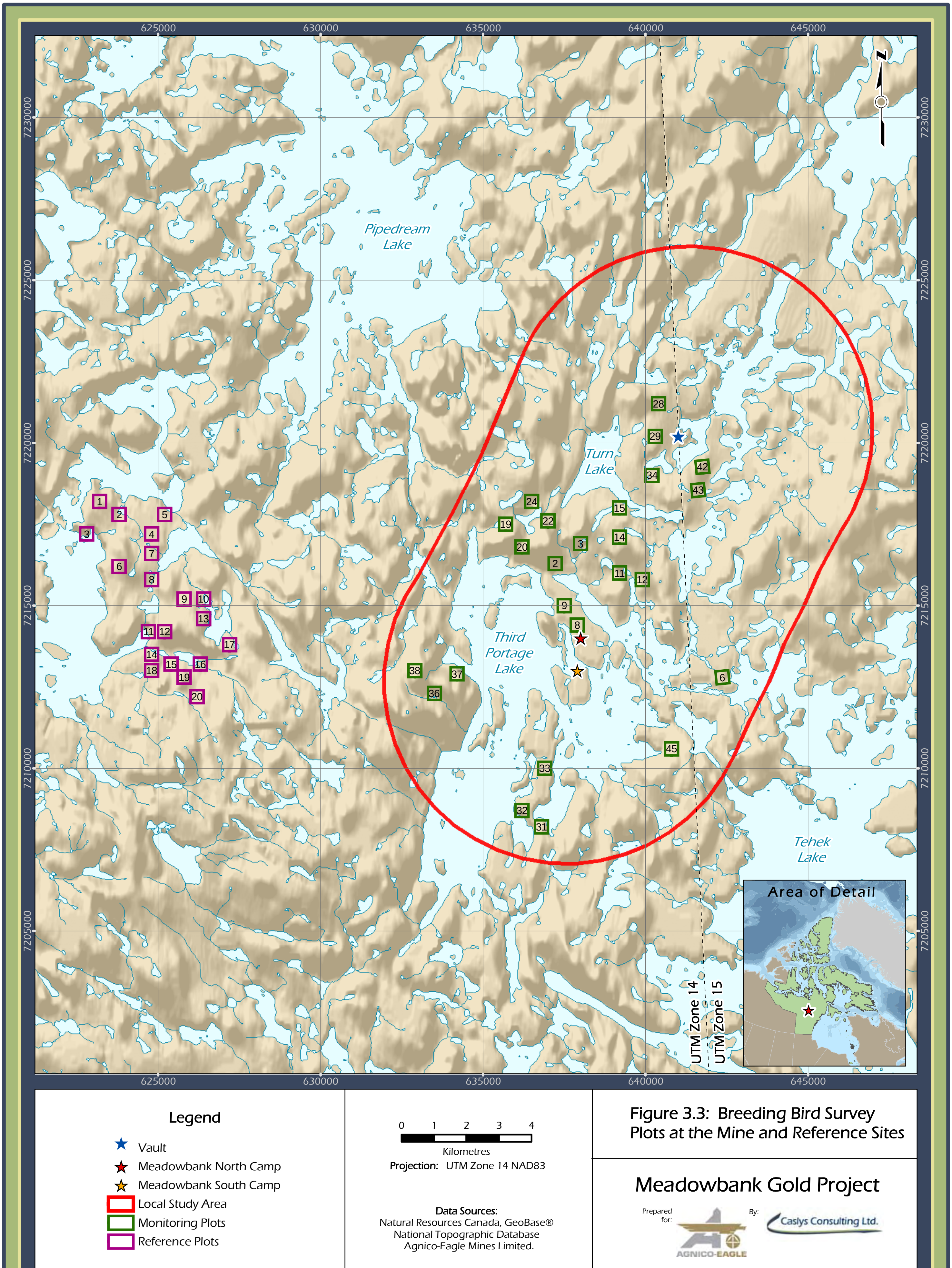
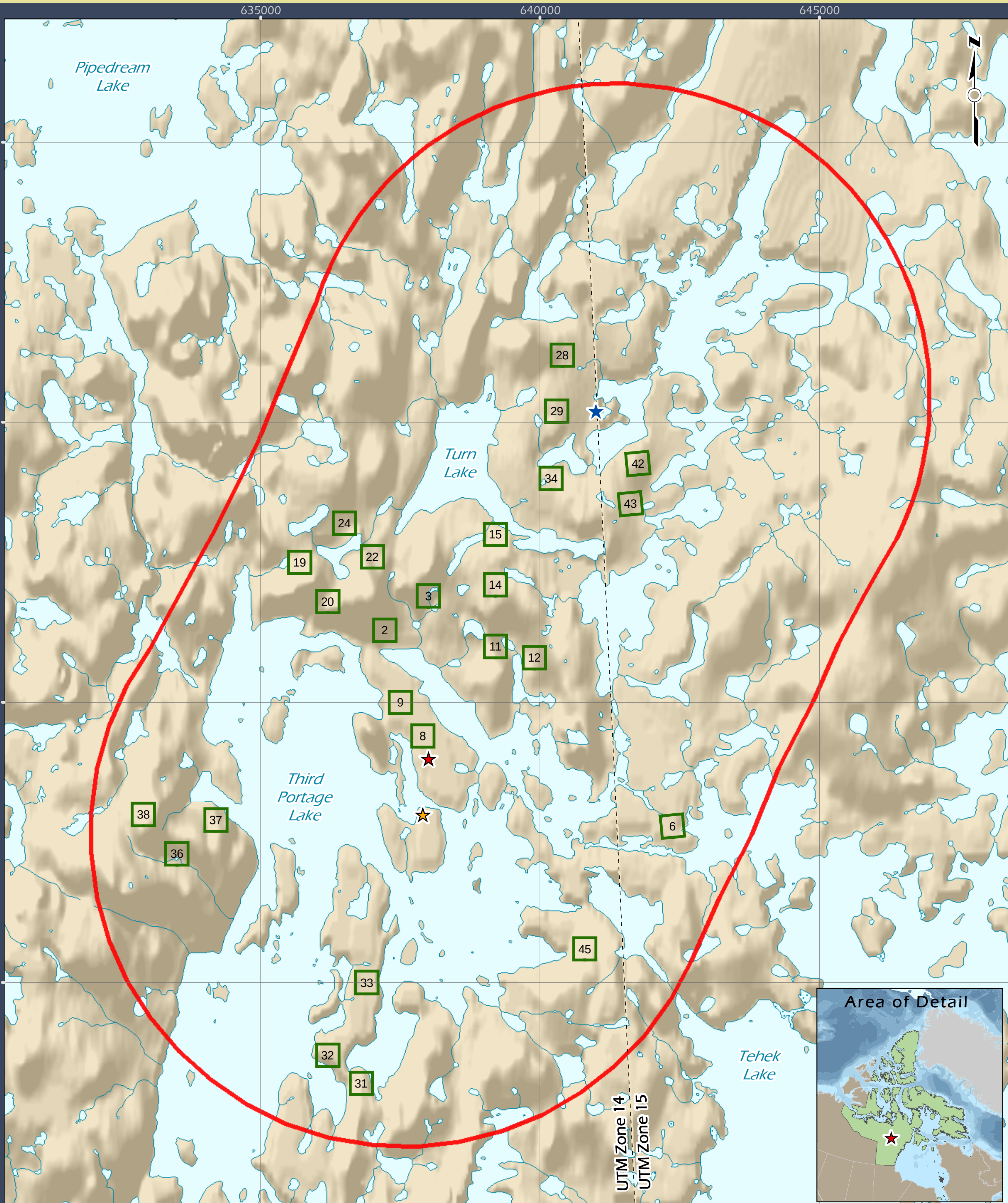


Figure 3.3: Breeding Bird Survey Plots at the Mine and Reference Sites

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

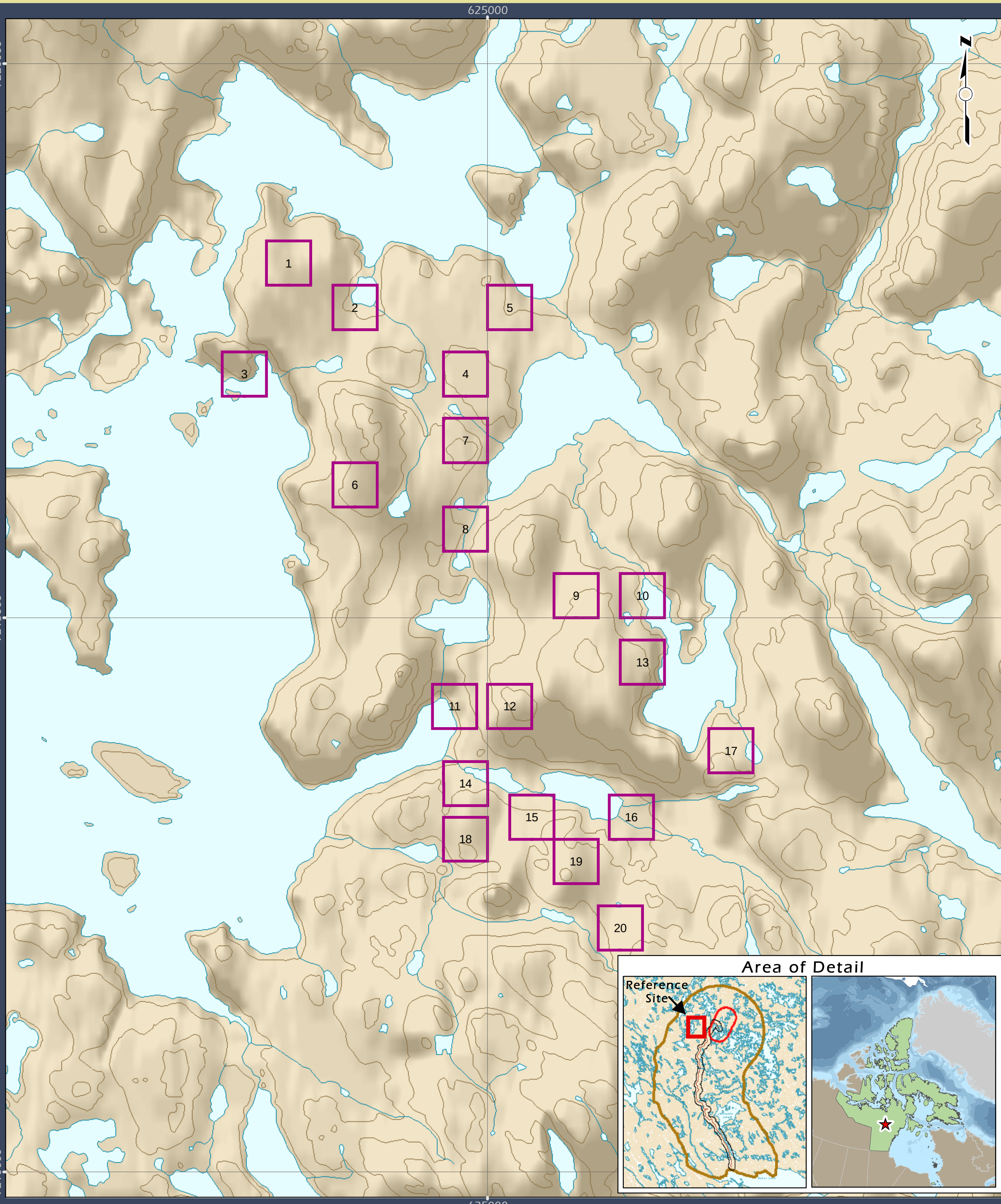
Data Sources:
Natural Resources Canada, GeoBase®
National Topographic Database
Agnico-Eagle Mines Limited.

Figure 3.4: 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
Agnico-Eagle Mines Limited.

Figure 3.5: Breeding Bird Survey Plots at the Reference Site

Meadowbank Gold Project

Prepared for: AGNICO-EAGLE

By: Caslys Consulting Ltd.

Table 3.6: 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
2	4	X		X	X	X	X
3	4	X		X	X	X	X
6	4	X		X	X	X	X
8	4	X		X	X	X	X
9	4	X		X	X	X	X
11	3	X			X	X	X
12	3	X			X	X	X
14	4	X		X	X	X	X
15	3	X			X	X	X
19	3	X		X		X	X
20	4	X		X	X	X	X
22	4	X		X	X	X	X
24	4	X		X	X	X	X
28	4		X	X	X	X	X
29	4		X	X	X	X	X
31	4		X	X	X	X	X
32	4		X	X	X	X	X
33	4		X	X	X	X	X
34	4		X	X	X	X	X
36	4		X	X	X	X	X
37	4		X	X	X	X	X
38	4		X	X	X	X	X
42	3		X		X	X	X
43	3		X		X	X	X
45	3		X		X	X	X
Total Surveys / Year		**13**	**12**	**19**	**24**	**25**	**25**

Table 3.7: 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
1	3	X	X	X	X
2	3	X	X	X	X
3	3	X	X	X	X
4	3	X	X	X	X
5	3	X	X	X	X
6	3	X	X	X	X
7	3	X	X	X	X
8	3	X	X	X	X
9	3	X	X	X	X
10	3	X	X	X	X
11	3	X	X	X	X
12	3	X	X	X	X
13	3	X	X	X	X
14	3	X	X	X	X
15	3	X	X	X	X
16	3	X	X	X	X
17	2	X		X	X
18	3	X	X	X	X
19	3	X	X	X	X
20	3	X	X	X	X
Total Surveys / Year		**20**	**19**	**20**	**20**

Plots are surveyed by two teams of two observers and surveys alternate daily between reference and mine plots. Teams also alternate between mine and reference locations.

The methodology involves a survey of 400 x 400 m plots (refer to Figures 3.3, 3.4, and 3.5 for plot locations and Tables 3.8 and 3.9 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. At 25 m intervals, 17 transects need to be walked to complete the survey. 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 3.8: 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 3.9: 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

3.4.2 Statistical Approach

Principal mine site construction commenced in summer 2008 and will continue through 2009. In previous years, PRISM survey analyses have been limited to an evaluation of the comparability of baseline bird community indices (described in Section 3.4.2.2) 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, mine construction was factored into the PRISM survey analyses for the first time, building on existing bird community indices to ascertain potential mine-related effects. The additional statistical analyses implemented in 2008 to assess for potential mine-related effects are discussed in Section 3.4.2.2.

3.4.2.1 Ecological Land Classification

In previous years, the proportion of each ELC land type was estimated for each PRISM plot. 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.

3.4.2.2 Bird Community Indices

The following indices were used to compare mine and reference / control site plots and consider temporal trends (Table 3.10).

Table 3.10: Indices of Bird Communities.

Indicator	Statistic	Comments
Species Relative Abundance	Mean count of all species	A general index of species abundance
Species Richness	Count of species observed	
Species Diversity	Shannon Weiner Function	Takes into account abundance and richness
Species Evenness	Shannon Weiner Function/ log (species richness)	Evenness or equitability of species

Species Relative Abundance

The number of birds counted in each survey is a potential index of relative abundance of birds in each habitat type. The counts for plots and location were tabulated to investigate differences in relative abundance under the assumption that detection probability of birds was similar in each survey area.

Relative abundance was compared on a species-specific basis. Differences between reference / control and mine sites and yearly trends were also compared using Poisson regression (McCullough and Nelder 1989) with a log link function. The Poisson distribution is based upon counts and can accommodate data with zero counts. In addition, assumptions regarding mean counts and variances can be accommodated through the estimation of a dispersion parameter which adjusts variances for mean counts (McCullough and Nelder 1989). The dispersion parameter is estimated by the Pearson chi-square of the model divided by its associated degrees of freedom (McCullough and Nelder 1989). One other potential issue with this dataset was that some plots were sampled multiple times (each year), while others had only been sampled once. A generalized estimating equation model (Liang and Zeger 1986) was used to correct variances for this form of repeated measures.

The general model that was used included terms for year, location (treatment and control), Julian day of survey, and an interaction of year and location. In addition, a model with a binary impact term was assigned for mine site plots in 2008, which were potentially affected by preliminary construction activities. This term, in addition to the other terms, tested for a change in relative abundance at the mine site plots, which would presumably be due to mine-related impacts. This analysis will be elaborated on in subsequent years with the addition of applicable data. Day of survey was entered to account for the fact that later surveys may have influenced counts.

Species Richness

Species richness is the number of unique species sighted in a PRISM plot. Species richness for mine and reference / control sites are summarized for each survey year, followed by Poisson regression, as described in the relative abundance section, to compare mine and reference / control sites and determine if temporal trends exist in species richness.

Species richness demographics was also analyzed using the Pradel model (Pradel 1996) in program MARK (White and Burnham 1999). For this analysis, the occurrence of a species in a given survey is entered as a capture for each species detected forming a capture matrix of species observed during each transect survey. The Pradel model then estimates detection probability of bird species, the rate of additions of new species (f) and the rate of loss of species (ϕ) for each year the survey is conducted. Rate of fidelity is the probability that a species present in one year will still be present in the next year. The rate of additions of new species is the number of new species arriving in plots for one year per species in the previous year. The rate of additions and losses can be added to estimate λ which is the overall rate of species turnover. If λ is 1 the community is stable, if it is less than 1 it is losing species and if it is greater than 1 it is gaining species.

Mine and reference / control plots were entered as groups in the analysis. Models were constrained to explore if the mine plots showed unique demographics for the interval between 2007 and 2008 when mine site construction commenced. Models support was evaluated using the sample size adjusted Akaike Information Criterion (AICc). The model with the lowest AIC score was considered to be most supported by the data. The difference between the most supported models and other models was indexed by the Delta AICc value. Any models with Delta AIC values less than 2 were also considered. The estimates of demography from each model were then averaged using the proportional support of each model as estimated by the AICc weight (w_i) (Burnham and Anderson 1998).

Species Diversity

Species diversity indices consider both the abundance and richness of species in an area. An area that has a higher density of dominant species but with few unique species will exhibit a lower species diversity index than an area that has abundance spread over many species. Species diversity was estimated using the Shannon Weiner H' function (Krebs 1998). The Shannon Weiner H' function is transformed to a N1 index, which represented the number of equally common species that would produce a similar H' value (MacArthur 1965). A higher N1 value would indicate that the community is more diverse.

Species Evenness

Evenness is a measure of the evenness of abundance of all species in a community. The higher the evenness score, the more even the abundance of species in a community. Evenness was estimated as the Simpson's evenness index (Krebs 1998). If all species are equally abundant than this value is 1. As the community becomes less even, this value approaches zero (0). All indices were calculated in SAS using formulas from Krebs (1998). A jackknife method was used to obtain variance estimates (Manly 1997) for species diversity and evenness estimates.

3.5 BREEDING BIRD TRANSECTS

3.5.1 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 3.6). 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. Surveys in 2008 were conducted following road completion.

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 and June 22 to July 6 in 2008. The bird transect survey was replicated three times in 2007 and twice in 2008 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 3.11.

Table 3.11: UTM Coordinates of Breeding Bird Transects along the All-Weather Private Access Road.

Transect	NAD	East to West Coordinates	North South Coordinate (on access 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

- 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 3.6: Breeding Bird Survey Transects along Proposed All-Weather Private Access Road

Meadowbank Gold Project

Prepared for: AGNICO-EAGLE

By: Caslys Consulting Ltd.

3.5.2 Statistical Approach

The 2008 data was added to the existing breeding bird dataset (2005-2007) and temporal trends in species community indices were refined and updated to assess the natural variability in bird populations as discussed in Section 3.5.2.1. The inclusion of AWPAR construction as a covariate in species community indices temporal trend analysis is discussed in Section 3.5.2.2.

3.5.2.1 Bird Community Indices

The indices used to compare mine and reference / control areas and consider temporal trends are provided in Table 3.10.

Species Relative Abundance

The number of birds counted in each transect are a potential index of relative abundance of birds in each habitat type. The counts for transects were tabulated to investigate differences in relative abundance under the assumption that detection probability of birds was similar in each survey area. An important assumption of relative abundance measures is constant detection through space and time.

Species Richness

Species richness is simply the number of unique species sighted in transects. Data was initially organized by transect, year of survey conducted, and whether the transect was roaded or not. Species richness demographics was then analyzed using the Pradel model (Pradel 1996) in program MARK (White and Burnham 1999). For this analysis, the occurrence of a species in a given survey is entered as a capture for each species detected forming a capture matrix of species observed during each transect survey. The Pradel model then estimates detection probability of bird species, the rate of additions of new species (f) and the rate of loss of species (ϕ) for each year the survey is conducted. The rate of additions and losses can be added to estimate λ which is the overall rate of species turnover. If λ is 1, the community is stable, whereas if it is less than 1, it is losing species and if it is greater than 1, it is gaining species.

Using the Pradel model, yearly change in species richness demographics for the south transects (1-5) and north transects (6-12) from 2005 to 2008 was evaluated separately given that transects 1-5 were roaded in 2007 and all transects were roaded in 2008. The model was further constrained to give species demographic estimates for the interval between 2007 and 2008 for the south transects (1-5) to see if the presence of the road in 2007 and 2008 affected species richness demographics. Model support was evaluated using the sample size adjusted Akaike Information Criterion (AICc). The model with the lowest AIC score was considered to be most supported by the data. The difference between the most supported models and other models was indexed by the Delta AICc value. Any models with Delta AIC values less than 2 were also considered. The estimates of demography from each model were then averaged using the proportional support of each model as estimated by the AICc weight (w_i) (Burnham and Anderson 1998).

Species Diversity

Species diversity indices consider both the abundance and richness of species in an area. An area that has a higher density of dominant species but with few unique species will exhibit a lower species diversity index than an area that has abundance spread over many species. Species diversity was estimated using the Shannon Weiner H' function (Krebs 1998) The Shannon Weiner H' function is transformed to a N1 index which represented the number of equally common species which would produce a similar H' value (MacArthur 1965). A higher N1 value would indicate that the community is more diverse. In addition we compared the evenness of communities.

Species Evenness

Evenness is a measure of the evenness of abundance of all species in a community. The higher the evenness score, the more even the abundance of species in a community. Evenness was estimated as the Simpson's evenness index (Krebs 1998). If all species are equally abundant than this value is 1. As the community becomes less even this value approaches 0. All indices were calculated in SAS using formulas from Krebs (1998). A jackknife method was used to obtain variance estimates (Manly 1997) for species diversity and evenness estimates.

3.5.2.2 Exploration of the Effect of Roads on Species Richness and Diversity

Bird observations were recorded in thirty, 100 m intervals on each transect. In addition, the point where roads bisected each transect was measured. To further explore the effects of roads, bird observation data for each interval was binned by the midpoint of the given interval. For example, if a bird was sighted in interval 1, or within 0-100 m on the transect, it was binned at 50 m on the transect. The distance from each midpoint from the road was then estimated by subtracting the point where the road bisected the transect from the interval midpoint. Each of the 30 intervals was then assessed in terms of sample sizes needed to estimate species diversity indices. Due to low sample sizes, intervals were further pooled by 200 m intervals. On average, the road bisected the transects at 1.2 km (min=0.8 km, max=2.1 km); therefore, some midpoints were at distances greater than 1.5 km.

The relationship between species diversity and richness and distance from road was initially summarized graphically to assess general trends in the data. The relationship of species diversity on both sides of the road was assessed (rather than binning into one a single distance from road) to act as a pseudo-replicate of the relationship. It was possible that species abundance, diversity and richness was higher towards the center of transects due to higher survey effort in these areas. This could potentially confound the effect of roads on species indices. To control for this, species diversity and richness were compared as a function of distance from road for non-roaded transects (6-12) as well as transects 1-5 in 2007. This comparison was also done for the 2008 dataset, in which all transects were roaded. These examinations allowed for a comparison of the species diversity/distance from center of transect relationship for both roaded and non-roaded transects.

To statistically test the relationship between species diversity and distance from road, a mixed model analysis of covariance (Milliken and Johnson 2002) was utilized. For this analysis, Shannon Weiner N1 was the response variable. Whether a transect was roaded or not, the interaction of the transect status and the absolute distance from the road to the observation were predictor (x-axis) variables. Repeated measures of birds for each interval and replication were modeled using a compound symmetric covariance matrix (Littell et al. 1996).

3.6 RAPTOR NEST SURVEYS

Although active raptor nests have not been identified in the Meadowbank mine site and along the AWPAR since surveys commenced in 1999, there remains a potential that raptors may utilize these areas. Surveys along the proposed AWPAR alignment in 2005 indicated that only low suitability habitat for nesting raptors is available. One abandoned raptor (or Common Raven [*Corvus corax*]) nest located on a large rock within approximately 500 m of the AWPAR continues to be monitored annually to determine whether birds return to nest at the site. Given the low probability of occurrence, a specific raptor survey was not scheduled for 2008. Instead, raptor observations were incorporated into on-going biweekly AWPAR surveys, as well as annual waterbird nest surveys and aerial survey of the Meadowbank and Access Road LSAs, which served to adequately determine whether raptors were actively nesting in these areas.

If an active raptor nest is observed within 1 km of mine site facilities or the AWPAR, a site-specific nest management plan will be developed that meets the approval of GNDoE biologists. The status of the nest will be monitored weekly until young have fledged. Raptor nests observed within 100 m of mine facilities will be monitored on a daily basis. 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. 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. 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).

3.7 WATERFOWL NEST SURVEYS

3.7.1 Survey Methodology

<u>Mine Site</u>

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 summer 2006 (9 to 14 July), summer 2007 (3 to 7 July) and summer 2008 (3 July) to determine the occurrence of nesting waterfowl. The 2008 survey was limited to priority areas only, as a result of operational constraints. As AWPAR road construction had been completed at the time of the 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 3.7 and Figure 3.8).

Two observers walk 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 waterfowl (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

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

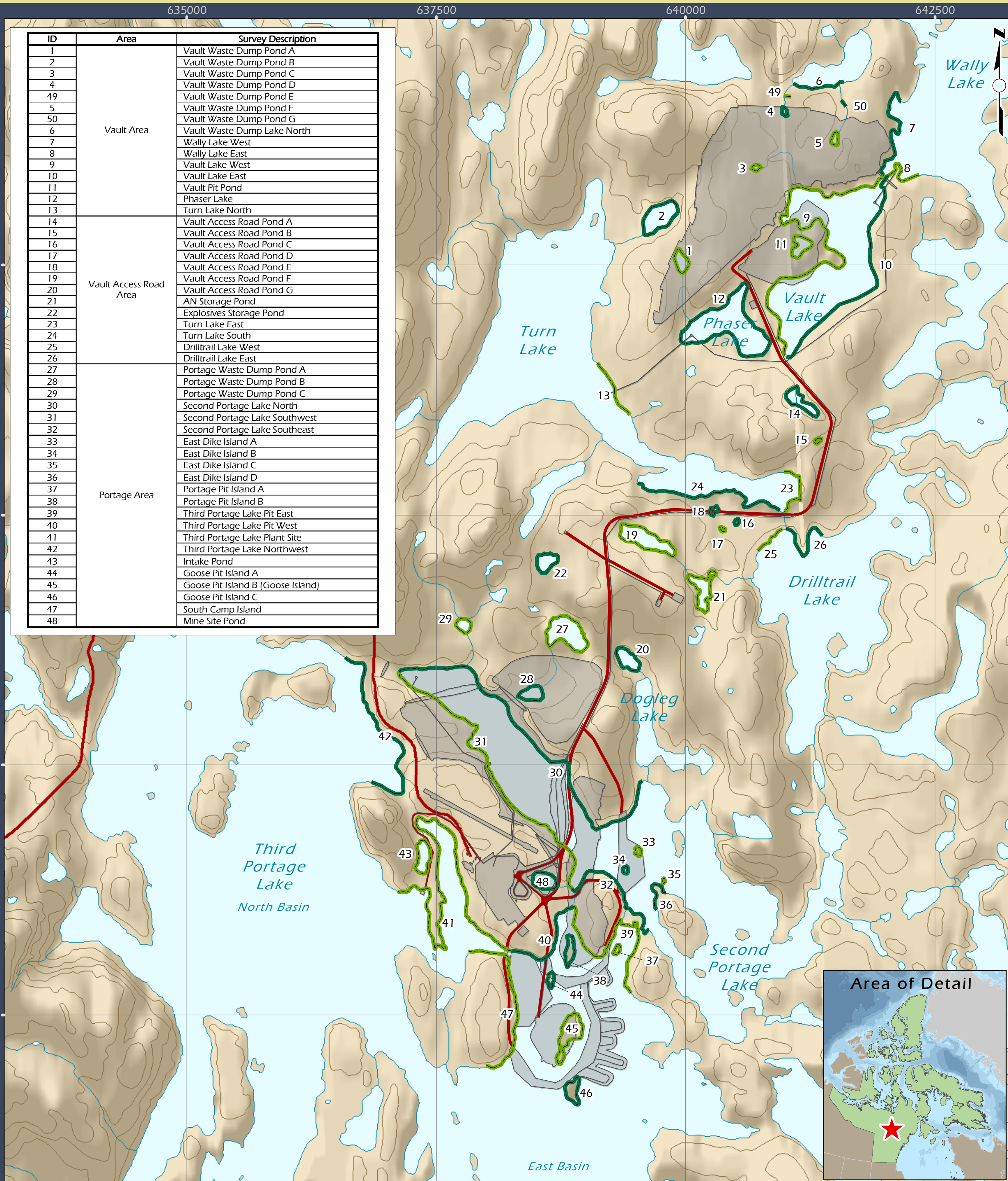
2nd Portage lakes; and 4) portions of Turn Lake, Phaser Lake, and Vault Lake. Details on the locations of each survey segment are provided in Table 3.12 and Figure 3.7. Observers use maps and UTM coordinates for orientation. The UTM locations (taken with handheld GPS units) of all waterfowl and shorebirds and their nests are recorded on datasheets (refer to Appendix A). An attempt is made to conduct the surveys in the first two weeks of July, when most waterfowl species are expected to be nesting.

Given the low numbers of nesting waterfowl seen in the Meadowbank mine site LSA on nest surveys to date (2004 to 2008), the number of waterfowl nesting within 200 m of mine site facilities within any given year is predicted to be small. However, potential changes in waterfowl nesting distribution may occur and will continue to be documented and monitored, as necessary.

Table 3.12: Waterfowl 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		**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 3.7: Meadowbank Waterbird Nest Survey Locations

Meadowbank Gold Project

Prepared for: AGNICO-EAGLE

By: Caslys Consulting Ltd.

All-Weather Private Access Road

Waterfowl nest surveys were conducted along the AWPAR in 2007 and 2008. In 2007, surveys were limited to recently completed sections of the AWPAR, whereas in 2008, surveys were conducted along the entire length of the AWPAR between Baker Lake and the mine site. Protocols are similar to those outlined above for the mine site. Shorelines of all wetlands and islands within 200 m of the access road were surveyed. Details on the locations of each survey segment are provided in Table 3.13 and Figure 3.8. Individual detailed map sheets and corresponding survey results are provided in Figures 4.47 to 4.60.

Table 3.13: Waterfowl Nest Survey Areas 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

Mapsheet	Label	Starting Location Easting	Starting Location Northing	End Location Easting	End Location Northing	Length (m)
D	L18	634672.55	7161199.60	634646.00	7161232.00	58.97
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

Mapsheet	Label	Starting Location Easting	Starting Location Northing	End Location Easting	End Location Northing	Length (m)
J	L43	627263.86	7204129.87	627415.06	7204130.20	219.91
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)

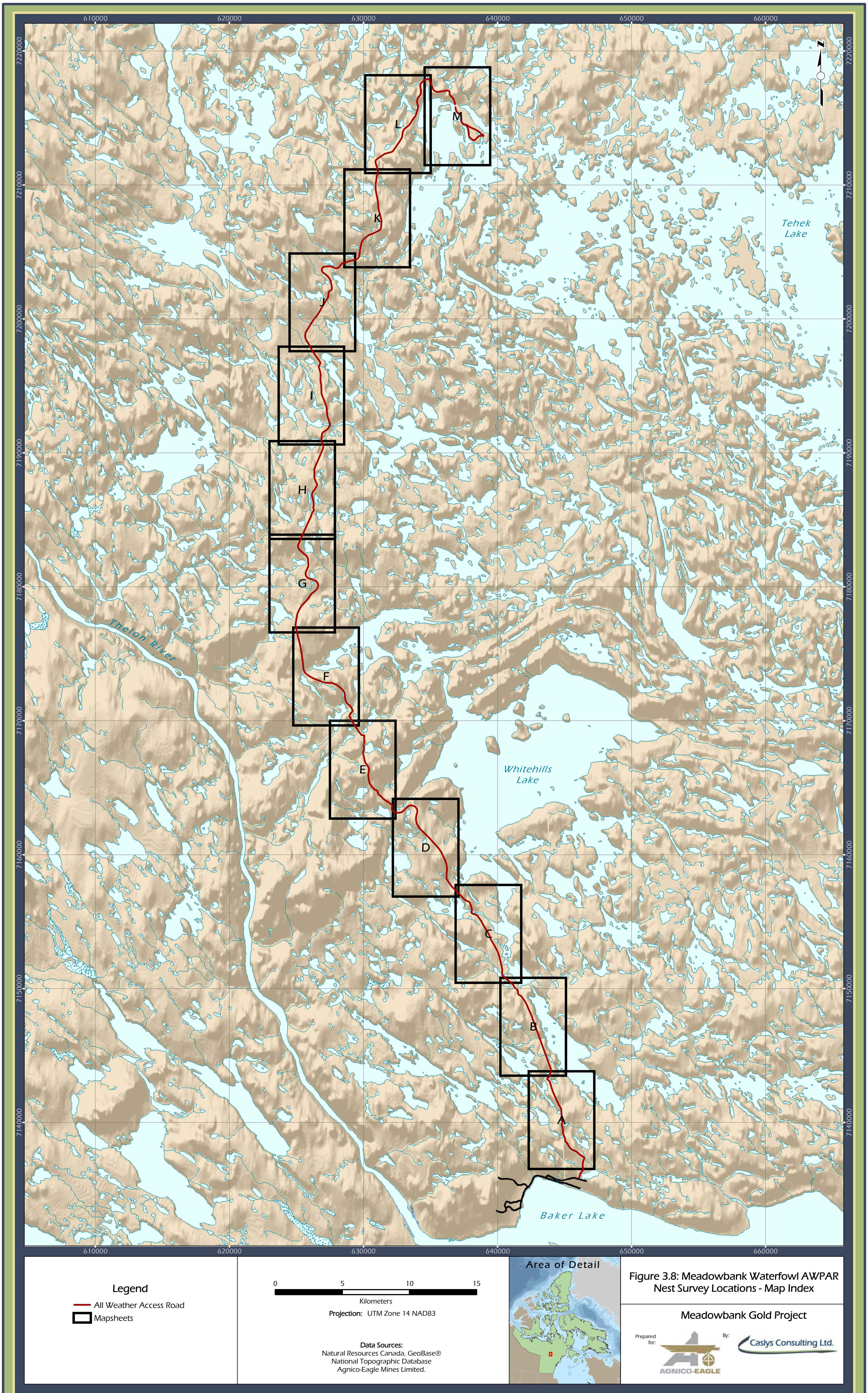


Figure 3.8: Meadowbank Waterfowl AWPAR Nest Survey Locations - Map Index

3.7.2 Statistical Approach

Waterfowl surveys involve systematic searches or transects to determine occupancy of waterfowl in habitat areas. The low occupancy of nesting waterfowl in the LSA to date precludes the use of abundance indices, which may be utilized in subsequent years contingent on resulting data.

It is possible that waterfowl are present in an area but are not detected. For example, birds may be sitting tight on nests. If sites (or transects) are visited repeatedly over a given year, then occupancy estimation models can be used to estimate both the probability of detection and probability of occupancy (MacKenzie et al. 2006). Occupancy modeling involves the identification of likely waterfowl nesting areas (i.e., lake, marshes) using past survey results. The presence or absence of waterfowl is then noted each time the area is visited. This analysis is similar to mark-recapture analyses except that the site (rather than the marked animal) becomes the sample unit.

Covariates (such as distance to mine site, habitat or other factors) can be used to determine likely factors influencing occupancy. Furthermore, multiple years of data can be analyzed to determine trends in occupancy over time. These models are readily available in the program MARK software package (White and Burnham).

These methods may be applied in future years when robust, multiple-year data is available, which identifies suitable areas where repeat nesting occurs.

3.8 MINE SITE GROUND SURVEYS

Following mine site construction completion (currently scheduled for 2009), mine site ground surveys will commence. Surveys will be conducted on a daily basis along a pre-determined route by full-time, on-site Agnico-Eagle environmental technicians/monitors. The survey protocol has been designed to focus predominantly on Caribou and Muskox occurrences at the Main and Vault sites (including the tailings pond and access road to the Vault Site); however, other incidental wildlife observations will also be recorded. The following information will be collected for each sighting (also refer to proposed field data form in Appendix A):

- date and time
- number of animals, group size
- sex: male or female
- age: calf, yearling, adult
- habitat use: Ecological Land Classification unit
- behaviour: resting, foraging, walking, running etc.
- direction of travel: N, NE, E, SE, S, SW, W, NW
- location and proximity to mine facilities – UTM coordinates if possible; likely kilometre markers on roads or distance from various facilities.

The sex and age of ungulates will be determined by a number of distinctive factors including size, coloring, antler size and growth, and vulval patch. On-site monitors will be experienced in determining the sex and age of ungulates, but each employee will receive training on distinctive features.

3.8.1 Incidental Mine Site Wildlife Observations

Currently, 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. Completed wildlife log forms are collected from designated areas on a regular basis for review and database entry by the full-time, on-staff Agnico-Eagle environmental supervisor.

Information recorded on log forms includes:

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

3.9 ALL-WEATHER PRIVATE ACCESS ROAD SYSTEMATIC GROUND SURVEYS

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 a frequency of at least two times per week, contingent on weather conditions. Results of the AWPAR systematic ground surveys are provided in Section 4.9.

3.9.1 Statistical Approach

Summary counts and the number of surveys in which species were detected were summarized as a function of season. Because the actual length of surveys was variable during road construction, counts were standardized by kilometre surveyed. The majority of species were typically sighted intermittently with the exception of Caribou and geese. Caribou and goose 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. 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.

3.9.2 Road Related Mortality

Perished species that were observed during the AWPAR systematic ground surveys were recorded and compiled at the end of 2008. 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. The road related mortality results are summarized in Section 4.9.2.

3.10 HARVEST STUDY

3.10.1 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 (i.e., Caribou, Muskox, and Wolverine [*Gulo gulo*]) and four fish species (i.e., Arctic Char [*Salvelinus alpinus*], Lake Trout [*Salvelinus namaycush*], Lake Whitefish [*Coregonus clupeaformis*], and Arctic Grayling [*Thymallus arcticus*]), and is only being conducted in one community (Baker Lake). The harvest study is conducted annually in collaboration with the Baker Lake HTO and an Agnico-Eagle appointed harvest study administrator. Agnico-Eagle recognizes that communication with participants is of high importance to ensure study success through adequate participation rates and accurate reporting.

3.10.2 Objectives

The primary objectives of the Meadowbank Harvest Study are to:

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

3. Understand regional distribution of hunting and fishing activity;
4. Investigate seasonal timing of hunting and fishing activity;
5. Determine whether increased harvest and catch rates are associated with the 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.

3.10.3 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 make data entry and collection as simple as possible. To support creel surveys, data on fish harvest (Arctic Char, Lake Trout, Lake Whitefish, and Arctic Grayling) is also requested.

3.10.4 Participants

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

3.10.5 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. Specifically, only nine participants recorded data for more than one month in 2007. To account for this apparent decline in interest, additional trips were made to Baker Lake in 2008 (May, July and October) to sign up participants, promote the study and remind participants to enter data each month. Sixty-three (63) prospective study participants were selected for inclusion in the 2008 study, based on 2007 participation and recommendations from Agnico-Eagle personnel and local area residents. Where possible, calendars (Appendix B) were hand-delivered to prospective participants. Remaining calendars were placed in the post office boxes of prospective participants along with English and Inuktitut instructional/promotional flyers (refer to Appendix C). Moreover, flyers were posted at the post office and Northern store during each visit, briefly outlining the study purpose and providing applicable contact information. Extra calendars were also left at these locations. Additionally, radio addresses were made on two occasions to announce the 2007 study winners, associated prizes and to promote the 2008 study. A signup sheet was made available in early 2008 at the Agnico-Eagle office. Notably, HTO involvement in 2008 was limited as a result of temporary HTO board dissolution and resulting short staffing. A preliminary meeting was held with interim HTO board members in May 2008 and a detailed meeting was held with the newly formed HTO board in October 2008 to present an overview of the study, and establish HTO interest and participation for the 2009 Hunter Harvest study.

3.10.6 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, prospective participants were contacted via telephone in September and asked if any information had been recorded in the calendar over the course of the year. Those individuals who had entered data in their calendars were interviewed during an October 2008 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, and included notable Caribou movements, aggregations and unique observations. 2008 Hunter Harvest study participants were contacted again in January 2009 and reminded to hand in their calendars to the Agnico-Eagle office. A visit to Baker Lake was conducted in January 2009 to collect 2008 calendars and conduct supplementary interviews of participants that did not hand in their calendars. In addition, the annual prize draw was held at the Agnico-Eagle office, the results of which were announced on the radio. Where possible, prizes were handed out in person along with a 2009 calendar to encourage continued participation. 2009 Hunter Harvest study calendars were also promoted and distributed to additional prospective participants during this time.

3.10.7 Promotion

Each year, the harvest study is promoted by posting instructional/promotional flyers around the community and supplying flyers and calendars to select households (refer to Appendix C). Radio announcements are also made at opportune times. To reward participation, active participants are provided with one raffle ticket for each month of involvement. At the end of each study year, a draw is held at the Agnico-Eagle office for a number of quality prizes that are of interest to hunters and anglers. In subsequent years, an interim draw may be held in the middle of the year to maintain interest, as recommended by the HTO as a means to further increase study participation.

3.10.8 Data Analysis and Reporting

Harvest data for 2008 was analyzed at the end of the study year, the results of which are summarized in Section 4.10, including information on spatial distribution, seasonal patterns, and harvest rates. In addition, a preliminary comparison of 2007 and 2008 Hunter Harvest study data was compared to baseline conditions for land use and traditional hunting areas obtained from the Nunavut Wildlife Management Board (NWMB) harvest study. Additional information will be compiled from the Inuit Land Use and Occupancy Project (IDS 1978), Northern Land Use Information Series (NLUIS) and Nunavut Atlas information for comparison in subsequent years.

3.11 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 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.

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 and has since been repaired for use in subsequent years. Therefore, six collars of the initial commitment of 15 collars are still available for deployment. Moreover, a commitment of an additional 10 collars was made by Agnico-Eagle to supplant the indefinite suspension of RSA and LSA aerial surveys, leaving a total of 16 collars that need to be deployed.

3.12 ENVIRONMENTAL HEALTH MONITORING

The Environmental Health Monitoring Program provides a means of routinely evaluating any changes in contaminant exposure and, ultimately, in potential risks to wildlife. Details of the environmental health monitoring program, including methodology and results to the end of 2007, are available in Appendix A of the 2007 Wildlife Monitoring Summary Report. In 2008, a second round[5] of baseline soil and vegetation (lichens, berries, and sedges) samples were collected from ten (seven mine or treatment sites and three external reference or control sites) predetermined sampling locations in the vicinity of the proposed Meadowbank project (refer to Table 3.14 for UTM coordinates and Figure 3.9 for specific location details). The 2008 sampling locations were analogous to 2005 sampling locations, serving to maintain consistency and provide a comparative second year of baseline data. At each sampling location, soil and tissues were collect at five sampling sites situated at least 100 m apart. Within each sample site, soil and vegetation samples were collected within a 10 to 30 m radius area depending on vegetation (particularly berry) availability. A detailed sampling methodology is provided below.

3.12.1 Soil Sampling Protocol

Soil samples were collected using a composite sampling method at each sample site. Representative grab samples were collected from five separate test pits per sample site (generally no greater than a 5.0 m^2 area) situated at least 100 m apart using a stainless steel ladle. First, the organic layer (which ranged from 0 to 5 cm below the surface) was removed and discarded. Second, two small scoops of soil, approximately 5 to 10 cm below surface, were placed in pre-labelled Ziploc bags and homogenized. Decontamination (i.e., cleaning to prevent cross-contamination) of soil sampling equipment (i.e., stainless steel spoons) was conducted at the beginning of each day, between treatment and control areas, and between sample site locations. The cleaning procedure involved rinsing sampling equipment with site water to remove any remaining sediment or organic matter, followed by a scrubbing with brushes using Liquinox detergent and a final rinse with site water.

3.12.2 Vegetation Sampling Protocol

Sedges, lichens and berries were collected in close proximity to the composite soil samples. At each of the 10 sampling locations, tissues were selected at each of five sites situated at least 100 m apart. Sedges were collected from an approximate 5.0 m^2 area near the centre of the sample site, by randomly selecting and simply grabbing/pulling representative sedges, periodically including roots. Samples were placed in a pre-labelled Ziploc bag. Similarly, lichen tissue (i.e., reindeer or foliose lichens) samples were collected by hand and placed in Ziploc bags. Collection of lichens and sedges continued until the Ziploc bag was full. Berry collection sites were selected along moderately dry, rolling hills where berries were the most abundant. Approximately two cups of berries were collected per site.

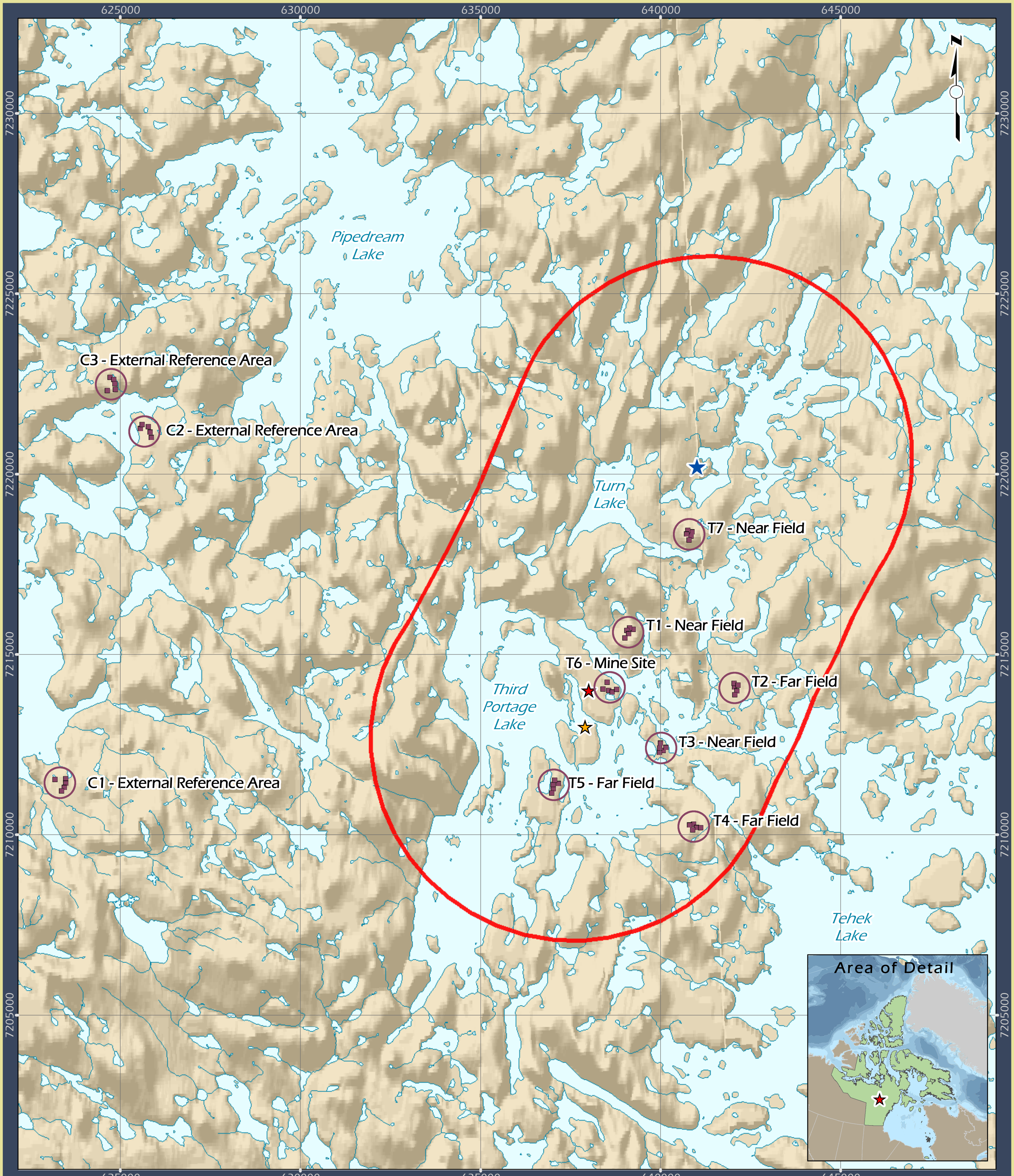
During the field sampling program, a field book was used to maintain a record of sample collections and observations, including: field staff, photo description, date and time, weather conditions, sample identifications, tissue and soil sample characteristics, number of samples taken, sample locations (including GPS coordinates), sample time, and general observations.

[5] First round of soil and vegetation sampling conducted in 2005.

Table 3.14: UTM Coordinates of 2008 Soil and Vegetation Sample Locations for Environmental Health Monitoring.

Sampling Location [1]	Site #1	Site #2	Site #3	Site #4	Site #5
Treatment Area					
1 – Far Field	14W 0639238 7215692	14W 0639137 7215734	14W 0639061 7215668	14W 0639109 7215569	14W 0639010 7215459
2 – Far Field	15W 0359410 7214020	15W 0359403 7214128	15W 0359507 7214072	15W 0359459 7213912	15W 0359391 7213816
3 – Near Field	14W 0640069 7212342	14W 0640146 7212421	14W 0639967 7212281	14W 0639976 7212409	14W 0639991 7212541
4 – Far Field	14W 0640916 7210294	14W 0640994 7210201	14W 0641112 7210194	14W 0640890 7210137	14W 0640802 7210271
5 – Far Field	14W 0637020 7211270	14W 0636978 7211160	14W 0637013 7211394	14W 0637162 7211419	14W 0637057 7211513
6 – Mine Site	14W 0638559 7213995	14W 0638651 7213953	14W 0638780 7214028	14W 0638515 7214226	14W 0638400 7214038
7 – Near Field	14W 0640847 7218280	14W 0640872 7218395	14W 0640755 7218444	14W 0640719 7218338	14W 0640788 7218177
External Reference Area					
1 – Control [1]	14W 0623487 7211356	14W 0623487 7211237	14W 0623450 7211115	14W 0623373 7211022	14W 0623187 7211341
2 – Control [1]	14W 0625552 7221258	14W 0625603 7221377	14W 0625777 7221312	14W 0625824 7221158	14W 0625859 7221014
3 – Control	14W 0624717 7222685	14W 0624818 7222623	14W 0624850 7222504	14W 0624861 7222349	14W 0624636 7222313

Notes: 1. Coordinates are in NAD 83 except for Control Sites 1 and 2, which are in NAD 27.



Legend

- Vault
- Meadowbank North Camp
- Meadowbank South Camp
- Sample Locations
- Local Study Area
- Treatment/Control Area

0 1 2 3 4

Kilometres

Projection: UTM Zone 14 NAD83

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

Figure 3.9: Environmental Health Monitoring Locations

Meadowbank Gold Project

Prepared for: AGNICO-EAGLE

By: Caslys Consulting Ltd.

3.13 CHECKLIST SURVEYS

Canadian Wildlife Services (Yellowknife) has requested the collection and submission of 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 2008 is provided in Table 3.15.

Table 3.15: Checklist Survey Effort per Month – 2003 to 2008.

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

3.14 BREEDING BIRD NEST SURVEYS

In April 2008, an updated[6] Breeding Bird Nest Monitoring and Management Plan (provided in Appendix D) was issued, serving to verify and maintain compliance with the Migratory Birds Regulations[7] during land clearing activities associated with Meadowbank infrastructure construction (mine site and ancillary facilities). The primary objective of the Breeding Bird Nest Monitoring and Management Plan is to mitigate potential disturbances to breeding birds and their nests during the land clearing activities through the establishment of nest survey protocols, identification of site-specific nest management tools and monitoring of individual active nests.

The protocol involves conducting surveys in proposed disturbance areas between 15 May and 31 July, contingent on snow conditions. Surveys are to be conducted within four days of the proposed disturbance. The disturbance area is traversed by two observers spaced a maximum of 10 m apart looking for the active nests of breeding birds up to a point 30 m beyond the proposed area of

[6] First developed in 2007 to address clearing associated with AWPAR construction.

[7] Enacted under the Canadian *Migratory Birds Convention Act* (1994, c.22), Section 6(a) of the Breeding Birds Regulations (CRC, c. 1035) prohibits the disturbance or destruction of the nests or eggs of migratory birds except under authority of a permit.

disturbance. Observed active nests are recorded via handheld GPS, photographs are collected and the nest location is conveyed to the road construction supervisors. Upon identification of an active nest, the exclusion zone is demarcated (application of exclusion zone in management plan) and monitored approximately once every two days to observe nesting stage via binoculars or a spotting scope to avoid close approaches.

In 2008, bird nest surveys were not conducted along the AWPAR as construction was completed in April (i.e., prior to the breeding bird window); however, surveys were conducted at the mine site during preliminary construction and earth works by on-site Agnico-Eagle environmental personnel. The results of the 2008 mine site breeding bird nest surveys are presented in Section 4.14 and Appendix E.

SECTION 4 • RESULTS

4.1 HABITAT MAPPING

2008 construction activities were limited primarily to completion of the AWPAR, exploration camp infrastructure upgrades and limited principal mine site construction (consisting predominantly of preliminary clearing / earth works), the majority of which will occur in 2009. As a result of the updated construction schedule, the analysis of potential habitat disturbance was deferred to 2009, following significant completion of both the mine site and ancillary facilities[8], for inclusion in the 2009 Wildlife Monitoring Summary Report.

4.2 RSA AERIAL SURVEY

4.2.1 Ungulates

4.2.1.1 Summary of Data to Date

The estimated mean number of Caribou and Muskox within the RSA is provided in Table 4.1. Data should be interpreted cautiously because of the low number of replications for most seasons and the differences in survey timing within each of the seasons. For Caribou, the maximum estimated count-to-date within the RSA was 22,364 in fall 2008. For Muskox, the maximum estimated count was 972 in summer 2008. Prior to the 2008 surveys, the maximum estimated Caribou count within the RSA was 8,512 in fall 2002. Similarly, the maximum estimated Muskox count prior to 2008 was 584 in spring 2006.

Table 4.1: Mean Count and Mean Population Estimate for Caribou and Muskox within the RSA.

		Caribou		Muskox	
	Year	**Mean Count**	**Mean Population Estimate**	**Mean Count**	**Mean Population Estimate**
Winter	2003	93	972	0	0
	2004	612	6,399	0	0
	2005	14	146	33	345
	2007	136	1,422	10	105
	2008	1513	15,814	26	272
Spring	1999	148	1,547	0	0
	2004	117	1,223	0	0
	2005	86	899	0	0
	2006	17	174	19	195
	2007	177	1,845	0	0
	2008	136	1,522	19	199

[8] based on the current construction schedule.

		Caribou		Muskox	
	Year	Mean Count	Mean Population Estimate	Mean Count	Mean Population Estimate
Summer	2002	3	31	1	10
	2004	29	303	6	63
	2005	44	460	24	250
	2006	4	37	7	68
	2007	64	669	31	318
	2008	0	0	**93**	**972**
Fall	2002	793	8,291	0	0
	2004	157	1,641	2	21
	2005	388	4,057	0	0
	2006	107	1,119	15	152
	2007	94	978	46	476
	2008	**2139**	**22,364**	22	230

BOLD – Largest value-to-date

4.2.1.2 Analysis of Natural Variation

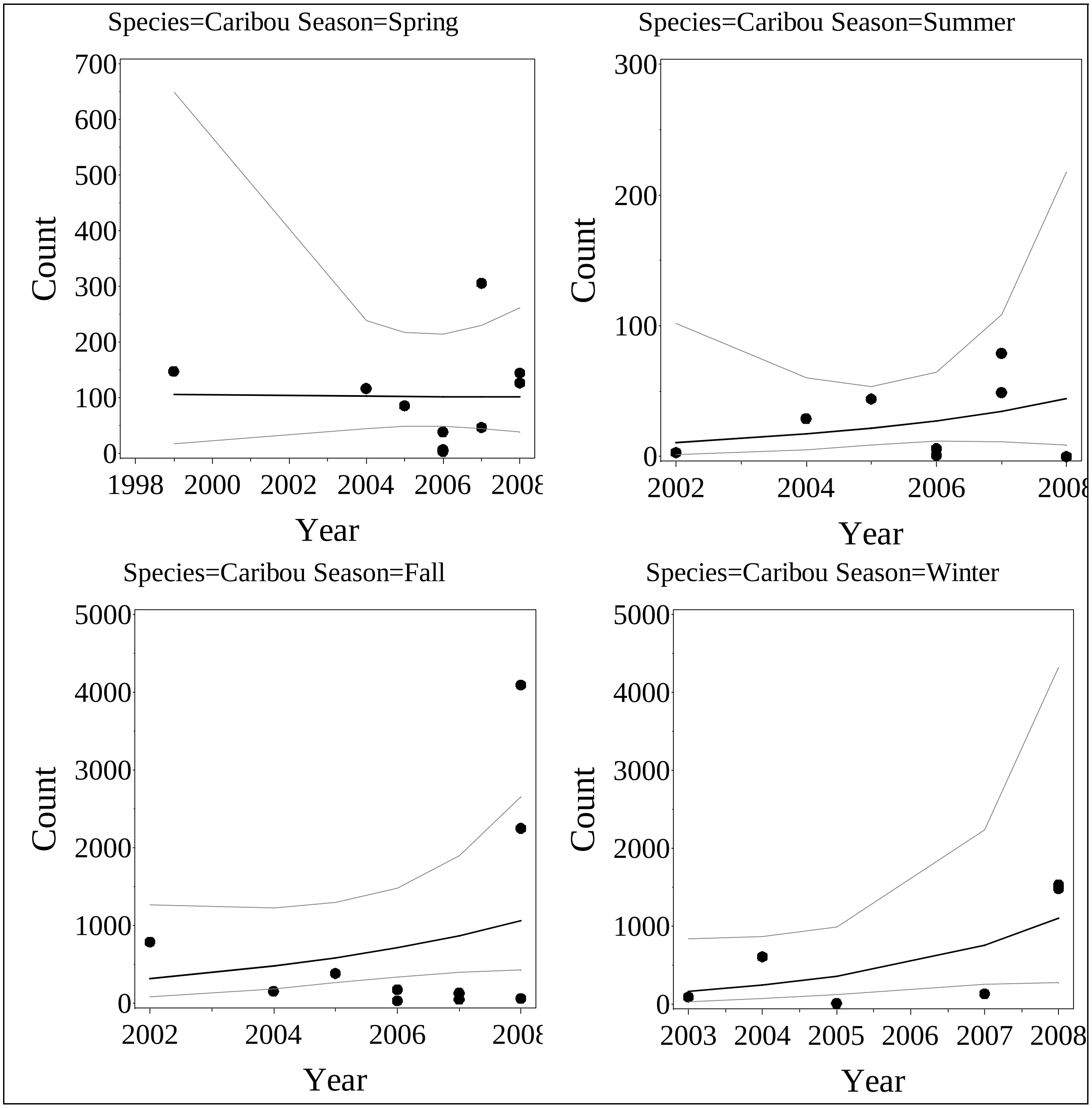
Abundance

Mean counts and RSA estimates are given by season for Caribou and Muskox in Table 4.2. Caribou and Muskox abundance was modeled for a continuous year term and a seasonal term. In contrast to previous years, the abundance of Caribou was no longer influenced by season (χ^2=2.64, df=3, p=0.4507) but was marginally influenced by year (χ^2=3.23, df=1, p=0.0723). An interaction of year times season was not significant (χ^2=2.65, df=3, p=0.44408). The highest abundances of Caribou occurred in the fall and winter (Table 4.2). Inspection of estimates (Figure 4.1) suggests a large degree of yearly variation in Caribou abundance.

Table 4.2: The Mean Number of Caribou and Muskox Counted on Transects and Population Estimates in the RSA by Season.

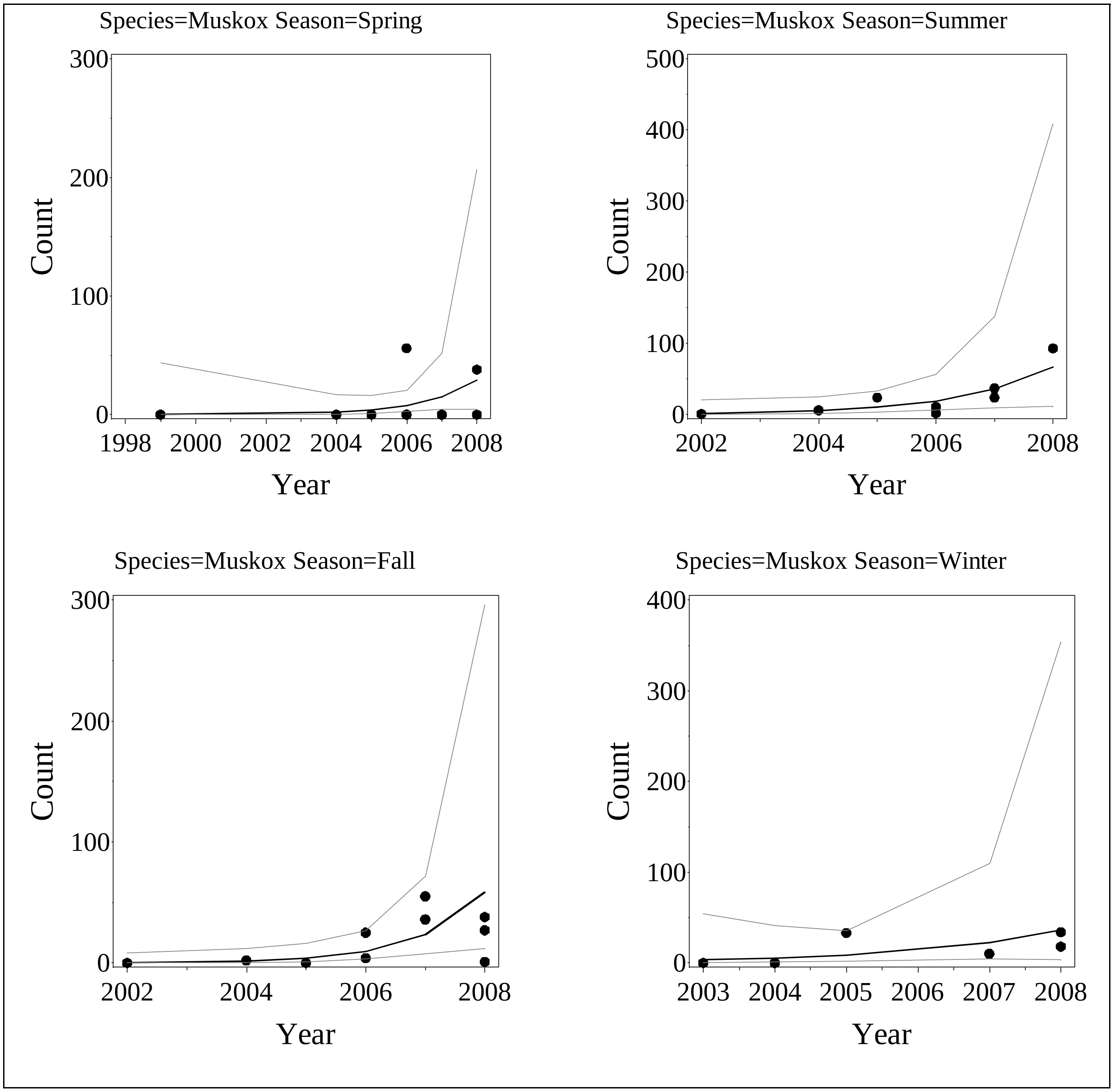
Species	Season	Counted				RSA Estimate				
		Mean	Std	Min	Max	Mean	Std	Min	Max	n
Caribou	Spring	103	90	4	306	1071	296	42	3194	10
	Summer	26	29	0	79	275	107	0	825	8
	Fall	816	1337	35	4098	8512	4412	365	42767	10
	Winter	647	703	14	1537	6761	3000	146	16070	6
Muskox	Spring	9	20	0	56	98	67	0	584	10
	Summer	25	30	1	93	258	112	10	971	8
	Fall	19	20	0	55	196	66	0	574	10
	Winter	16	15	0	34	166	65	0	356	6

Figure 4.1: Counts of Caribou in the RSA as a Function of Year and Season. Estimated Counts and Associated Confidence Intervals from Negative Binomial Regression are also Provided.



In contrast to previous years, Muskox abundance was not influenced by season (χ^2=0.53, df=3, p=0913) but continued to be influenced by year (χ^2=10.23, df=1, p=0.0014). Abundance was not influenced by an interaction of year times season (χ^2=0.52, df=1, p=0.9134). Muskox were slightly more abundant in summer (Table 4.2), relative to the other seasons. Inspection of yearly counts suggests that Muskox abundance increased over the course of surveys for the summer and fall seasons (Figure 4.2).

Figure 4.2: Counts of Muskox in the RSA as a Function of Year and Season. Estimated Counts and Associated Confidence Intervals from Negative Binomial Regression are also Provided.



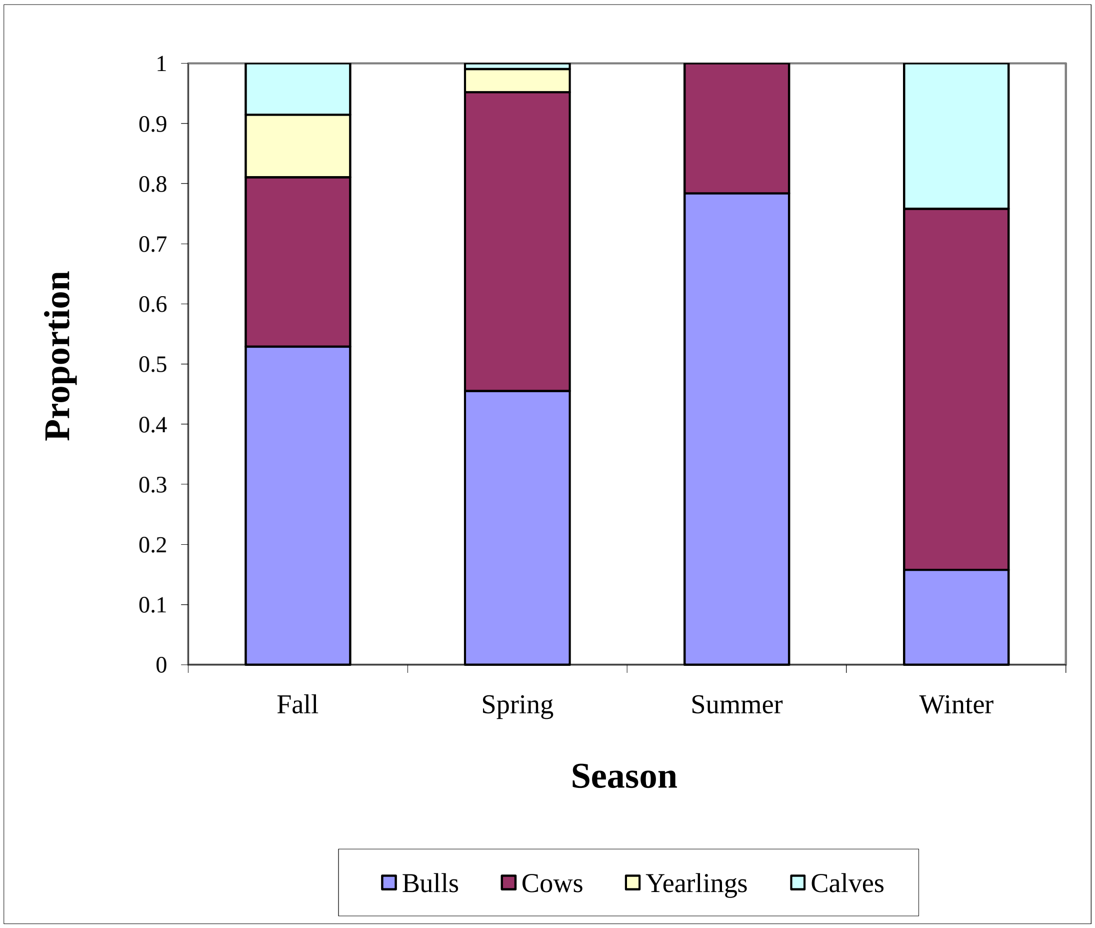
Caribou Herd Composition

Caribou herd composition was estimated from the RSA (including the 100 x 100 km^2 study area used during baseline surveys) to maximize sample sizes (Table 4.3 and Figure 4.3). Of 789 observations of Caribou groups (up from a cumulative count of 468 in 2007), 145 (15%) were classified in terms of age/sex groups. Sample size during some seasons limited statistical analysis of this data. For example, the mean number of Caribou groups that were used to estimate proportions was 8.5, 4, 2.5, and 5 for fall, spring, summer, and winter, respectively. The low number of groups observed prevented the use of bootstrap methods to estimate variances. Instead, variance was estimated as the standard error of mean proportion observed on different survey dates across all survey years. Date of survey rather than survey number was used as the sample unit to estimate means (to increase sample sizes). Inspection of estimates suggests the dominance of some age and sex classes as a function of season.

Table 4.3: Composition of Caribou Herds in the RSA by Season. The Number of Surveys in which Compositions were Based upon (n) and the Mean Number of Caribou Sighted to Estimate Proportions (Mean Observations) is also Given. Data is Cumulative (i.e. from all Years Surveyed).

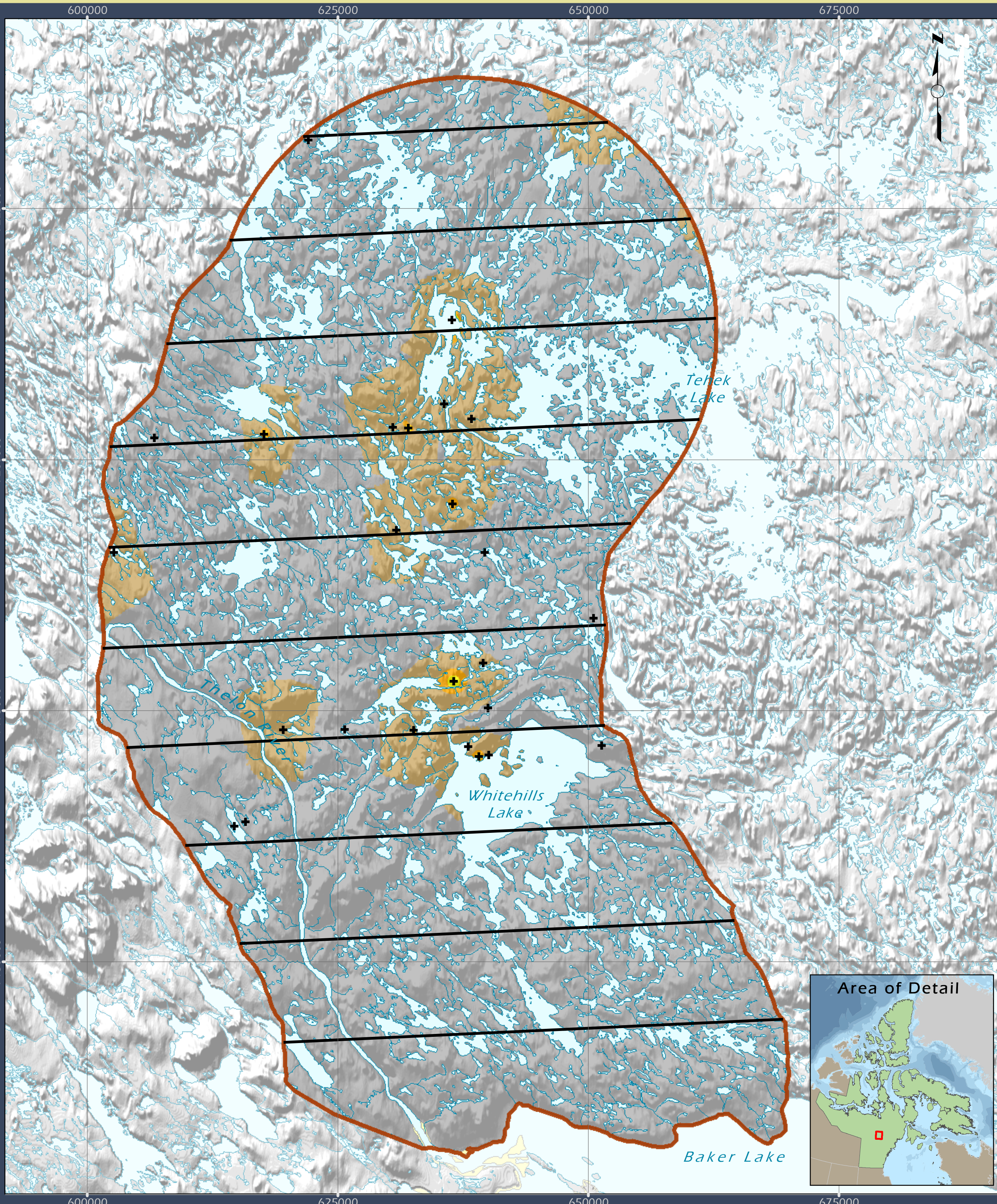
	Proportion								Sample Size	
Season	**Bulls**	**Std**	**Cows**	**Std**	**Yearlings**	**Std**	**Calves**	**Std**	**n**	**Mean Obs**
Fall	0.53	0.11	0.28	0.08	0.10	0.09	0.09	0.03	11	63.3
Spring	0.46	0.27	0.50	0.28	0.04	0.04	0.01	0.01	4	47.8
Summer[1]	0.78	0.13	0.22	0.13	0.00	0.00	0.00	0.00	4	6.8
Winter	0.16	0.10	0.60	0.03	0.00	0.00	0.24	0.10	5	53.6

Figure 4.3: The Composition of Caribou Herds in the RSA as Listed in Table 4.3.



Distribution

IDW mapping techniques were used to graphically illustrate Caribou and Muskox distribution within the RSA. Maps for Caribou distribution by survey year are provided in Figures 4.4 through 4.10, while distribution in 2008 by season (i.e., Winter = October to March; Spring = April and May; Summer = June and July; and Fall = August and September) are provided in Figures 4.11 through 4.14. Muskox distribution for the 2008 survey year (all seasons) is provided in Figure 4.15. Maps for Muskox distribution in 2008 by season (as described above) are provided in Figures 4.16 through 4.19.



Legend

Caribou / Ha	
	0
	1 - 5
	5 - 10
	10 - 15
	15 - 20
	> 20

Regional Study Area
Hydrology
RSA Aerial Transects 2005-2007

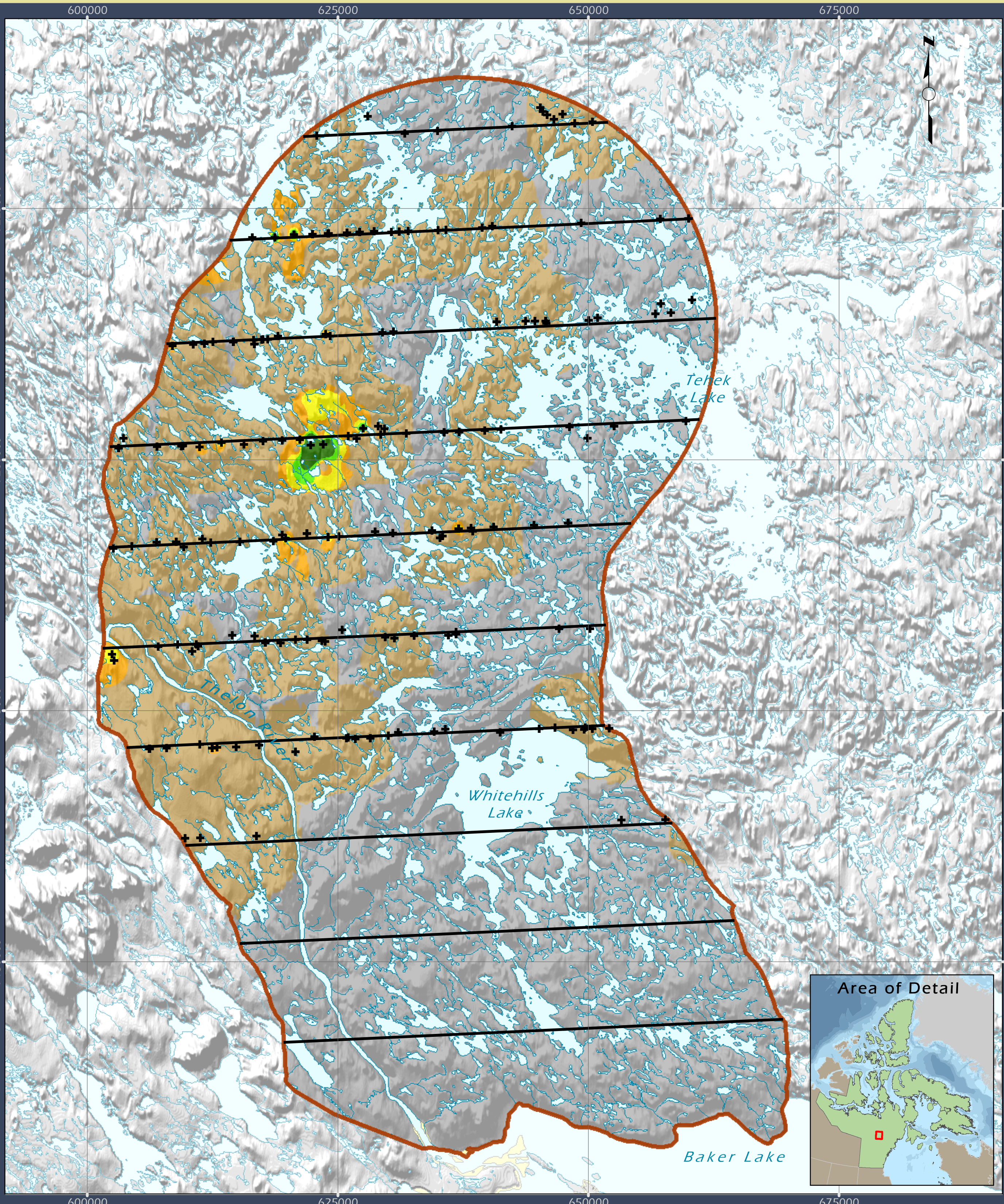
0 5 10 15 20
Kilometres
Projection: UTM Zone 14 NAD83

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

Fig 4.4 - Aerial Survey Data
Distribution of Observed Caribou
in the 1999 Survey

Meadowbank Gold Project

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



Legend

- Regional Study Area
- Hydrology
- RSA Aerial Transects 2005-2007

Caribou / Ha
- 0
- 1 - 5
- 5 - 10
- 10 - 15
- 15 - 20
- > 20

0 5 10 15 20
Kilometres

Projection: UTM Zone 14 NAD83

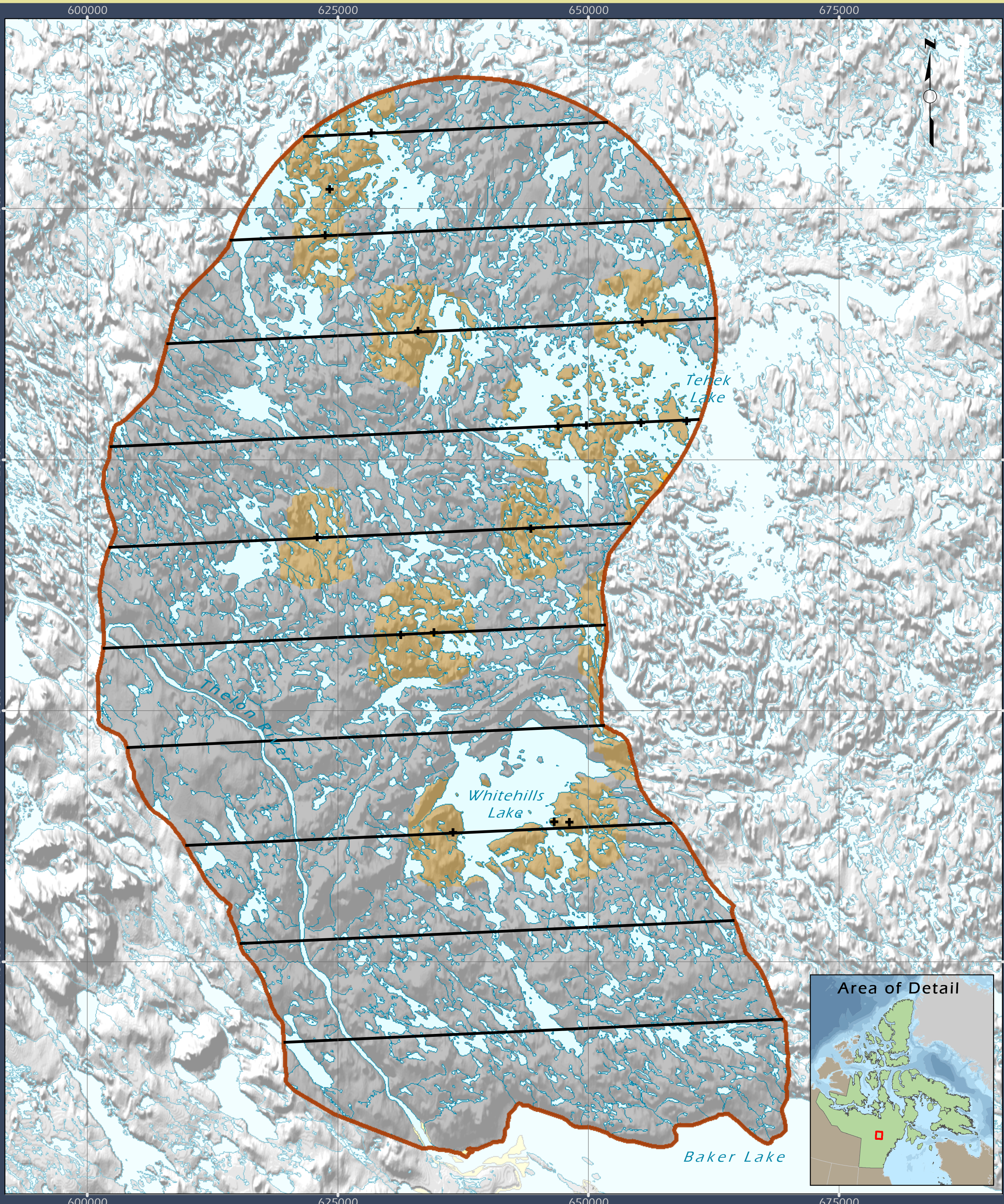
Data Sources:
Natural Resources Canada, GeoBase®
National Topographic Database
Agnico-Eagle Mines Limited.

Fig . 4.5 - Aerial Survey Data Distribution of Observed Caribou in the 2002 Survey

Meadowbank Gold Project

Prepared for: AGNICO-EAGLE

By: Caslys Consulting Ltd.



Legend

Regional Study Area
Hydrology
RSA Aerial Transects 2005-2007

Caribou / Ha
- 0
- 1 - 5
- 5 - 10
- 10 - 15
- 15 - 20
- > 20

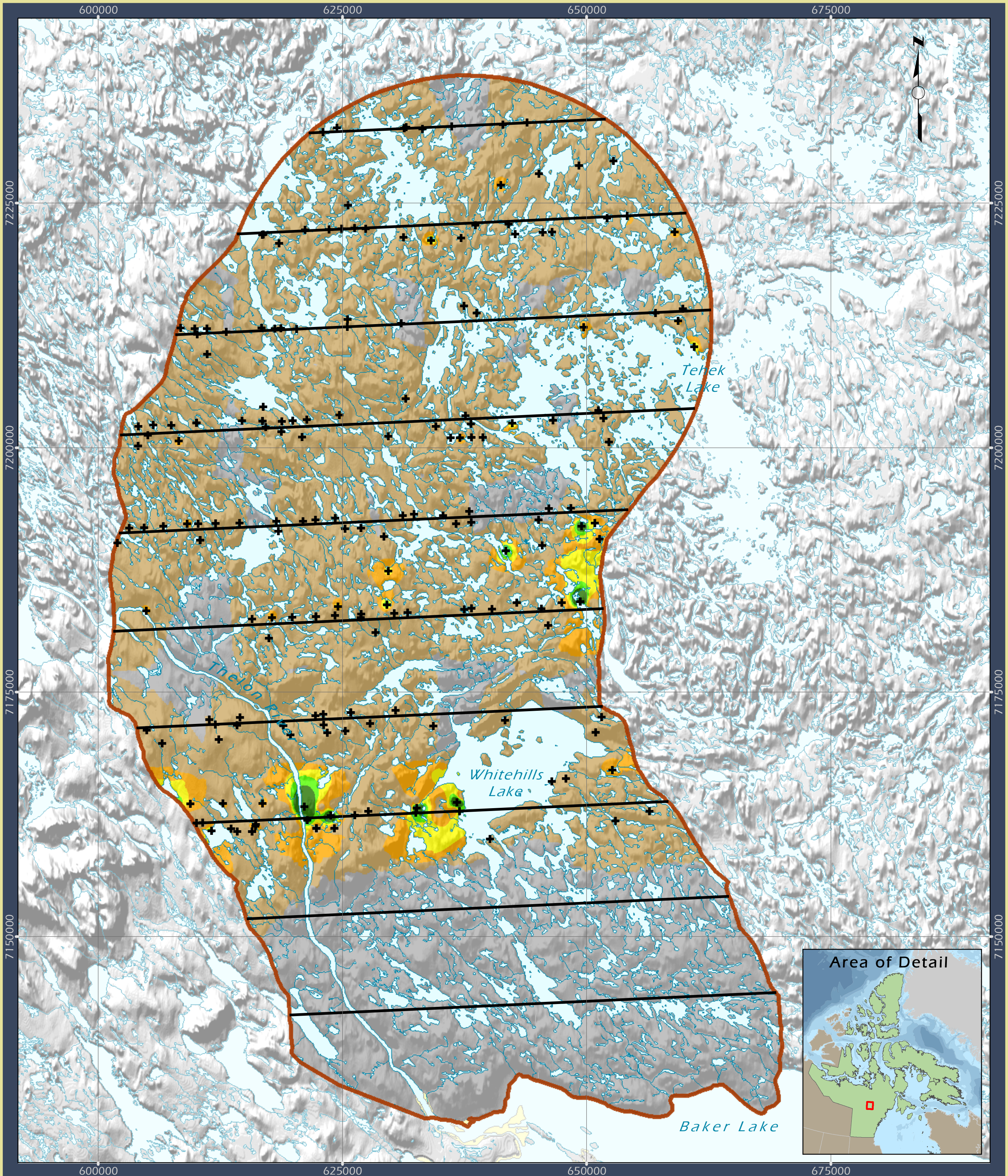
0 5 10 15 20
Kilometres
Projection: UTM Zone 14 NAD83

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

Fig. 4.6 - Aerial Survey Data Distribution of Observed Caribou in the 2003 Survey

Meadowbank Gold Project

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



Legend

	Caribou / Ha
Regional Study Area	0
Hydrology	1 - 5
RSA Aerial Transects 2005-2007	5 - 10
	10 - 15
	15 - 20
	> 20

0 5 10 15 20
Kilometres
Projection: UTM Zone 14 NAD83

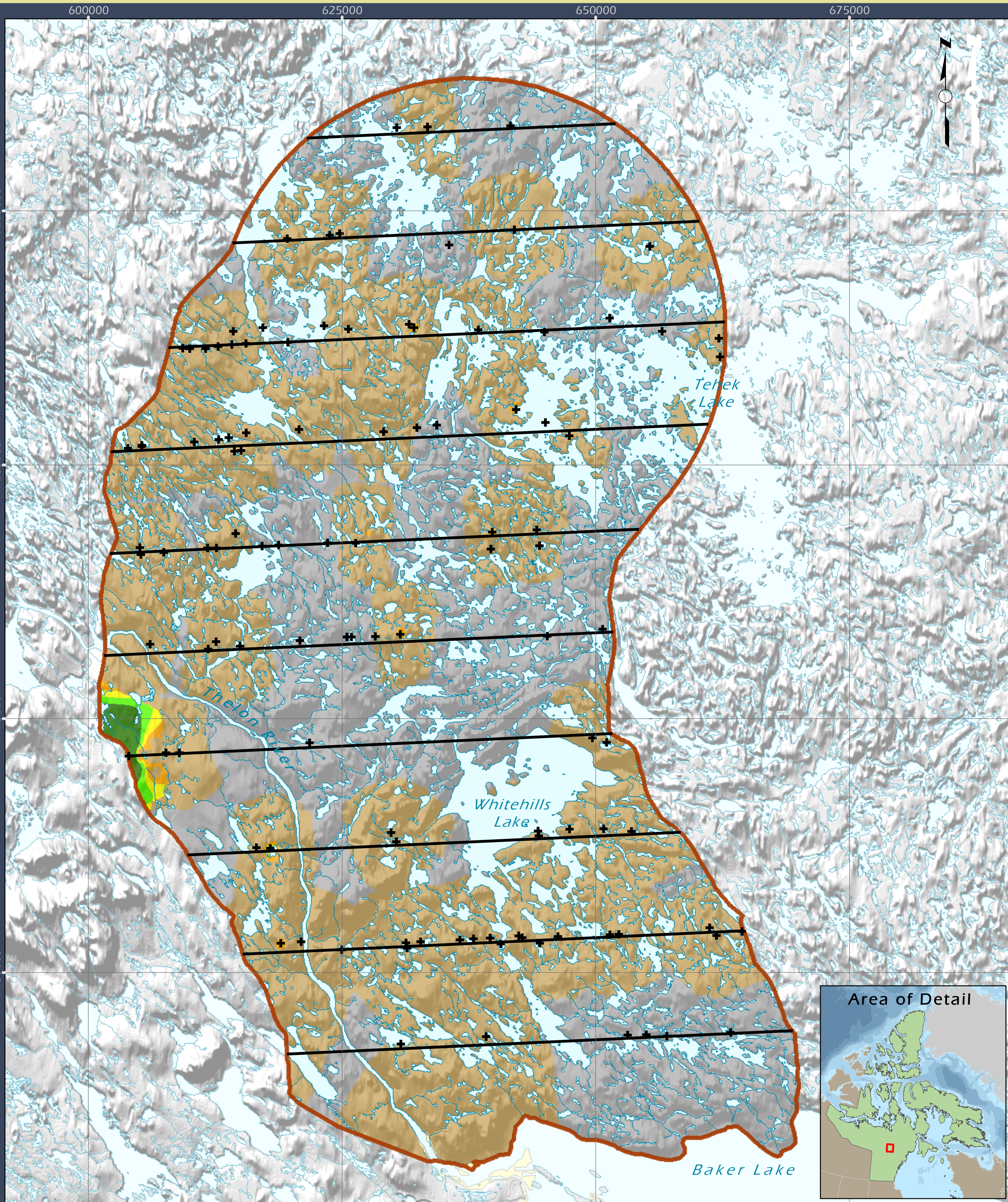
Data Sources:
Natural Resources Canada, GeoBase®
National Topographic Database
Agnico-Eagle Mines Limited.

Fig. 4.7 - Aerial Survey Data Distribution of Observed Caribou in the 2004 Survey

Meadowbank Gold Project

Prepared for: AGNICO-EAGLE

By: Caslys Consulting Ltd.



Legend

Caribou / Ha

Regional Study Area		0
Hydrology		1 - 5
RSA Aerial Transects 2005-2007		5 - 10
		10 - 15
		15 - 20
		> 20

0 5 10 15 20

Kilometres

Projection: UTM Zone 14 NAD83

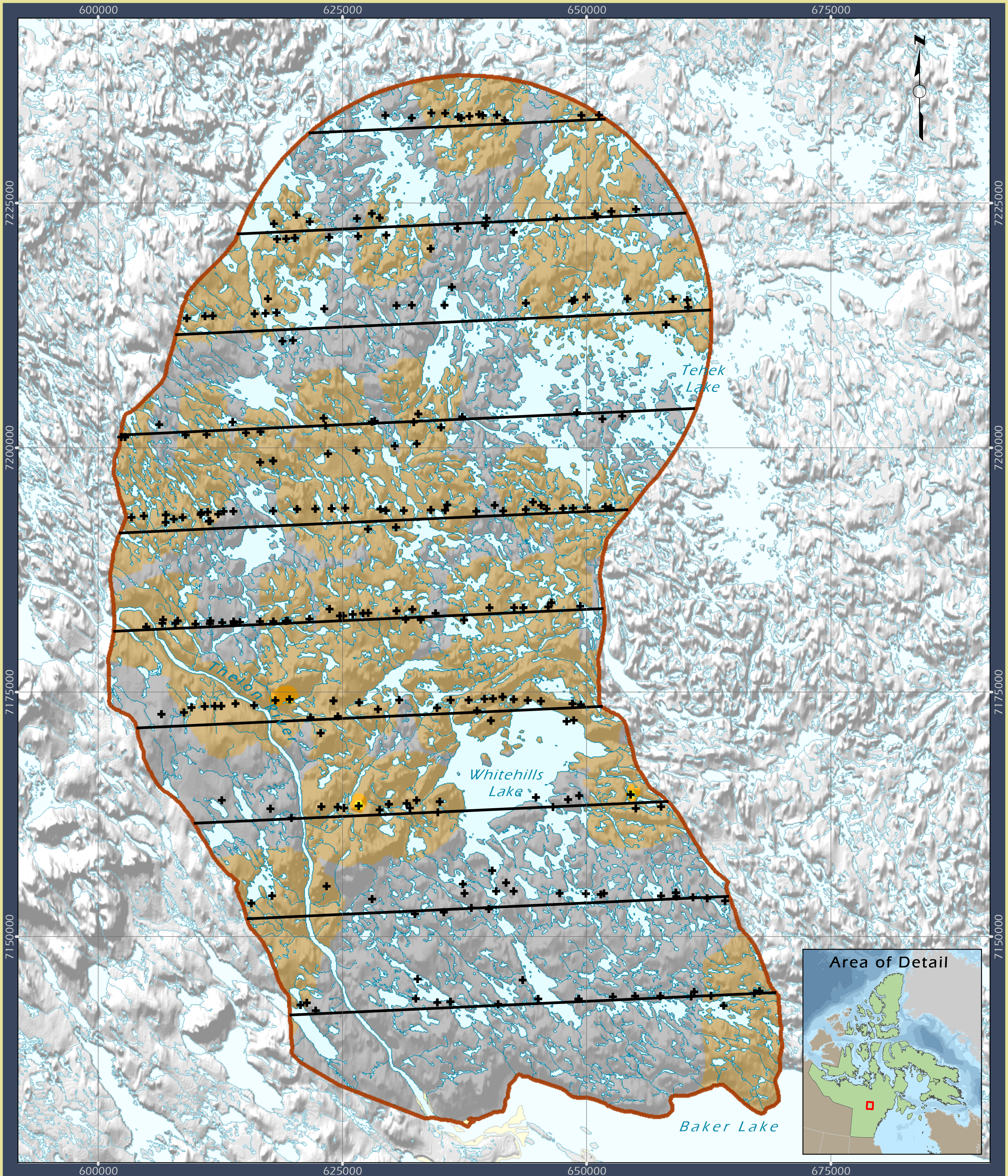
Data Sources:
Natural Resources Canada, GeoBase®
National Topographic Database
Agnico-Eagle Mines Limited.

Fig. 4.8 - Aerial Survey Data Distribution of Observed Caribou in the 2005 Survey

Meadowbank Gold Project

Prepared for: AGNICO-EAGLE

By: Caslys Consulting Ltd.



Legend

- Regional Study Area
- Hydrology
- RSA Aerial Transects 2005-2007

Caribou / Ha
0
1 - 5
5 - 10
10 - 15
15 - 20
> 20

0 5 10 15 20

Kilometres

Projection: UTM Zone 14 NAD83

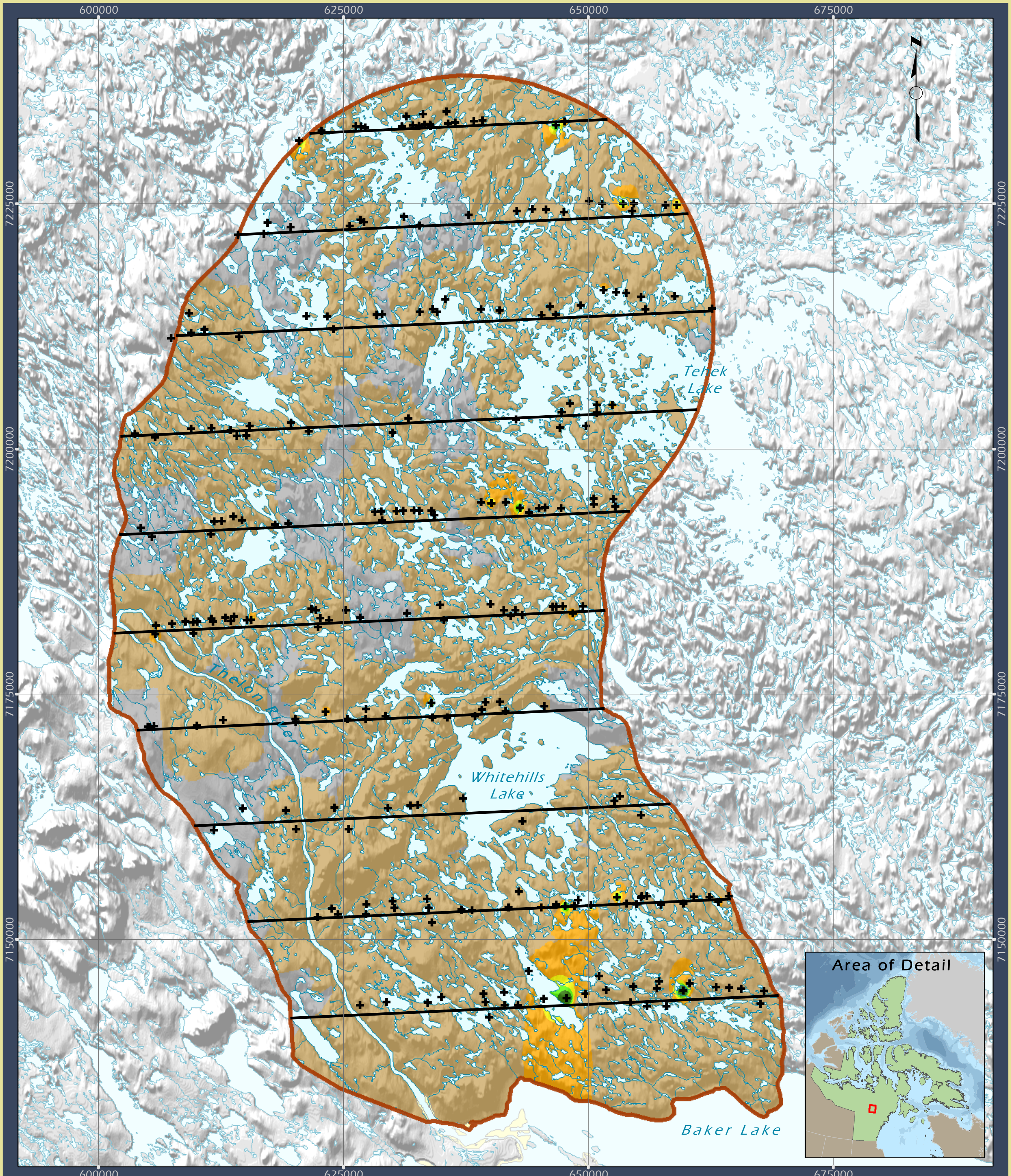
Data Sources:
Natural Resources Canada, GeoBase®
National Topographic Database
Agnico-Eagle Mines Limited.

Fig. 4.9 - Aerial Survey Data Distribution of Observed Caribou in the 2006 Survey

Meadowbank Gold Project

Prepared for: AGNICO-EAGLE

By: Caslys Consulting Ltd.



Legend

Regional Study Area
Hydrology
RSA Aerial Transects 2005-2007

Caribou / Ha
0
1 - 5
5 - 10
10 - 15
15 - 20
> 20

0 5 10 15 20
Kilometres
Projection: UTM Zone 14 NAD83

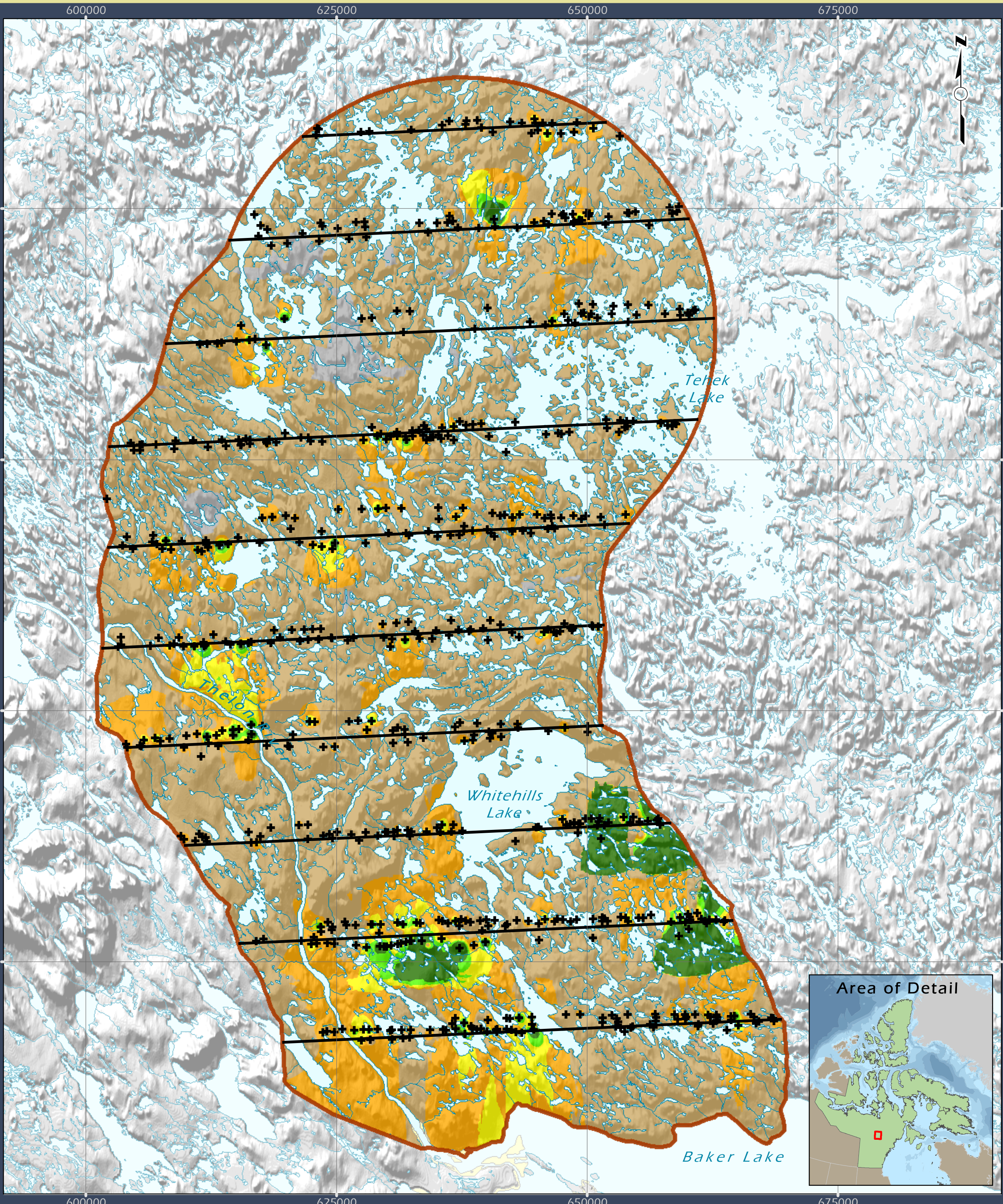
Data Sources:
Natural Resources Canada, GeoBase®
National Topographic Database
Agnico-Eagle Mines Limited.

Fig. 4.10 - Aerial Survey Data Distribution of Observed Caribou in the 2007 Survey

Meadowbank Gold Project

Prepared for: AGNICO-EAGLE

By: Caslys Consulting Ltd.



Legend

Caribou / Ha

- Regional Study Area
- Hydrology
- RSA Aerial Transects 2005-2008

- 0
- 1 - 5
- 5 - 10
- 10 - 15
- 15 - 20
- > 20

0 5 10 15 20

Kilometres

Projection: UTM Zone 14 NAD83

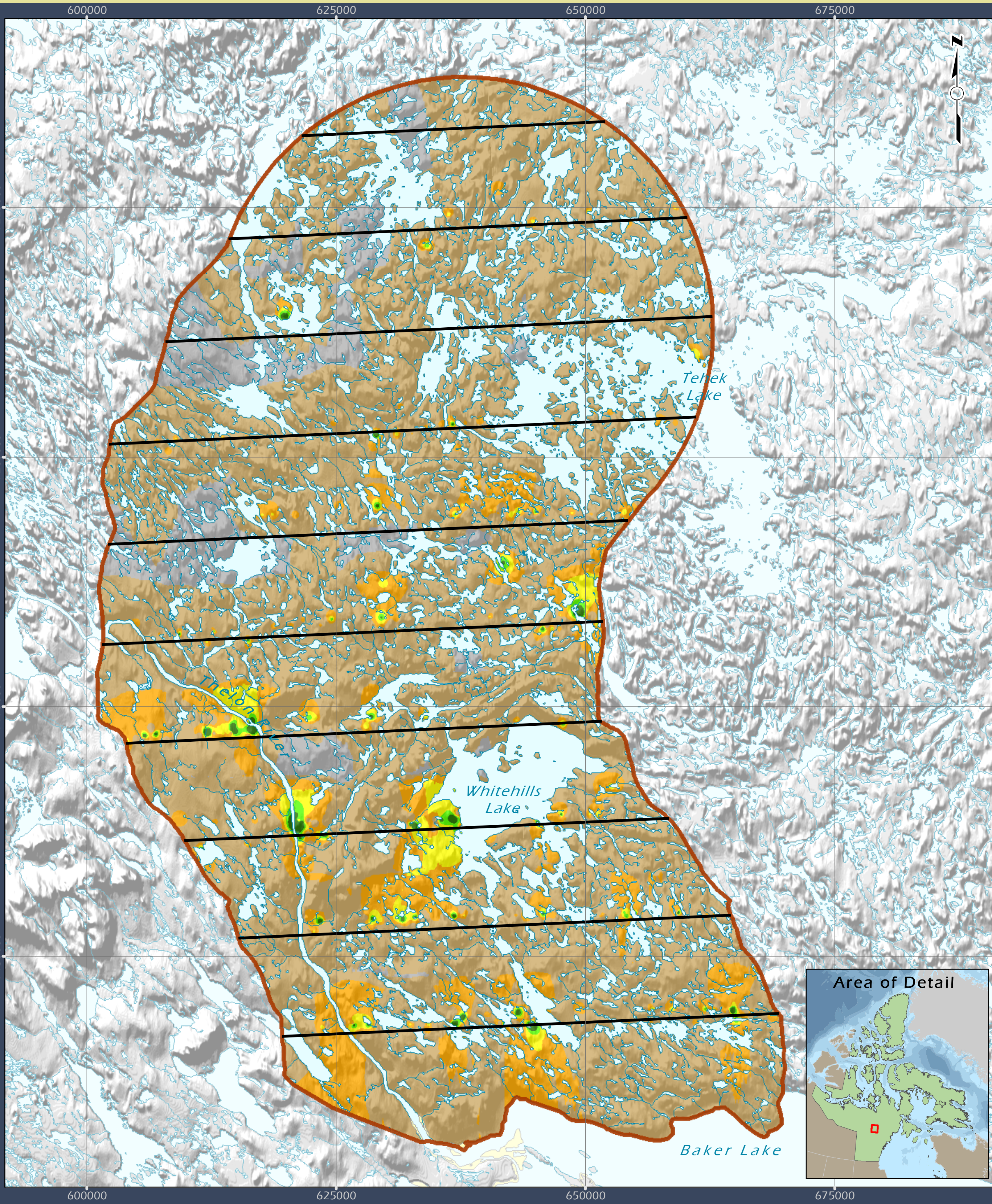
Data Sources:
Natural Resources Canada, GeoBase®
National Topographic Database
Agnico-Eagle Mines Limited.

Figure 4.11: Aerial Survey Data Distribution of Observed Caribou in the 2008 Survey

Meadowbank Gold Project

Prepared for: AGNICO-EAGLE

By: Caslys Consulting Ltd.



Legend

Regional Study Area	
Hydrology	
RSA Aerial Transects 2005-2008	

Caribou / Ha

0	
1 - 5	
5 - 10	
10 - 15	
15 - 20	
> 20	

0 5 10 15 20
Kilometres

Projection: UTM Zone 14 NAD83

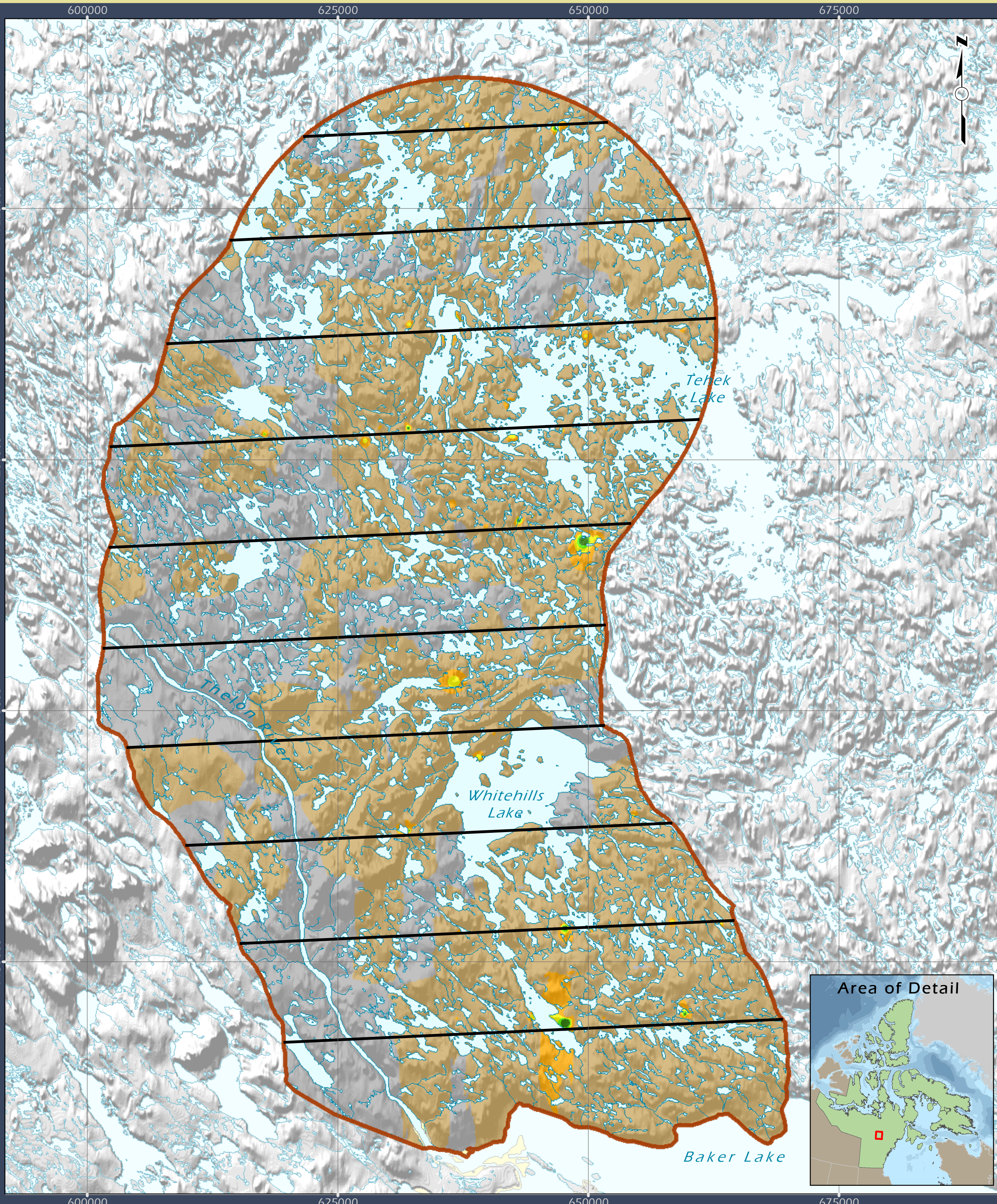
Data Sources:
Natural Resources Canada, GeoBase®
National Topographic Database
Agnico-Eagle Mines Limited.

Figure 4.12: Aerial Survey Data Distribution of Observed Caribou in the Winter Season

Meadowbank Gold Project

Prepared for: AGNICO-EAGLE

By: Caslys Consulting Ltd.



Legend

- Regional Study Area
- Hydrology
- RSA Aerial Transects 2005-2008

Caribou / Ha
0
1 - 5
5 - 10
10 - 15
15 - 20
> 20

0 5 10 15 20

Kilometres

Projection: UTM Zone 14 NAD83

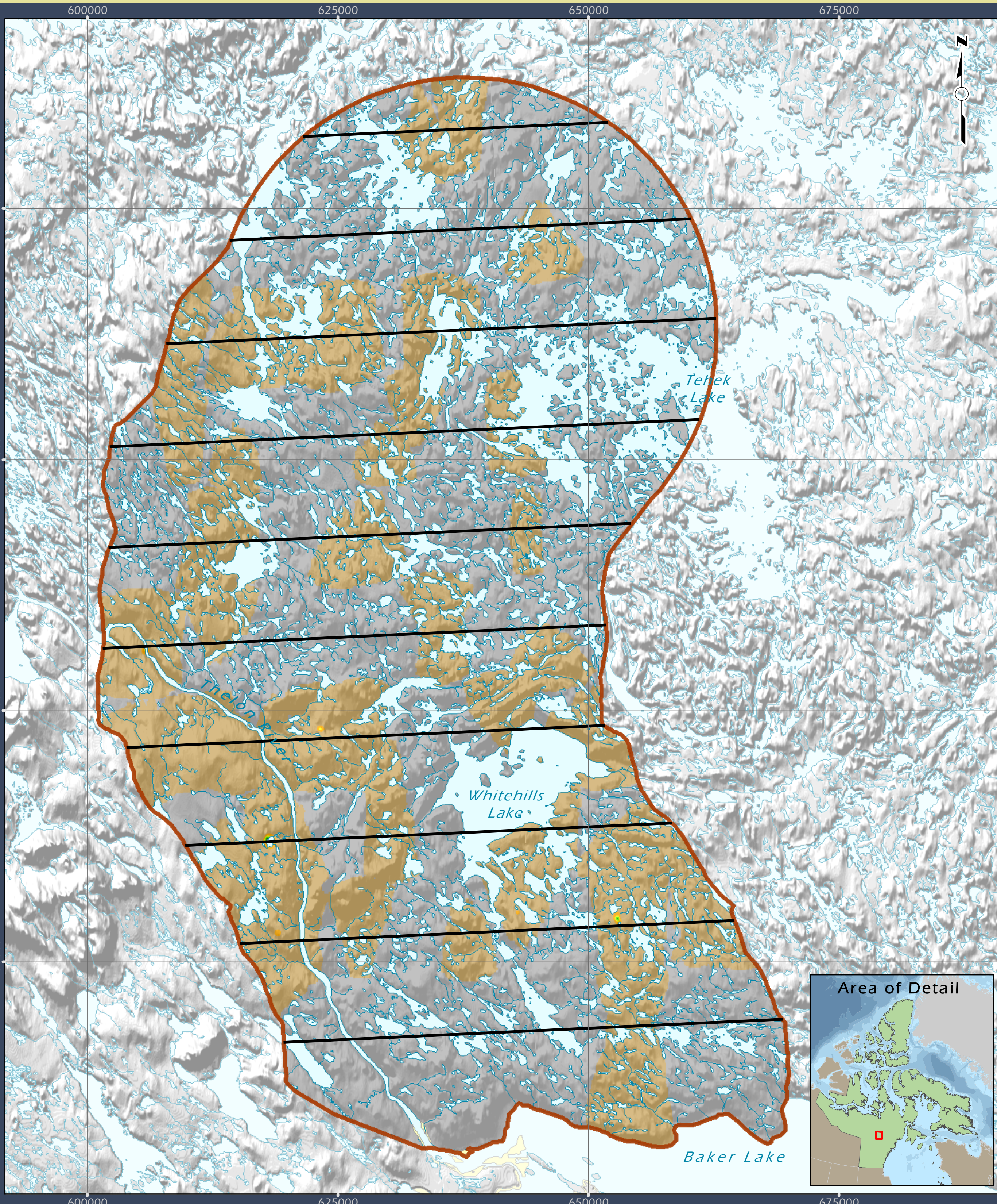
Data Sources:
Natural Resources Canada, GeoBase®
National Topographic Database
Agnico-Eagle Mines Limited.

Figure 4.13: Aerial Survey Data Distribution of Observed Caribou in the Spring Season

Meadowbank Gold Project

Prepared for: AGNICO-EAGLE

By: Caslys Consulting Ltd.



Legend

- Regional Study Area
- Hydrology
- RSA Aerial Transects 2005-2008

Caribou / Ha
0
1 - 5
5 - 10
10 - 15
15 - 20
> 20

0 5 10 15 20
Kilometres
Projection: UTM Zone 14 NAD83

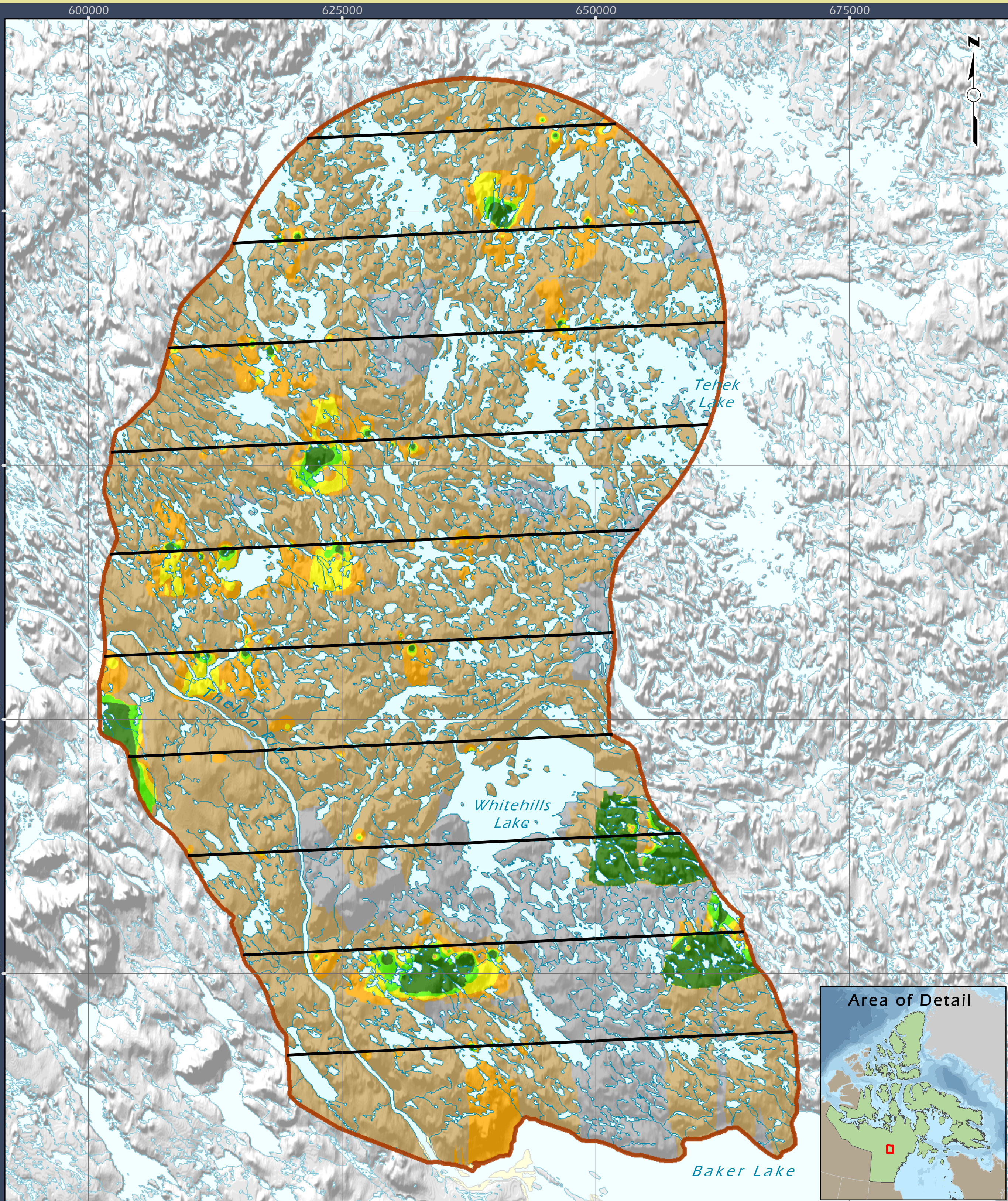
Data Sources:
Natural Resources Canada, GeoBase®
National Topographic Database
Agnico-Eagle Mines Limited.

Figure 4.14: Aerial Survey Data Distribution of Observed Caribou in the Summer Season

Meadowbank Gold Project

Prepared for: AGNICO-EAGLE

By: Caslys Consulting Ltd.



Legend

- Regional Study Area
- Hydrology
- RSA Aerial Transects 2005-2008

Caribou / Ha
0
1 - 5
5 - 10
10 - 15
15 - 20
> 20

0 5 10 15 20

Kilometres

Projection: UTM Zone 14 NAD83

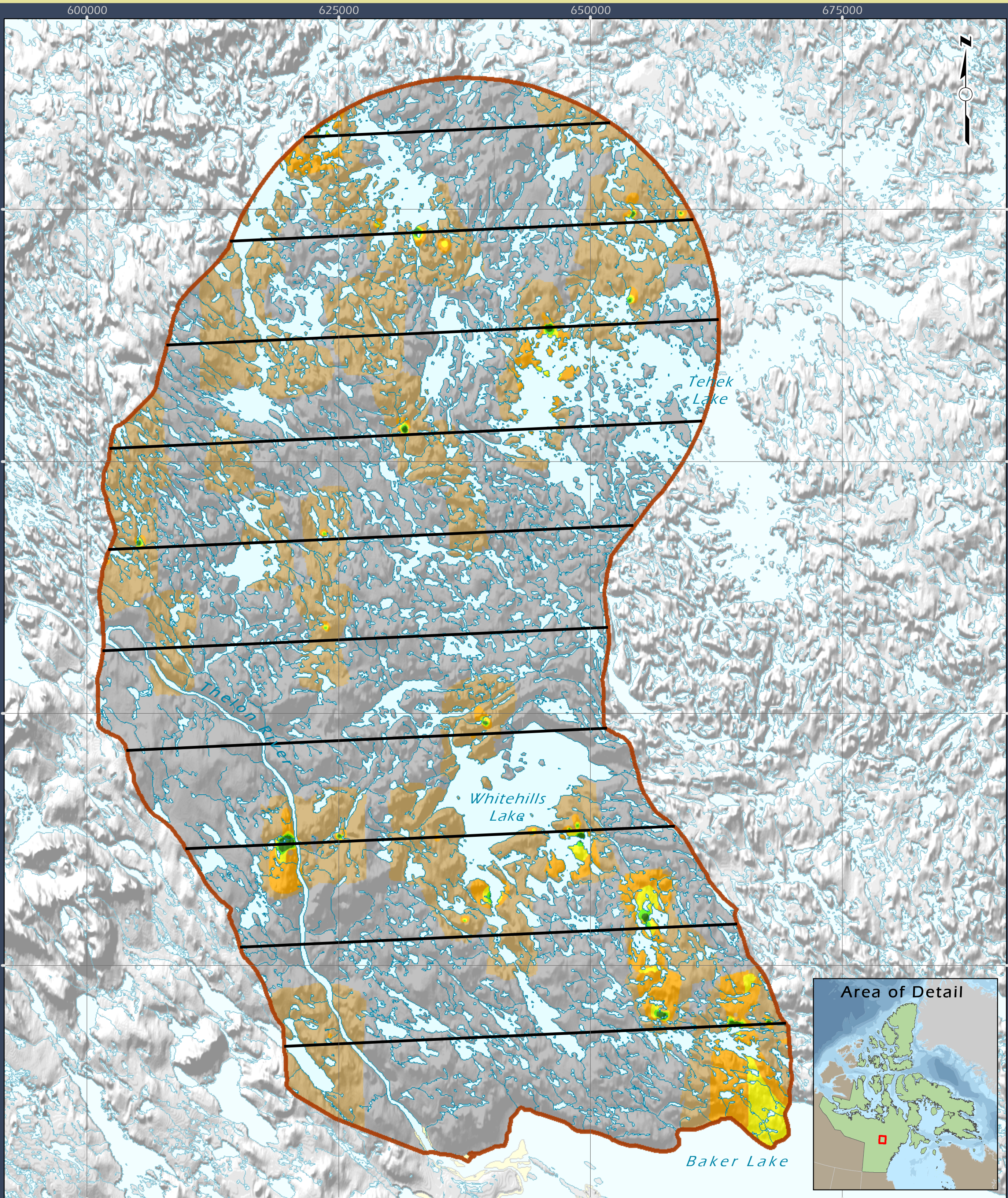
Data Sources:
Natural Resources Canada, GeoBase®
National Topographic Database
Agnico-Eagle Mines Limited.

Figure 4.15: Aerial Survey Data Distribution of Observed Caribou in the Fall Season

Meadowbank Gold Project

Prepared for: AGNICO-EAGLE

By: Caslys Consulting Ltd.



Legend

Muskox / Ha

Regional Study Area			0
Hydrology			< 2
RSA Aerial Transects 2005-2008			2 - 4
			4 - 6
			6 - 8
			> 8

0 5 10 15 20
Kilometres

Projection: UTM Zone 14 NAD83

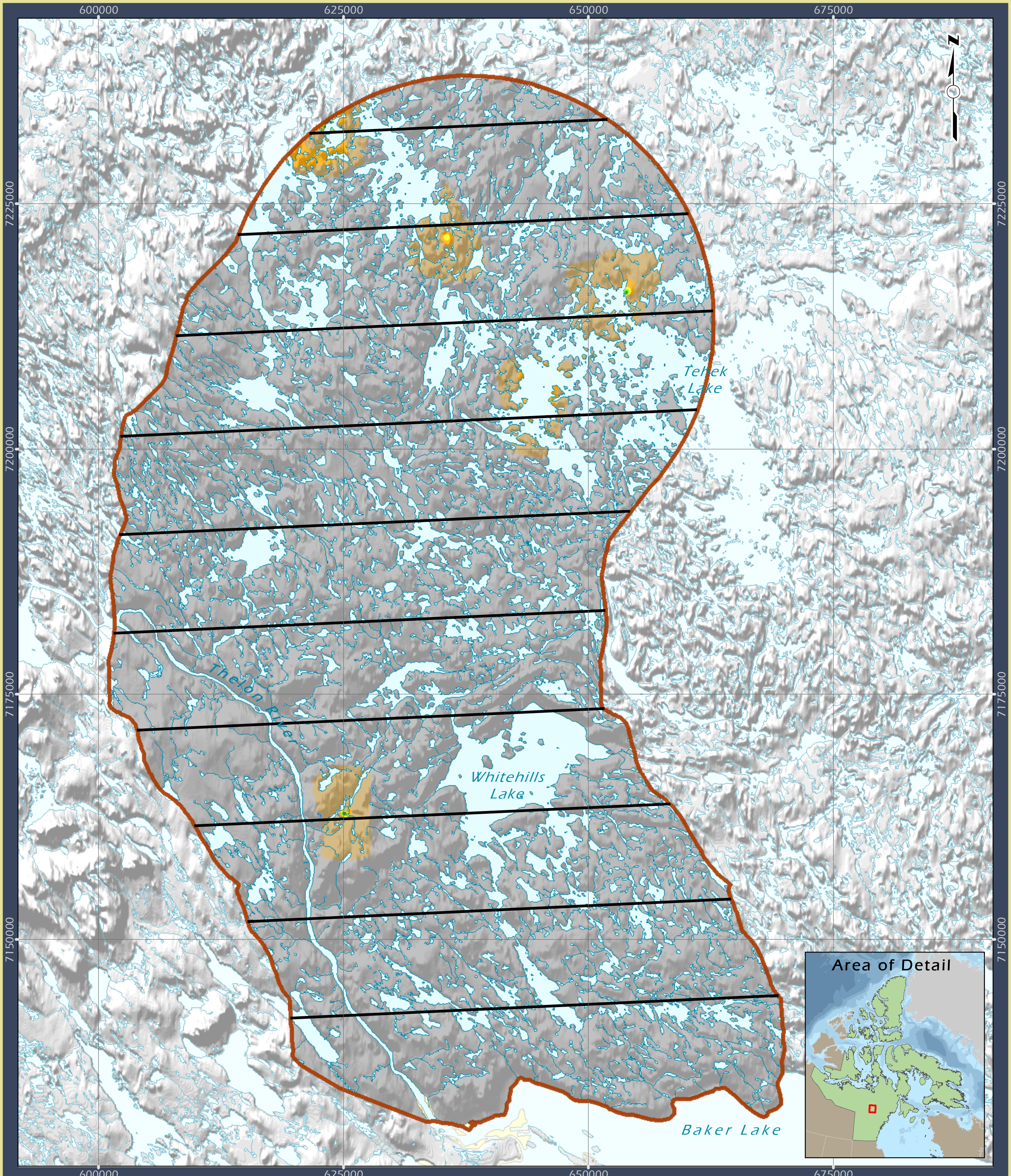
Data Sources:
Natural Resources Canada, GeoBase®
National Topographic Database
Agnico-Eagle Mines Limited.

Figure 4.16: Aerial Survey Data Distribution of Observed Muskox (All Seasons)

Meadowbank Gold Project

Prepared for: AGNICO-EAGLE

By: Caslys Consulting Ltd.



Legend

	Muskox / Ha
Regional Study Area	0
Hydrology	< 2
RSA Aerial Transects 2005-2008	2 - 4
	4 - 6
	6 - 8
	> 8

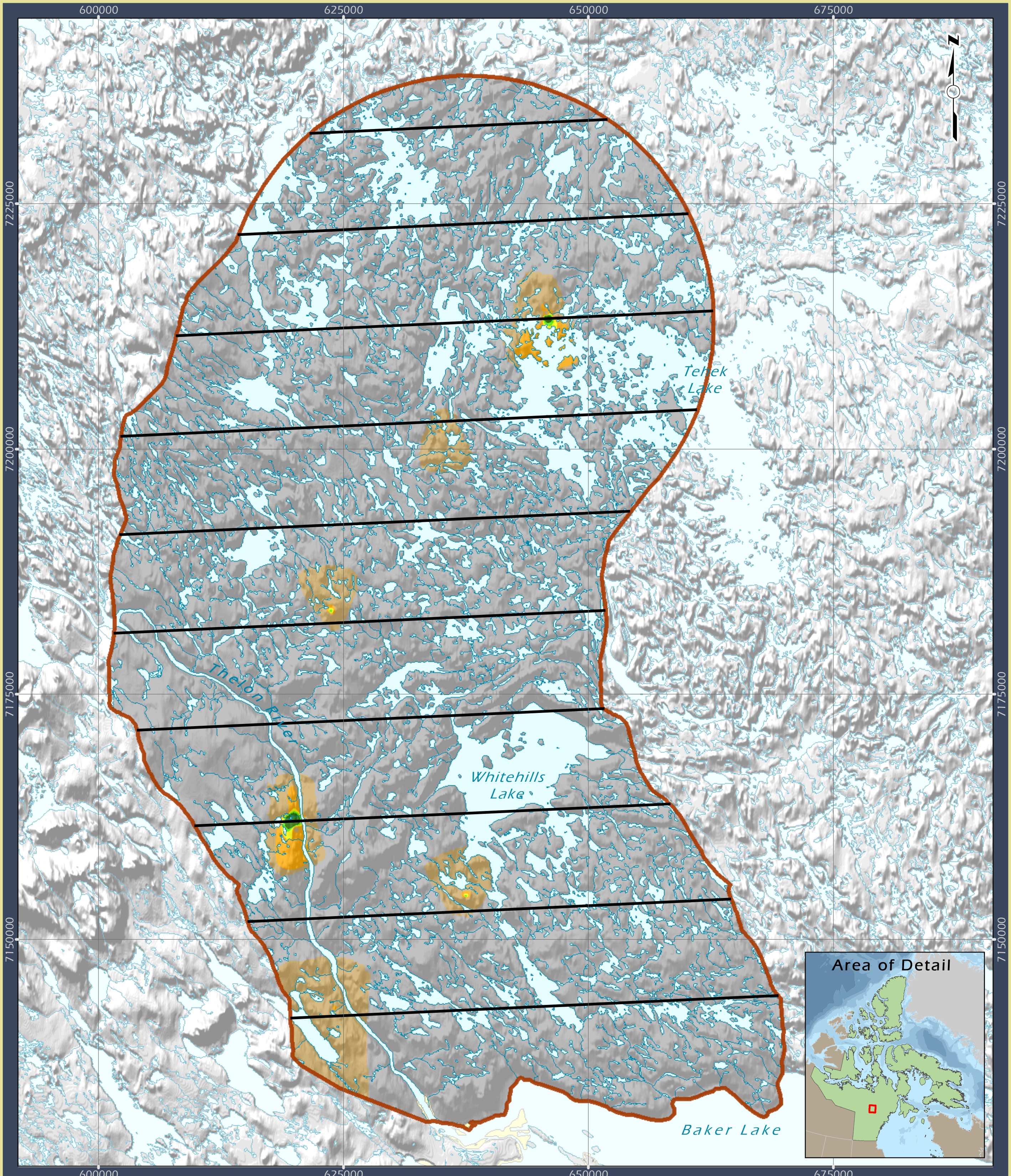
0 5 10 15 20
Kilometres
Projection: UTM Zone 14 NAD83

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

Figure 4.17: Aerial Survey Data Distribution of Observed Muskox in the Winter Season

Meadowbank Gold Project

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



Legend

Legend		Muskox / Ha	
Regional Study Area			0
Hydrology			< 2
RSA Aerial Transects 2005-2008			2 - 4
			4 - 6
			6 - 8
			> 8

0 5 10 15 20

Kilometres

Projection: UTM Zone 14 NAD83

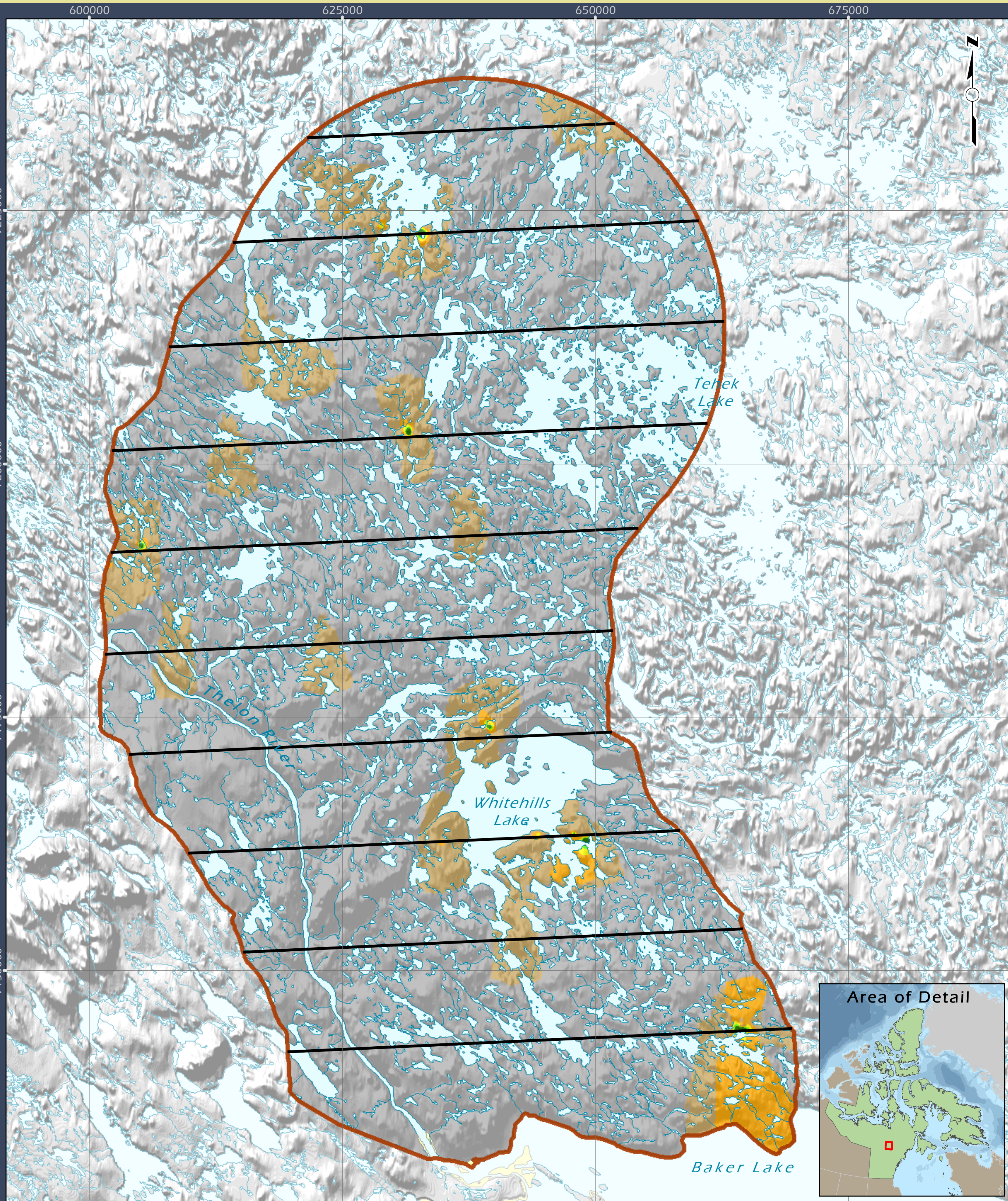
Data Sources:
Natural Resources Canada, GeoBase®
National Topographic Database
Agnico-Eagle Mines Limited.

Figure 4.18: Aerial Survey Data Distribution of Observed Muskox in the Spring Season

Meadowbank Gold Project

Prepared for: AGNICO-EAGLE

By: Caslys Consulting Ltd.



Legend

Muskox / Ha

Regional Study Area		0
Hydrology		< 2
RSA Aerial Transects 2005-2008		2 - 4
		4 - 6
		6 - 8
		> 8

0 5 10 15 20
Kilometres
Projection: UTM Zone 14 NAD83

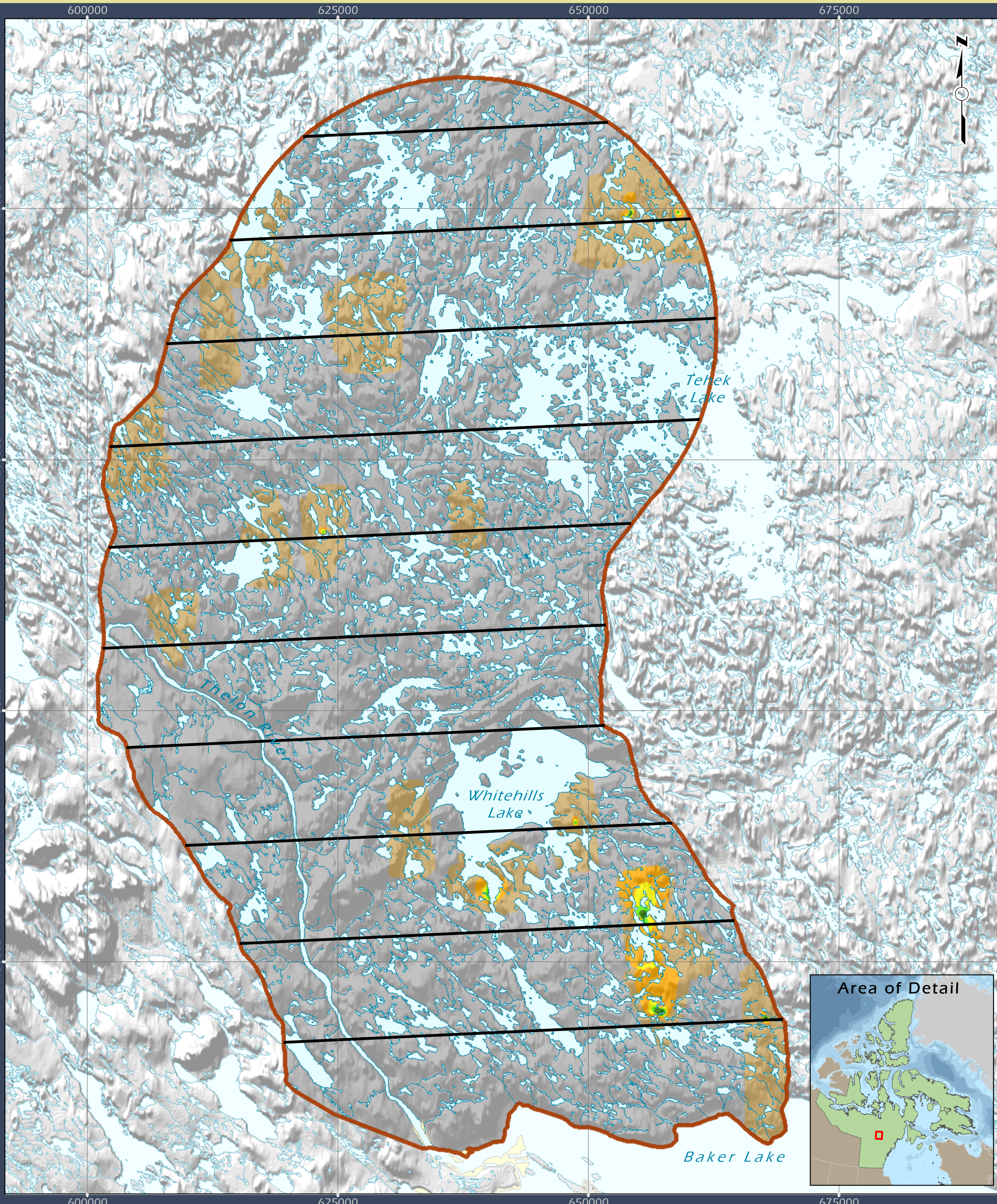
Data Sources:
Natural Resources Canada, GeoBase®
National Topographic Database
Agnico-Eagle Mines Limited.

Figure 4.19: Aerial Survey Data Distribution of Observed Muskox in the Summer Season

Meadowbank Gold Project

Prepared for: AGNICO-EAGLE

By: Caslys Consulting Ltd.



Legend

Muskox / Ha

Regional Study Area		0	
Hydrology		< 2	
RSA Aerial Transects 2005-2008		2 - 4	
		4 - 6	
		6 - 8	
		> 8	

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 4.20: Aerial Survey Data Distribution of Observed Muskox in the Fall Season

Meadowbank Gold Project

Prepared for: AGNICO-EAGLE

By: Caslys Consulting Ltd.

4.2.2 Waterfowl

4.2.2.1 Summary of Data to Date

The estimated mean number of waterfowl (i.e., the total number of waterfowl counted during a survey that were on a given transect averaged by season within a specific year) within the RSA is provided in Table 4.4 for the various species for which data is available. Data should be interpreted cautiously because of the low number of replications for most seasons and the variation in survey timing within each of the seasons.

Table 4.4: Mean Number of Waterfowl and Sandhill Crane within the RSA.

	Spring						Summer						Fall					
Waterfowl	**1999**	**2004**	**2005**	**2006**	**2007**	**2008**	**2002**	**2004**	**2005**	**2006**	**2007**	**2008**	**2002**	**2004**	**2005**	**2006**	**2007**	**2008**
Canada Goose	418	0	0	0	0	63	5510	219	42	2034	303	6430	910	701	2593	585	1966	157
Duck	0	0	0	0	0	0	0	0	0	5	0	84	837	0	0	0	0	0
Long-tailed Duck	0	0	0	0	0	0	21	0	0	16	31	0	0	0	0	0	0	0
Red-breasted Merganser	0	0	0	0	0	0	0	10	0	0	0	0	0	0	0	0	0	0
Sandhill Crane	0	0	0	0	0	10	0	0	0	0	0	0	73	52	167	146	47	0
Snow Goose	335	0	0	0	0	0	0	251	0	21	251	0	29150	10330	63	36615	261	6441
Tundra Swan	314	0	0	0	0	0	0	0	0	10	0	21	31	0	0	10	31	0
White-fronted Goose	0	0	0	0	0	0	0	0	0	0	0	0	763	0	0	0	0	0

With the exception of Canada Goose, Snow Goose and Sandhill Crane (*Grus canadensis*), the number of individuals of other waterfowl species observed was too low to reasonably interpret data. For Canada Goose, the maximum estimated count within the RSA was 6,430 in Summer 2008 (prior to which, the maximum estimated count was 5,510 in summer 2002). For Snow Goose, the maximum estimated count was 73,230 (not shown) in early September 2006. The maximum estimate for Sandhill Crane was 167 in Fall 2005.

4.2.2.2 Analysis of Natural Variation

Abundance

The mean number of waterfowl counted and RSA estimates by season (cumulative across years) are provided in Table 4.5. In general, the abundance data for waterfowl was ill-conditioned for count-based analyses with a dichotomy of either large counts or zero (0) counts. This clustered type of data was best modeled using the negative binomial distribution. However, the tradeoff was that the power of tests was reduced and the precision of predictions was low.

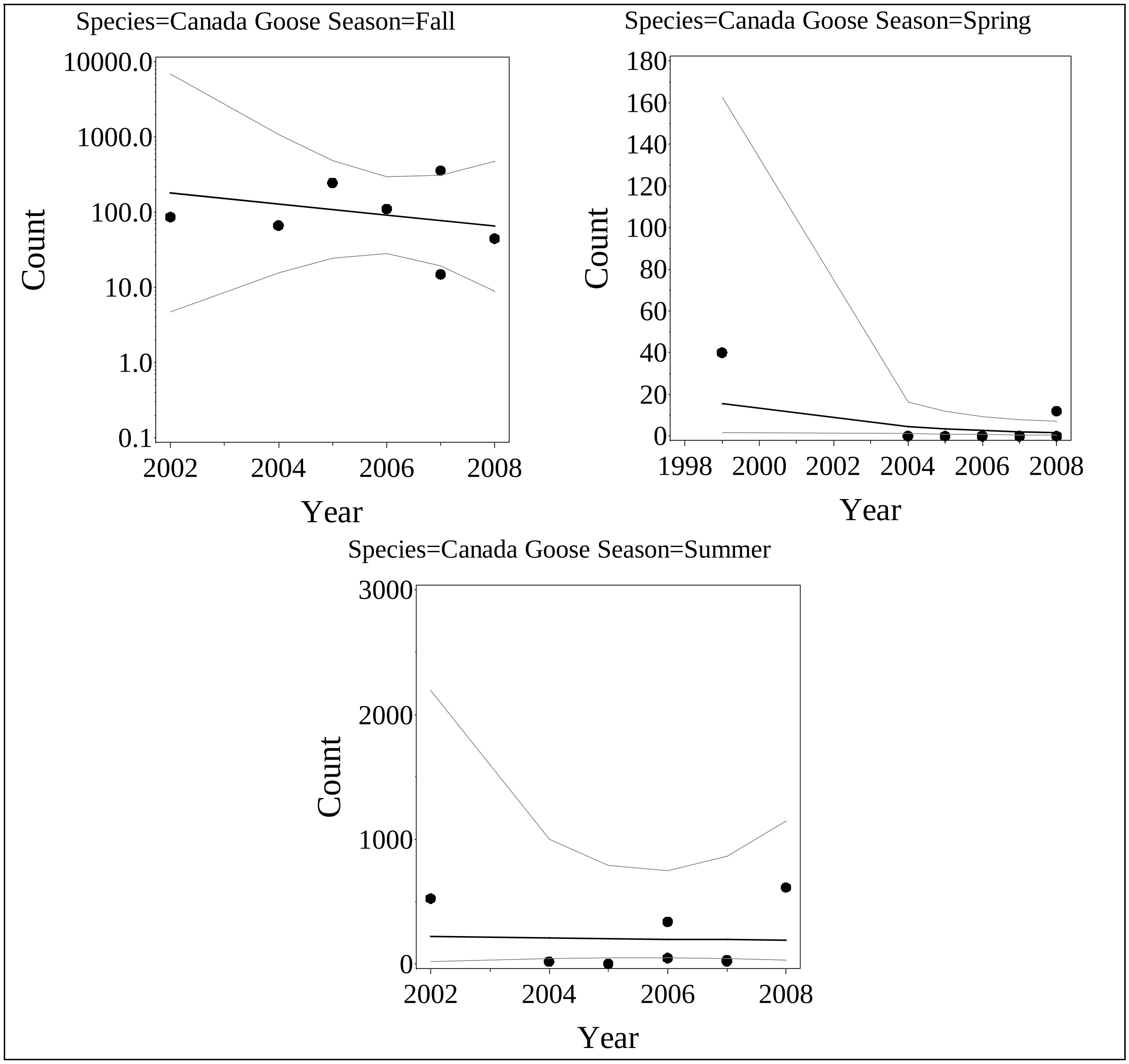
The abundance (counts) of Canada Geese was no longer influenced by season (χ^2=0.51, df=2, p=0.77) or year (χ^2=0.80, df=1, p=0.37) (Figure 4.21), in contrast to previous years, in which both season and year appeared to influence abundance. The largest number of Canada Geese was observed in the summer and fall (Table 4.5). Additional years of season-specific data would serve to generate a better estimate of trend across all seasons.

Table 4.5: The Mean Number of Waterfowl Counted on Transects and Population Estimates of Waterfowl within the RSA by Season. Data was Averaged across Years and Counts are Cumulative.

		Counted				RSA Estimate				
Species	**Season**	**Mean**	**Std**	**Min**	**Max**	**Mean**	**Std**	**Min**	**Max**	**n**
Canada Goose	Spring	5.2	12.8	0.0	40	54.4	133.8	0.0	418.2	10
	Summer	201.8	253.9	4.0	615	2109.4	2654.2	41.8	6430.2	8
	Fall	93.5	120.8	0.0	361	977.6	1262.7	0.0	3774.4	10
Snow Goose	Spring	3.2	10.1	0.0	32	33.5	105.8	0.0	334.6	10
	Summer	9.5	17.6	0.0	48	99.3	184.3	0.0	501.9	8
	Fall	1268.4	2239.4	0.0	7004	13261.8	23414.1	0.0	73230.5	10
White-fronted Goose	Fall	7.3	23.1	0.0	73	76.3	241.4	0.0	763.3	10

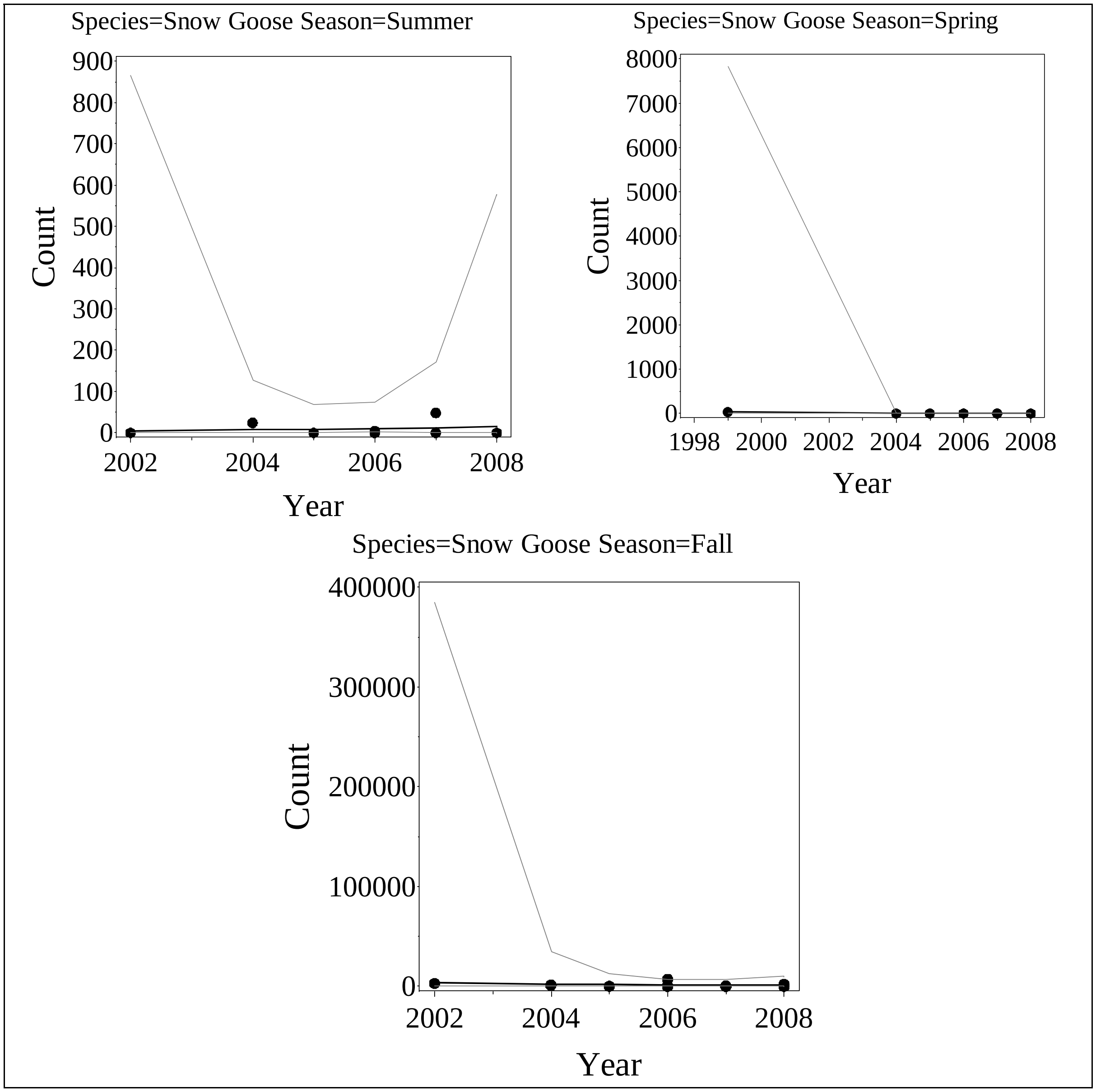
Note: 'n' refers to the number of surveys conducted for each season. The RSA estimate is the estimate for the RSA based on birds counted on the transects.

Figure 4.21: Counts of Canada Goose in the RSA as a Function of Year and Season. Estimated Counts and Associated Confidence Intervals from Negative Binomial Regression are also Provided. In the Summer and Fall Seasons, Data is Plotted on a Log-scale to Ease Interpretation of Estimates.



Following the addition of 2008 data into the existing dataset, the abundance of Snow Geese was no longer influenced by season (χ^2=2.91, df=2, p=0.2329) and continued to be unaffected by year (χ^2=1.83, df=1, p=0.1763). The abundance of Snow Geese was low in all seasons except the fall of 2006 when a relatively large number of geese were observed in one survey (Figure 4.22). Specifically, an observation of 7,004 Snow Geese from the fall of 2006 is not included in the analysis to allow for a reasonable interpretation of other data points. Inclusion of this data point relative to the other generally low counts recorded during the surveys would significantly reduce the confidence interval and limit the validity of the trend analysis.

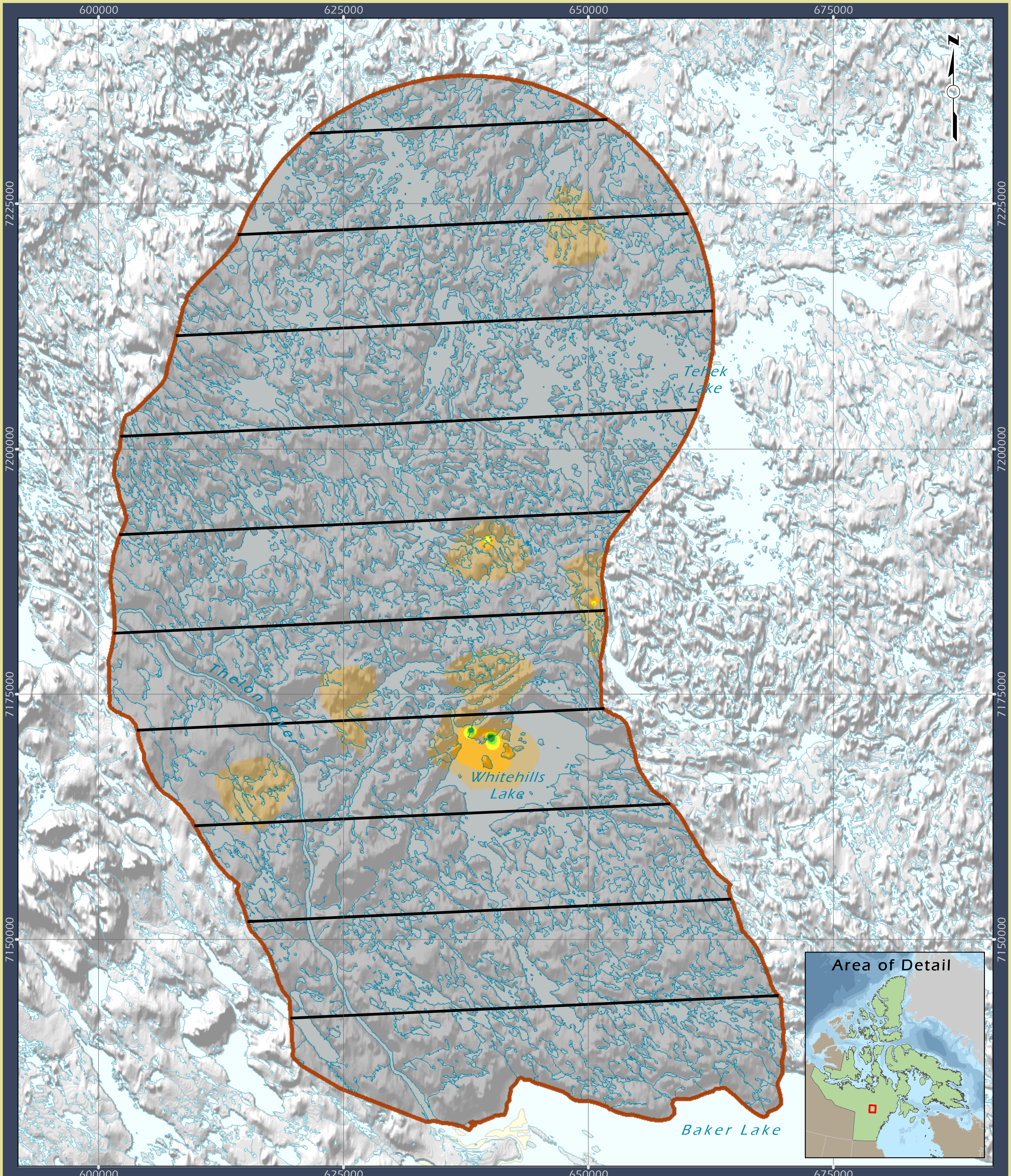
Figure 4.22: Counts of Snow Goose in the RSA as a Function of Year and Season. Estimated Counts and Associated Confidence Intervals from Negative Binomial Regression are also Provided.



The Greater White-fronted Goose was only observed in the fall of 2002 making the testing of trends or seasonal effects problematic.

Distribution

IDW mapping techniques were used to graphically show waterfowl distribution within the RSA. Maps for 2008 waterfowl distribution by survey month are provided in Figures 4.23 through 4.27.



Legend

Waterfowl / Ha

Regional Study Area			0
Hydrology			1 - 5
RSA Aerial Transects 2005-2008			5 - 10
			10 - 15
			15 - 20
			> 20

0 5 10 15 20

Kilometres

Projection: UTM Zone 14 NAD83

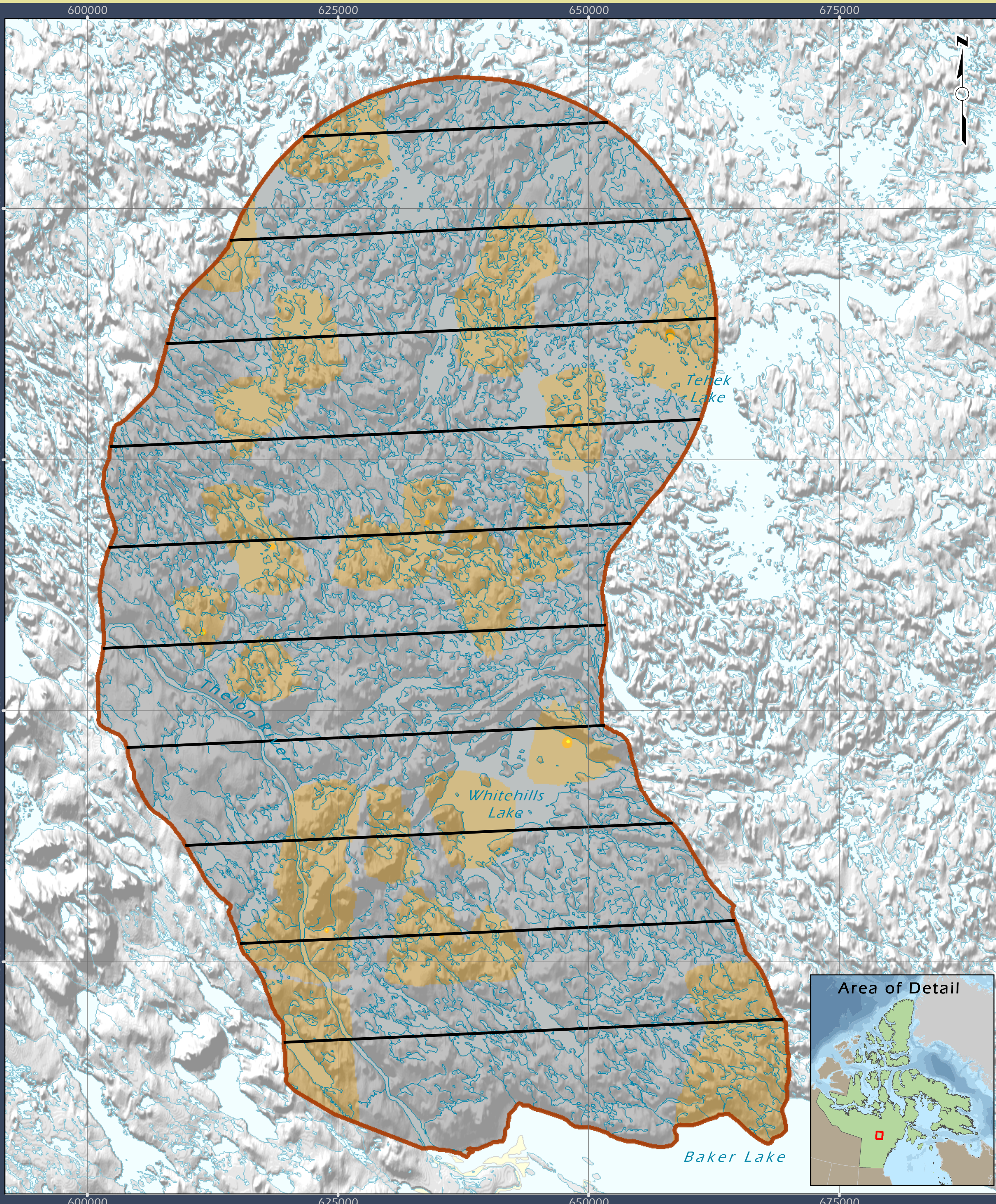
Data Sources:
Natural Resources Canada, GeoBase®
National Topographic Database
Agnico-Eagle Mines Limited.

Figure 4.23: Aerial Survey Data Distribution of Observed Waterfowl in May

Meadowbank Gold Project

Prepared for: AGNICO-EAGLE

By: Caslys Consulting Ltd.



Projection: UTM Zone 14 NAD83

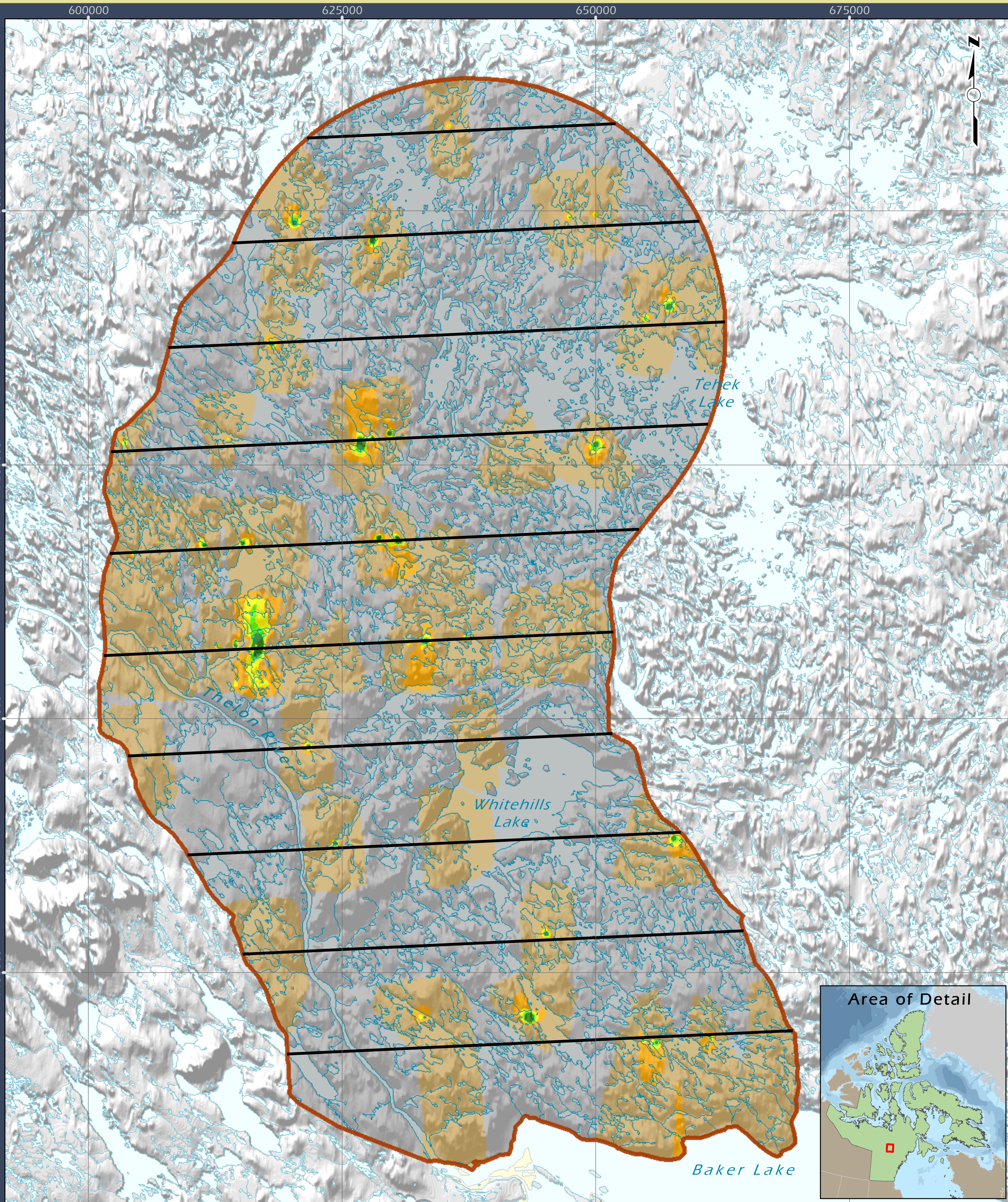
Data Sources:
Natural Resources Canada, GeoBase®
National Topographic Database
Agnico-Eagle Mines Limited.

Figure 4.24: Aerial Survey Data Distribution of Observed Waterfowl in June

Meadowbank Gold Project

Prepared for: AGNICO-EAGLE

By: Caslys Consulting Ltd.



Legend

Waterfowl / Ha

Regional Study Area			0
Hydrology			1 - 5
RSA Aerial Transects 2005-2008			5 - 10
			10 - 15
			15 - 20
			> 20

0 5 10 15 20
Kilometres

Projection: UTM Zone 14 NAD83

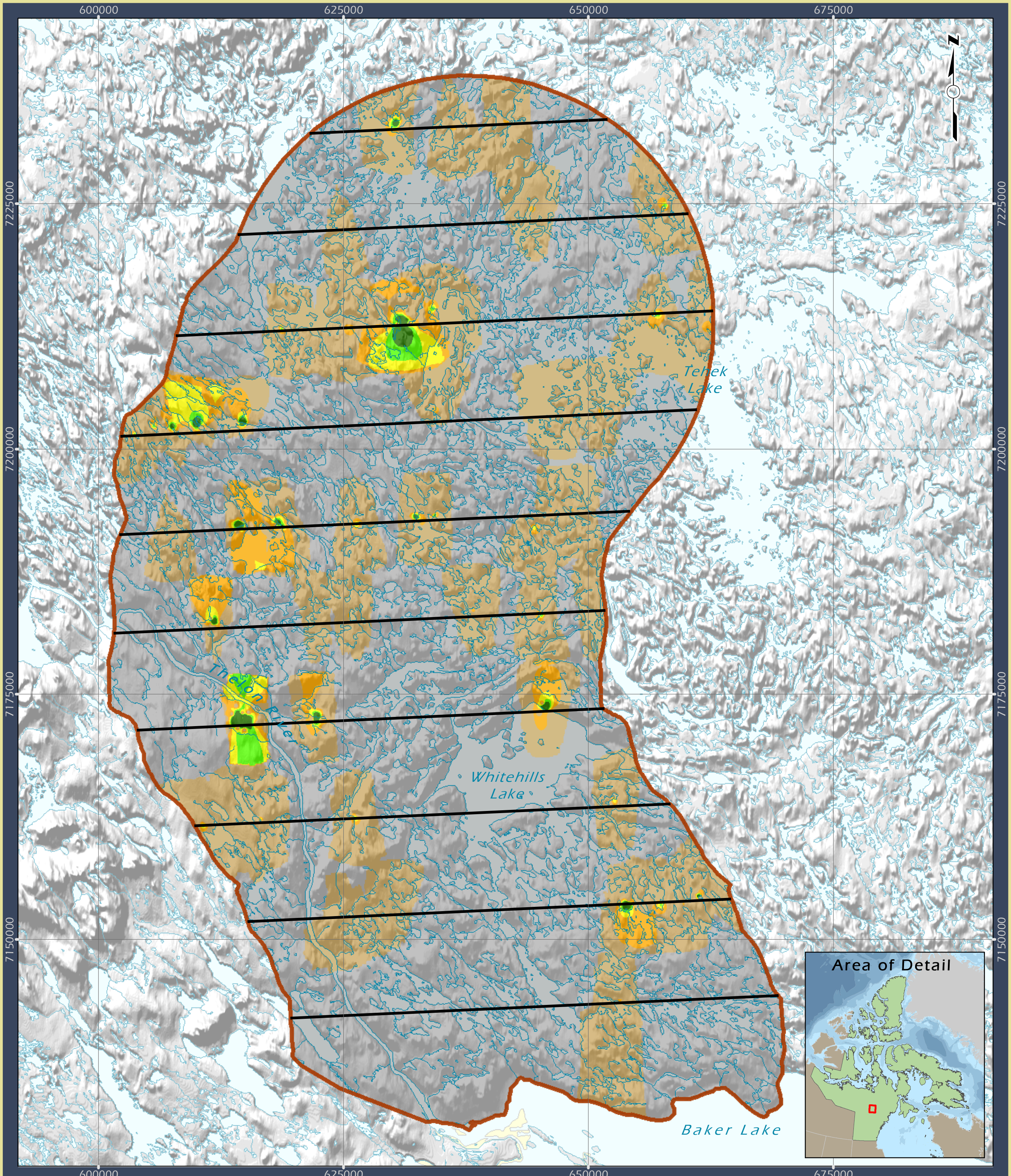
Data Sources:
Natural Resources Canada, GeoBase®
National Topographic Database
Agnico-Eagle Mines Limited.

Figure 4.25: Aerial Survey Data Distribution of Observed Waterfowl in July

Meadowbank Gold Project

Prepared for: AGNICO-EAGLE

By: Caslys Consulting Ltd.



Legend

Regional Study Area
Hydrology
RSA Aerial Transects 2005-2008

Waterfowl / Ha
0
1 - 5
5 - 10
10 - 15
15 - 20
> 20

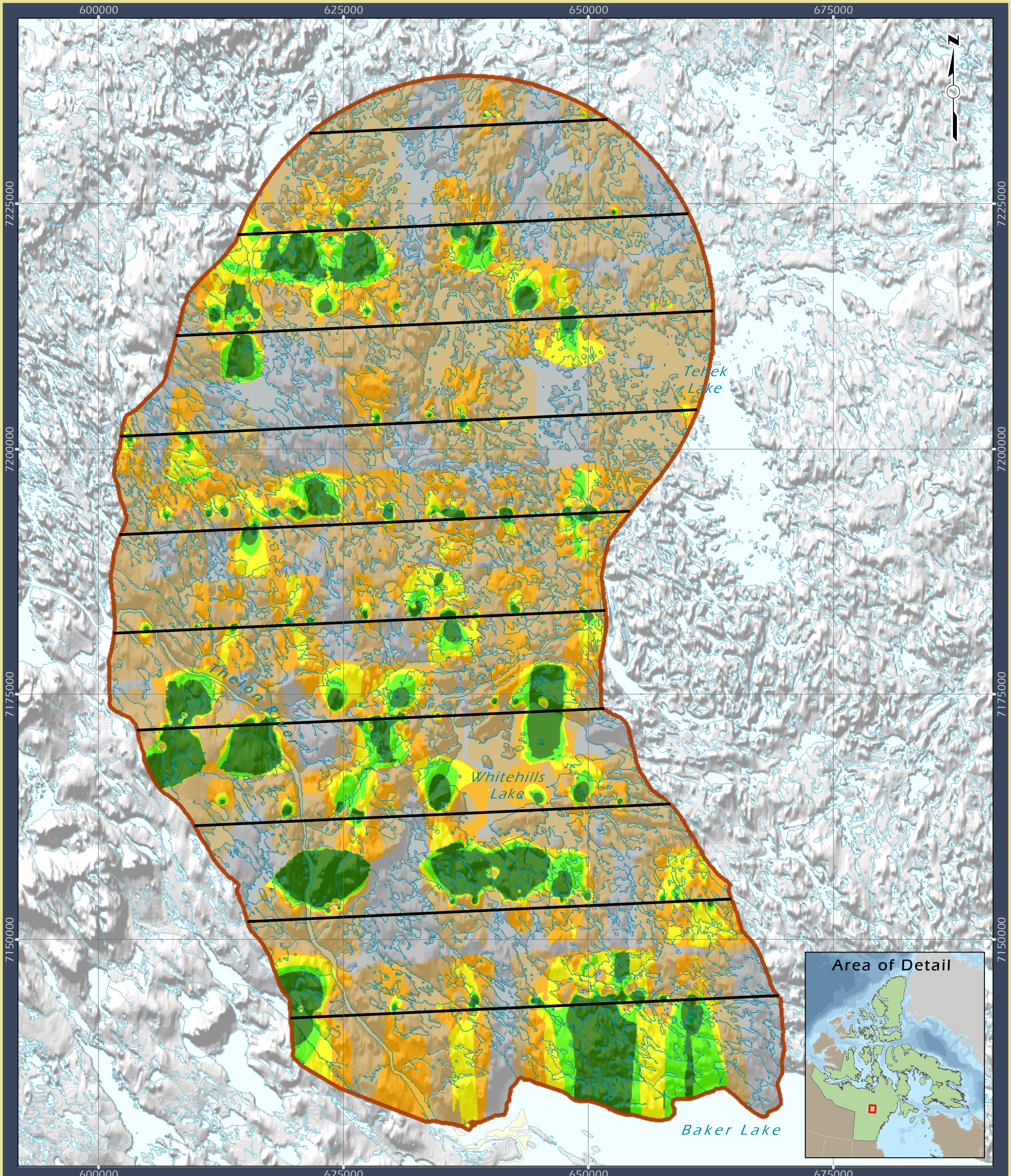
0 5 10 15 20
Kilometres
Projection: UTM Zone 14 NAD83

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

Figure 4.26: Aerial Survey Data Distribution of Observed Waterfowl in August

Meadowbank Gold Project

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



Legend

- Regional Study Area
- Hydrology
- RSA Aerial Transects 2005-2008

Waterfowl / Ha
0
1 - 5
5 - 10
10 - 15
15 - 20
> 20

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 4.27: Aerial Survey Data Distribution of Observed Waterfowl in September

Meadowbank Gold Project

Prepared for: AGNICO-EAGLE

By: Caslys Consulting Ltd.

4.2.3 Incidental Sightings of Other Species

Other species were sighted incidentally during RSA surveys. Counts for these species should be interpreted cautiously given that the probability of sighting these species was very low during aerial surveys (refer to Table 4.6). For most other species this data should be interpreted in terms of presence rather than abundance.

Table 4.6: Cumulative Sightings Across Years of all Species during RSA Surveys.

	Counted					Sightings			
Species	**Mean**	**Std**	**Min**	**Max**	**n**	**Summer**	**Fall**	**Winter**	**Spring**
Arctic Fox	0.4	0.7	0	3	24	3	2	2	
Arctic Groundsquirrel	0.1	0.3	0	1	10		1		
Arctic Hare	0.4	1.3	0	6	28	1	1		2
Canada Goose	92.9	167.3	0	615	28	8	7		2
Canid	0.7	2.2	0	7	10		1		
Caribou	390.4	829.8	0	4098	34	7	10	6	10
Common Raven	1.1	3.3	0	19	34		3	4	4
Duck	4.9	18.8	0	80	18	2	1		
Glaucous Gull	0.3	0.8	0	2	18	1	2		
Goose sp.	0.3	0.7	0	2	8	1			
Grizzly Bear	0.3	1.2	0	5	18	1			1
Gull	0.4	1.1	0	5	28	2	1		1
Gyrfalcon	0.2	0.4	0	1	20		2		1
Herring Gull	2.4	3.5	0	11	28	7	5		1
Jaeger	0.4	0.7	0	2	8	2			
Long-tailed Duck	1.4	2.2	0	6	8	3			
Long-tailed Jaeger	0.3	0.5	0	1	8	2			
Muskox	16.9	22.0	0	93	34	8	8	4	2
Northern Pintail	0.1	0.4	0	1	8	1			
Passerine	27.9	88.2	0	279	10		1		
Peregrine Falcon	0.1	0.4	0	1	8	1			
Ptarmigan	56.1	301.0	0	1757	34	2	4	1	2
Raptor	0.1	0.3	0	1	18	1	1		
Red-breasted Merganser	0.1	0.4	0	1	8	1			
Rock Ptarmigan	11.8	51.5	0	301	34	5	4	3	2
Rough-legged Hawk	0.2	0.5	0	2	28	2	1		2
Sandhill Crane	4.4	7.2	0	28	28	6	5		2
Snow Goose	456.9	1432.2	0	7004	28	3	6		1
Snowy Owl	0.2	0.6	0	2	34	1	1	1	3
Tundra Swan	1.6	5.7	0	30	28	2	3		1
White-fronted Goose	7.3	23.1	0	73	10		1		
Willow Ptarmigan	0.2	0.6	0	2	10				1
Wolf	0.6	1.5	0	8	34	2	2	3	1
Wolverine	0.3	0.6	0	2	16			3	1

Note: The mean count of these species (averaged across years and seasons) is provided. The number of surveys in which a species was sighted (out of 7, 7, 4 and 8 surveys in summer, fall, winter and spring respectively) is also provided. The sample size (n) for estimation of mean was determined by the number of seasons in which a species was seen (as discussed in the methods).

4.3 LSA AERIAL SURVEY

The LSA study area was significantly smaller than the RSA area. It was completely surveyed and therefore it was assumed that the detection probability of focal species was 1.

4.3.1 Ungulates

4.3.1.1 Summary of Data to Date

Caribou were encountered regularly during aerial surveys of the LSA (i.e., 16 of 22 surveys), whereas Muskox were seen much less regularly (i.e., 8 of 22 surveys). The largest number of Caribou (i.e., 547) was observed on the 21 September 2002 aerial survey of the LSA.

4.3.1.2 Analysis of Natural Variation

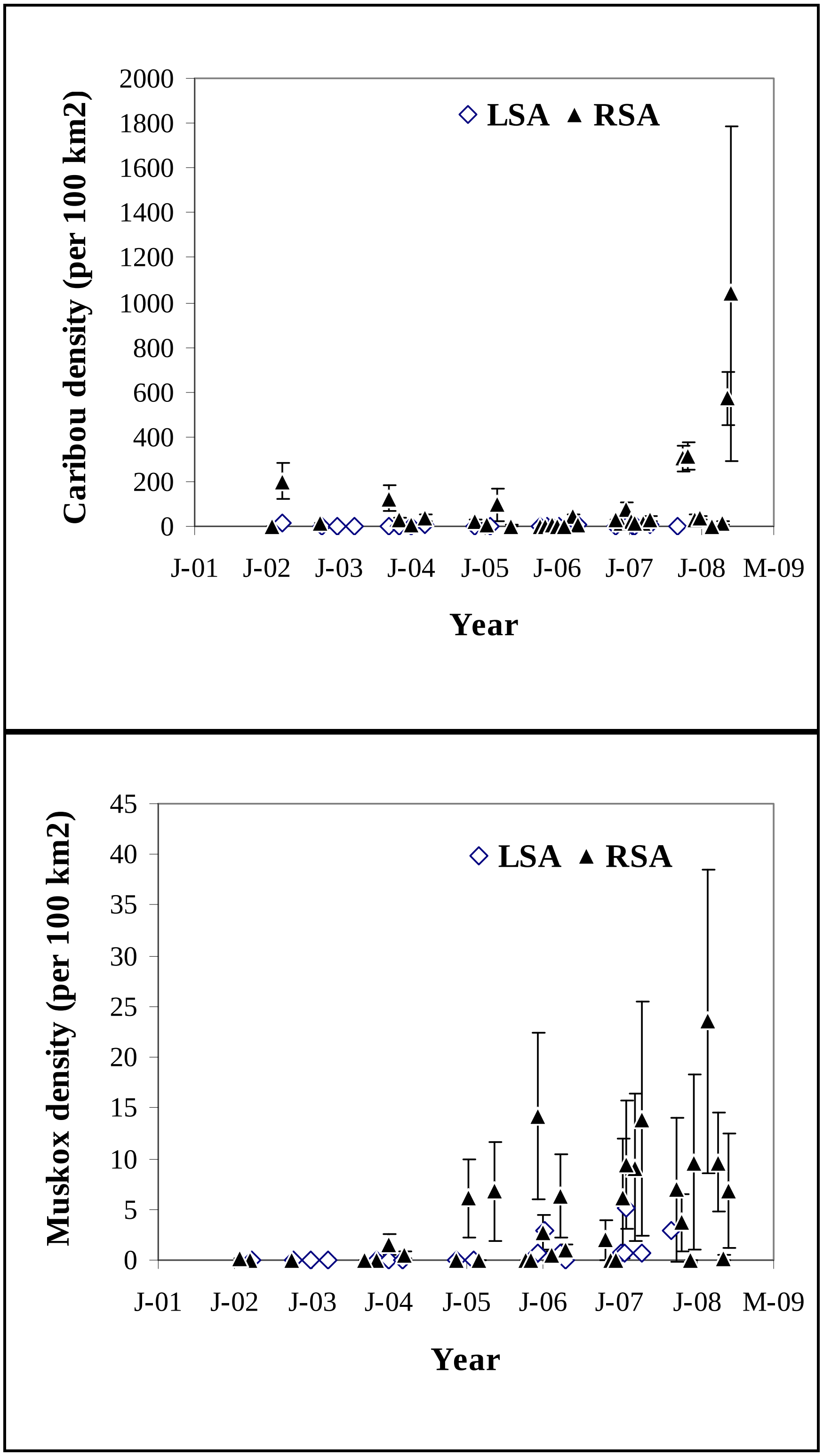
Caribou and Muskox densities (i.e., number per km^2) were estimated based on area of land in LSA and RSA areas (areas of water excluded) except for Caribou in winter (Table 4.7 and Figure 4.28). An analysis of data to date suggests that Caribou density was influenced by area (F=4.85, df=1, p<0.0001), an interaction of area and season (F=4.51, df=6, p=0.0011), but not year (F=1.55, df=1, p=0.2189). Caribou density was higher in the RSA for all seasons.

Muskox density was significantly affected by an interaction of area and season (F=2.74, df=5, p=0.0306), and year (F=19.52, df=1, p<0.0.0001). Muskox density was higher in the RSA area; however, densities were relatively low in both the RSA and LSA.

Table 4.7: Comparison of Cumulative LSA and Cumulative Estimated RSA Densities for Ungulates.

Species	Season	LSA					RSA				
		Density	Stderr	Min	Max	n	Density	Stderr	Min	Max	n
Caribou	Fall	9.05	2.96	0.00	18.60	6	206.77	107.17	8.87	1038.9	10
	Spring	1.93	0.65	0.00	2.98	5	24.73	7.91	1.01	77.58	9
	Summer	4.00	2.55	0.00	21.58	8	6.69	2.60	0.00	20.03	8
	Winter	0.86	0.45	0.00	1.54	3	132.43	58.75	2.87	314.7	6
Muskox	Fall	0.25	0.16	0.00	0.74	6	4.77	1.61	0.00	13.94	10
	Spring	0.15	0.15	0.00	0.74	5	2.65	1.79	0.00	14.20	9
	Summer	1.58	0.68	0.00	5.21	8	6.27	2.72	0.25	23.58	8

Figure 4.28: Comparison of Density (Count per 100 km²) of Caribou and Muskox for the LSA and RSA.



4.3.2 Waterfowl

4.3.2.1 Summary of Data to Date

Snow Goose and Canada Goose were the most common species observed during aerial surveys of the LSA. The only other waterfowl species observed were Tundra Swan (*Cygnus columbianus*; one survey) and Long-tailed Duck (*Clangula hyemalis*; two surveys).

4.3.2.2 Analysis of Natural Variation

The LSA study area was significantly smaller than the RSA area. It was completely surveyed and; therefore, it was assumed that the detection probability of focal species was 100%.

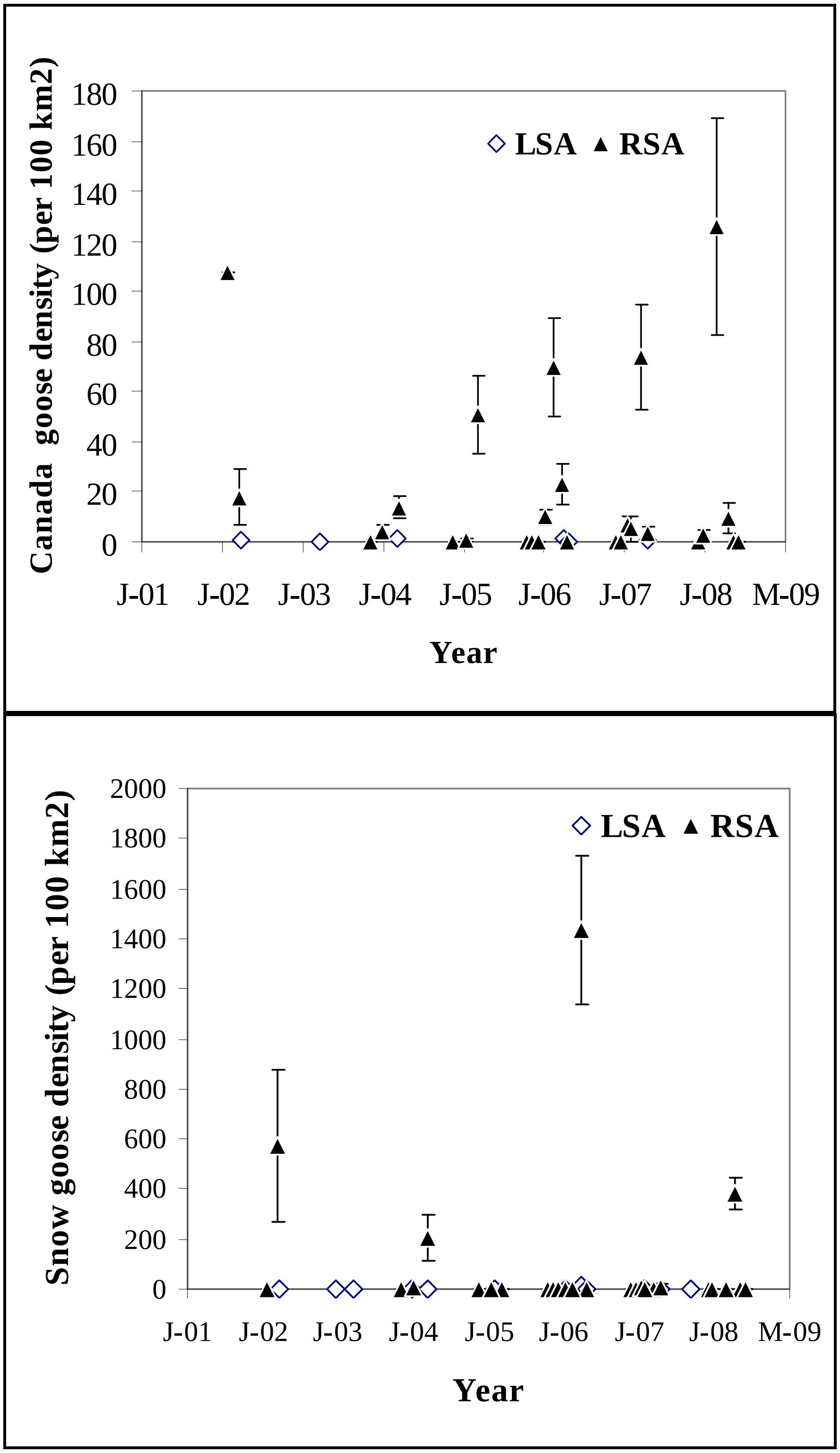
Comparison of densities was limited for seasons in which waterfowl species were observed in the LSA. Densities for Canada Geese were significantly higher for the RSA study area (F=12.75, df=1, p=0.0003). Study area interacted with season suggesting that the degree in which densities differed was a function of season (F=8.18, df=3, p=0.0003). Notably, prior to the inclusion of 2007 data, statistical analysis suggested that density was not affected by season. Year of survey did not influence density estimates (F=1.44, df=1, p=0.2379).

Densities for Snow Geese were different between study areas (F=5.69, df=1, p=0.0226) and also as a an interaction of season and study area (F=5.52, df=3, p=0.0033). Year of survey also affected densities F=3.19, df=1, p=0.0827), although this relationship was weaker than in previous years. Inspection of estimates (Table 4.8 and Figure 4.29) suggests that mean Snow Goose estimates were higher in the fall; however, this was primarily due to a large number of geese seen during the fall of 2006 (Table 4.8 and Figure 4.29).

Table 4.8: Comparison of LSA and Estimated RSA Densities for Waterfowl Species. Densities are Expressed in Birds per 100 km^2.

		LSA					RSA				
Species	**Season**	**Density**	**Std**	**Min**	**Max**	**n**	**Density**	**Std**	**Min**	**Max**	**n**
Canada Goose	Fall	0.51	0.19	0.00	1.03	6	19.15	7.82	0.00	73.93	10
Canada Goose	Summer	0.19	0.19	0.00	1.54	8	41.32	18.38	0.82	125.95	8
Snow Goose	Fall	2.75	2.75	0.00	16.47	6	259.76	145.03	0.00	1434.35	10
Snow Goose	Summer	0.13	0.13	0.00	1.03	8	1.95	1.28	0.00	9.83	8

Figure 4.29: Comparison of RSA and LSA Densities (Birds per 100 km²) for Canada and Snow Geese.



4.3.3 Incidental Sightings of Other Species

Other species were sighted incidentally during LSA surveys. The probability of sighting many of these species is probably low and therefore counts should be interpreted cautiously (refer to Table 4.9).

Table 4.9: Counts from All Species Sighted during LSA Surveys. Surveys in which no Species were Sighted are not Shown in this Table.

		Species																						
Year	**Date**	**Arctic Fox**	**A.G. Squirrel**	**Arctic Hare**	**Canada Goose**	**Caribou**	**Duck**	**Glaucous Gull**	**Gull**	**Gyrfalcon**	**Herring Gull**	**Jaeger**	**L.T. Duck**	**Muskox**	**Passerine**	**Ptarmigan**	**Rock Ptarmigan**	**Sandhill Crane**	**Shorebird**	**Snow Bunting**	**Snow Goose**	**Tundra Swan**	**W. Ptarmigan**	**Wolf**
2002	21-Sep	0	4	17	1	25	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0	0	0
2003	02-Apr	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2004	26-Feb	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	22-Apr	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	18-Jun	0	0	0	0	4	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
	27-Aug	0	0	0	2	6	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0
2005	03-May	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	20-May	0	0	0	0	4	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
	21-Jun	0	0	0	0	3	0	0	1	0	2	0	0	4	0	0	3	0	0	0	2	1	0	0
	04-Sep	0	0	0	2	21	0	0	0	0	0	0	0	1	0	0	0	1	0	0	32	0	0	0
	27-Sep	1	0	1	0	6	0	1	0	1	0	0	0	0	3	0	5	0	0	0	0	0	0	0
2007	01-Apr	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	15-Jun	0	0	0	3	29	1	0	0	0	1	1	0	1	1	1	13	3	1	0	0	0	1	0
	26-Jun	0	0	0	0	3	0	0	0	0	3	0	0	1	0	0	2	2	0	0	0	0	0	1
	06-Jul	0	0	0	0	0	0	0	0	0	1	0	0	7	0	0	0	0	0	0	0	0	0	0
	20-Sep	0	0	0	1	15	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
2008	02-Jul	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	1	3	0	0	0	0	0	0
Total Counts To Date		**1**	**4**	**18**	**9**	**130**	**1**	**1**	**1**	**1**	**7**	**1**	**5**	**16**	**4**	**3**	**25**	**11**	**1**	**1**	**34**	**1**	**1**	**1**

4.4 BREEDING BIRD PLOTS

4.4.1 Summary of Data to Date

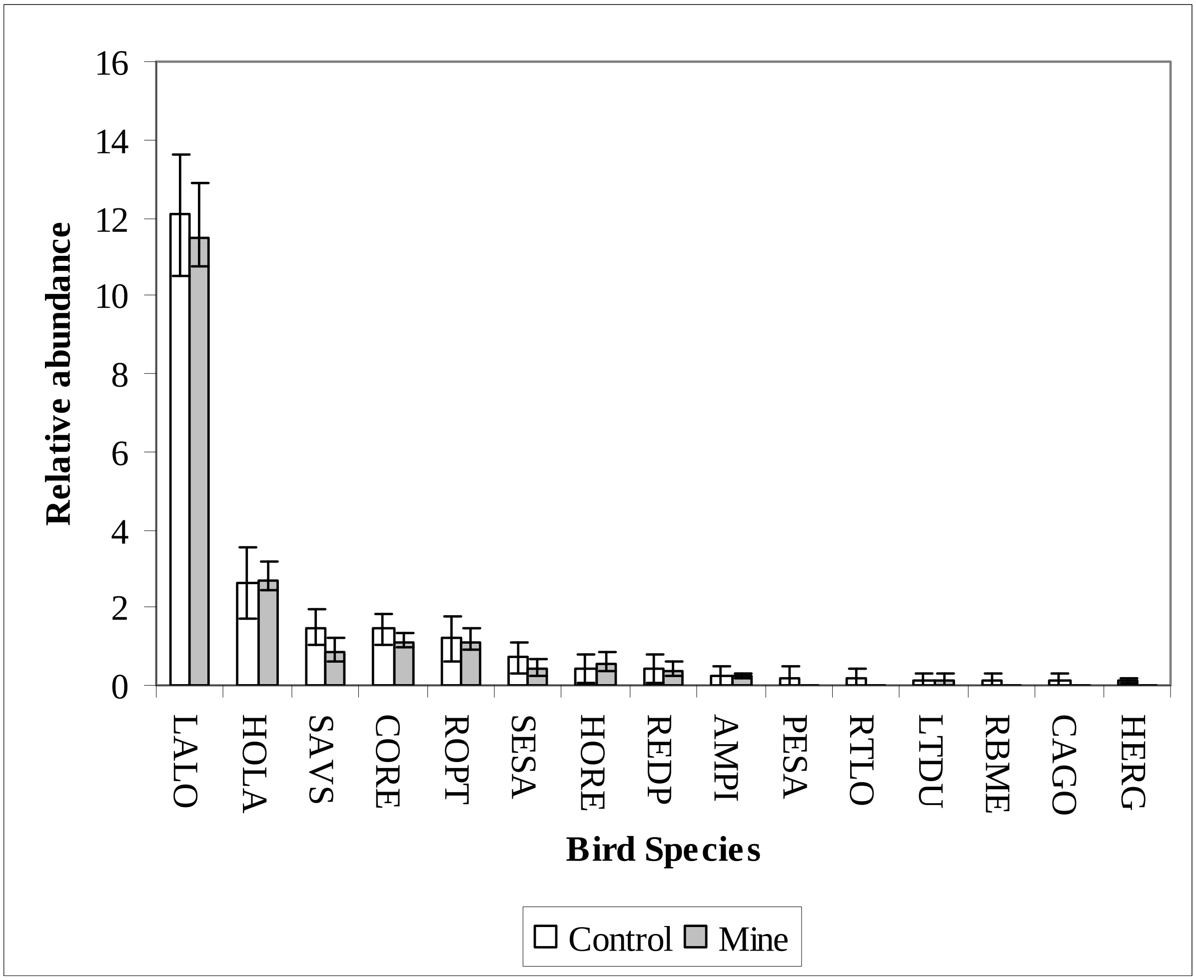
Initial mine site construction was underway at the mine site at the time of the 2008 surveys, which allowed for a preliminary assessment of potential mine-related effects. In previous years, mine site construction had not commenced; therefore, the main objective of historical PRISM plot analyses was 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. Moreover, 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 for baseline community metrics or temporal trends between reference / control and mine areas, with confidence intervals for mean counts per plot overlapping for most species data, thereby validating the use of each area for comparative purposes during mine site construction and operation. Similarly, the comparison of ELC types for PRISM plots suggests roughly equal proportions of ELC classes in reference / control and mine site plots, with the reference / control site plots having slightly higher proportions of Heath-Tundra and mine site plots having slightly higher proportions of Lichen classes.

Additional details pertaining to historical comparative analyses are available in the 2007 Wildlife Monitoring Summary Report (Agnico-Eagle 2007).

4.4.1.1 Species Relative Abundance

Bird species abundance was relatively equal across mine and reference / control site plots with the confidence intervals for mean counts per plot overlapping for most species (Figure 4.30).

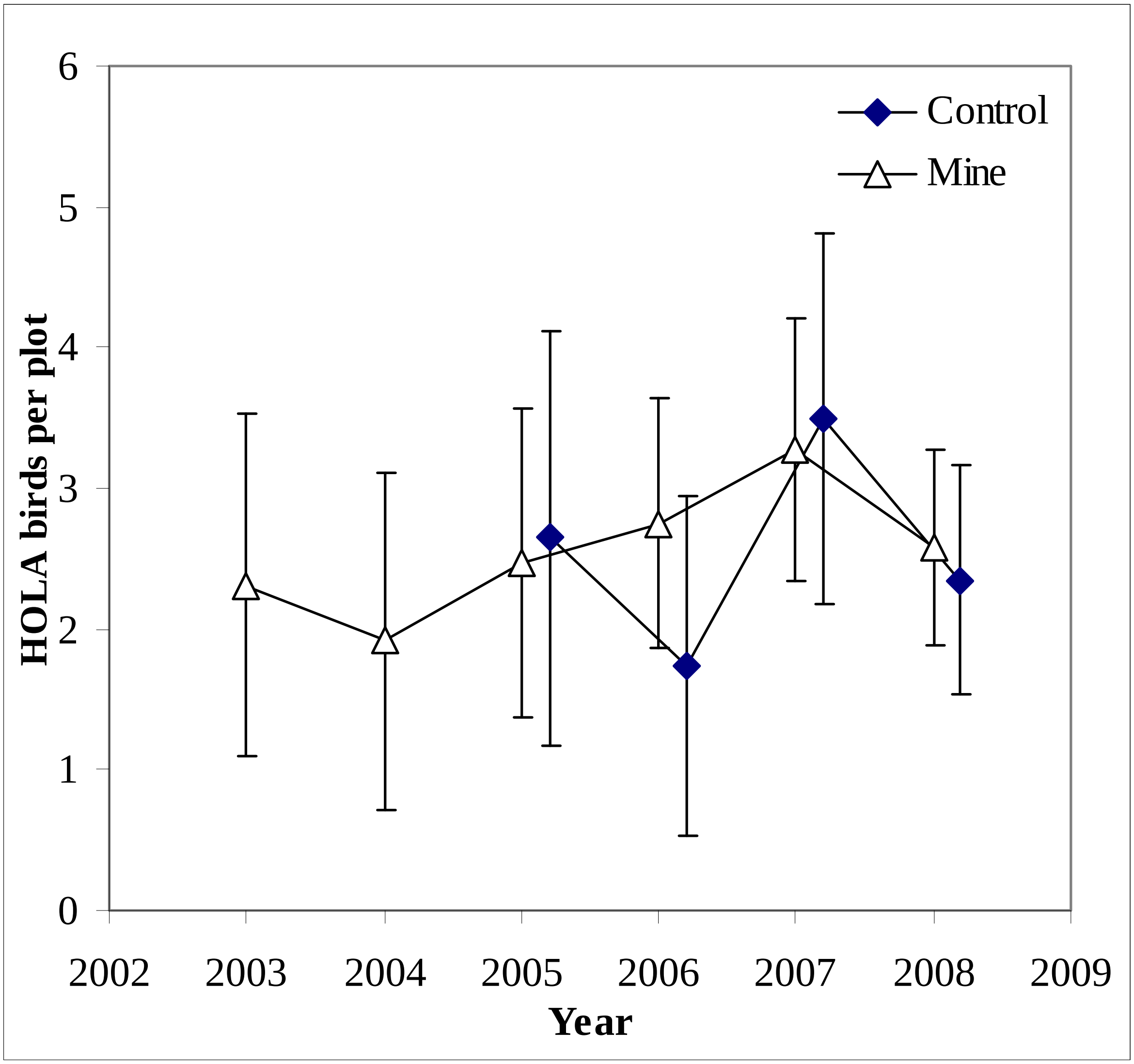
Figure 4.30: Relative Abundance (Mean Birds Counted per Plot) for the 15 Most Common Bird Species. Relative Abundance was Averaged across Years for Estimates. Error Bars are 95% Confidence Intervals.



Lapland Longspur (LALO), Horned Lark (*Eremophila alpestris*; HOLA), Common Redpoll (*Carduelis flammea*; CORE) and Savannah Sparrow (*Passerculus sandwichensis*; SVSP) comprise the most common species.

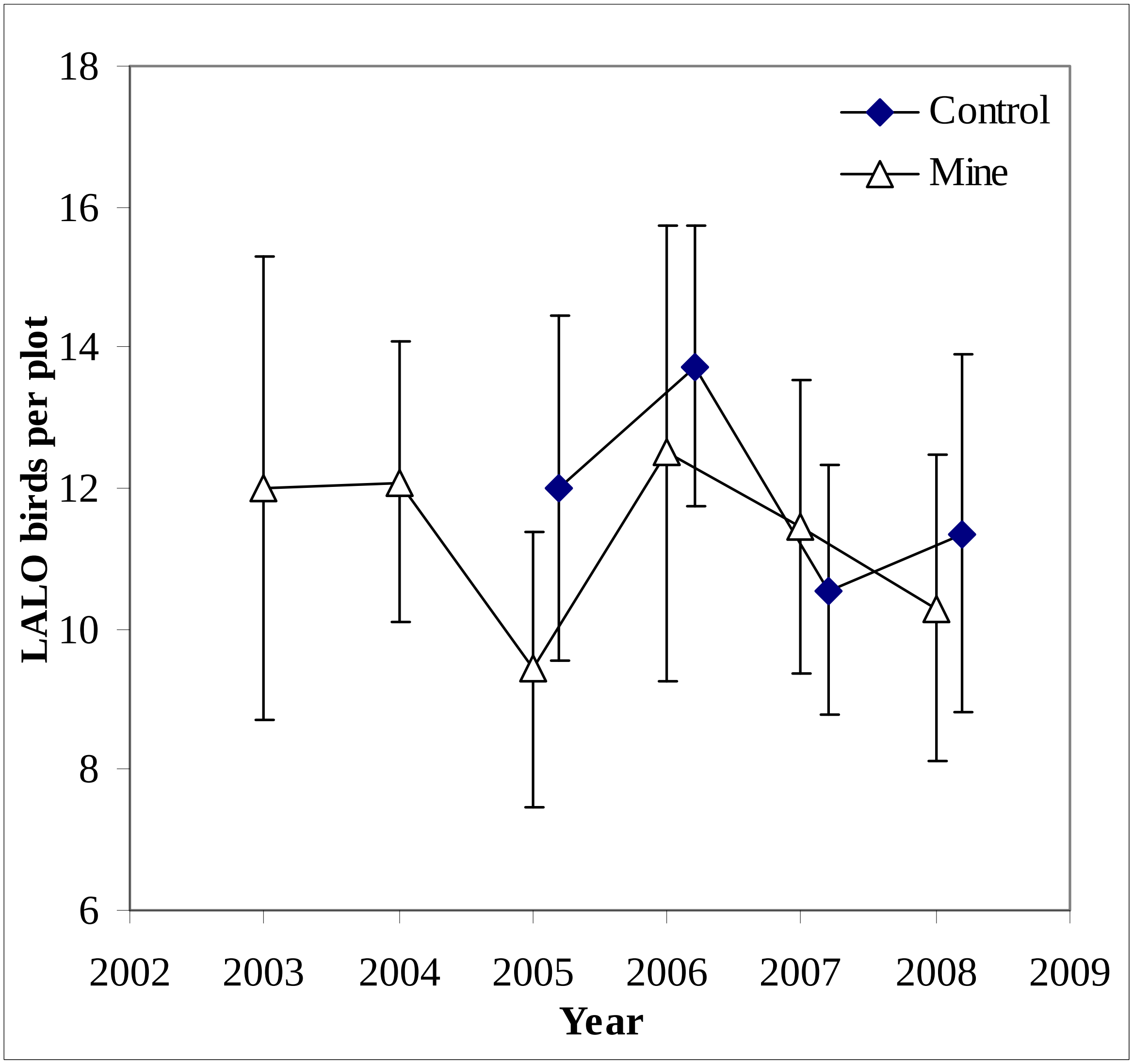
Poisson regression analysis indicated that there was no significant difference between mine and reference / control site plots as well as no significant temporal trends in the abundance of Horned Lark, specific differences (impacts) within mine site plots (in 2008) or effects of the distance of the plot from mine infrastructure construction (at α=0.05) (Figure 4.31). Observation of mean counts suggest reasonable stability in abundance for the mine site plots and a decrease in the reference /control site plots between 2005 and 2006. Estimates were similar between mine and reference / control sites in 2008.

Figure 4.31: Temporal Trends in Relative Abundance (Mean Birds Counted per Plot) of the Horned Lark as a Function of Mine and Reference / Control Site Plots. Error Bars are 95% Confidence Intervals of Mean Estimates.



Poisson regression analysis indicated that there were no temporal trends, or differences in abundance for Lapland Longspurs between mine and reference / control site plots or specific differences (impacts) within mine site plots (in 2008) or effects of the distance of the plot from mine infrastructure construction (at α=0.05) (Figure 4.32).

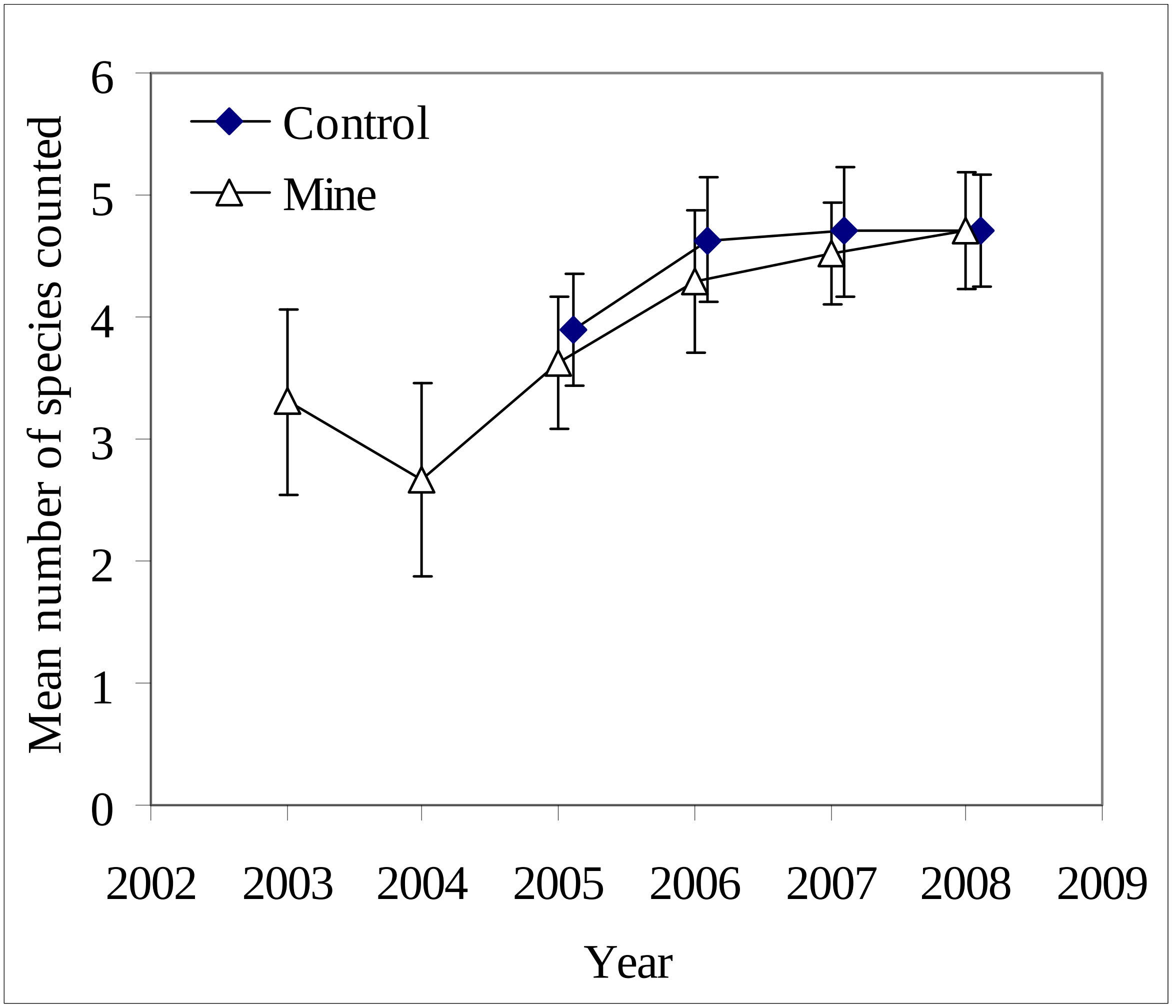
Figure 4.32: Temporal Trends in Relative Abundance (Mean Birds Counted per Plot) of the Lapland Longspur as a Function of Mine and Reference Control Site Plots. Error Bars are 95% Confidence Intervals of Mean Estimates.



4.4.1.2 Species Richness

Species richness (i.e., the mean number of unique species counted at plots) was initially compared graphically (Figure 4.33). Species richness was 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=12.08, df=1, p=0.0005). The effect of location (mine or control) was not significant (χ^2=1.48, df=1, p=0.02233) nor was the effect of distance from construction on mine site plots (χ^2=3.59, df=2, p=0.165).

Figure 4.33: Species Richness (the Mean Number of Species Counted at Plots) as a Function of Year of Survey and Plot Location.



4.4.1.3 Species Richness Demographics

The Pradel model analysis suggested that the fidelity (θ) of species and the rate of documenting new species varied from 2005 to 2008. Fidelity is the probability that a bird species observed within a plot one year would be present the next year. A model that had a different rate of new species for the mine and reference / control site plots in the 2007 to 2008 interval was also supported (Table 4.10).

Table 4.10: Pradel Model Species Demographics Model Selection Results. Sample Size Adjusted Akaike Information Criterion (AICc), the Difference in AICc between the Most Supported Model for Each Model (ΔAICc), AICc Weight (wi), Number of Model Parameters (K) and Deviance is Provided.

Model	AICc	ΔAICc	wi	K	Deviance
θ (year) p(.) f(year)	212.0	0.00	0.26	7	42.5
θ (year) p(.) f(year+m/c08)	212.4	0.42	0.21	8	40.5
θ (year) p(.) f(+m/c08)	213.0	0.99	0.16	6	45.8
θ (year+m/c08) p(.) f(year)	213.5	1.53	0.12	3	53.1
θ (year+m/c08) p(.) f(year+m/c08)	214.3	2.31	0.08	8	42.4
θ (.) p(.) f(.)	214.8	2.74	0.07	7	45.2
θ (.) p(.) f(year+m/c08)	214.8	2.80	0.07	9	40.5
θ (year) p(year) f(year)	218.0	5.95	0.01	6	50.8
θ (g) p(g) f(g)	219.2	7.20	0.01	10	42.4
θ (g*year) p(.) f(g*year)	223.6	11.59	0.00	13	38.9
θ (g*year) p(g*year) f(g*year)	243.1	31.14	0.00	20	37.6

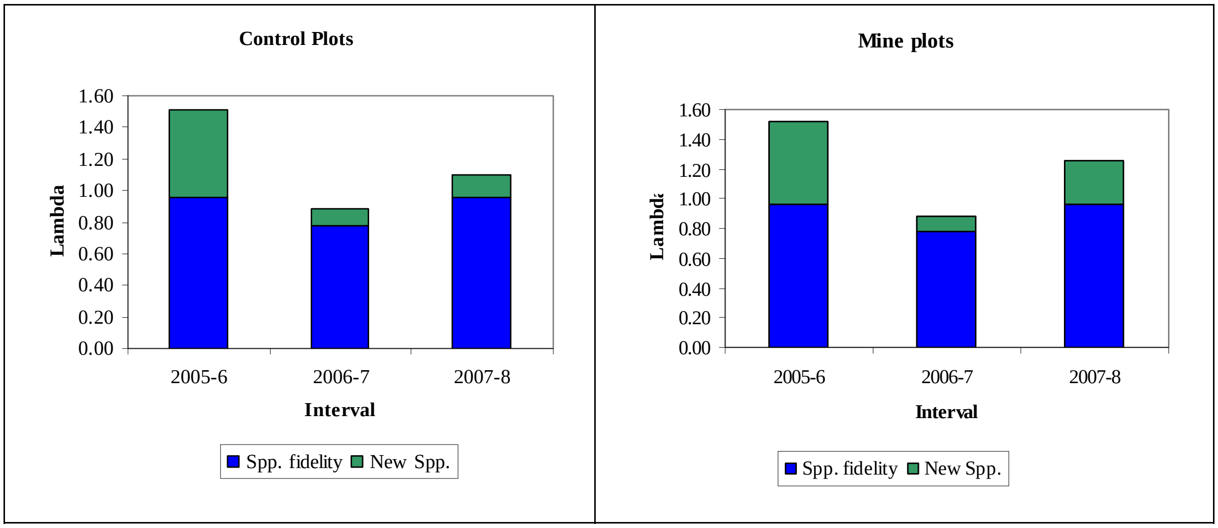
Inspection of model averaged estimates suggests that rates of fidelity were similar for mine and reference / control site plots for all intervals. However, the rate of new species was slightly higher for the mine site plots in the 2007 to 2008 interval (Table 4.11).

Table 4.11: Model Averaged Parameter Estimates from the Pradel Model

Parameter	Area	Interval	Estimate	SE	LCI	UCI
Fidelity (θ)	Control	2005-6	0.96	0.08	0.28	1.00
		2006-7	0.78	0.10	0.53	0.92
		2007-8	0.96	5.34	0.00	1.00
New spp. (f)	Control	2005-6	0.56	9.57	0.00	1.00
		2006-7	0.10	0.10	0.01	0.50
		2007-8	0.14	1.20	0.00	1.00
Fidelity (θ)	Mine	2005-6	0.96	0.08	0.28	1.00
		2006-7	0.78	0.10	0.52	0.92
		2007-8	0.96	5.34	0.00	1.00
New spp. (f)	Mine	2005-6	0.56	9.57	0.00	1.00
		2006-7	0.10	0.10	0.01	0.50
		2007-8	0.30	1.21	0.00	1.00

Fidelity and rate of additions can be added to get the overall rate of change in species richness (λ). A λ of 1 implies constant species richness whereas $\lambda<1$ implies a decrease and $\lambda>1$ implies an increase. Species richness increased in the 2005 to 2006 and 2007 to 2008 intervals and was roughly constant between 2005 and 2007. In addition, the fidelity of species was the dominant factor in maintaining species richness compared to rates of new species introductions within a given area (Figure 4.34).

Figure 4.34: Model Averaged Estimates of Overall Change in Species Richness (the Mean Number of Species Counted at Plots) from Pradel Model Analysis.



Inspection of the raw data revealed that American Robin (*Turdus migratorius*; AMRO), Canada Goose (CAGO), Least Sandpiper (*Calidris minutilla*; LESA), Sandhill Crane (SACR) and an unidentified shorebird (SHOR) appeared for the first time in the mine site plots in 2008 whereas American Golden Plover (*Pluvialis dominica*; AGPL) appeared for the first time in reference / control sites plots in 2008. Of the new species that appeared in mine site plots in 2008, CAGO was also identified in reference / control site plots in 2005 (Table 4.12). The larger number of new species in the mine area plots contributed to the higher new species estimates for mine plots in 2008, but should be interpreted cautiously, given that the shorebird could not be identified.

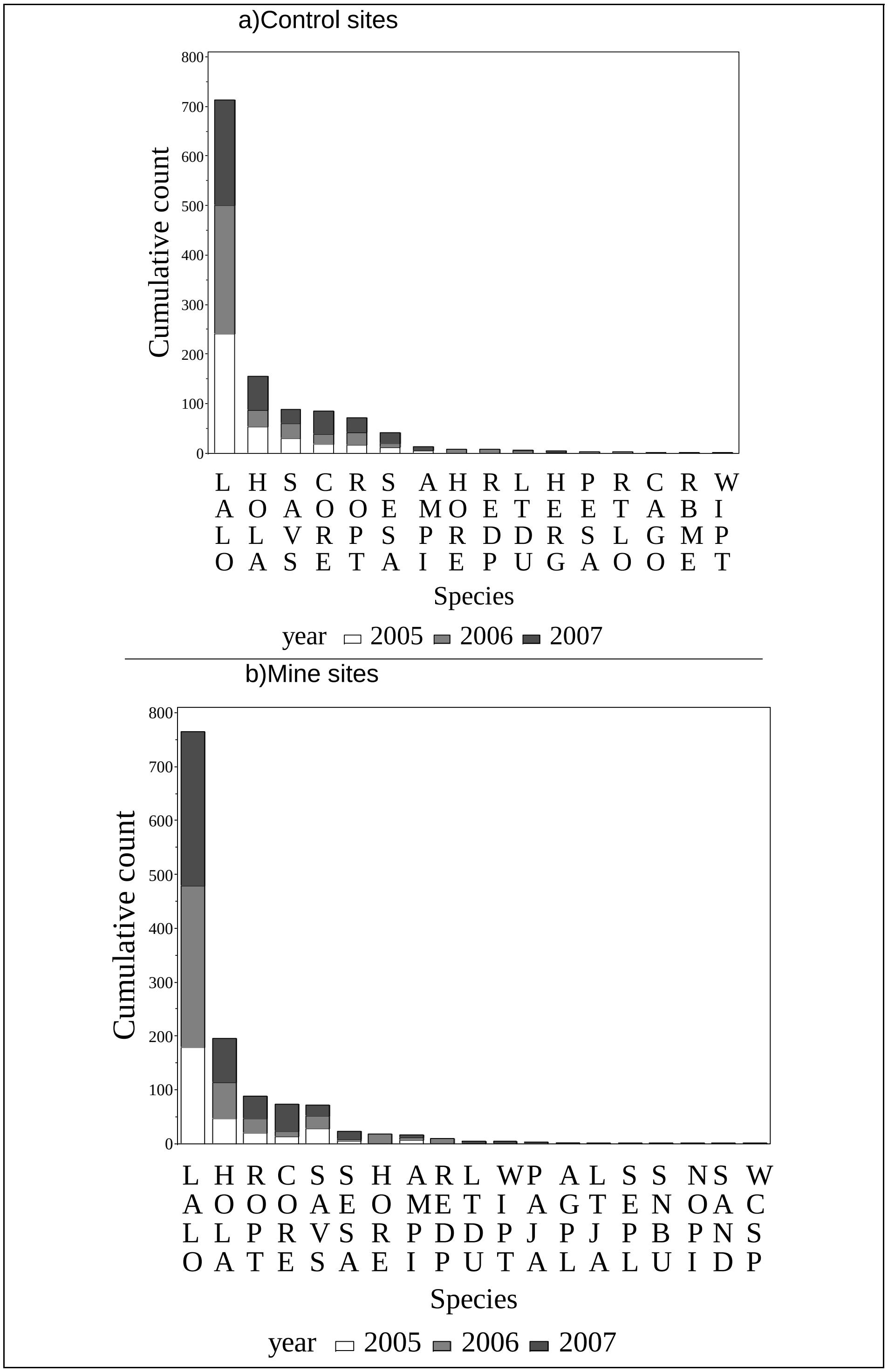
Table 4.12: New Species Identified in Reference / Control and Mine Site Plots for Each Year Surveyed. A Species in Italics was Uniquely Identified in Reference / Control or Mine Site Plots Only.

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

4.4.1.4 Species Diversity

Overall species diversity was compared graphically for plots sampled in 2005, 2006 and 2007 (pre-construction period). A more diverse community should have a more even distribution of species. Figure 4.35 illustrates that both mine and control sites were heavily dominated by Lapland Longspur (LOLA), Horned Lark (HOLA), Savannah Sparrow (SAVS), Common Redpoll (CORE) and Rock Ptarmigan (*Lagopus mutus*; ROPT). Most other species were only occasionally sighted on plots.

Figure 4.35: Cumulative Counts of Species for Control / Reference and Mine Site Plots for Surveys Conducted in 2005, 2006 and 2007 (Pre-construction Period).



The Shannon N1 species diversity and evenness indices were used to compare species diversity trends across years for mine and reference / control site plots. Results suggested that species diversity and evenness were equal for mine and reference / control site plots in all years (inclusive of 2008) (Figures 4.36 and 4.37, respectively) as indicated by overlap of confidence intervals. Species diversity has continued to increase for both mine and reference / control site plots throughout the study (i.e., since 2003). Species evenness was higher in 2004; however, a large degree of variance around estimates makes interpretation difficult. Species diversity was slightly higher in 2008 in mine site plots; however, the estimate was not significantly different than reference / control site plots as indicated by overlap of confidence intervals of estimates. Additional years of data will serve to establish trends, if any.

Figure 4.36: Species Diversity Scores for Mine and Reference / 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.

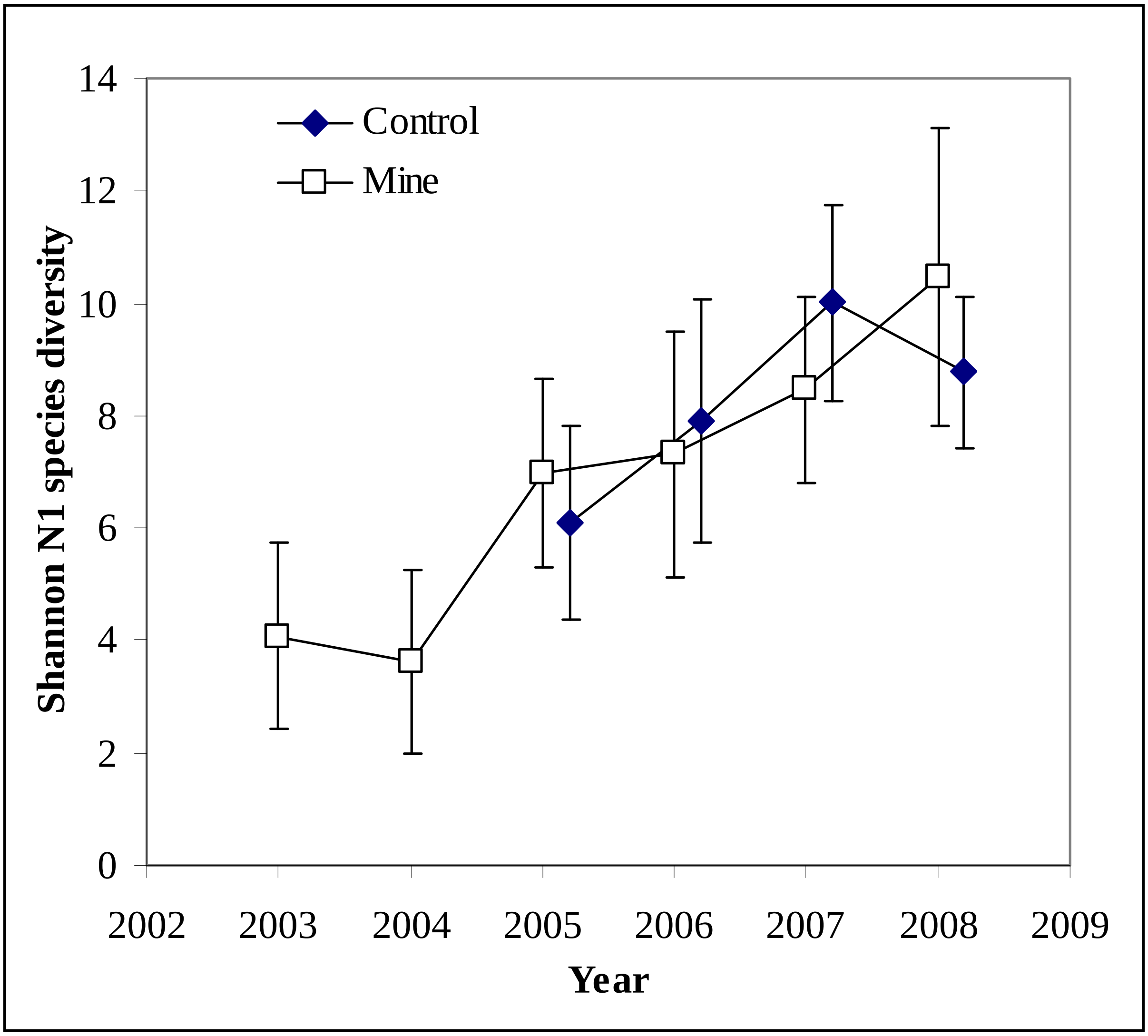
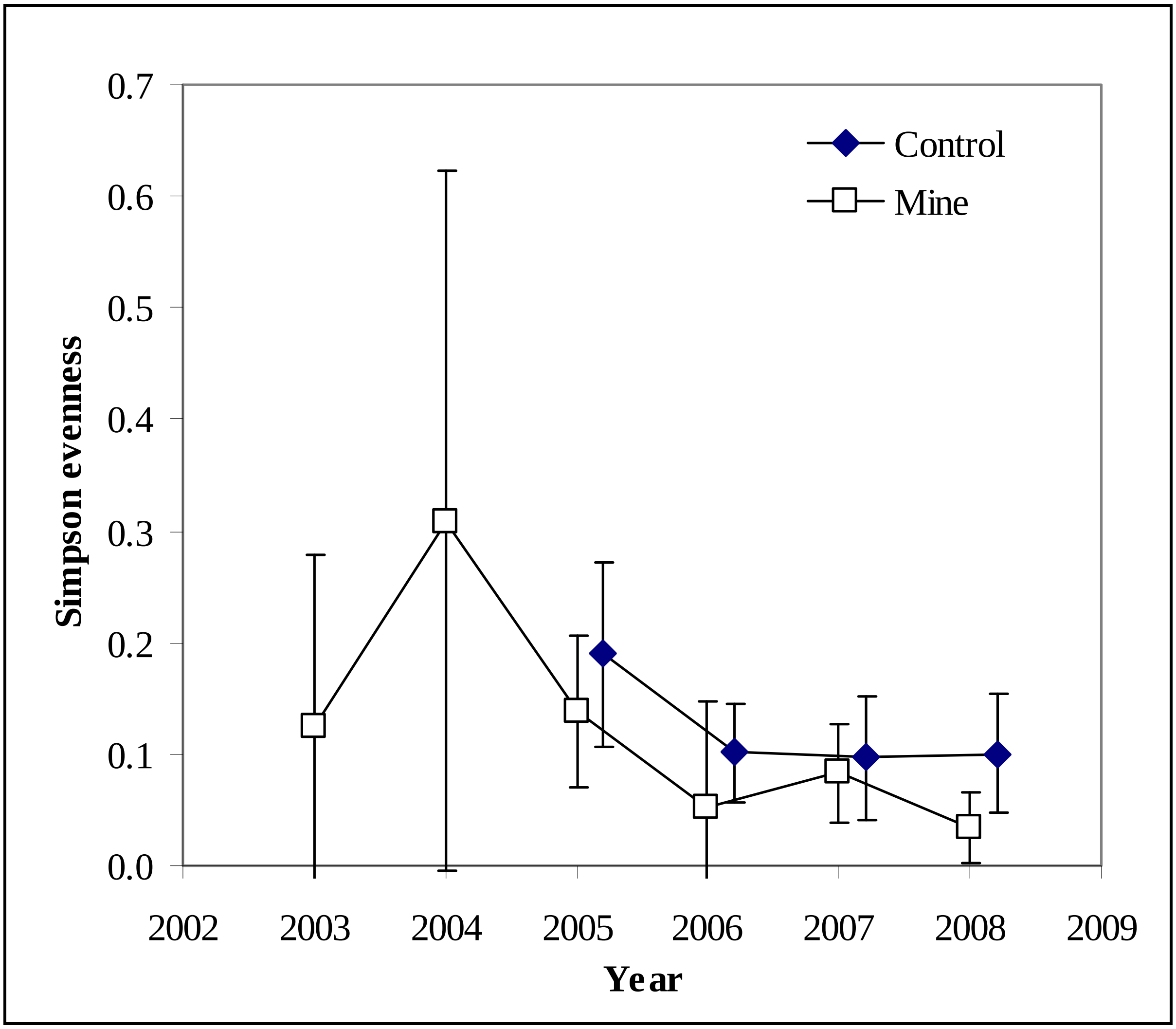
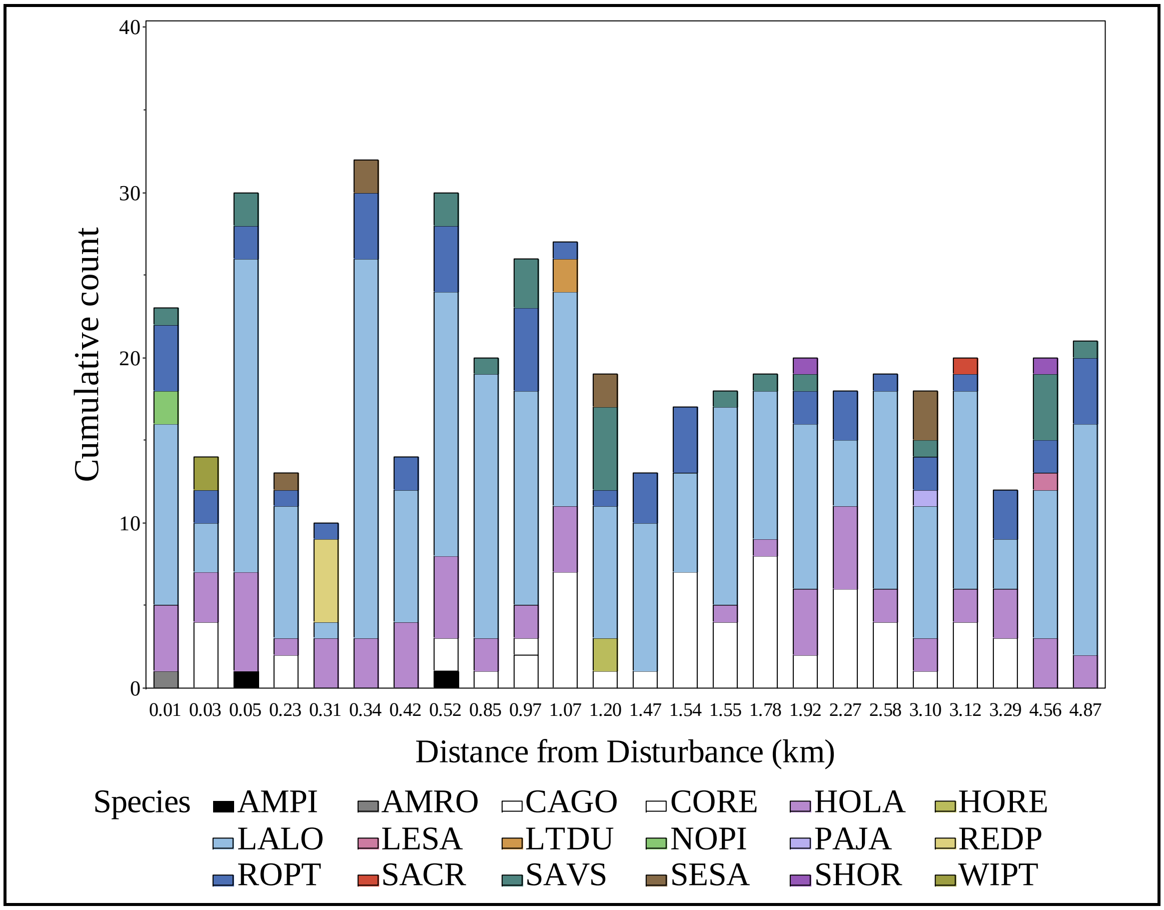


Figure 4.37: Species Evenness Scores for Mine and Control Sites as a Function of Year Surveyed.



Species diversity was analyzed for mine site plots in 2008 to assess whether distance from construction affected species diversity. No significant effects of distance from construction were detected (at α=0.05). A graphical representation of the data (Figure 4.38) suggests a large degree of variance in both species sighted and species relative abundance as a function of distance from construction. Therefore, the power to detect mine-related effects was presumably low and will require additional years of data to ascertain potential mine-related effects, if any.

Figure 4.38: Species Diversity of Mine Plots for 2008 as a Function of Distance from Disturbance. Each Bar Represents Data from One Plot. The Length of Each Sub-group Bar Indicates the Number of Each Species Sighted.



4.4.2 Potential Project-Related Variation

Potential project-related activities were factored into analyses comparing mine and reference / control plot sites in terms of community metrics for the first time in 2008. Based on available data to date, no adverse changes in community metrics were identified as a result of project-related activities. Specifically, of the most commonly observed species (i.e., those species with sufficient data to compare statistically with relative certainty) temporal species abundance was relatively equal between mine and reference / control site plots. Similarly, species richness and species diversity were synonymous between mine and reference control site plots. The effect of location or distance from construction was not significant. A large degree of variance in species evenness and species diversity analyses may be masking potential effects, requiring additional years of data to identify variation as a result of project-related activities. Notably, historical analyses have indicated that ELC land classifications are statistically indifferent; therefore, any variation identified in subsequent years is not anticipated to be the result of marginal habitat variation between sites.

4.5 BREEDING BIRD TRANSECTS

4.5.1 Summary of Data to Date

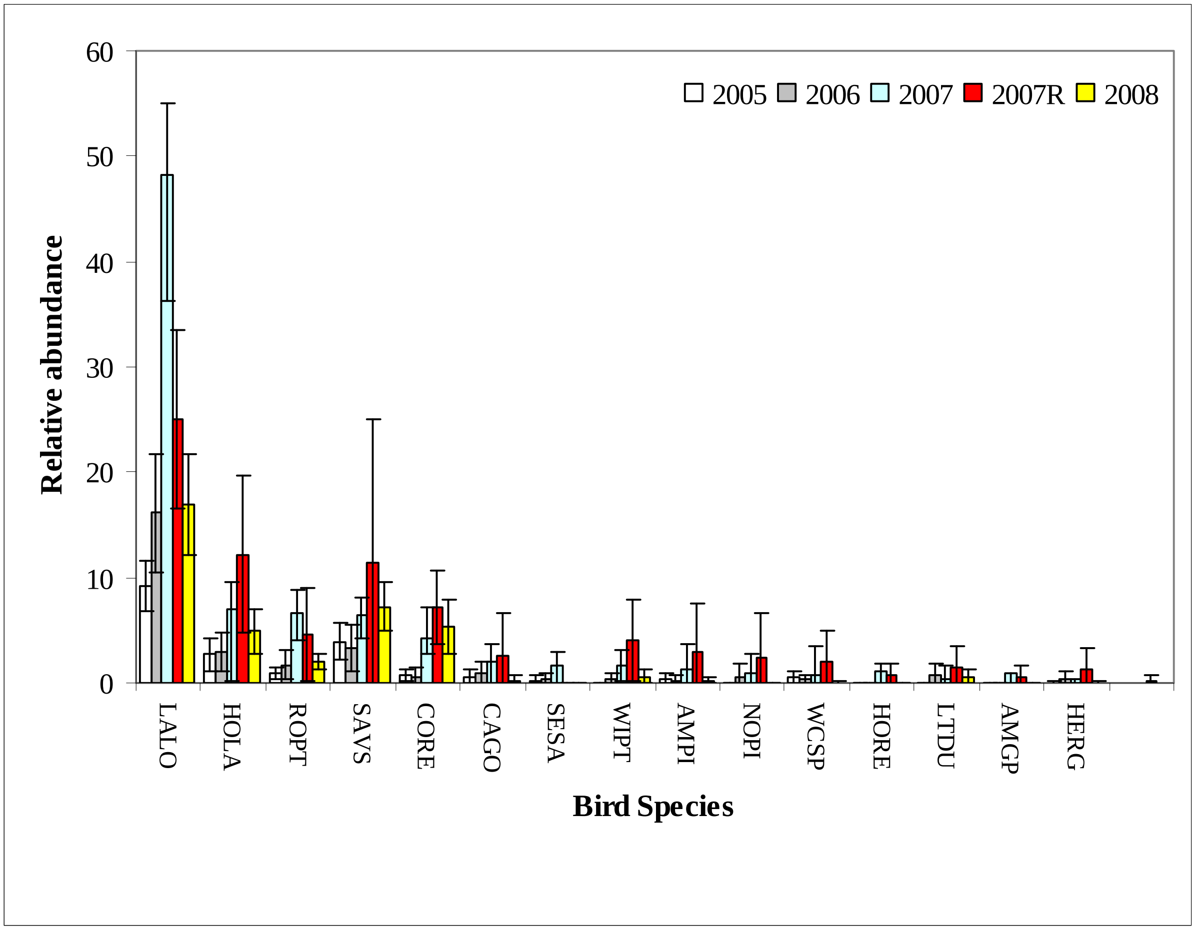
Breeding bird transects were conducted in 2005 and 2006 prior to mine site and AWPAR construction. In 2007, the AWPAR had been constructed in 5 of 12 transects (transects 1 to 5) prior to the surveys, which were conducted between 17 June 2007 and 2 July 2007. In 2008, the AWPAR had been completed prior to the surveys (22 June 2008 to 6 July 2008). Surveys are scheduled to continue on an annual basis during the principal mine site construction period (2009) and at least the first three years of the operation period (2010 to 2012). Between 2005 and 2007, the three most common species were Lapland Longspur, Savannah Sparrow, and Horned Lark. In 2008, the three most common species were Lapland Longspur (230 individuals), Common Redpoll (107 individuals) and Savannah Sparrow (94 individuals). Seventy-one (71) Horned Lark were also observed. Remaining species have been observed at relatively low frequencies.

4.5.2 Analysis of Natural Variation

4.5.2.1 Species Relative Abundance

Species relative abundance was higher in 2007 compared to 2005, 2006 and 2008 for many species (Figure 4.39). Survey effort and timing of the survey are factors in establishing species abundance indices. For instance, fewer numbers of Lapland Longspur, which arrive early to breeding grounds, were observed in 2005 when surveys were conducted later in the season. Similarly, higher numbers of Savannah Sparrow, which arrives later within the study area, were observed on the later surveys in 2005.

Figure 4.39: 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.

The estimated relative abundance of birds is a function of the true number of birds in the transect area and the sightability of birds. Surveys between 2006 and 2008 occurred during the breeding season when birds were calling and singing and therefore more readily identified. In addition, it is possible that the presence of the road in a portion of the transects in 2007 increased sightability of some species (discussed in additional detail in Section 4.5.3). Sightability can be compared for each year through histograms of observations as a function of distance from the transect center line (Figure 4.40). For example, the majority of observations of Lapland Longspur observations in 2005 occurred within 50 meters of the center line. In contrast, a higher proportion of observations occurred beyond this distance in 2006 and 2007. In 2008, a higher proportion of sightings were further from the transect line center further suggesting that the road and resulting edge effect may have increased sightability. As discussed later, distance methods (Buckland et al. 1993; Buckland et al. 2004) allow estimation of sightability based upon the distribution of observations from the center line. These methods will be pursued in future years to provide more robust measures of abundance.

Figure 4.40: Frequencies of Observations of Lapland Longspur as a Function of Distance (in metres). from the Transect Center Line for Each Year Surveyed.

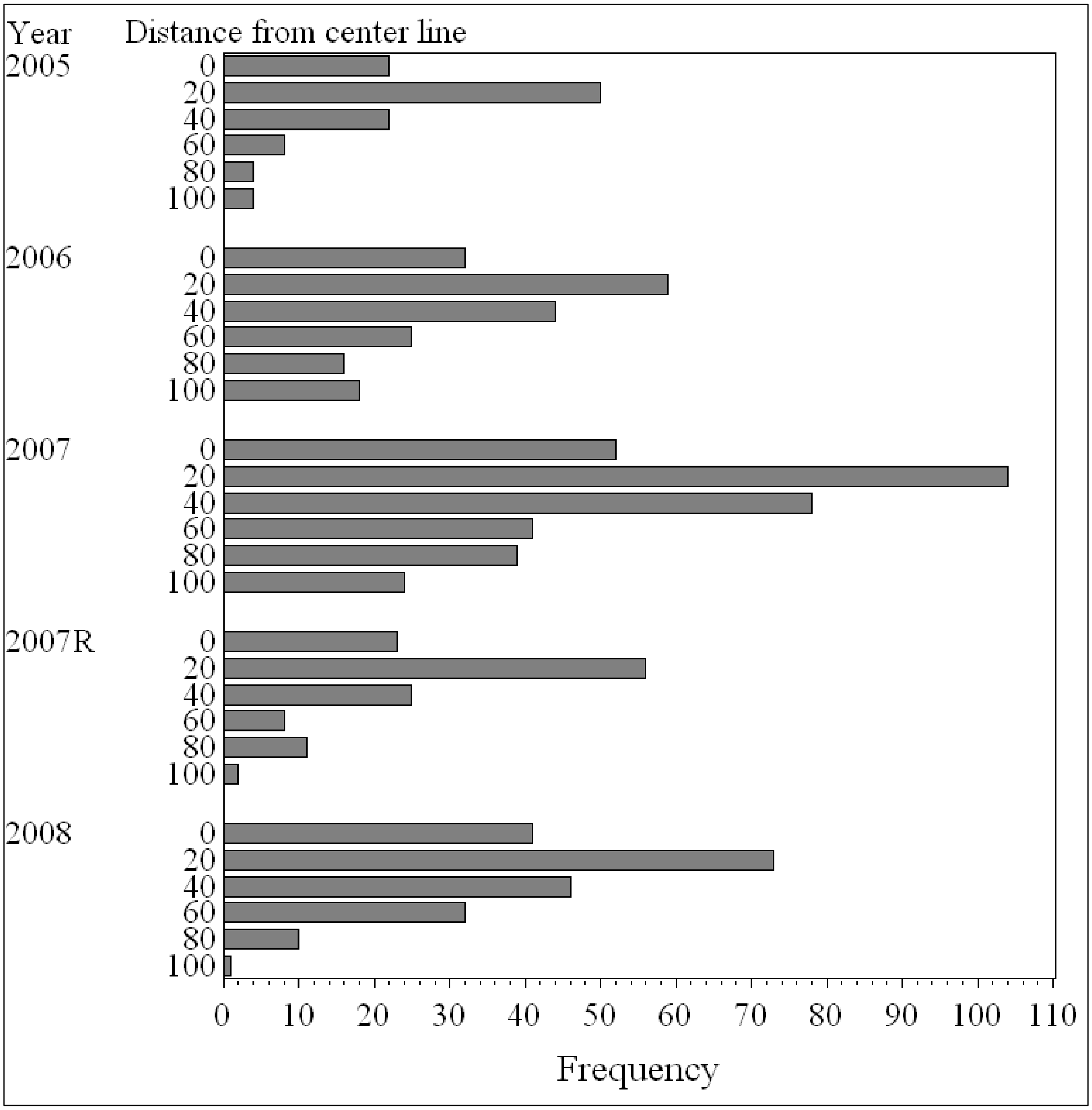


Table 4.13 summarizes species relative abundance. It is also useful for interpretation of species richness.

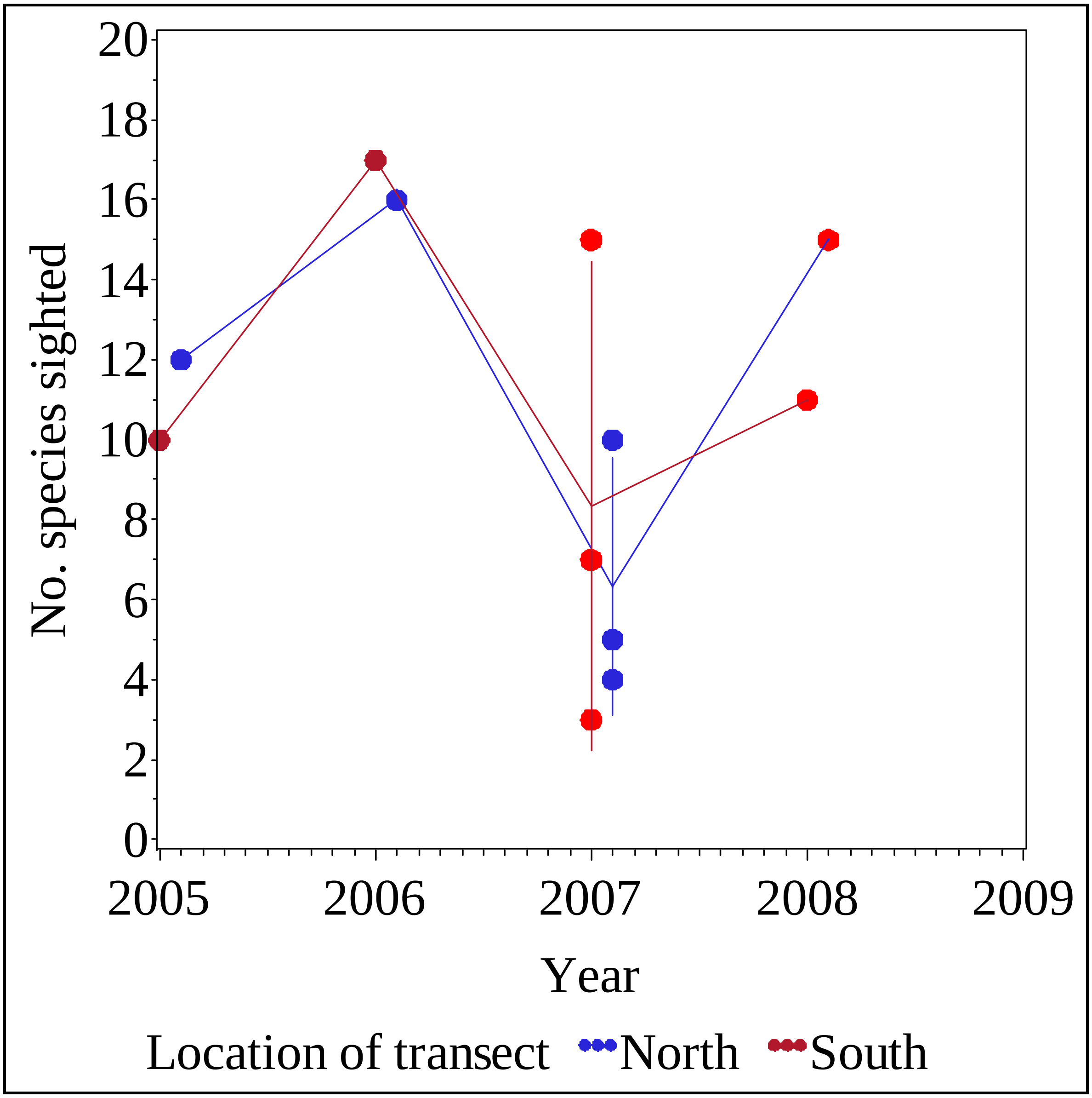
Table 4.13: Mean Species Relative Abundances (Mean Birds Counted per Transect) and Species Detections per Transect per Year.

Species Species	Mean Relative Abundance					Detections			
	2008 Mean	2007R Mean	2007 Mean	2006 Mean	2005 Mean	2008	2007	2006	2005
AGPL	0.0	0.0	0.0	0.1	0.1	0	0	1	1
AMGP	0.0	0.2	1.0	0.0	0.0	0	1	0	0
AMPI	0.3	0.8	1.3	0.3	0.3	1	1	1	1
CAGO	0.3	11.4	2.0	1.0	0.5	1	1	1	1
CKGO	0.0	0.0	0.0	0.2	0.0	0	0	1	0
CORE	5.3	7.2	4.3	0.6	0.7	1	1	1	1
DUNL	0.0	0.2	0.1	0.0	0.0	0	1	0	0
GRSC	0.0	0.8	0.0	0.0	0.0	0	0	0	0
GWFG	0.5	0.8	0.0	0.0	0.0	1	0	0	0
HERG	0.1	1.2	0.4	0.4	0.1	1	1	1	1
HOLA	4.9	4.6	7.0	2.9	2.7	1	1	1	1
HORE	0.0	0.0	1.1	0.0	0.0	0	1	0	0
LALO	16.9	25.0	48.3	16.2	9.3	1	1	1	1
LTDU	0.6	1.4	0.3	0.8	0.0	1	1	1	0
LTJA	0.0	0.0	0.6	0.0	0.0	0	1	0	0
NOPI	0.0	0.6	1.0	0.6	0.0	0	1	1	0
PAJA	0.1	0.2	0.0	0.0	0.0	1	0	0	0
PASS	0.0	0.4	0.1	0.1	0.0	0	1	1	0
PESA	0.0	0.8	0.0	0.2	0.0	0	0	1	0
REDP	0.1	0.2	0.0	0.1	0.0	1	0	1	0
RLHA	0.0	0.0	0.0	0.1	0.0	0	0	1	0
ROPT	2.0	2.6	6.6	1.7	0.9	1	1	1	1
RTLO	0.0	0.2	0.0	0.0	0.0	0	0	0	0
SACR	0.3	2.0	0.3	0.3	0.3	1	1	1	1
SAND	0.0	0.0	0.0	0.1	0.0	0	0	1	0
SAVS	7.3	12.2	6.4	3.3	3.9	1	1	1	1
SESA	0.0	0.0	0.0	0.1	0.0	0	0	1	0
SESA	0.6	3.0	1.6	0.4	0.3	1	1	1	1
SNBU	0.1	0.2	0.0	0.0	0.0	1	0	0	0
SNGO	0.0	34.4	0.0	0.0	0.0	0	0	0	0
TUSW	0.0	0.0	0.0	0.0	0.1	0	0	0	1
WCSP	0.1	4.0	0.7	0.3	0.5	1	1	1	1
WIPT	0.6	2.4	1.6	0.3	0.0	1	1	1	0
WRSA	0.0	0.2	0.0	0.0	0.0	0	0	0	0

4.5.2.2 Species Richness

In general, species richness increased from 2005 to 2006 then decreased in 2007 and increased in 2008 (Table 4.13 and Figure 4.41). The south transects were roaded in 2007 and all transects were roaded in 2008 (as denoted by a red dot in Figure 4.41). Three replicate transects were conducted in 2007; therefore, each transect result is denoted by a separate dot while the line indicates the mean value. Supported models suggest that species detection (p) (i.e., the probability of sighting a species given that it is present) was highest in 2007 (not shown), presumably due to the higher effort during this year.

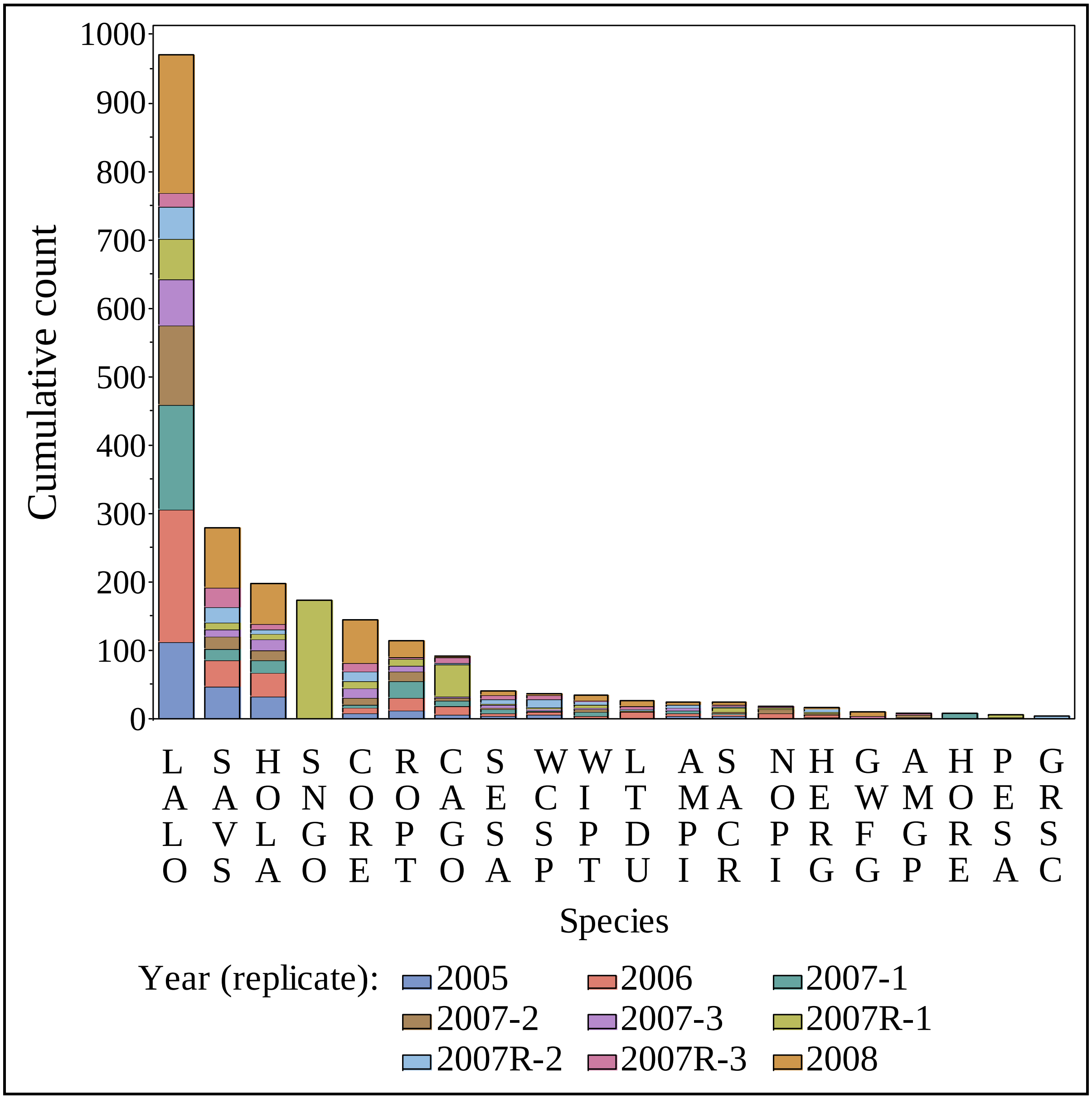
Figure 4.41: Species Richness (Number of Species Sighted) for North (6 to 12) and South (1 to 5) Transects as a Function of Year.



4.5.2.3 Species Diversity

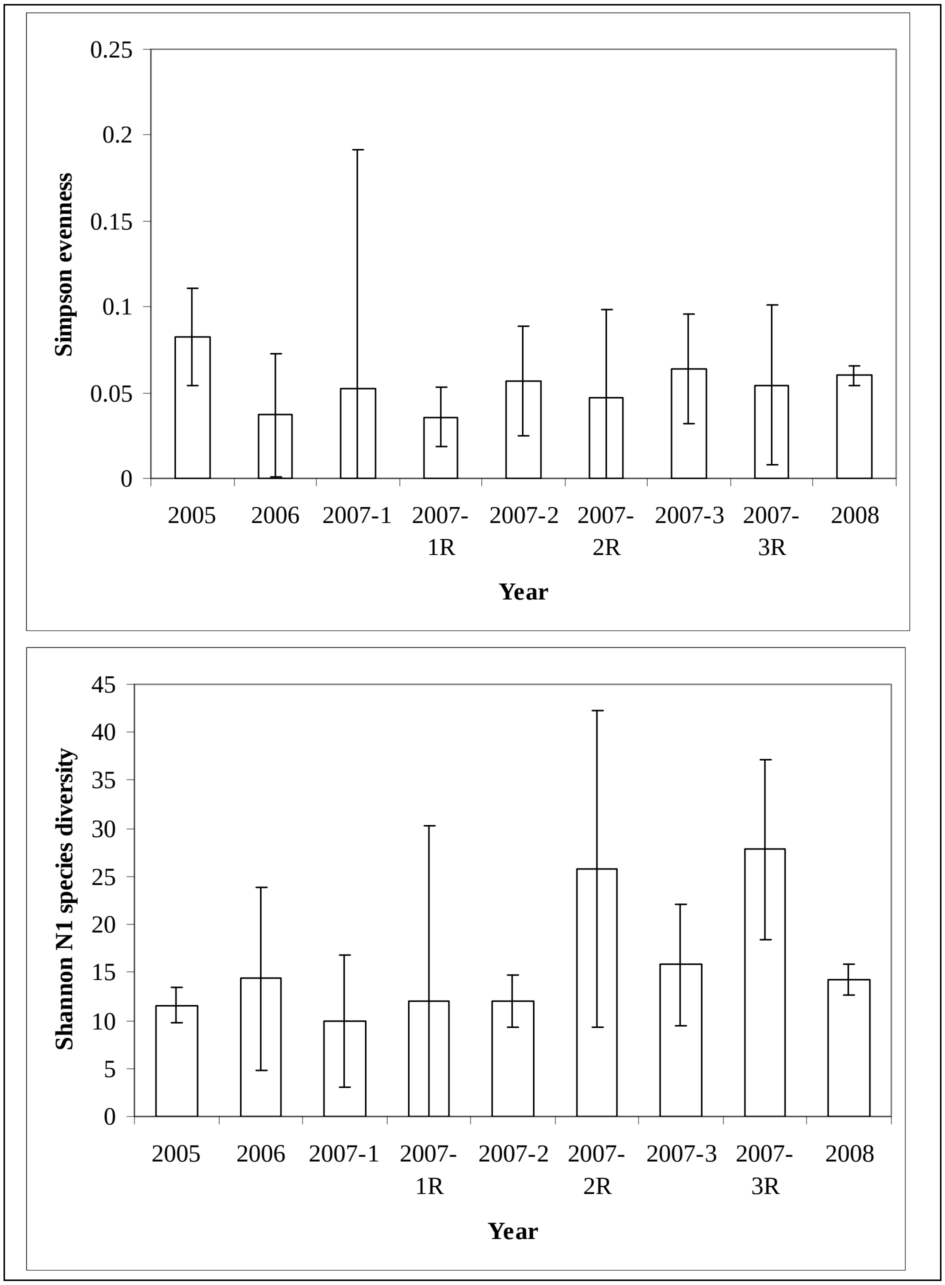
Overall species diversity was compared graphically for transects sampled in 2005 to 2008. Figure 4.42 indicates that transects were dominated by relatively few species with many species only being seen occasionally. Each replicate conducted in 2007 for roaded and non-roaded transects was summarized separately so that the sample units were equivalent for each year.

Figure 4.42: Cumulative Counts of Species for Transects Surveyed from 2005 to 2008. Three Surveys were Conducted in 2007. Transects 1-5 in which the Road had been Constructed Prior to Surveys are Denoted by 2007R. The list of Species Shown is Restricted to the 20 Most Abundant Species



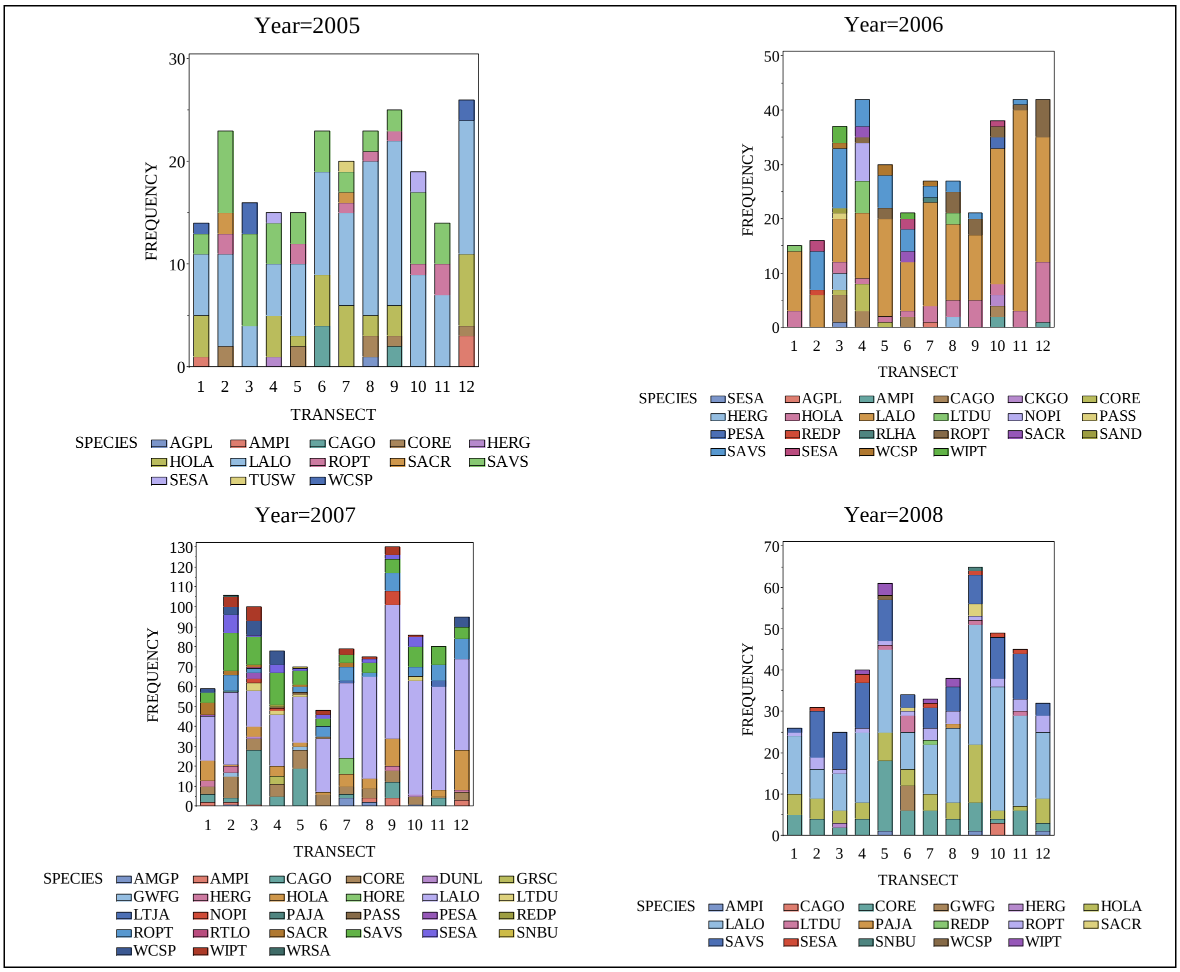
Shannon N1 species diversity indices were greater for 2007; however, there was a large degree of variance in estimates suggesting that the precision of estimates was low. An initial comparison of replicates in 2007 for roaded and non-roaded transects suggest that species diversity may be higher in roaded transects especially in later replicates (refer to Figure 4.43), necessitating further analyses to validate this result.

Figure 4.43: Species Diversity and Evenness Scores for Bird Transects 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



Further inspection of transect-specific diversity data suggests a reasonable degree of variance in the total number of birds observed as well as the number of species seen on transects in 2006 compared to 2005 (Figure 4.44). For example, the total number of birds seen per transect in 2005 varied from 15 to 25 whereas the total number of birds seen per transect in 2006 varied from 15 to 50. This resulted in larger variances for species diversity indices in 2006. Interestingly, the higher number of species sighted in 2007 is partially attributed to roaded transects (1-5) compared to non-roaded transects (6-12). In contrast, the overall number of species sighted is less in the 2008 transects which was probably due to reduced survey effort (compared to 2007).

Figure 4.44: Histogram of the Number and Species of Bird Observed per Transect in 2005 through to 2008. Three Replicate Surveys were Conducted per Transect in 2007 and therefore the Frequency of Birds Counted is Higher than in 2005 and 2006 where only 1 Replicate was Conducted. Transects 1-5 were Roaded in 2007 and All Transects were Roaded in 2008.



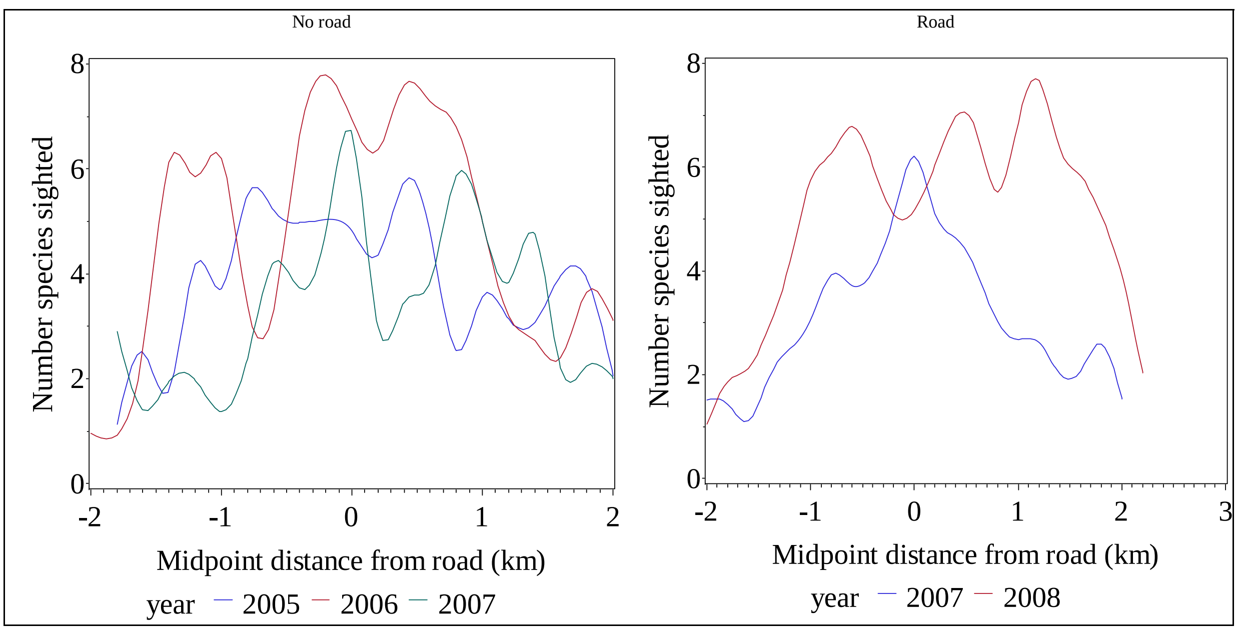
4.5.3 Potential Project-Related Variation

4.5.3.1 The Effect of Roads on Species Richness and Diversity

Plots of species richness and diversity index suggests that both indices were highest closest to the road for roaded transects compared to non-roaded transects in 2007; however, this effect was not detected statistically in 2008 (Figure 4.45). Non-roaded transects should be considered a control given that no road was constructed when surveys were conducted on these transects. Snow Goose were excluded from this analysis. A spline smoothing function (tension value=35) was used to smooth the data. Similarity between indices suggests that species richness was the main factor influencing species diversity (as opposed to species relative abundance). In this case, the non-roaded transects should be treated as a "control" group. For example, it is possible that the majority of species might be sighted towards the center of the transect since this area may be surveyed more intensively than peripheral areas thereby causing species diversity to be highest in the center. However, this effect should be equal for road and non-road transects across years. Sightability may also be higher closer to the road which could explain the peak in indices in 2007. However, presumably this effect would have also occurred in 2008.

Further analysis of this data was conducted using the Pradel model in mark to assess the demography of species diversity for roaded and non-roaded areas, as the main question was whether the presence of the roads in south transects in 2007 and all transects in 2008 affected demographics. Model selection results suggested that the rate of new species utilizing transects areas as well as the overall sightability of species was influenced by roads (Table 4.14).

Figure 4.45: The Relationship of Species Richness (Number of Species Sighted) and Shannon-Weiner Species Diversity and Midpoint Distance from Road for Bird Transect Surveys Conducted in 2007 in Roaded and Non-roaded Transects.



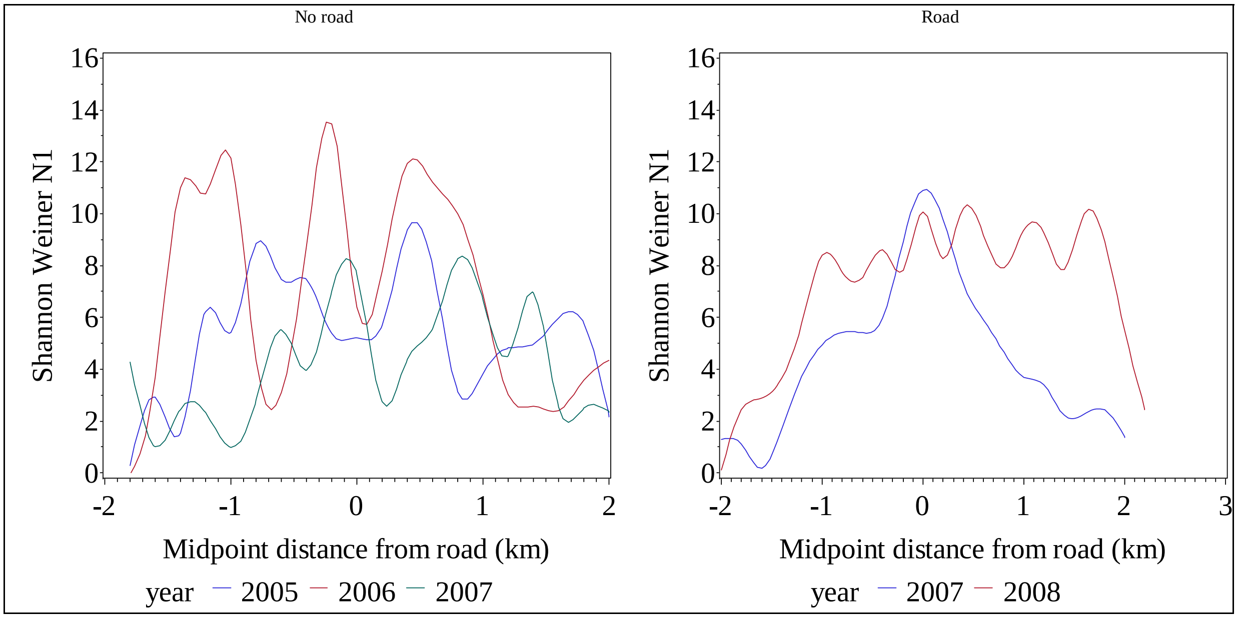
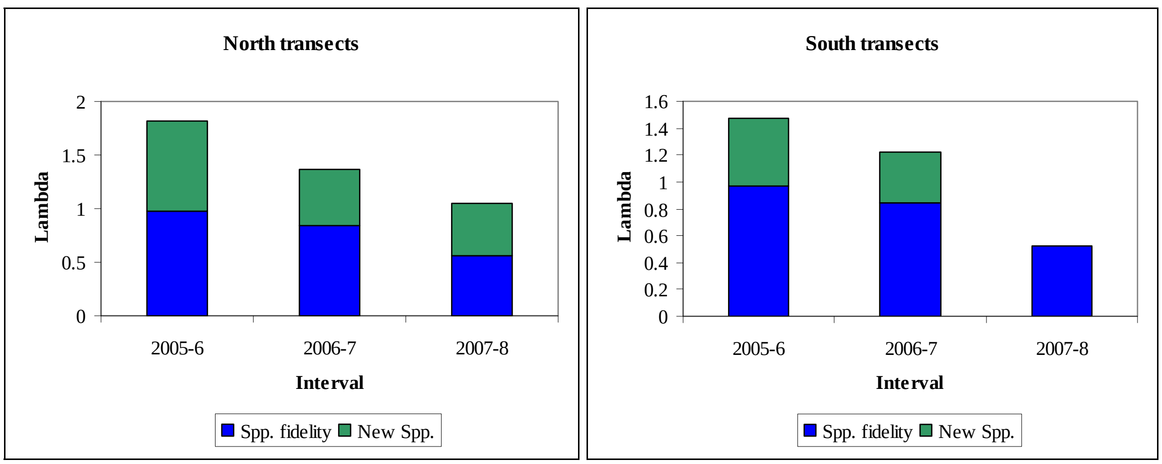


Table 4.14: Pradel Model Selection Results. Sample Size Adjusted Akaike Information Criterion (AICc), the Difference in AICc between the most Supported Model for Each Model (ΔAICc), AICc Weight (wi), Number of Model Parameters (K) and Deviance is Provided.

Model	AICc	ΔAICc	wi	K	Deviance
θ(t) p(rd07) f(+rd)	275.0	0.00	0.340	7	33.5
θ(t) p(07) f(t+rd)	276.4	1.35	0.174	9	30.3
θ(t) p(rd07) f(t+rd)	277.0	2.03	0.123	9	31.0
θ(t) p(.) f(t+rd)	277.1	2.14	0.117	8	33.4
θ(t+rd) p(.) f(t+rd)	278.7	3.65	0.055	9	32.6
θ(t+rd) p(rd07) f(t+rd)	278.8	3.81	0.051	10	30.4
θ(t) p(rd07) f(t+rd)	279.4	4.40	0.038	10	31.0
θ(t) p(.) f(t+rd)	279.5	4.46	0.037	9	33.4
θ(t) p(.) f(t	280.0	4.97	0.028	7	38.5
θ(t) p(rd) f(t+rd)	280.0	5.00	0.028	10	31.6
θ(t) p(t+rd) f(t+rd)	282.7	7.73	0.007	12	29.4
θ(t) p(t) f(t)	284.4	9.41	0.003	10	36.0
θ(.) p(.) f(.)	297.2	22.15	0.000	3	64.5
θ(g*t) p(g*t) f(g*t)	301.5	26.47	0.000	20	26.9
θ(g) p(g) f(g)	302.9	27.90	0.000	6	63.7

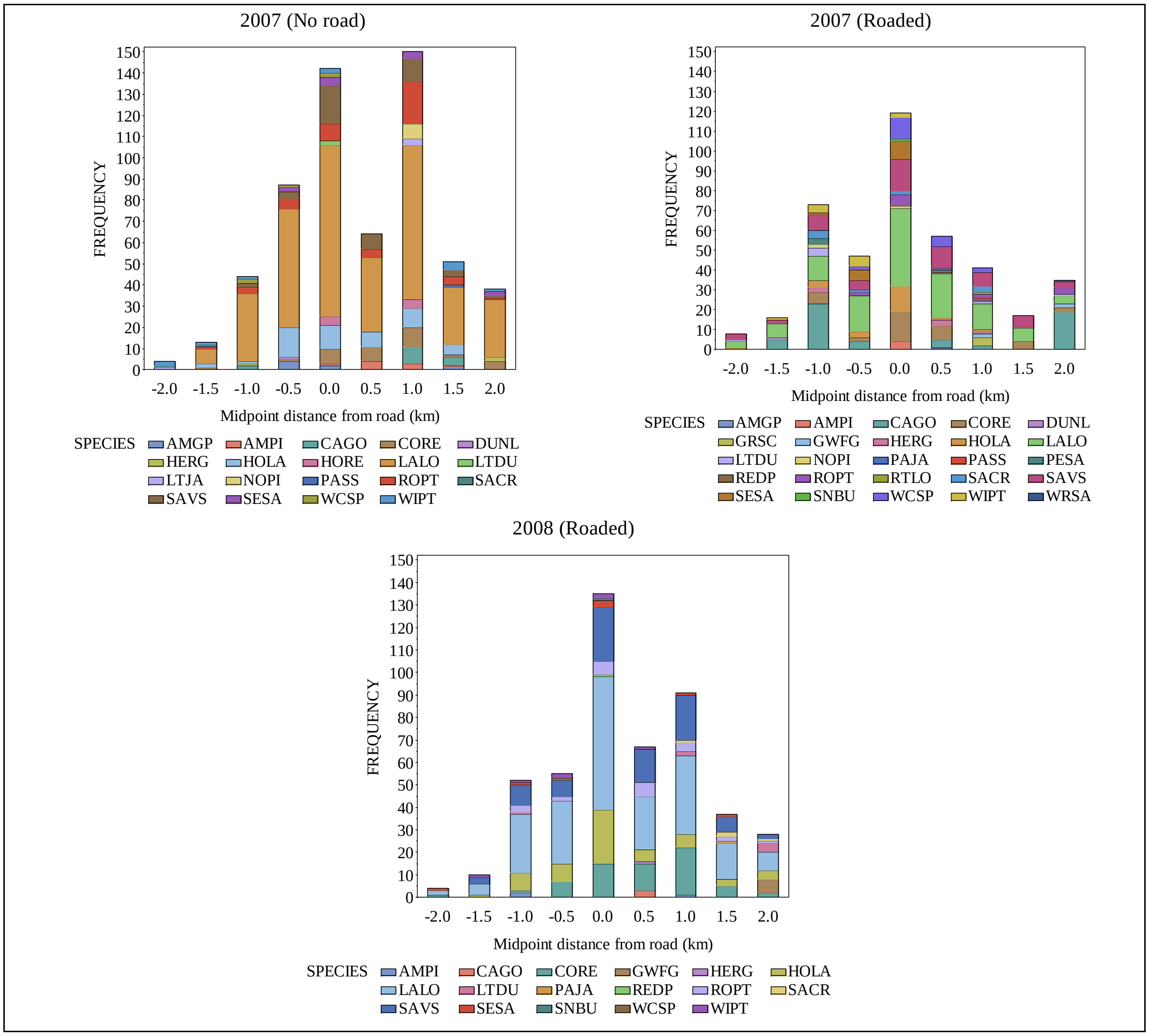
For the Pradel model, fidelity (θ) plus rates of addition (f) equals the species rate of change (λ). Each of these estimates serves to provide insight as to the dominant factors affecting species richness demographics. Estimates suggest that both species fidelity and rates of addition decreased for all transects for the intervals between surveys from 2005 to 2008. Roads would have only affected demographics for the 2007 to 2008 survey interval. Estimates suggest that there were no new species (f) in the south transects (that were roaded in 2007 and 2008) compared to the north transects (that were roaded only in 2008). This general trend is also suggested by observation of the counts of species (Figure 4.41) where the number of species sighted increased less for the roaded south transects than north transects. Modelled averaged estimates of species fidelity (θ), rates of addition (f), and overall rate of change in species (λ) are provided in Figure 4.46. Estimates correspond to the change in species demography for each survey interval.

Figure 4.46: Model Averaged Estimates of Species Demography from the Pradel Model Analysis for North and South Transects.



The effect of roads on species diversity was further explored using stacked bar charts which suggest that the largest numbers of all species was observed towards the center of roaded and non-roaded transects presumably due to the effect of greater survey effort in these areas. A larger number of species was seen towards the center of roaded transects in 2007 (Figure 4.47). Non-roaded transects should be considered a control given that no road was constructed when surveys were conducted on these transects. Snow Goose were excluded from the analysis. Lapland Longspur dominated the non-roaded transects whereas a more diverse mix of species was observed in the roaded transect. In 2008, larger numbers of species were sighted in the midpoint of transects, however the actual number of species sighted was fairly even within 1.5 km of the road.

Figure 4.47: Stacked Bar Charts Displaying the Abundances of Each Species as a Function of Distance from Road for Roaded and Non-roaded Transects.



The relationship between roads and species diversity was statistically tested using analysis of covariance to test whether distance from road could predict species diversity. Analysis of covariance results suggested that year of the analysis (F=8.2, df=3,58, p=0.0001), whether a road was present on the transect (F=5.99, df=1, 39, p=0.019), and the interaction of whether a transect was roaded or not and absolute distance (F=46.34 ,df=2, 39, p<0.0001) were all significant. Slope estimates suggested that species diversity decreased with distance from road for both roaded and non-roaded transects. However, the slope for roaded transects (β=-4.06, SE=0.51) was greater than the slope for non-roaded transects (β=-2.45, SE=0.45) suggesting that species diversity declined at a greater rate as a function of distance from road for roaded transects compared to non-roaded transects. However, the mean species diversity (standardized for other covariates) was higher for roaded (mean N1=6.18, SE=0.43, df=39, t=14.29, p<0.001) than non-roaded transects transects (mean N1=5.75, SE=0.32, df=39, t=17.44, p<0.001).

4.5.3.2 Replicate Surveys and Mark-Recapture Models to Assess Changes in Species Occurrence and Richness

Given the results of statistical analyses, transects should be replicated two (2) to four (4) times in a shorter time window, which will allow the use of Robust design (Pollock and Otto 1983), Pradel models (Pradel 1996) or occupancy models to estimate trends in species richness over time (Boulinier et al. 1998; Setterington and Boulanger 2001) in program MARK (White and Burnham 1999). Essentially, these models can account for changes in detection probability and will allow for detailed modeling of changes in species richness due to potential mine effects and other factors and will become increasingly useful statistical tools as the dataset continues to expand.

For occupancy model analysis, occurrence of a species of interest would be entered for each of the 12 transects surveyed each year. Estimates of detection and occupancy of the species would be produced for each year that the surveys are conducted. Transect specific covariates (i.e., habitat, anthropogenic, environmental etc.) would be added to help explain trends in occupancy over time. Occupancy models require at least two (preferably three to four) sessions of sampling per year to allow estimation of detection probability. The number of sessions that should be conducted depends on the probability of detection and occupancy of the species of interest and the number of sites surveyed (MacKenzie et al. 2006).

4.5.3.3 Distance Sampling Methods to Estimate Species-specific Densities and Abundances

Distance sampling methods (Buckland et al. 1993; Buckland et al. 2004) are recommended to estimate densities for target species, allowing a more robust comparison of densities and changes in species densities over time through the estimation of detection probabilities. The use of distance methods requires more attention to sighting birds on the center line of the transect given that simpler (and more precise) distance models assume that birds are sighted with a probability of 1 on the center of the transect. Observation of histograms (Figures 4.46 and 4.47) from previous years suggests that some birds were not sighted on the center line (given that frequencies are lower closer to the center line). In addition, it is assumed that distances of birds from the centerline are measured accurately. Use of GPS and semi-permanent markers can help ensure that distance observations are accurate.

4.5.3.4 Use of Habitat Covariates to Further Explain Differences in Richness, Abundance, and Diversity between Habitats

Since differences in habitat type may be contributing to the variance in species relative abundance and richness on each of the transects, the relative proportion of ELC habitat type should be estimated for each transect (along with associated strip width). Data can be entered as a covariate in Pradel models and distance models, as can anthropogenic factors such as disturbance area caused by disturbance type. This analysis of covariance approach (Milliken and Johnson 2002) will have optimal power to separate variation in species abundance and richness caused by natural and anthropogenic factors.

4.5.3.5 Monitoring of Survey Effort per Interval in each Transect

One potential confounding factor in estimating the effect of roads on species diversity is unequal survey effort across the transect. Ideally, an equal amount of time should be spent in each survey interval and the true amount of time should be noted. The time spent per interval would then be used as an effort covariate in the analysis.

4.6 RAPTOR NEST SURVEYS

Given the low probability of occurrence, a specific raptor survey was not scheduled for 2008. Instead, raptor observations were integrated into on-going biweekly AWPAR surveys, as well as annual waterbird nest surveys and aerial survey of the Meadowbank and Access Road LSAs, which served to adequately determine whether raptors were actively nesting in these areas. Although numerous raptors were observed in 2008, no nesting behaviour or repeat observations within a specific location were noted. During the 2008 breeding bird surveys, a lone Peregrine Falcon was observed leaving a quarry (location details provided in Table 4.14), which provides suitable nesting habitat. This site will be investigated further in 2009.

A cumulative summary of potential information on potential raptor nests within the LSA and RSA is provided in Table 4.15.

Table 4.15: 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 from bouldery slope to seepage toe. Nest is about 350- 400m W - NW of the nearest point of the proposed access 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

Nest ID	Species	Location (UTM)	Notes
			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.

4.7 WATERFOWL NEST SURVEYS

4.7.1 Mine Site

Waterfowl 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 waterfowl nests were located. In 2005, when survey intensity increased slightly, two duck broods and one Common Loon were observed (Table 4.16).

Table 4.16: Waterfowl Nest Survey Results in 2005.

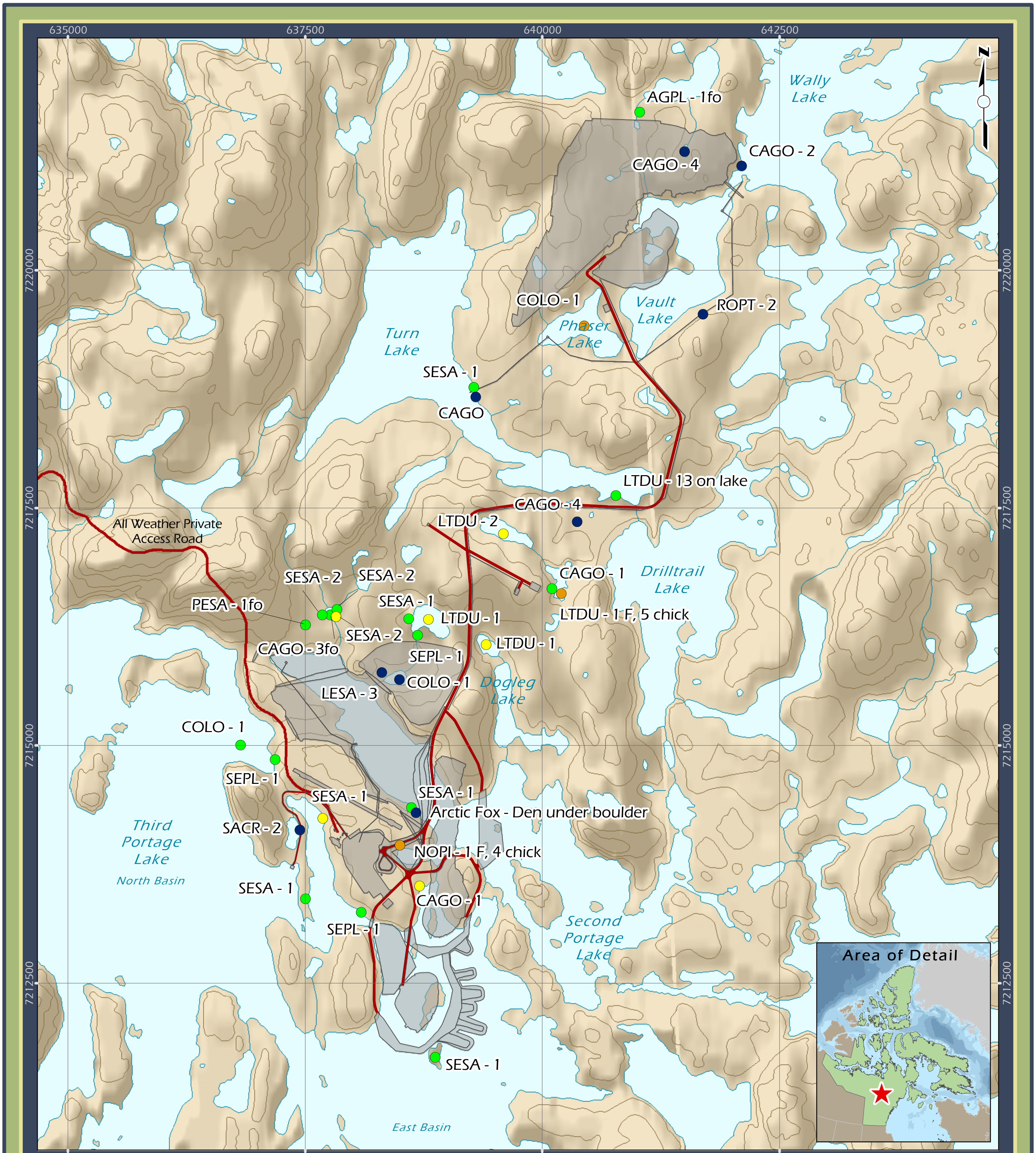
Date	Location	Species	#	UTM Coordinates
16 July	Small Lake near SE end of Airstrip	Northern Pintail	1 F, 4 chick	14W 0638500 7213950
18 July	East of Explosives Storage	Long-tailed Duck	1 F, 5 chick	14W 0640200 7216600
19 July	Phaser Lake	Common Loon	1 adult	14W 640800 7219400

Starting in 2006, surveys followed the intensive protocols discussed in Section 3.7. In all, approximately 50 km of shoreline was surveyed (refer to Table 3.12 in Section 3.7). Semipalmated Sandpiper was the most common waterbird species encountered in 2006 (Table 4.17 and Figure 4.48) while Canada Goose was the most common waterbird species encountered in 2007 (Table 4.17 and Figure 4.48). In 2008, Long-tailed Duck was the most common waterbird species (Table 4.17 and Figure 4.48). Annual variability to-date is anticipated to be largely the result of survey timing and intensity.

Table 4.17: Waterfowl Nest Survey Results in 2006, 2007 and 2008

Date	Location	Species	Number	UTM Coordinates
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

Date	Location	Species	Number	UTM Coordinates
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



Legend

- 2005 Survey Locations
- 2006 Survey Locations
- 2007 Survey Locations
- 2008 Survey Locations
- 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

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 4.48: Meadowbank Mine Site Waterfowl Nest Survey Results for 2005, 2006, 2007 and 2008

Meadowbank Gold Project

Prepared for: AGNICO-EAGLE

By: Caslys Consulting Ltd.

4.7.2 Waterfowl Nest Surveys - AWPAR

Waterfowl nest surveys were conducted along recently completed sections of the AWPAR for the first time in 2007. Results for 2007 are summarized in Table 4.18, while 2008 results are summarized in Table 4.19. Results from both years are illustrated in Figure 4.49 to Figure 4.61 (Mapsheet A to Mapsheet M).

Table 4.18: Waterfowl Nest Survey Results in 2007.

Survey Date	Mapsheet	Area	Survey Results
12-Jul-07	A	L1	No waterfowl observed
12-Jul-07	A	L2	Northern Pintail - 1
12-Jul-07	A	L3	Long-tailed Duck - pair; Semipalmated Sandpiper - 1
12-Jul-07	A	L4	No waterfowl observed
12-Jul-07	A	L5	Semipalmated Sandpiper - 3
12-Jul-07	A	P1	Red-throated Loon - 1; Long-tailed Duck - 1; Dead loon - 1
12-Jul-07	A	P2	Long-tailed Duck - 1
12-Jul-07	A	P3	Duck Nest with 7 eggs - 15W 0355573 7138166
12-Jul-07	A	P4	No waterfowl observed
12-Jul-07	A	P5	No waterfowl observed
12-Jul-07	A	P6	No waterfowl observed
12-Jul-07	A	P7	Not surveyed
12-Jul-07	A	L6	Long-tailed Duck - 1 female; Semipalmated Sandpiper - 4
12-Jul-07	A	L7	No waterfowl observed
12-Jul-07	A	L8	Common Redpoll Nest with 1 egg - 14W 0641942 7149517
12-Jul-07	A	L9	Long-tailed Duck - 1 male, 2 females
12-Jul-07	A	P10	No waterfowl observed
12-Jul-07	A	P11	No waterfowl observed
12-Jul-07	A	P12	Not surveyed
12-Jul-07	A	P13	Savannah Sparrow Nest with 3 eggs; Semipalmated Sandpiper - 1
12-Jul-07	A	P8	Canada Goose Nest; Canada Goose - 2; Semipalmated Sandpiper - 1
12-Jul-07	A	P9	No waterfowl observed
12-Jul-07	A	L10	Semipalmated Sandpiper - 1
12-Jul-07	A	L11	Red-breasted Merganser - 1 male, 2 females
12-Jul-07	A	L12	No waterfowl observed
12-Jul-07	A	L13	Semipalmated Sandpiper - 2
12-Jul-07	A/B	L14	Long-tailed Duck - 1 female; Red-necked Phalarope - 1
07-Jul-07	B	L15	No waterfowl observed
07-Jul-07	B	L16	Herring Gull Nest ~400 m west of bridge; Common Redpoll Nest with 1 egg - 14W 0638141 7155828
07-Jul-07	B	L17	Savannah Sparrow Nest with 3 chicks, 2 eggs - 14W 0637229 7156762; Canada Goose - 3
07-Jul-07	B	P15	No waterfowl observed

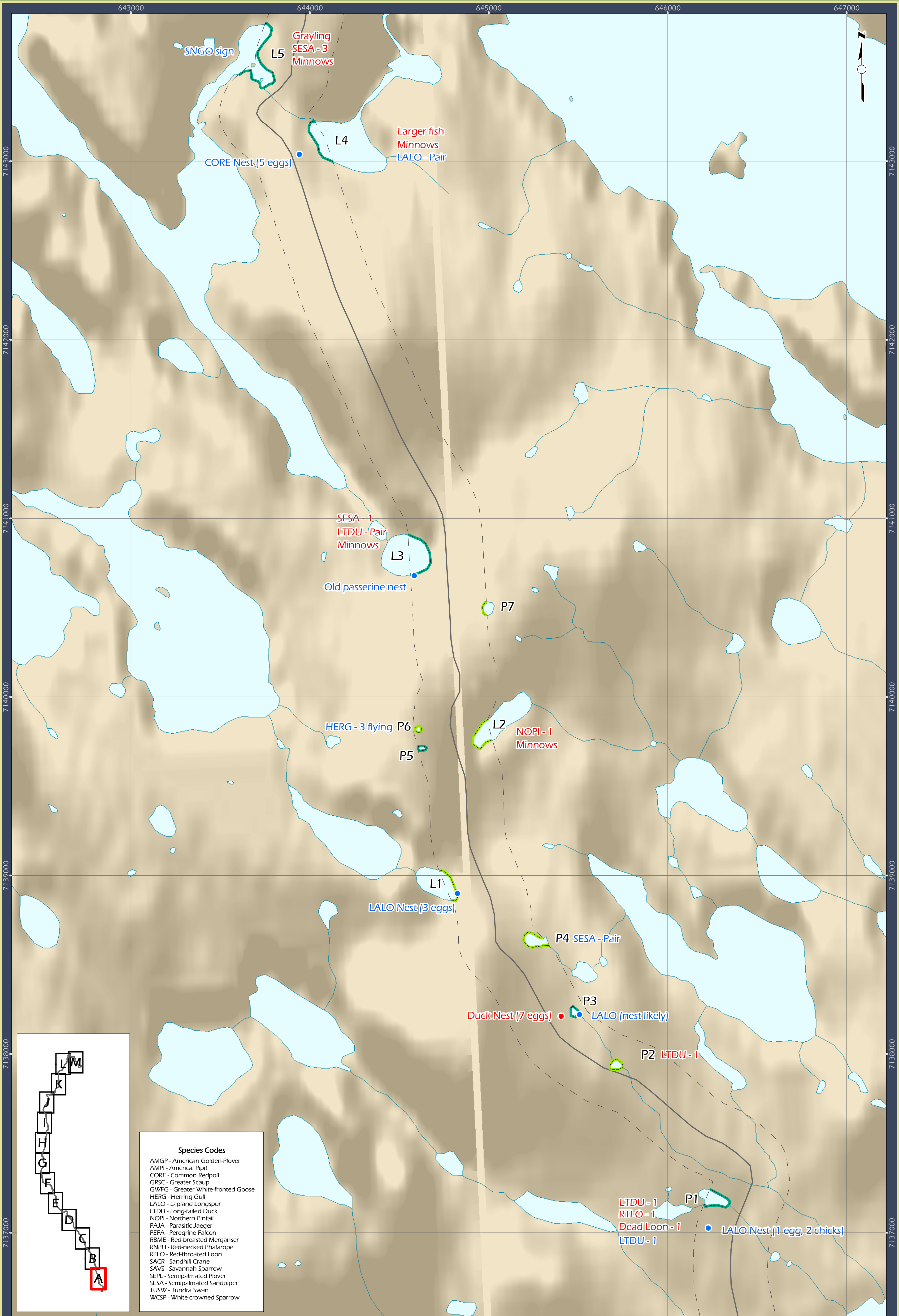
Survey Date	Mapsheet	Area	Survey Results
07-Jul-07	B	L18	Canada Goose Nest in centre of lake; Northern Pintail - 4
07-Jul-07	B	L19	No waterfowl observed
07-Jul-07	B	L20	Canada Goose OLD Nest - 14W 0633148 7163541; American Golden-Plover - 1
07-Jul-07	B	P16	No waterfowl observed
07-Jul-07	B	P18	No waterfowl observed
07-Jul-07	B	P19	No waterfowl observed
07-Jul-07	B	P20	Canada Goose Nest in centre of pond - Photo 3907; Sandhill Crane - 2 - 150 m to East; Long-tailed Duck - 1 female
07-Jul-07	B	P21	Long-tailed Duck - pair; Semipalmated Sandpiper - 1
07-Jul-07	B	L23	Savannah Sparrow Nest with 5 eggs; 14W 630051 7167808
07-Jul-07	B	L25	Common Redpoll Nest with 3 eggs - 14W 0629827 7169190
07-Jul-07	B	L26	Savannah Sparrow Nest with 5 eggs - 14W 0628886 7170193; Long-tailed Duck - 1 male; Tundra Swan - 2
07-Jul-07	B	P22	No waterfowl observed
07-Jul-07	B	P23	Semipalmated Sandpiper - 1
07-Jul-07	B	P24	Semipalmated Sandpiper - 1
07-Jul-07	B	P25	No waterbird or fish observations
07-Jul-07	B	L27	Greater White-fronted Goose Nest w/ 3 eggs - 14W 0629209 7170541; GWFG - pair; Northern Pintail - 1 female; Long-tailed Duck - 1 male
07-Jul-07	C	L28	No waterfowl observed
06-Jul-07	C	L29	American Pipit Nest with 6 eggs - 14W 0628372 7172109; Long-tailed Duck - 1 male
06-Jul-07	C	P27	Common Redpoll Nest with 3 eggs - 14W 0628641 7171877; Herring Gull
06-Jul-07	C	P28	No waterfowl observed
06-Jul-07	C	P29	Lapland Longspur Nest with 6 eggs - 14W 0626811 7172889

Table 4.19: Waterfowl Nest Survey Results in 2008.

Survey Date	Mapsheet	Label	Survey Results
30-Jun-08	A	L1	LALO nest - 3 eggs - 644825 E; 7138900 N
30-Jun-08	A	L2	No waterfowl / shorebird / passerine activity
30-Jun-08	A	L3	Old passerine nest - 644584 E; 7140679 N
30-Jun-08	A	L4	CORE nest - 5 eggs - 643942 E; 7143039 N. LALO pair - 643800 E; 7143180 N. WIPT pair - 643807 E; 7143279 N
30-Jun-08	A	L5	SVSP calling - 643725 E; 7143394 N. WIPT pair - 643852 E; 7143481 N. Lots of SNGO sign
30-Jun-08	A	P1	LALO nest - 1 egg, 2 chicks - 646228 E; 7137026 N. 1 LTDU on centre island. No nest/eggs observed
30-Jun-08	A	P2	No waterfowl / shorebird / passerine activity
30-Jun-08	A	P3	LALO pair calling and luring observers away - likely a nest @ 645507 E; 7138221 N
30-Jun-08	A	P4	Pair of SESA observed near road. Good habitat - gradually sloped, vegetated, marshy edges
30-Jun-08	A	P5	Largely disturbed - much of vegetation had been removed as a result of access road construction
30-Jun-08	A	P6	3 HERG flew over during survey; largely disturbed east edge as a result of access road construction
30-Jun-08	A	P7	No waterfowl / shorebird / passerine activity
30-Jun-08	B	L6	CAGO - no nest - 643991 E; 7144536 N. SESA - no nest. 643849 E; 7144703 N. Walked twice as numerous passerines calling throughout
01-Jul-08	B	L7	CAGO nest - 643032 E; 7146318 N. 2nd CAGO sitting (no nest) at 642917 E; 7146420 N. LALO nest - 2 eggs - 643059 E; 7146263 N
01-Jul-08	B	L8	1 NOPI female flying N->S during survey
30-Jun-08	B	L9	HERG pair on icefloe - centre of lake. 3 SACR foraging - 640872 E; 7150336 N. Three WIPT and old passerine nest at 641062 E; 7150427 N
30-Jun-08	B	P10	NOPI - east edge of lake. Flew off upon approach
30-Jun-08	B	P11	1 HERG - opposite (east) side of lake. Flew off upon approach
01-Jul-08	B	P12	Sandpiper (unidentified sp.) - 642238 E; 7148213 N
30-Jun-08	B	P13	Old passerine nest - 641380 E; 7149627 N
30-Jun-08	B	P8	Old passerine nest - 643232 E; 7146136 N
01-Jul-08	B	P9	5 CAGO flew over N->S during survey
01-Jul-08	C	L10	HERG foraging - 640378 E; 7151093 N. CORE and SVSP calling
01-Jul-08	C	L11	Abandoned/Old waterfowl nest - 640229 E; 7151151 N. SVSP nest 640169 E; 7151229 N. Pair of LTDU and GRSC on lake. Abandoned SVSP nest 640045 E7151310 N
01-Jul-08	C	L12	CORE nest - 5 eggs - 640395 E; 7152061 N
01-Jul-08	C	L13	No waterfowl / shorebird / passerine activity
01-Jul-08	C	L14	Old waterfowl nest on island - 639739 E; 7153768 N
01-Jul-08	C	L15	No waterfowl / shorebird / passerine activity
01-Jul-08	C	L16	Old CORE nest - 637988 E; 7155897 N. Old passerine nest - 637989 E; 7155811 N
01-Jul-08	C	L17	No waterfowl / shorebird / passerine activity. Lots of SNGO sign
01-Jul-08	C	P15	No waterfowl / shorebird / passerine activity
01-Jul-08	D	L18	5 CAGO flew off upon approach
01-Jul-08	D	L19	No waterfowl / shorebird / passerine activity; very rock shores with minimal vegetation cover
01-Jul-08	D	L20	4 WCSP - 633120 E; 7163552 N - no nest(s) observed
01-Jul-08	D	P16	No waterfowl / shorebird / passerine activity
01-Jul-08	D	P18	Waterbird skull - 636545 E; 7157936 N

Survey Date	Mapsheet	Label	Survey Results
01-Jul-08	D	P19	No waterfowl / shorebird / passerine activity
01-Jul-08	D	P20	CAGO nest - 635065 E; 7161409 N.1 juvenile LTDU at centre of lake
02-Jul-08	D	P21	No waterfowl / shorebird / passerine activity
02-Jul-08	E	L23	No waterfowl / shorebird / passerine activity. Boulder fields beyond 630055 E; 7167820 N. Opens up again at 7168055 N
02-Jul-08	E	L25	CAGO pair near start. Flew off upon approach. No sign of nest.
02-Jul-08	E	L26	Old waterfowl nest - 628952 E; 7170065 N. 5 LTDU on centre of lake. Shores appear to have been recently utilized by waterfowl (sign consisting of droppings and feathers)
02-Jul-08	E	P22	Old CORE nest - 631175 E; 7164780 N. Southern bank and first portion of northern bank primarily boulder field
02-Jul-08	E	P23	1 SEPL - 630839 E; 7164841 - no nest. Old nest along road edge - 630815 E; 7164880 N. 3 LTDU on lake foraging
02-Jul-08	E	P24	WIPT pair near road edge, otherwise no waterfowl / shorebird / passerine activity
02-Jul-08	E	P25	SVSP nest - 4 eggs - 629930E; 7167475 N. Old passerine nest - 629899 E; 7167435 N
02-Jul-08	F	L27	CAGO nest - 629329 E; 7170554 N. Pair of NOPI - flew off upon approach.
02-Jul-08	F	L28	No waterfowl / shorebird / passerine activity
02-Jul-08	F	L29	2 NOPI on south edge of lake. Area mostly rocky outcrop with overhangs on east bank. PEFA observed leaving from quarry to south.
02-Jul-08	F	L65	No waterfowl / shorebird / passerine activity
02-Jul-08	F	P27	No waterfowl / shorebird / passerine activity
02-Jul-08	F	P28	3 SACR foraging - 628089 E; 7172494 N
02-Jul-08	F	P29	No waterfowl / shorebird / passerine activity
02-Jul-08	G	L30	Old CORE nest - 626575 E; 7180421 N
02-Jul-08	G	L31	2 LTDU juveniles on centre of lake. Very rocky shores and banks/edges - minimal vegetation cover
02-Jul-08	G	L32	No waterfowl / shorebird / passerine activity
02-Jul-08	G	P30	CORE nest - 3 eggs - 625053 E; 7178438 N
02-Jul-08	G	P31	No waterfowl / shorebird / passerine activity
02-Jul-08	G	P32	Old waterfowl nest - 625602 E; 7181083 N. CORE nest - empty but appears to have been recently constructed - 625589E; 7181016 N
02-Jul-08	G	P33	PAJA pair and nest - 2 eggs - 625391 E; 7182999 N
02-Jul-08	H	L34	HERG nest - 626438 E; 7186305 N. Adult incubating nest and could therefore not determine number of eggs. Pair of SACR vocalizing and defending near island 626450 E; 7186480 N - likely a nest
03-Jul-08	H	L35	AGPL following and calling/evading. Likely a nest - 626025 E; 7186720 N
02-Jul-08	H	L36	HERG perched on rock near start, otherwise no waterfowl / shorebird / passerine activity
03-Jul-08	H	P34	No waterfowl / shorebird / passerine activity
03-Jul-08	H	P35	No waterfowl / shorebird / passerine activity
03-Jul-08	H	P36	Old waterfowl nest - 626595 E; 7189869 N. 4 LTDU on lake - 2 females and 2 juveniles
03-Jul-08	I	L37	No waterfowl / shorebird / passerine activity
03-Jul-08	I	L38	Immediately south of old Forward Camp. Heavily disturbed area. Two WIPT pair, otherwise no bird activity
03-Jul-08	I	L39	Numerous solitary LALO and SESA foraging. BE bank largely a dry river bed. Little vegetation present.
03-Jul-08	I	L40	HERG pair and nest - 626300 E; 7197850 N - may be outside of study area
03-Jul-08	I	P37	3 WIPT chicks - 627562 E; 7192315 N. Lots of accumulated refuse from Forward Camp

Survey Date	Mapsheet	Label	Survey Results
03-Jul-08	I	P38	No waterfowl / shorebird / passerine activity
03-Jul-08	J	L42	Area had been recently heavily utilized by SNGO - lots of sign (feathers and droppings) but no nests
03-Jul-08	J	L43	Quite a few SESA but could not locate any nests. CAGO nest at 627394 E; 7204199 N. Did not approach for closer look as HERG circling overhead.
03-Jul-08	J	L44	No waterfowl / shorebird / passerine activity
03-Jul-08	J	P39	LTDU nest - 4 eggs - 625722 E; 7198716 N. 6 male WIPT west of lake. SESA nest - 4 eggs - 625811 E; 7198721 N
03-Jul-08	J	P40	No waterfowl / shorebird / passerine activity
03-Jul-08	J	P41	No waterfowl / shorebird / passerine activity
03-Jul-08	J	P42	PAJA nest. Could not locate but continuously attacked by pair. 2 raptor pellets and one old egg - 627209 E; 7203586 N
03-Jul-08	J	P43	No waterfowl / shorebird / passerine activity
03-Jul-08	J	P44	No waterfowl / shorebird / passerine activity
03-Jul-08	J	P45	SVSP - 5 eggs - 628086 E; 7203896 N
03-Jul-08	J	P46	No waterfowl / shorebird / passerine activity
03-Jul-08	K	L45	1 CAGO and 1 AGPL - 629577E; 7205376 N - no nests observed. 1 LALO nest - 629603 E; 7205323 N
03-Jul-08	K	L46	SVSP nest - 5 eggs - 631306 E; 7207218 N
03-Jul-08	K	L47	HOLA pair - no nest observed - 630854 E; 7209816 N
03-Jul-08	K	L48	No waterfowl / shorebird / passerine activity. Very rocky beyond 7210058 N
03-Jul-08	K	L49	Only western shores and upland areas vegetated. Rest is rocky. 1 SESA foraging - east edge, out of study area.
03-Jul-08	K	P47	1 LTDU female on lake; 3 LALO between lake and road
03-Jul-08	K	P48	No waterfowl / shorebird / passerine activity
03-Jul-08	K	P49	No waterfowl / shorebird / passerine activity. Almost entirely rocky shores.
03-Jul-08	K	P50	Marshy and overgrown with grasses dominant. Minimal standing water.
04-Jul-08	K	P51	No waterfowl / shorebird / passerine activity
04-Jul-08	L	L50	HOLA pair near start. 3 LALO - 634070 E; 7215183 N. 2 CORE courting - 634084 E; 7215384 N. 4 LALO and 1 LALO nest - 4 eggs - 634223 E; 7215697 N. 17 SNGO flew over in formation
04-Jul-08	L	L51	Area had been recently heavily utilized by SNGO - lots of sign (feathers and droppings) but no nests; 1 LALO near start.
04-Jul-08	L	L52	1 LALO pair - 633905 E; 7216005 N. 1 LALO pair - 633822 E; 7215660 N
04-Jul-08	L	L53	1 LAL female - alarm call at 634057 E; 7217564 N - likely a nest nearby
04-Jul-08	L	L54	LALO nest - 4 eggs - 634462 E; 7217887 N
04-Jul-08	L	L55	1 LALO male - 634561 E; 7217945 N
04-Jul-08	L	L64	No waterfowl / shorebird / passerine activity
04-Jul-08	L	P52	1 LALO male calling between lake and road
04-Jul-08	M	L57	No waterfowl / shorebird / passerine activity. A lot of ice still on lake.
04-Jul-08	M	L58	Old LALO nest - 637050 E; 7215283 N. 1 ROPT male - 637105 E; 7214995 N. 1 LALO male - 637183 E; 7215187 N. 3 LALO (1 male, 2 females) - 636861 E; 7215528 N
04-Jul-08	M	L60	LALO nest with 4 chicks - 637984 E; 7213335 N
04-Jul-08	M	L61	3 LALO pairs - 638684 E; 7213771 N, 638578 E; 7213764 N and 638639 E; 7213923 N. NW edge of lake highly eutrophic
04-Jul-08	M	L62	No waterfowl / shorebird / passerine activity
04-Jul-08	M	L63	LALO pair - 638903 E; 7213500 N. 3 LALO females - 6388910 E; 7213587 N



Legend

All Weather Access Road

Road Buffer (200m)

Nest Locations (Observation Year)

- 2007
- 2008

Survey Route - 2008 *

(Note: Alternating Colour to help with transect identification)

* Observations for 2007 are in red and 2008 are in blue.

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

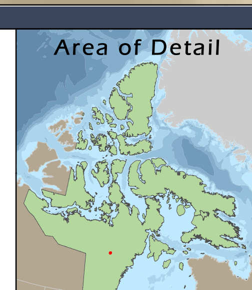
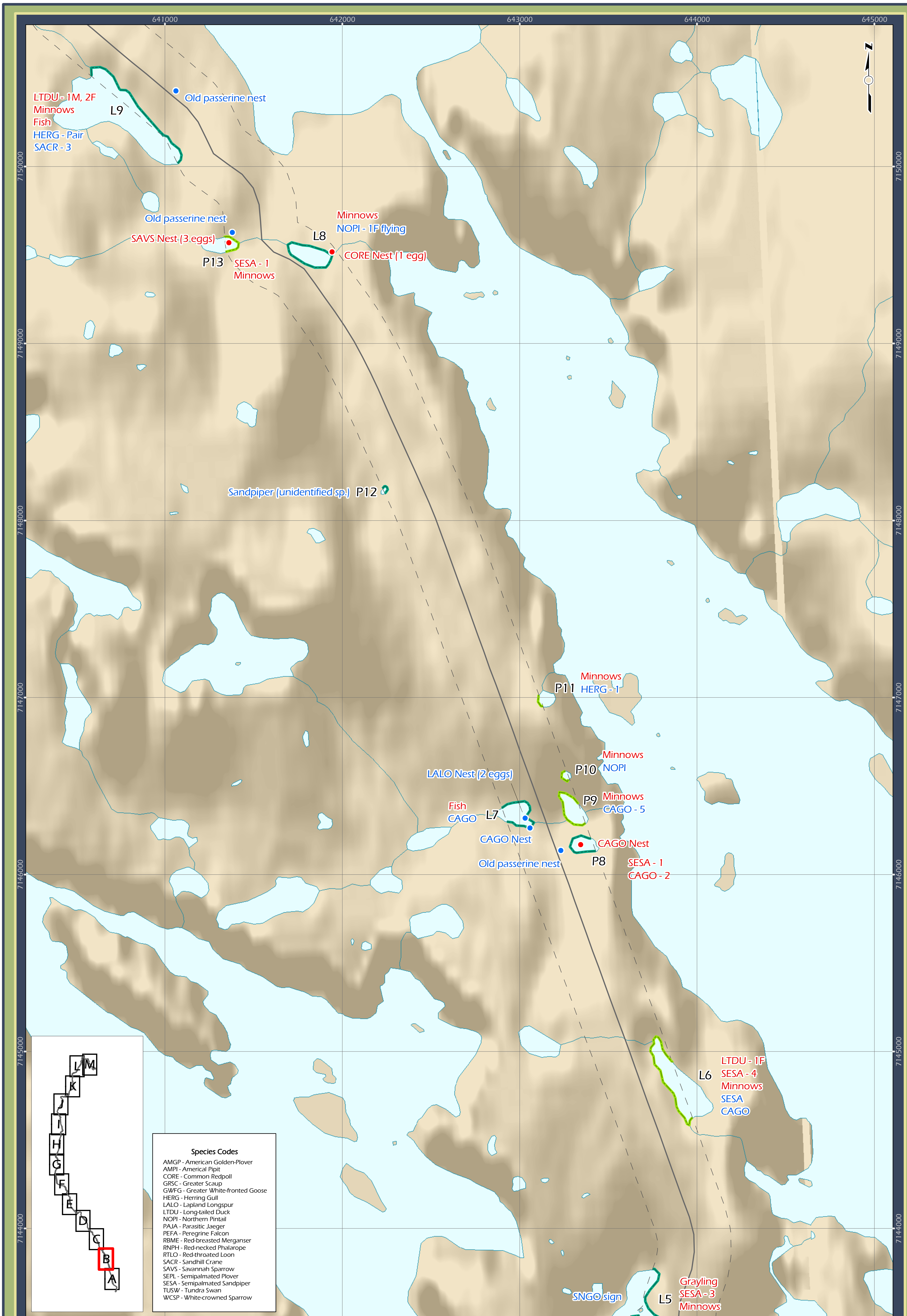


Figure 4.49:
2007 and 2008 AWPAR
Waterfowl Nest Survey Results
Mapsheet A

Meadowbank Gold Project

Prepared for: AGNICO-EAGLE

By: Caslys Consulting Ltd.



Legend

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

Survey Route - 2008 *
(Note: Alternating Colour
to help with transect identification)

* Observations for 2007 are in red and 2008 are in blue.

0 250 500 750
Metres

Projection: UTM Zone 14 NAD83

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

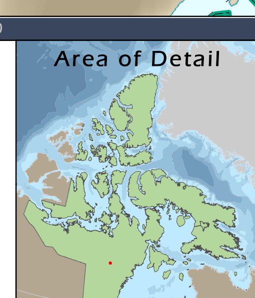
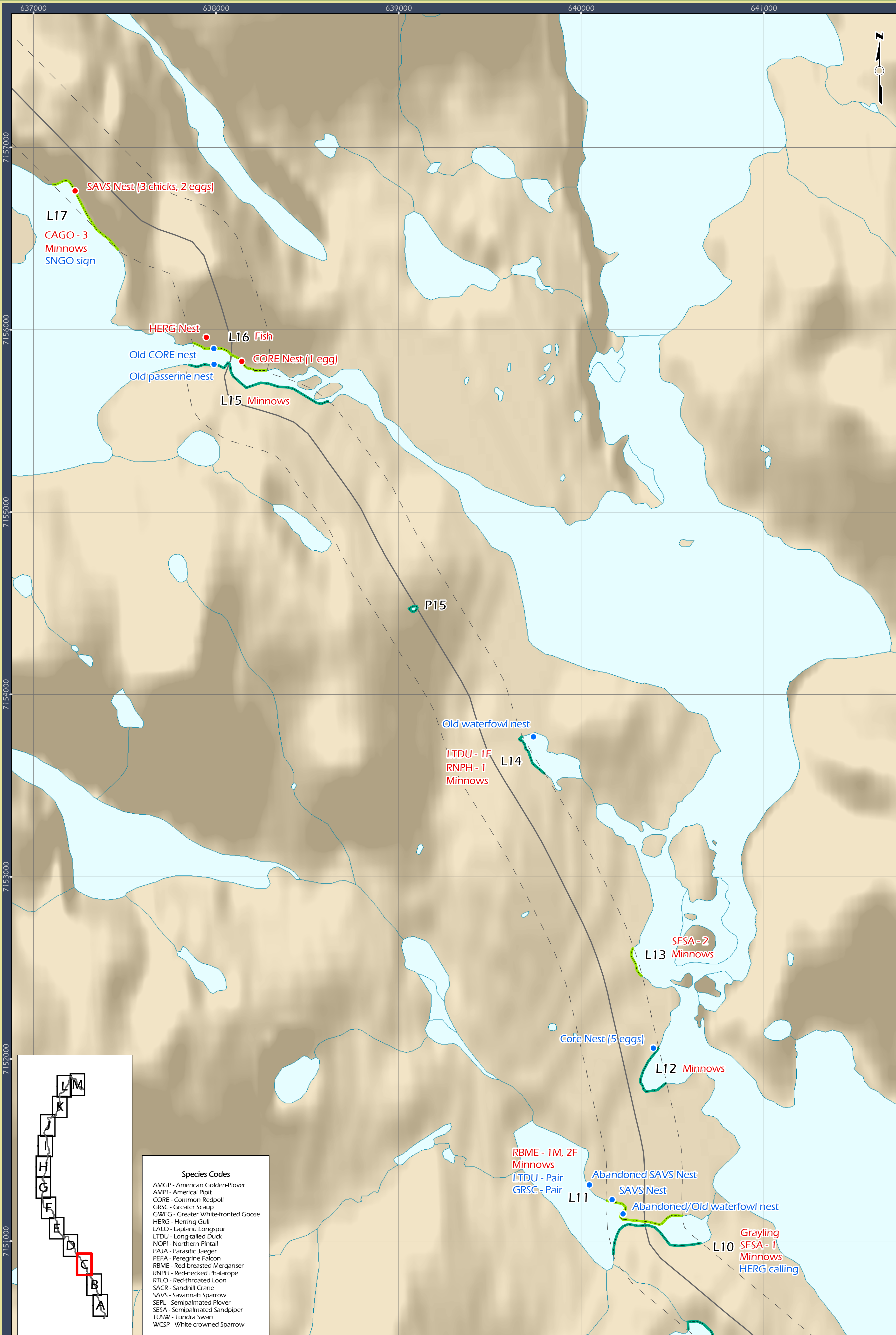


Figure 4.50:
2007 and 2008 AWPAR
Waterfowl Nest Survey Results
Mapsheet B

Meadowbank Gold Project

Prepared for: AGNICO-EAGLE

By: Caslys Consulting Ltd.



Legend

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

Survey Route - 2008 *
(Note: Alternating Colour
to help with transect identification)

* Observations for 2007 are in red and 2008 are in blue.

0 250 500 750
Metres

Projection: UTM Zone 14 NAD83

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

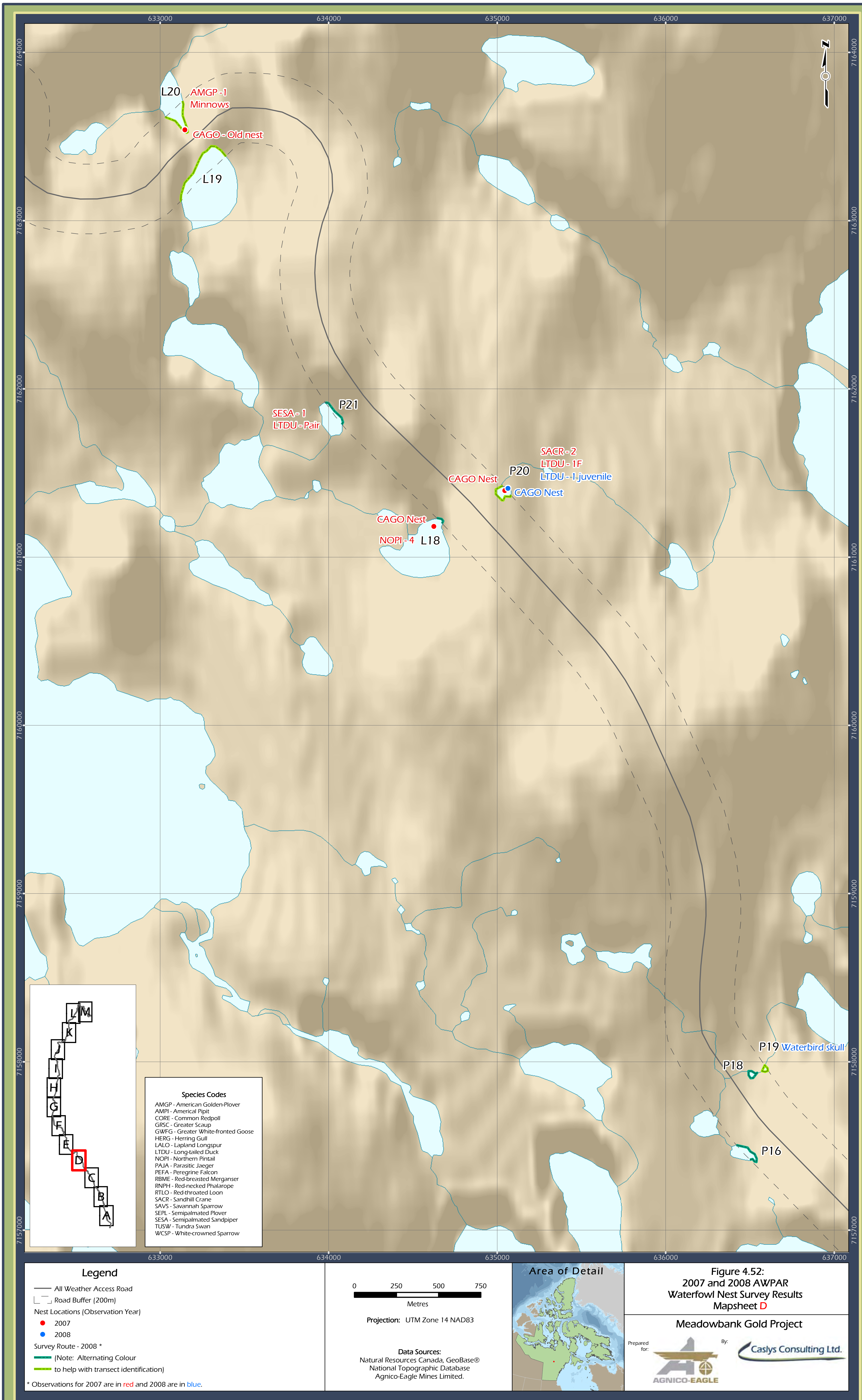
Area of Detail

Figure 4.51:
2007 and 2008 AWPAR
Waterfowl Nest Survey Results
Mapsheet C

Meadowbank Gold Project

Prepared for: AGNICO-EAGLE

By: Caslys Consulting Ltd.



L20
AMGP - 1
Minnows
CAGO - Old nest
L19
SESA - 1
LTDU - Pair
P21
SACR - 2
LTDU - 1F
LTDU - 1-juvenile
P20
CAGO Nest
CAGO Nest
CAGO Nest
NOPI - 4
L18
P19
Waterbird skull
P18
P16
633000
634000
635000
636000
637000
7164000
7163000
7162000
7161000
7160000
7159000
7158000
7157000
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Species Codes
AMGP - American Golden-Plover
AMPI - Americal Pipit
CORE - Common Redpoll
GRSC - Greater Scaup
GWFG - Greater White-fronted Goose
HERG - Herring Gull
LALO - Lapland Longspur
LTDU - Long-tailed Duck
NOPI - Northern Pintail
PAJA - Parasitic Jaeger
PEFA - Peregrine Falcon
RBME - Red-breasted Merganser
RNPH - Red-necked Phalarope
RTLO - Red-throated Loon
SACR - Sandhill Crane
SAVS - Savannah Sparrow
SEPL - Semipalmated Plover
SESA - Semipalmated Sandpiper
TUSW - Tundra Swan
WCSP - White-crowned Sparrow
Legend
All Weather Access Road
Road Buffer (200m)
Nest Locations (Observation Year)
2007
2008
Survey Route - 2008 *
(Note: Alternating Colour
to help with transect identification)
* Observations for 2007 are in red and 2008 are in blue.
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 4.52:
2007 and 2008 AWPAR
Waterfowl Nest Survey Results
Mapsheet D
Meadowbank Gold Project
Prepared for:
AGNICO-EAGLE
By:
Caslys Consulting Ltd.

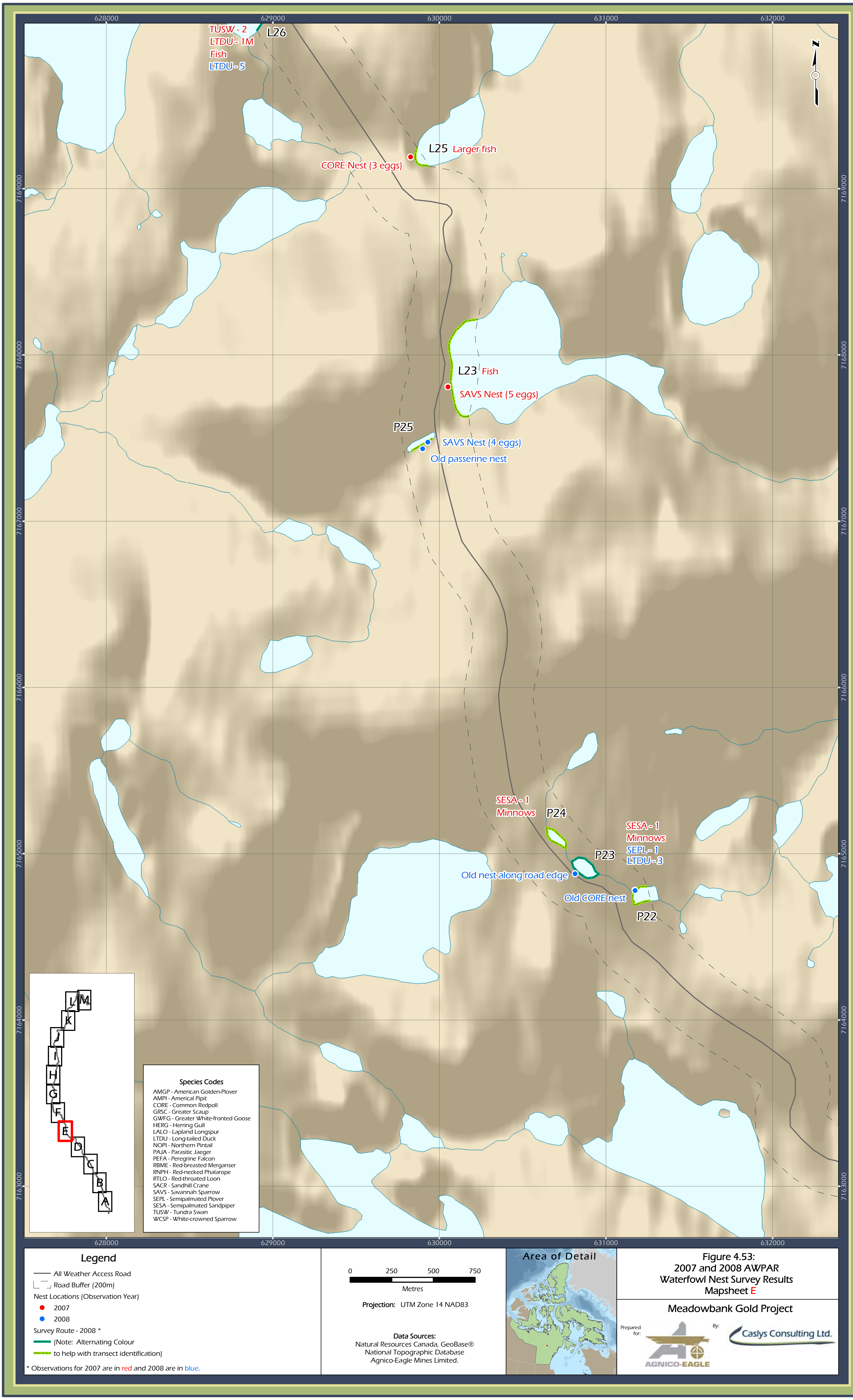
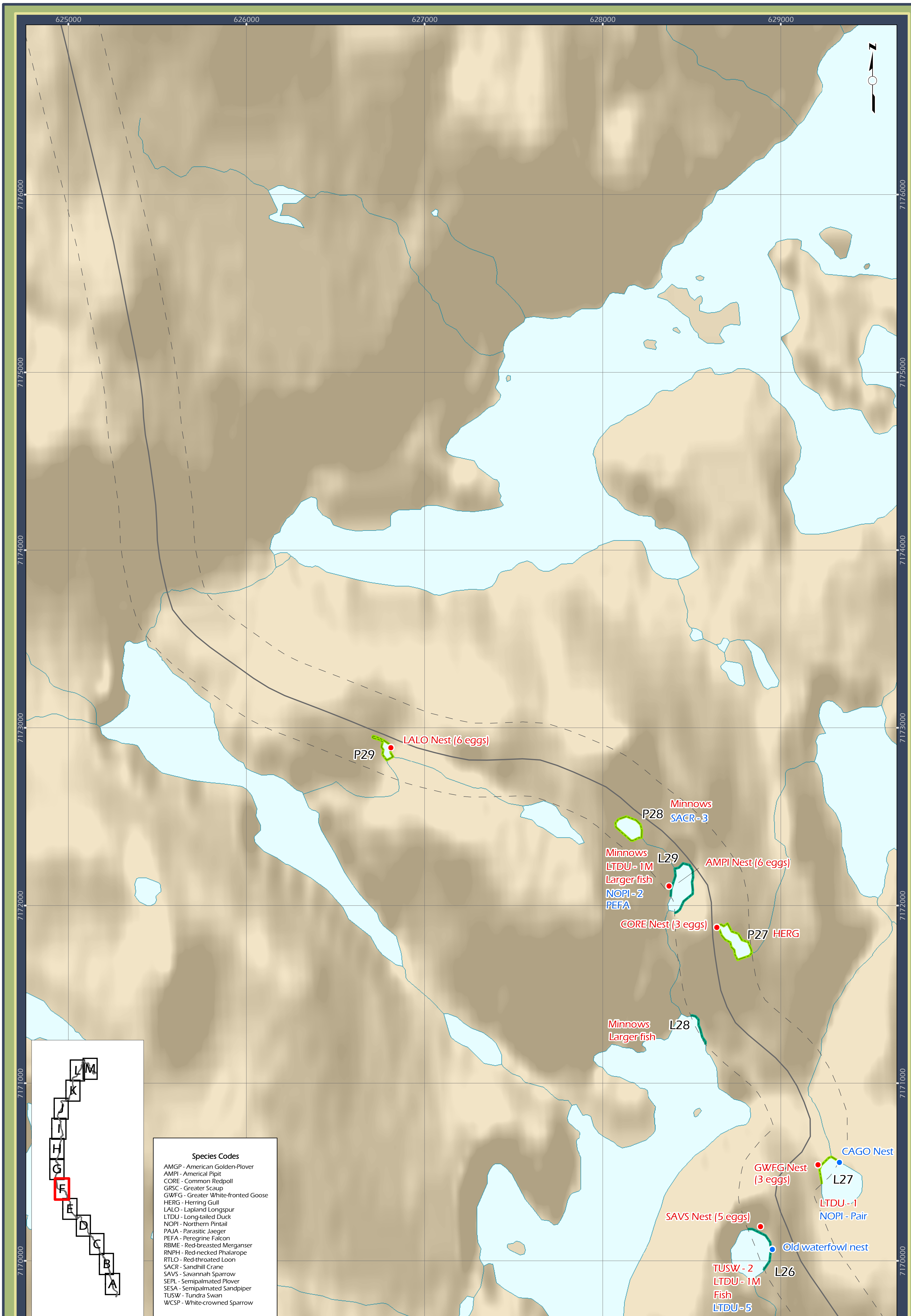


Figure 4.53:
2007 and 2008 AWPAR
Waterfowl Nest Survey Results
Mapsheet E



Legend

- All Weather Access Road
- Road Buffer (200m)

Nest Locations (Observation Year)

- 2007
- 2008

Survey Route - 2008 *

- (Note: Alternating Colour
- to help with transect identification)

* Observations for 2007 are in red and 2008 are in blue.

0 250 500 750

Metres

Projection: UTM Zone 14 NAD83

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

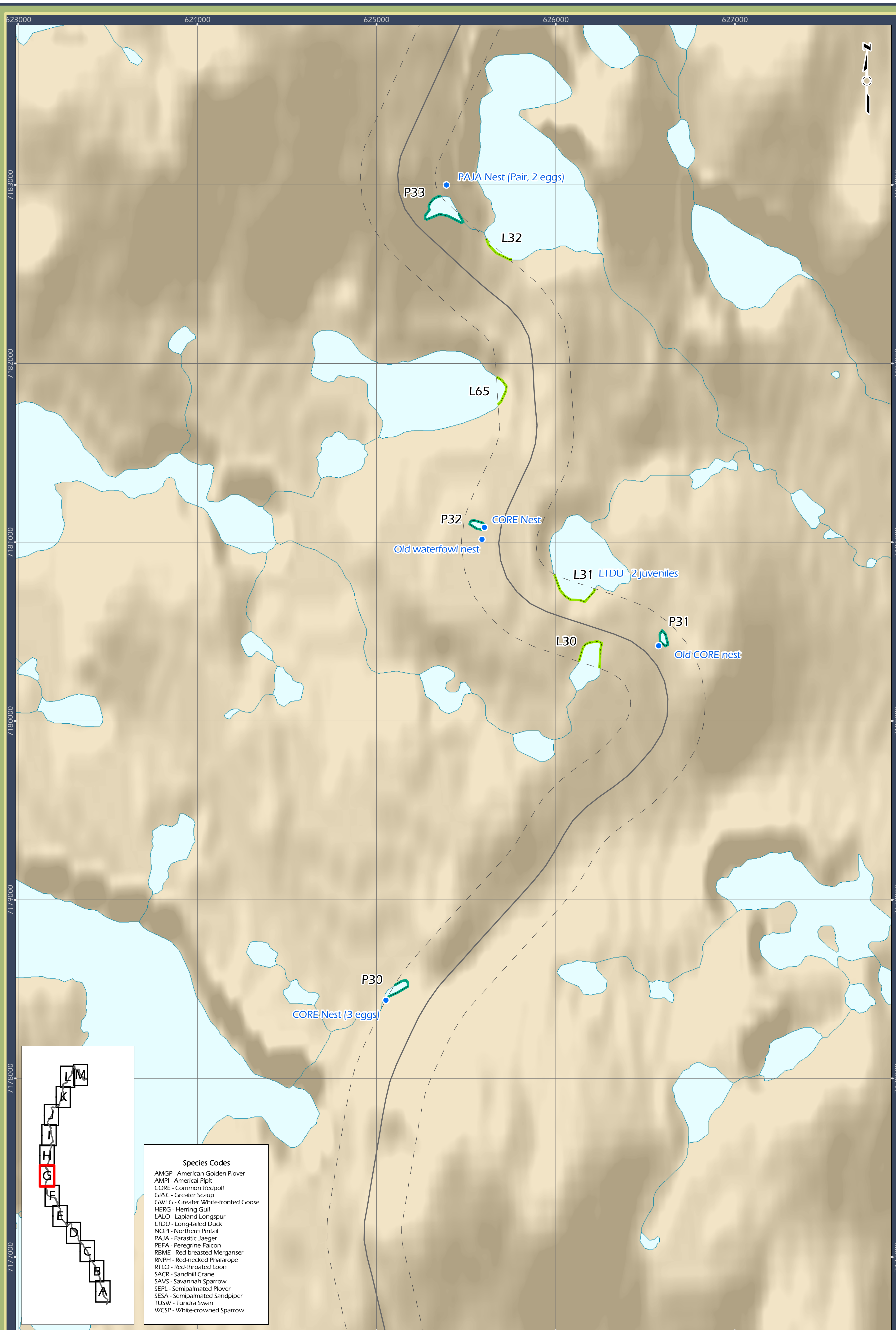
Area of Detail

Figure 4.54:
2007 and 2008 AWPAR
Waterfowl Nest Survey Results
Mapsheet F

Meadowbank Gold Project

Prepared for: AGNICO-EAGLE

By: Caslys Consulting Ltd.



Legend

All Weather Access Road

Road Buffer (200m)

Nest Locations (Observation Year)

- 2007
- 2008

Survey Route - 2008 *

(Note: Alternating Colour to help with transect identification)

* Observations for 2007 are in red and 2008 are in blue.

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 4.55:
2008 AWPAR
Waterfowl Nest Survey Results
Mapsheet G

Meadowbank Gold Project

Prepared for: AGNICO-EAGLE

By: Caslys Consulting Ltd.

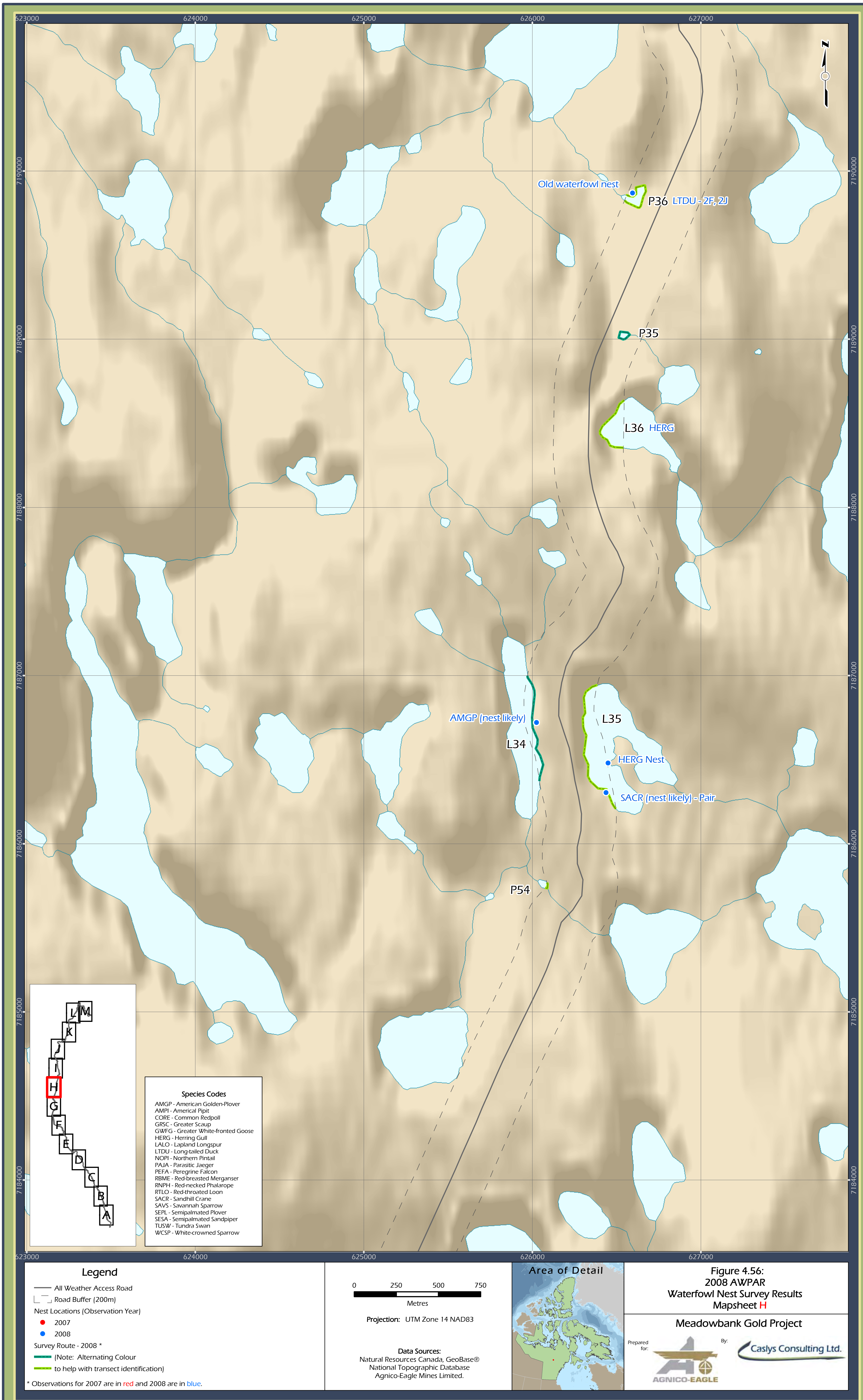
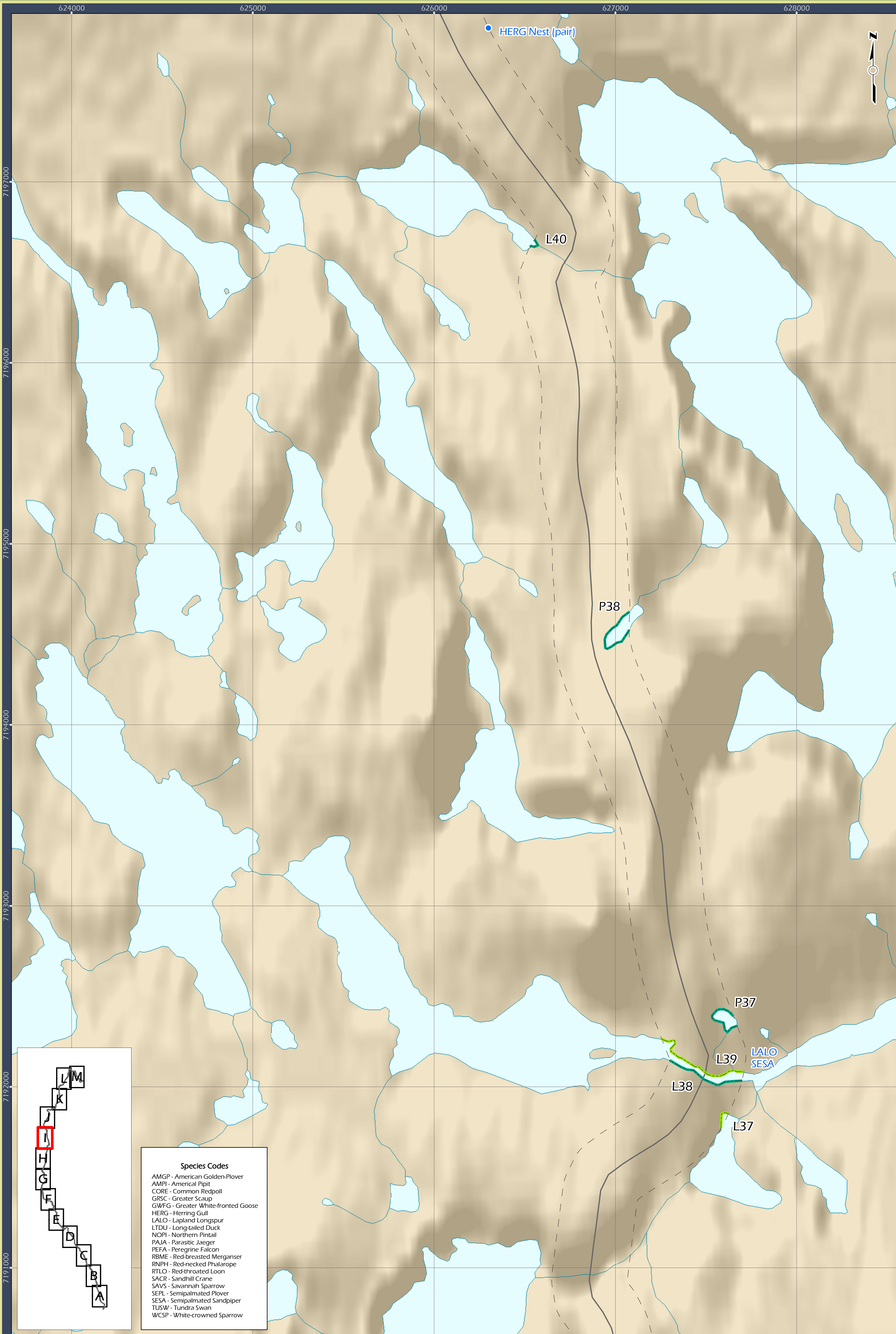


Figure 4.56:
2008 AWPAR
Waterfowl Nest Survey Results
Mapsheet H



Legend

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

* Observations for 2007 are in red and 2008 are in blue.

0 250 500 750
Metres

Projection: UTM Zone 14 NAD83

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

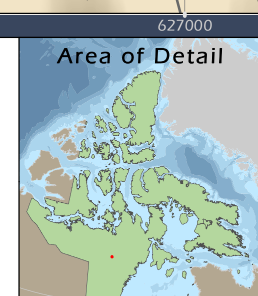
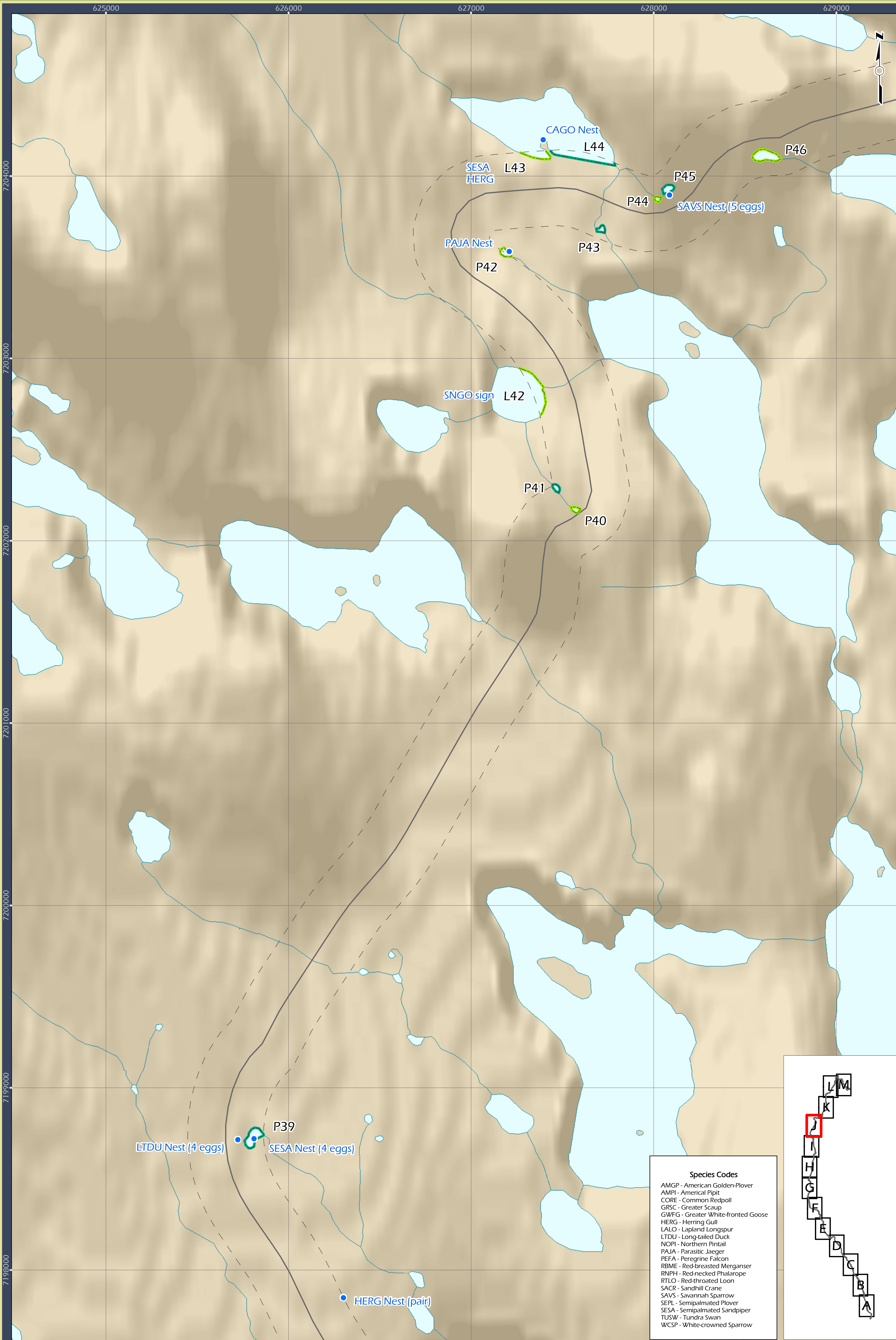


Figure 4.57:
2008 AWPAR
Waterfowl Nest Survey Results
Mapsheet I

Meadowbank Gold Project

Prepared for: AGNICO-EAGLE

By: Caslys Consulting Ltd.



Species Codes

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

Legend

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

* Observations for 2007 are in red and 2008 are in blue.

0 250 500 750
Metres

Projection: UTM Zone 14 NAD83

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

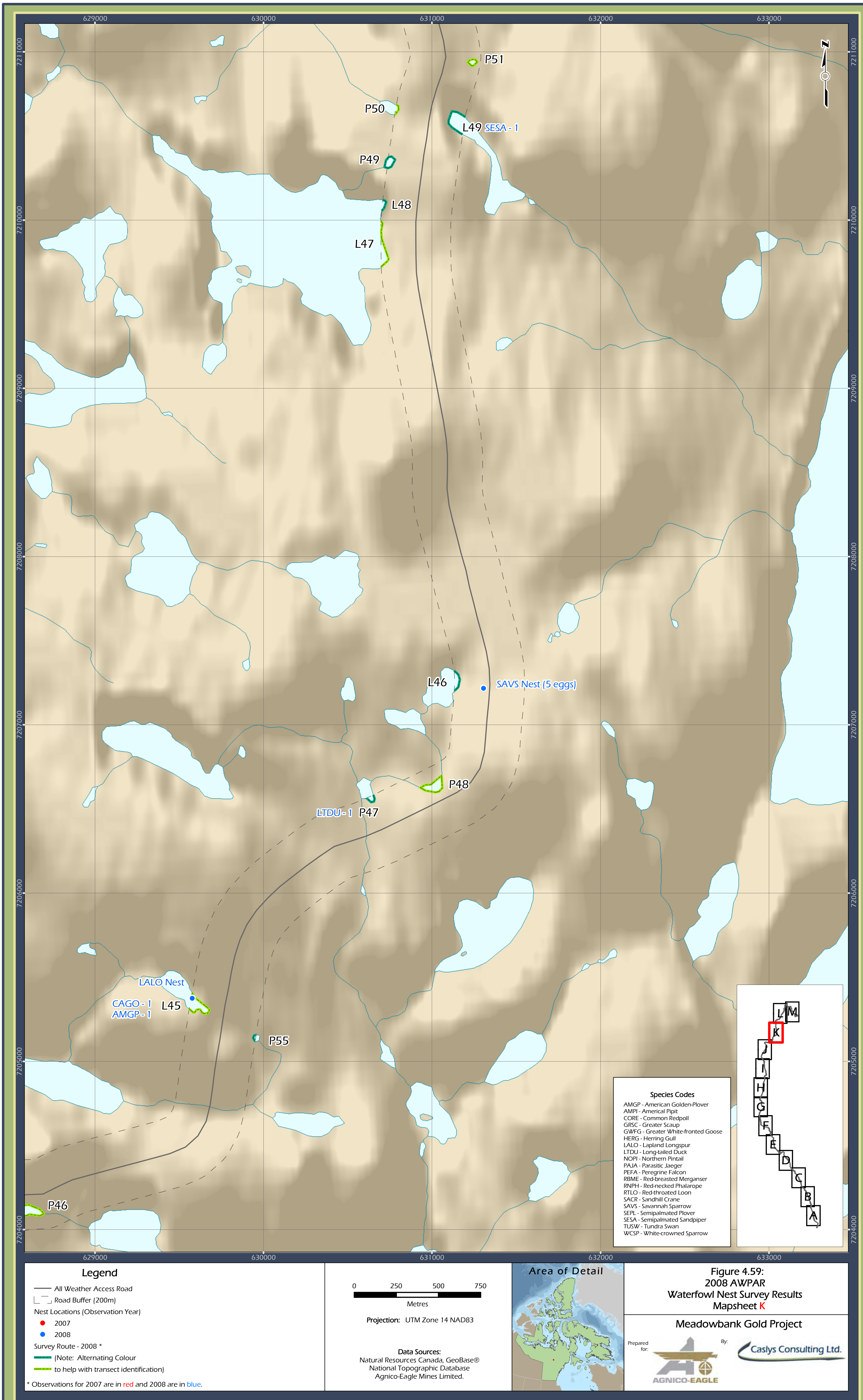
Area of Detail

Figure 4.58:
2008 AWPAR
Waterfowl Nest Survey Results
Mapsheet J

Meadowbank Gold Project

Prepared for: AGNICO-EAGLE

By: Caslys Consulting Ltd.


629000
630000
631000
632000
633000
7211000
7210000
7209000
7208000
7207000
7206000
7205000
7204000
P51
P50
L49 SESA - 1
P49
L48
L47
L46
SAVS Nest (5 eggs)
P48
LTDU - 1 P47
LALO Nest
CAGO - 1
AMGP - 1
L45
P55
P46
Species Codes
AMGP - American Golden-Plover
AMPI - Americal Pipit
CORE - Common Redpoll
GRSC - Greater Scaup
GWFG - Greater White-fronted Goose
HERG - Herring Gull
LALO - Lapland Longspur
LTDU - Long-tailed Duck
NOPI - Northern Pintail
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RNPH - Red-necked Phalarope
RTLO - Red-throated Loon
SACR - Sandhill Crane
SAVS - Savannah Sparrow
SEPL - Semipalmated Plover
SESA - Semipalmated Sandpiper
TUSW - Tundra Swan
WCSP - White-crowned Sparrow
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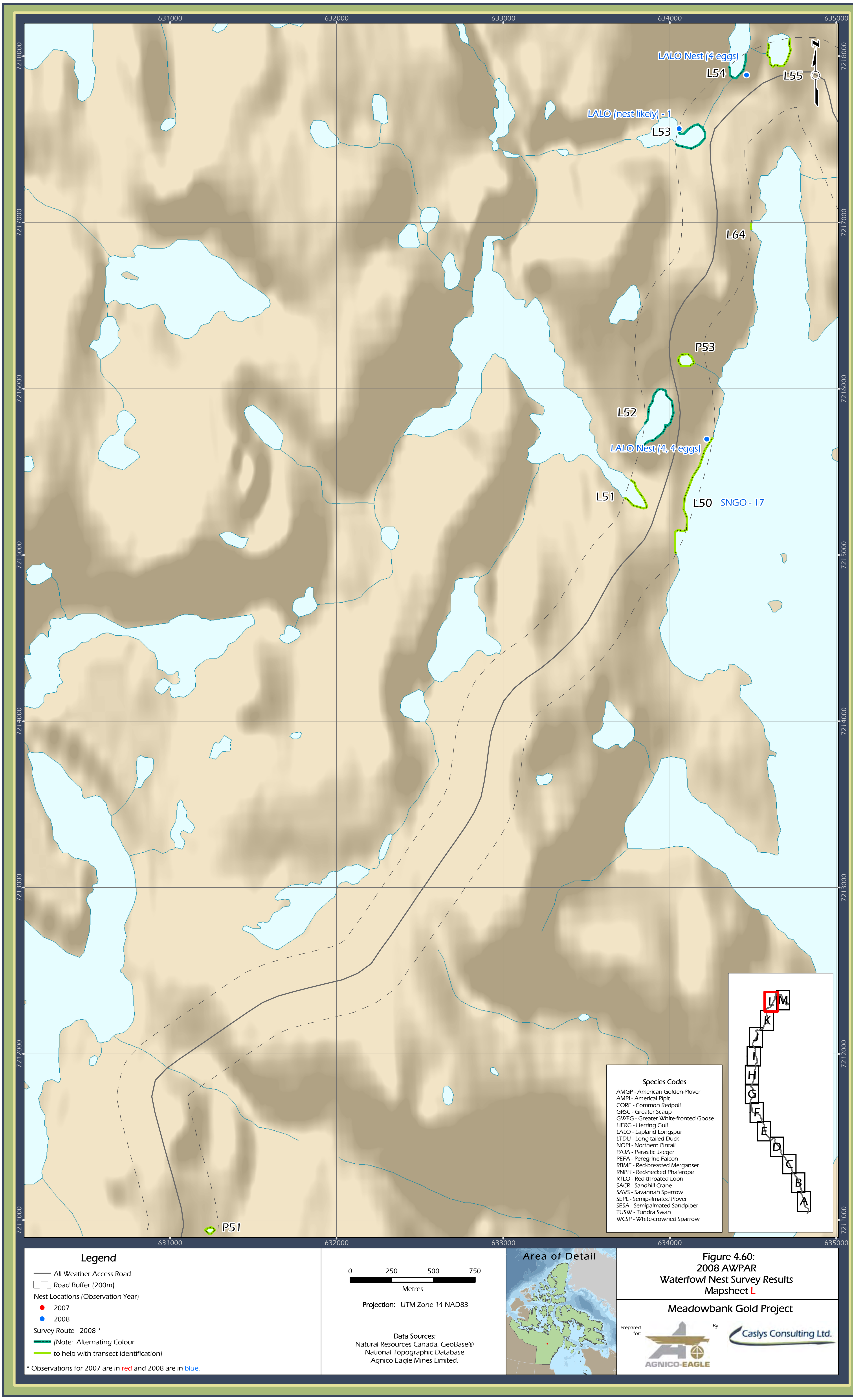
Legend
All Weather Access Road
Road Buffer (200m)
Nest Locations (Observation Year)
2007
2008
Survey Route - 2008 *
(Note: Alternating Colour
to help with transect identification)
* Observations for 2007 are in red and 2008 are in blue.
0 250 500 750
Metres
Projection: UTM Zone 14 NAD83
Data Sources:
Natural Resources Canada, GeoBase®
National Topographic Database
Agnico-Eagle Mines Limited.
Area of Detail
Figure 4.59:
2008 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
LALO Nest (4 eggs)
L54
L55
LALO (nest likely) - 1
L53
L64
P53
L52
LALO Nest (4, 4 eggs)
L51
L50
SNGO - 17
P51
Species Codes
AMGP - American Golden-Plover
AMPI - Americal Pipit
CORE - Common Redpoll
GRSC - Greater Scaup
GWFG - Greater White-fronted Goose
HERG - Herring Gull
LALO - Lapland Longspur
LTDU - Long-tailed Duck
NOPI - Northern Pintail
PAJA - Parasitic Jaeger
PEFA - Peregrine Falcon
RBME - Red-breasted Merganser
RNPH - Red-necked Phalarope
RTLO - Red-throated Loon
SACR - Sandhill Crane
SAVS - Savannah Sparrow
SEPL - Semipalmated Plover
SESA - Semipalmated Sandpiper
TUSW - Tundra Swan
WCSP - White-crowned Sparrow
M
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C
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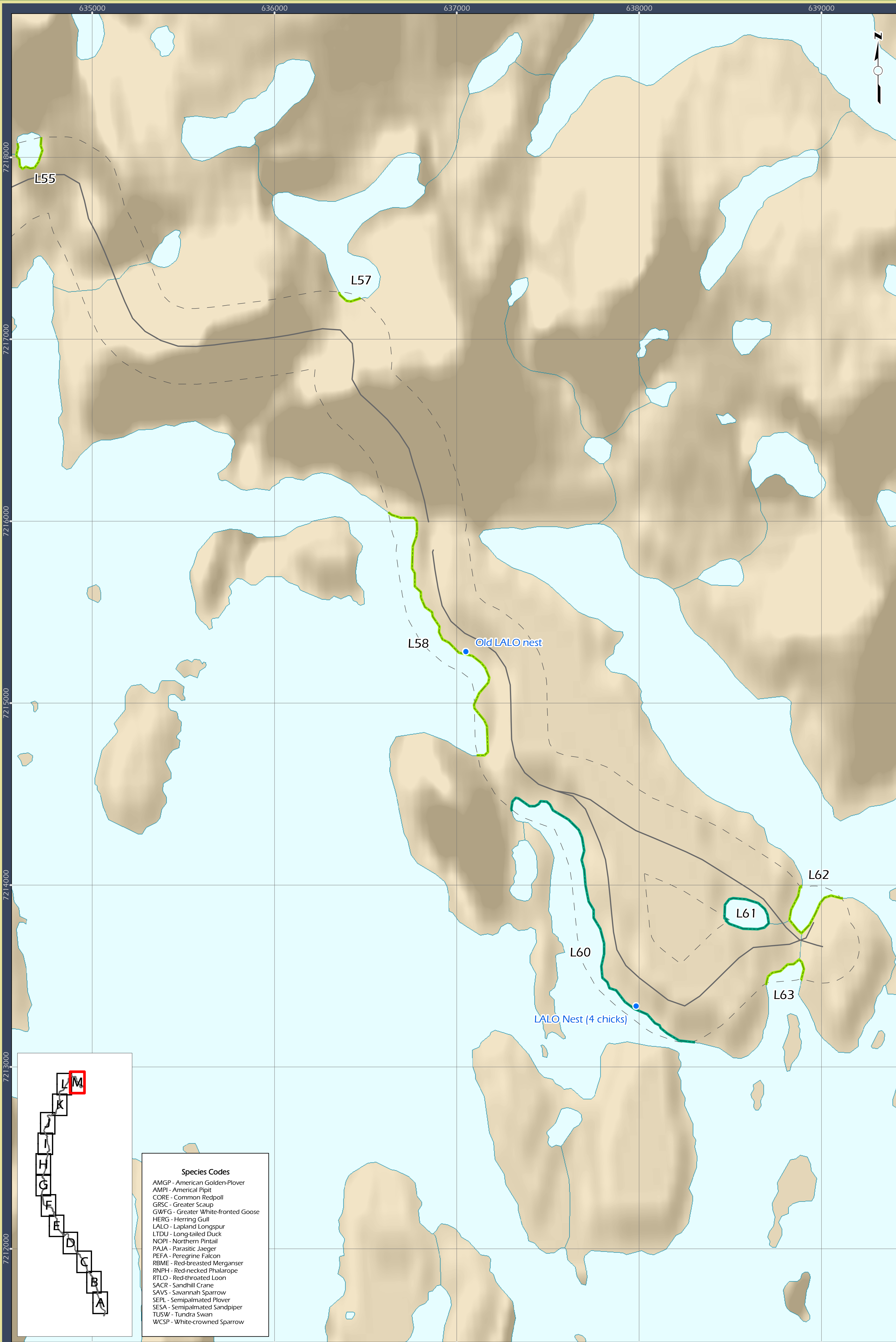
A
Legend
All Weather Access Road
Road Buffer (200m)
Nest Locations (Observation Year)
2007
2008
Survey Route - 2008 *
(Note: Alternating Colour
to help with transect identification)
* Observations for 2007 are in red and 2008 are in blue.
0
250
500
750
Metres
Projection: UTM Zone 14 NAD83
Data Sources:
Natural Resources Canada, GeoBase®
National Topographic Database
Agnico-Eagle Mines Limited.
Area of Detail
Figure 4.60:
2008 AWPAR
Waterfowl Nest Survey Results
Mapsheet L
Meadowbank Gold Project
Prepared for:
AGNICO-EAGLE
By:
Caslys Consulting Ltd.



Legend

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

* Observations for 2007 are in red and 2008 are in blue.

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 4.61:
2008 AWPAR
Waterfowl Nest Survey Results
Mapsheet M

Meadowbank Gold Project

Prepared for: AGNICO-EAGLE

By: Caslys Consulting Ltd.

4.7.3 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 and the collection of sufficient survey data during AWPAR operation for appropriate statistical analysis. An assessment of the accuracy of impact predictions may be included in the 2009 Wildlife Monitoring Summary report contingent on 2009 survey observations and mine site construction completion.

4.8 MINE SITE GROUND SURVEYS

Principal mine site construction commenced in mid-2008 and is currently scheduled to be completed in 2009, after which mine site ground surveys will commence. The survey findings are currently scheduled to be included in the 2009 Wildlife Monitoring Summary report contingent on the timing of mine site construction completion.

4.8.1 Incidental Mine Site Wildlife Observations

Incidental wildlife observations were reported by numerous Agnico-Eagle personnel throughout 2008. The number of reports filed in 2008 increased markedly relative to 2007, which is the result of an increased presence of environmental personnel at the mine site as well as an increased awareness of the importance of managing wildlife through employee education. Observational results were used by environmental personnel to monitor wildlife activity within the boundaries of Meadowbank camp as well as the constructed mine site and ancillary areas. Observational information was particularly useful in verifying the effectiveness of the waste management and disposal processes and in identifying potential problem animals. A summary of the 2008 wildlife log is provided in Appendix F.

4.9 ALL-WEATHER PRIVATE ACCESS ROAD GROUND SURVEYS

Ground surveys commenced shortly following the onset of AWPAR construction. In 2007, seventy-four (74) road ground surveys were successfully completed. At the end of December 2007, approximately 95 km of the proposed 110 km total had been completed; therefore, sampling intensity during the 2007 monitoring program varied along the AWPAR corridor given that road construction started in the south and progressed northward. Specifically, the southern portion of the corridor was sampled more intensely because it was accessible for a longer period of time. In 2008, sampling intensity varied marginally until the road was completed in March.

In 2007, the road surveys were conducted on average every 4.1 days from March 1, 2007 until December 31, 2007. In 2008, the road surveys were conducted on average every 4.2 days from January 2, 2008 until December 29, 2008. Distance surveyed and the number of surveys conducted each season in 2007 and 2008 is detailed in Table 4.20.

Table 4.20: The Mean Distance of Road Surveyed and Number of Surveys per Season in 2007 and 2008.

Year	Season	Distance surveyed in km			
		Mean	Min	Max	n
2007	Spring	29.1	24.6	32.3	10
	Summer	44.9	5.0	57.4	24
	Fall	64.1	58.3	73.5	8
	Winter	69.5	13.9	95.4	32
2008	Spring	106.8	106.8	106.8	15
	Summer	106.8	106.8	106.8	6
	Fall	106.8	106.8	106.8	15
	Winter	103.3	91.9	106.8	52

Caribou and waterfowl represent the two most commonly sighted groups observed during the surveys. Table 4.21 and 4.22 summarize the seasonal and monthly 2008 monitoring program observations and sampling intensity for Caribou and waterfowl, respectively. 2007 results are also provided for comparative purposes. Figure 4.62 illustrates variation in sampling intensity in 2008.

Table 4.21: 2007 and 2008 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

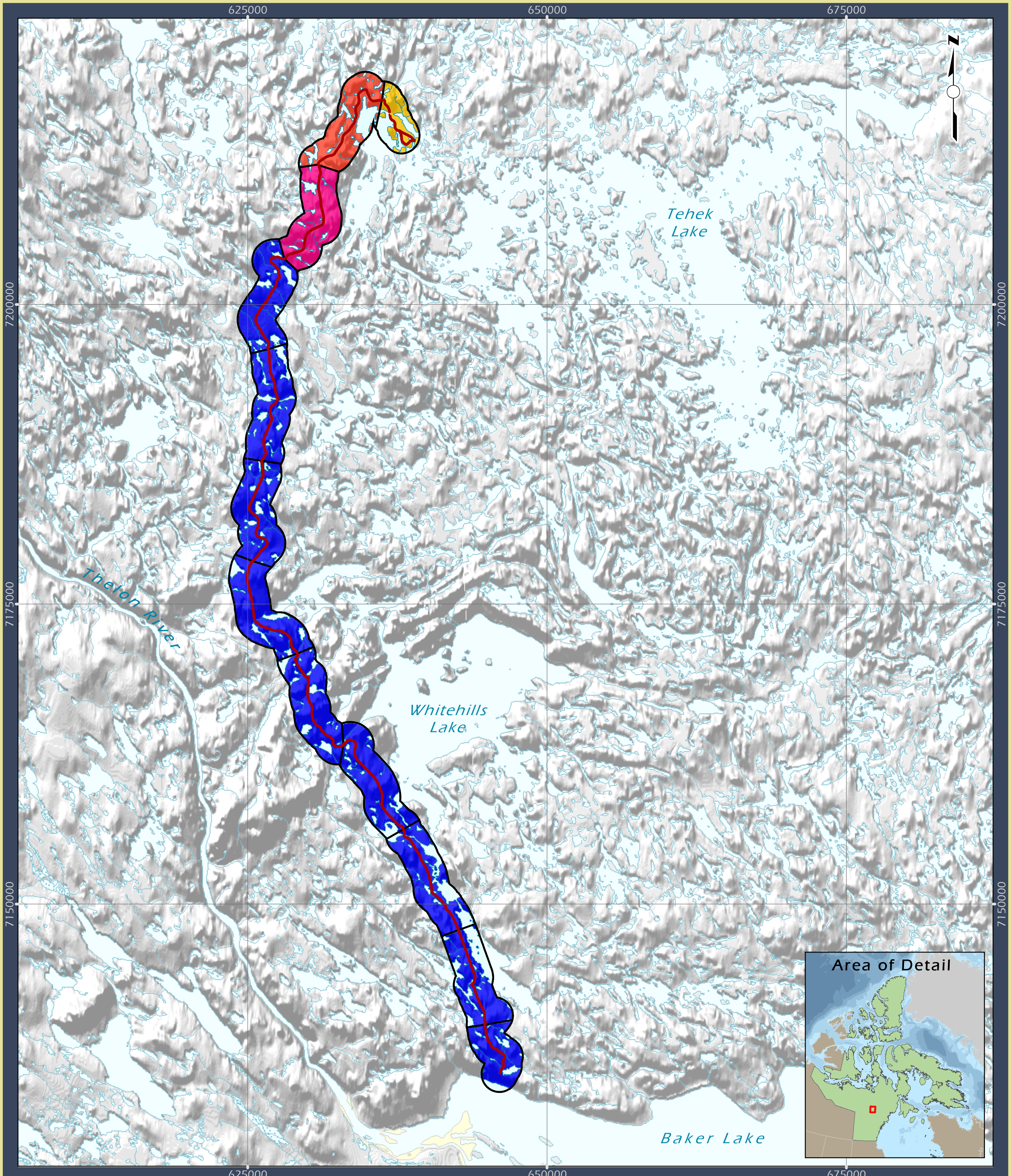
Year	Season	Month	# of Surveys	Total # of Sightings*	Average # of Sightings / Survey	Total # of Observed Caribou	Average # of Observed Caribou / Survey	Average # of Caribou / Sighting
	Winter	October	12	62	5.2	2,910	242.5	46.9
	Winter	November	11	87	7.9	7,895	717.7	90.7
	Winter	December	10	136	13.6	1,402	140.2	10.3

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

Table 4.22: 2007 and 2008 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					

Figure 4.63 (Mapsheet A) and Figure 4.64 (Mapsheet B) illustrates the observed 2008 spring Caribou distribution within the LSA for the AWPAR. Similarly, Figure 4.65 (Mapsheet A) and Figure 4.66 (Mapsheet B) illustrates the observed 2008 summer Caribou distribution within the LSA for the AWPAR. Figure 4.67 (Mapsheet A) and Figure 4.68 (Mapsheet B), and Figure 4.69 (Mapsheet A) and Figure 4.70 (Mapsheet B) illustrate the observed Caribou distribution in 2008 fall and winter, respectively. Figure 4.71 (Mapsheet A) and Figure 4.72 (Mapsheet B) illustrate observed Caribou distribution data within the LSA for the AWPAR for all seasons in 2008.



Legend

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

Number of Surveys

- 67 - 68
- 69 - 82
- 83 - 77
- 88

0 5 10 15
Kilometres

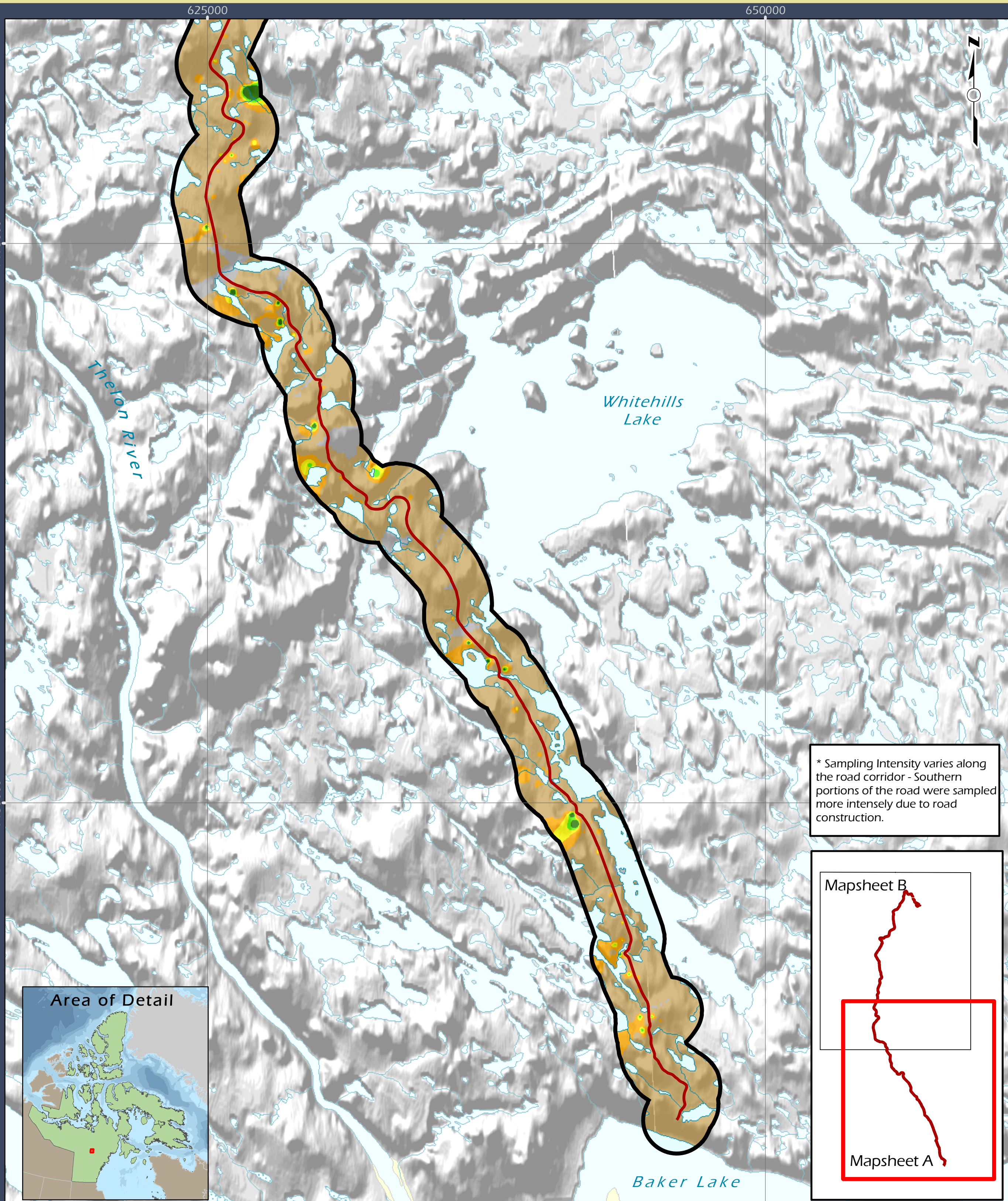
Projection: UTM Zone 14 NAD83

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

Figure 4.62: 2008 AWPAR Ground Survey Variation in Sampling Intensity

Meadowbank Gold Project

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



Legend

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

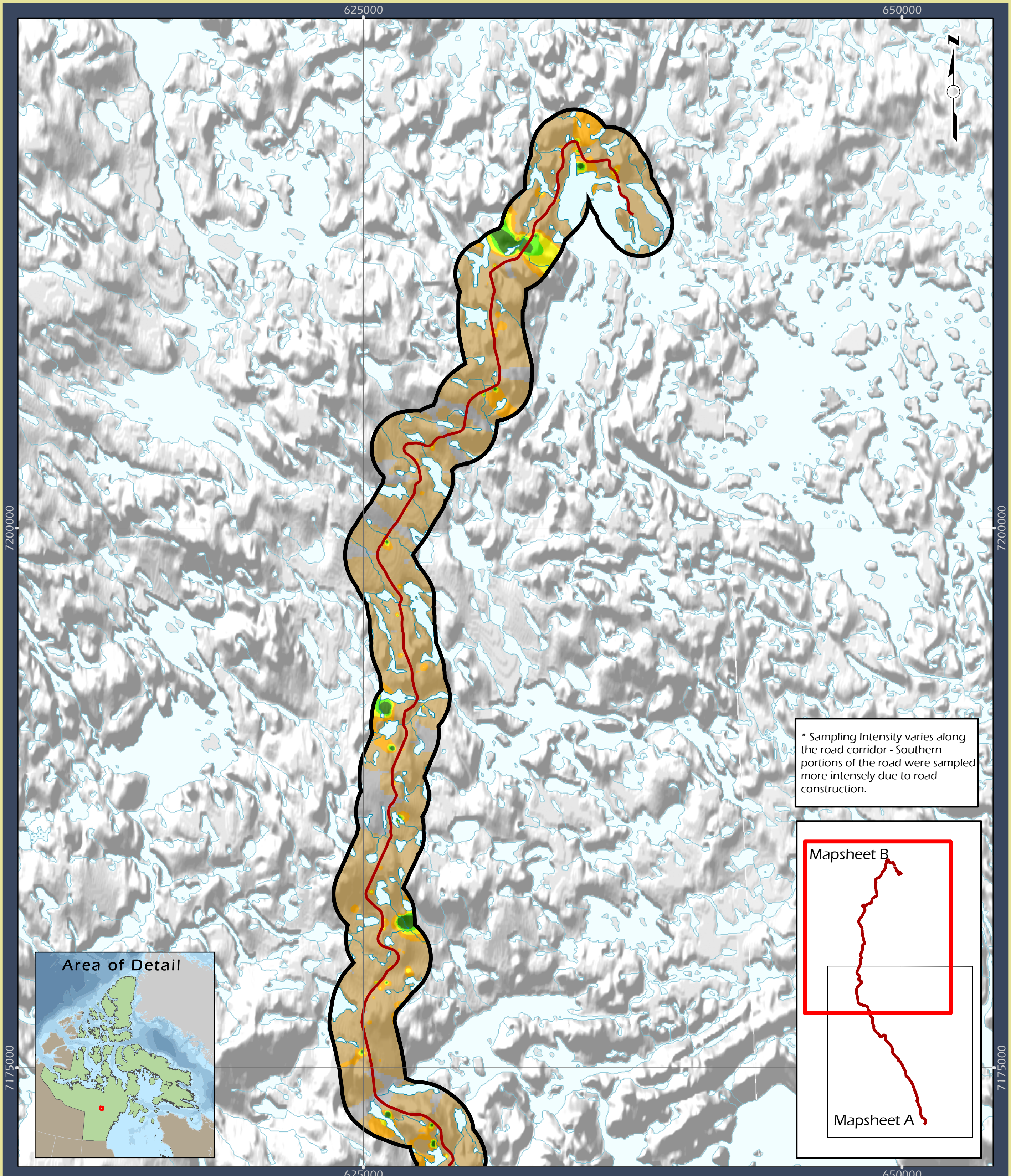
0 5 10
Kilometres
Projection: UTM Zone 14 NAD83

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

Figure 4.63: Spring 2008 Ground Survey Observed Caribou Distribution within the LSA for the AWPAR Mapsheet A

Meadowbank Gold Project

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



Legend

Caribou / Ha

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

0 5 10

Kilometres

Projection: UTM Zone 14 NAD83

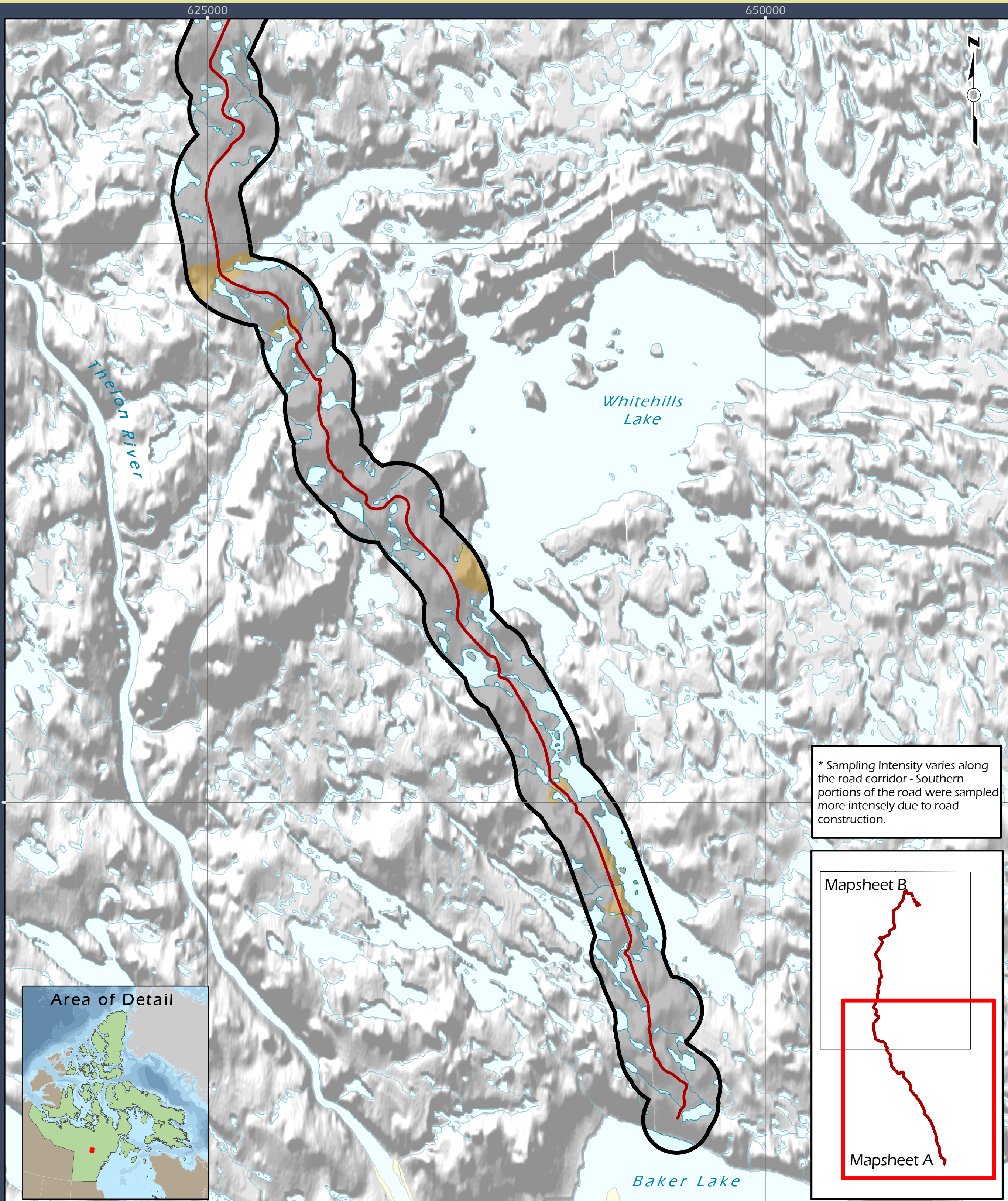
Data Sources:
Natural Resources Canada, GeoBase®
National Topographic Database
Agnico-Eagle Mines Limited.

Figure 4.64: Spring 2008 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

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

Caribou / Ha

- 0
- 1 - 5
- 5 - 10
- 10 - 15
- 15 - 20
- > 20

0 5 10

Kilometres

Projection: UTM Zone 14 NAD83

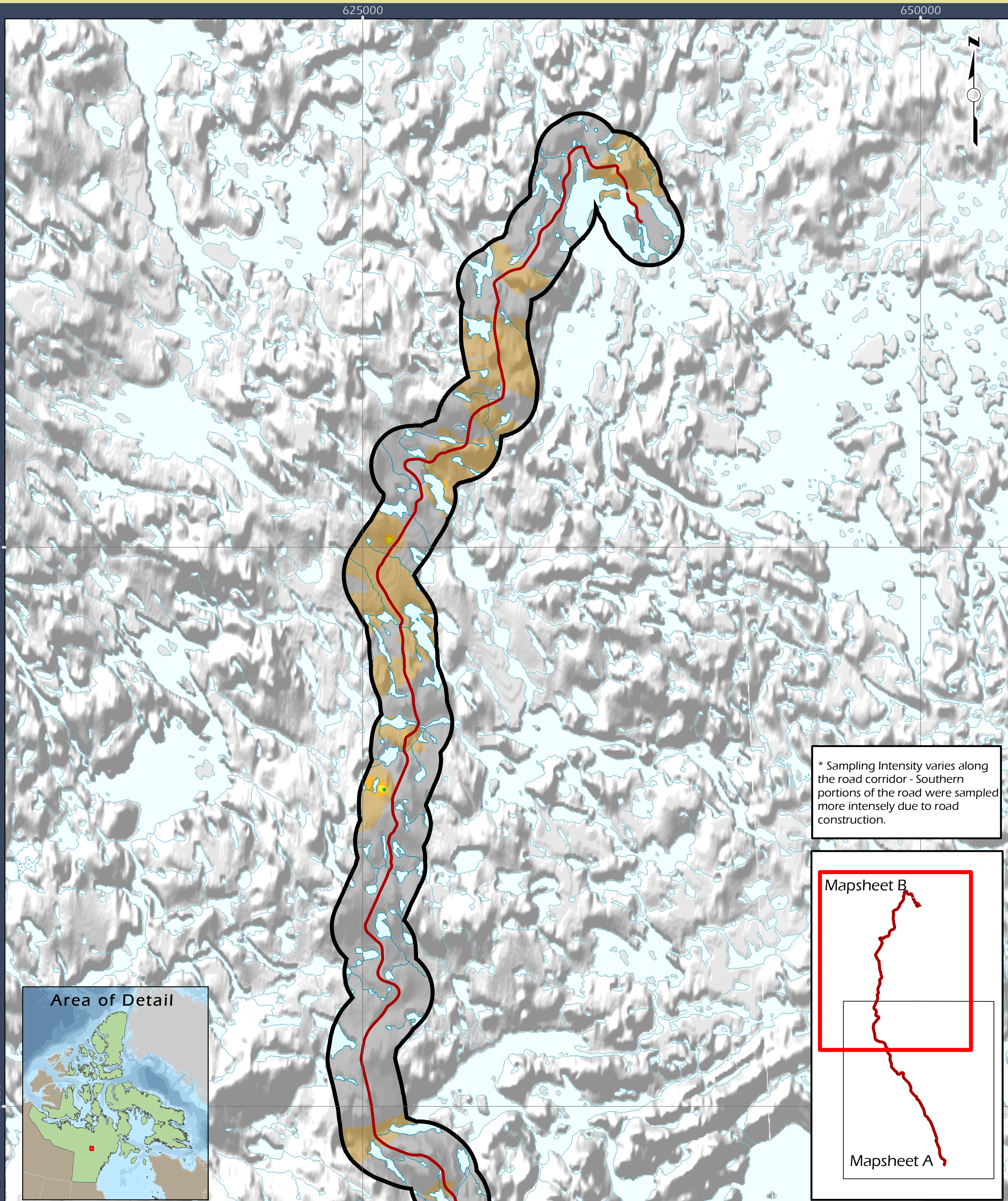
Data Sources:
Natural Resources Canada, GeoBase®
National Topographic Database
Agnico-Eagle Mines Limited.

Figure 4.65: Summer 2008 Ground Survey Observed Caribou Distribution within the LSA for the AWPAR Mapsheet A

Meadowbank Gold Project

Prepared for: AGNICO-EAGLE

By: Caslys Consulting Ltd.



Legend

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

0 5 10
Kilometres
Projection: UTM Zone 14 NAD83

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

Figure 4.66: Summer 2008 Ground Survey Observed Caribou Distribution within the LSA for the AWPAR Mapsheet B

Meadowbank Gold Project

Prepared for: AGNICO-EAGLE

By: Caslys Consulting Ltd.

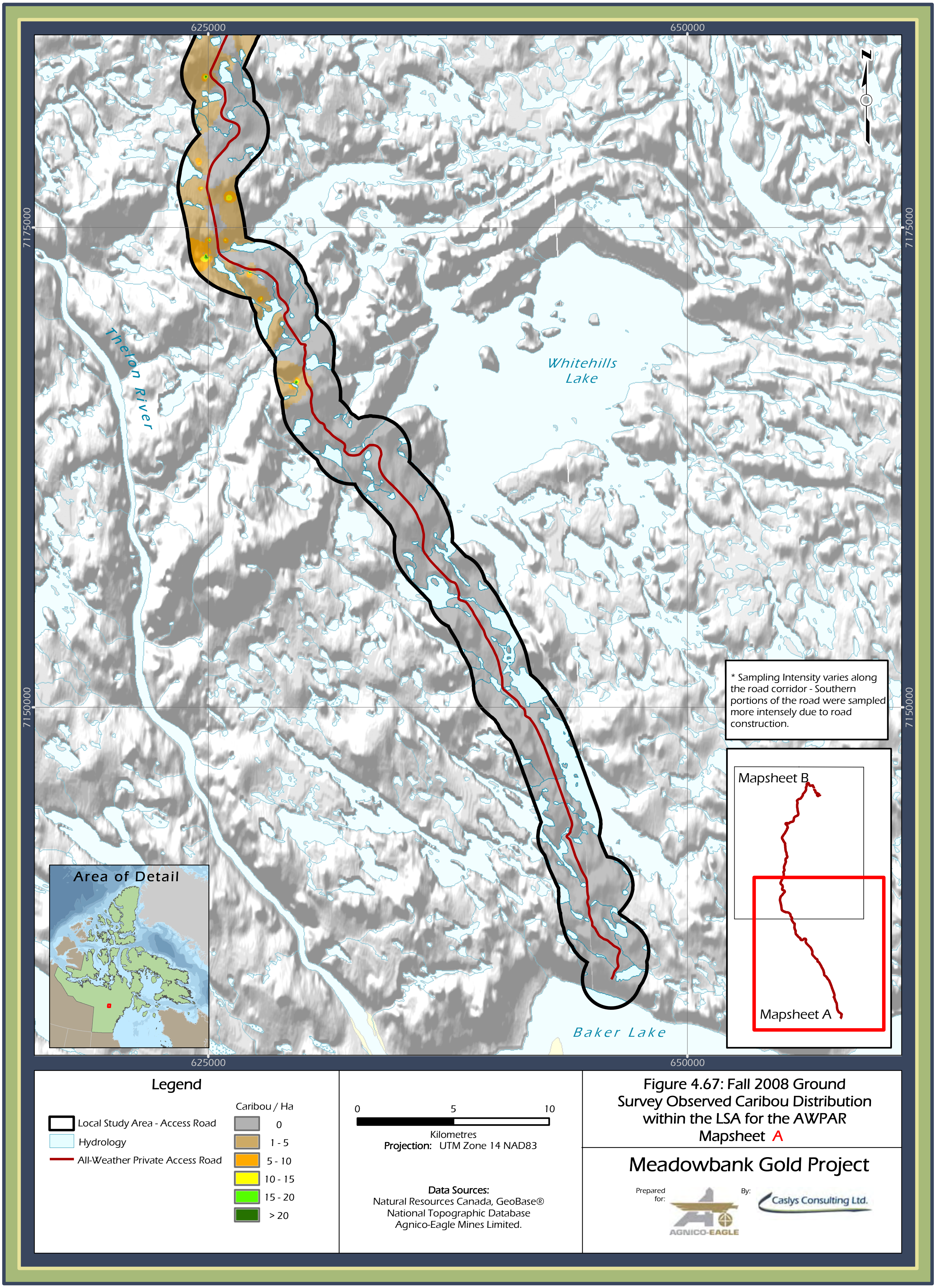
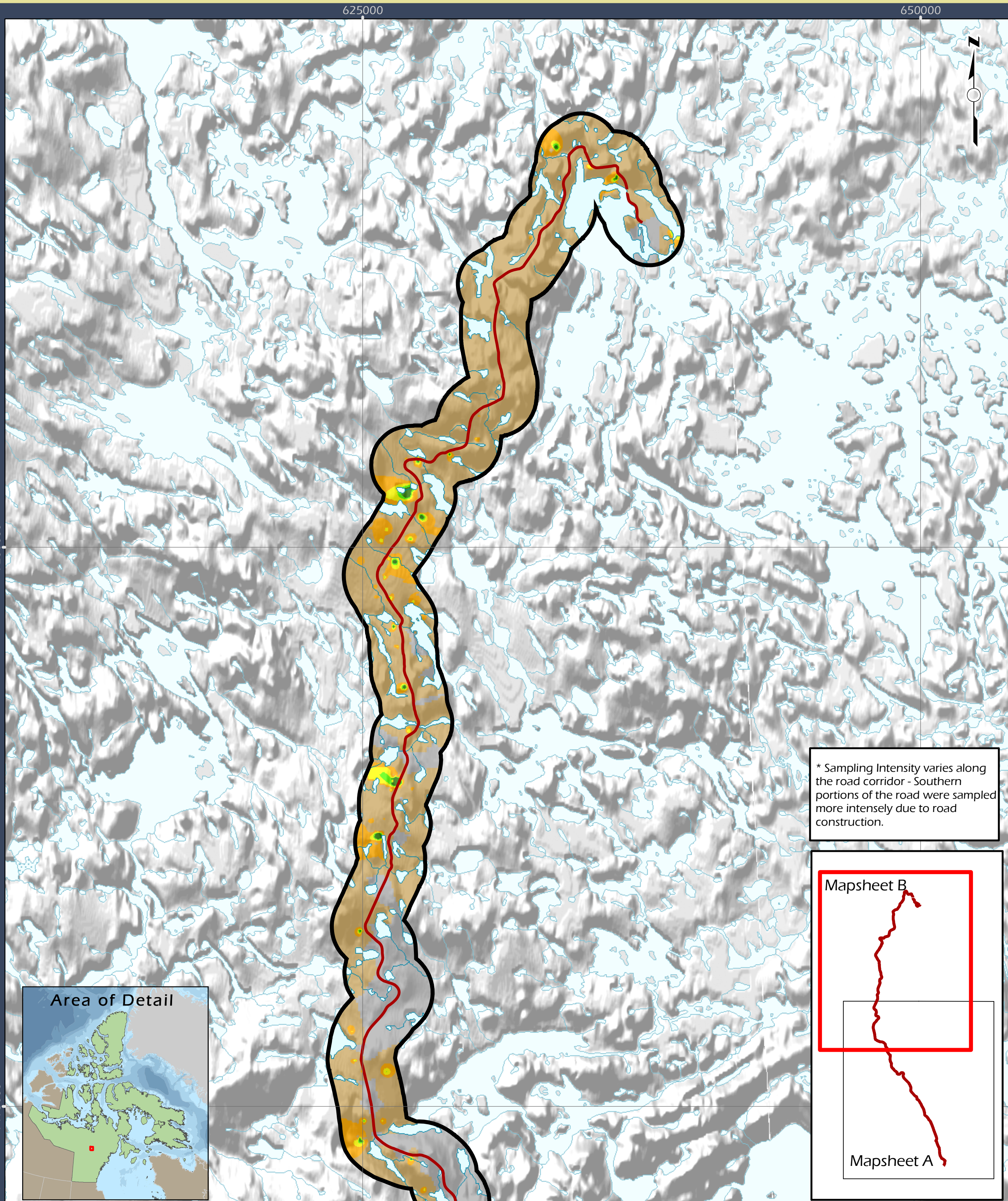


Figure 4.67: Fall 2008 Ground Survey Observed Caribou Distribution within the LSA for the AWPAR Mapsheet A

Meadowbank Gold Project

Prepared for: AGNICO-EAGLE

By: Caslys Consulting Ltd.



Legend

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

Caribou / Ha
0
1 - 5
5 - 10
10 - 15
15 - 20
> 20

0 5 10

Kilometres

Projection: UTM Zone 14 NAD83

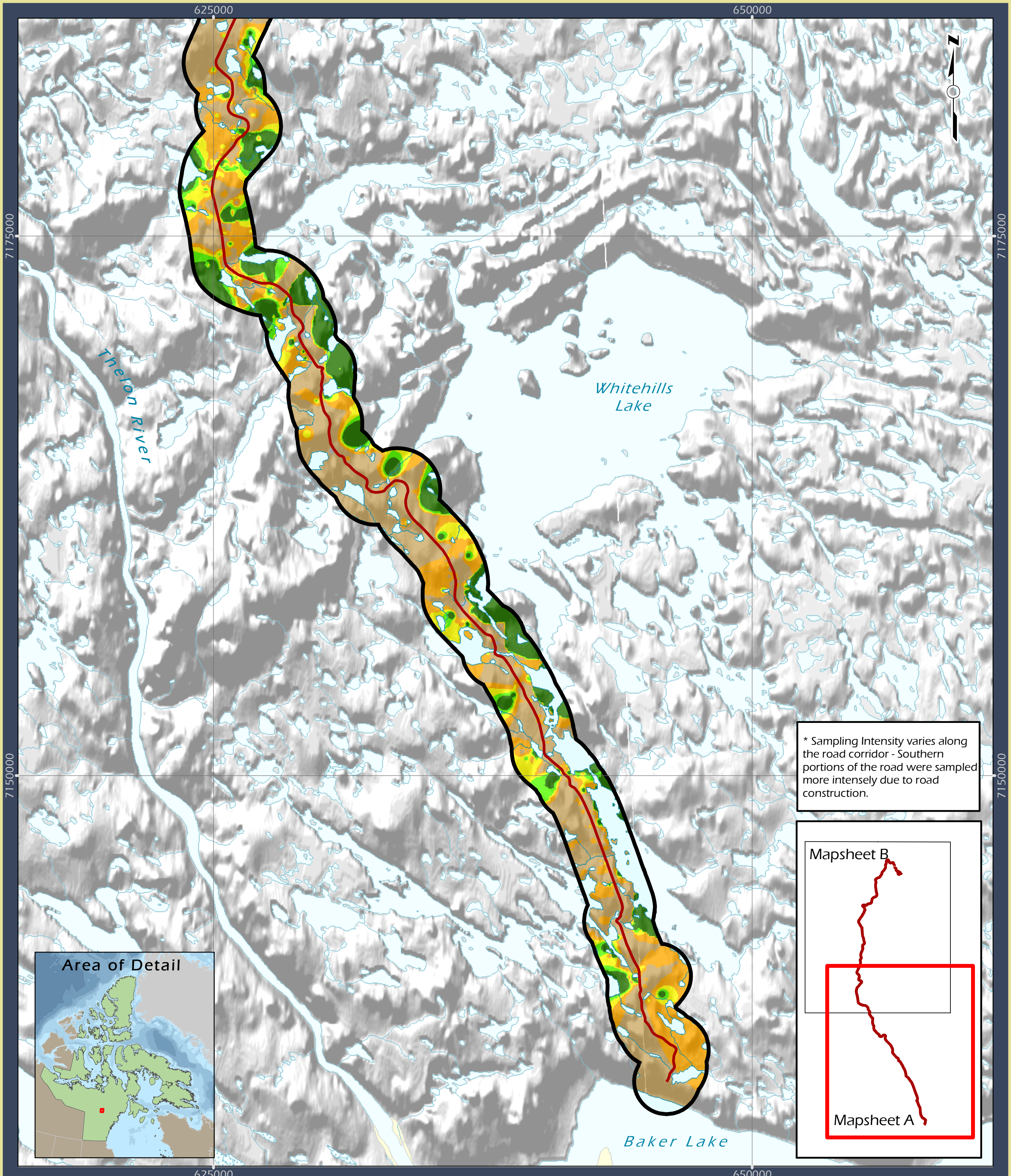
Data Sources:
Natural Resources Canada, GeoBase®
National Topographic Database
Agnico-Eagle Mines Limited.

Figure 4.68: Fall 2008 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

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

Caribou / Ha
0
1 - 5
5 - 10
10 - 15
15 - 20
> 20

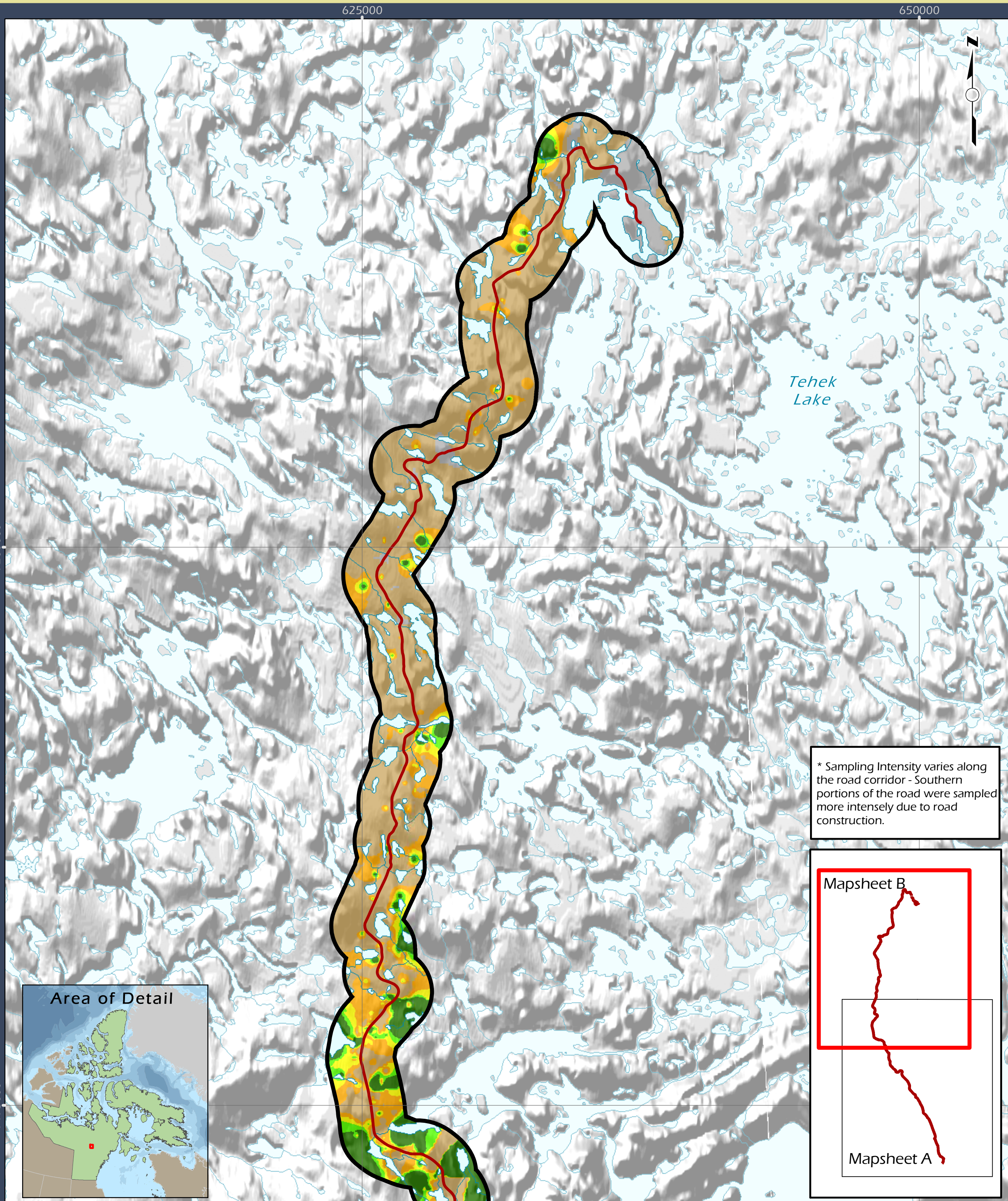
0 5 10
Kilometres
Projection: UTM Zone 14 NAD83

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

Figure 4.69: Winter 2008 Ground Survey Observed Caribou Distribution within the LSA for the AWPAR Mapsheet A

Meadowbank Gold Project

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



Legend

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

Caribou / Ha

- 0
- 1 - 5
- 5 - 10
- 10 - 15
- 15 - 20
- > 20

0 5 10
Kilometres

Projection: UTM Zone 14 NAD83

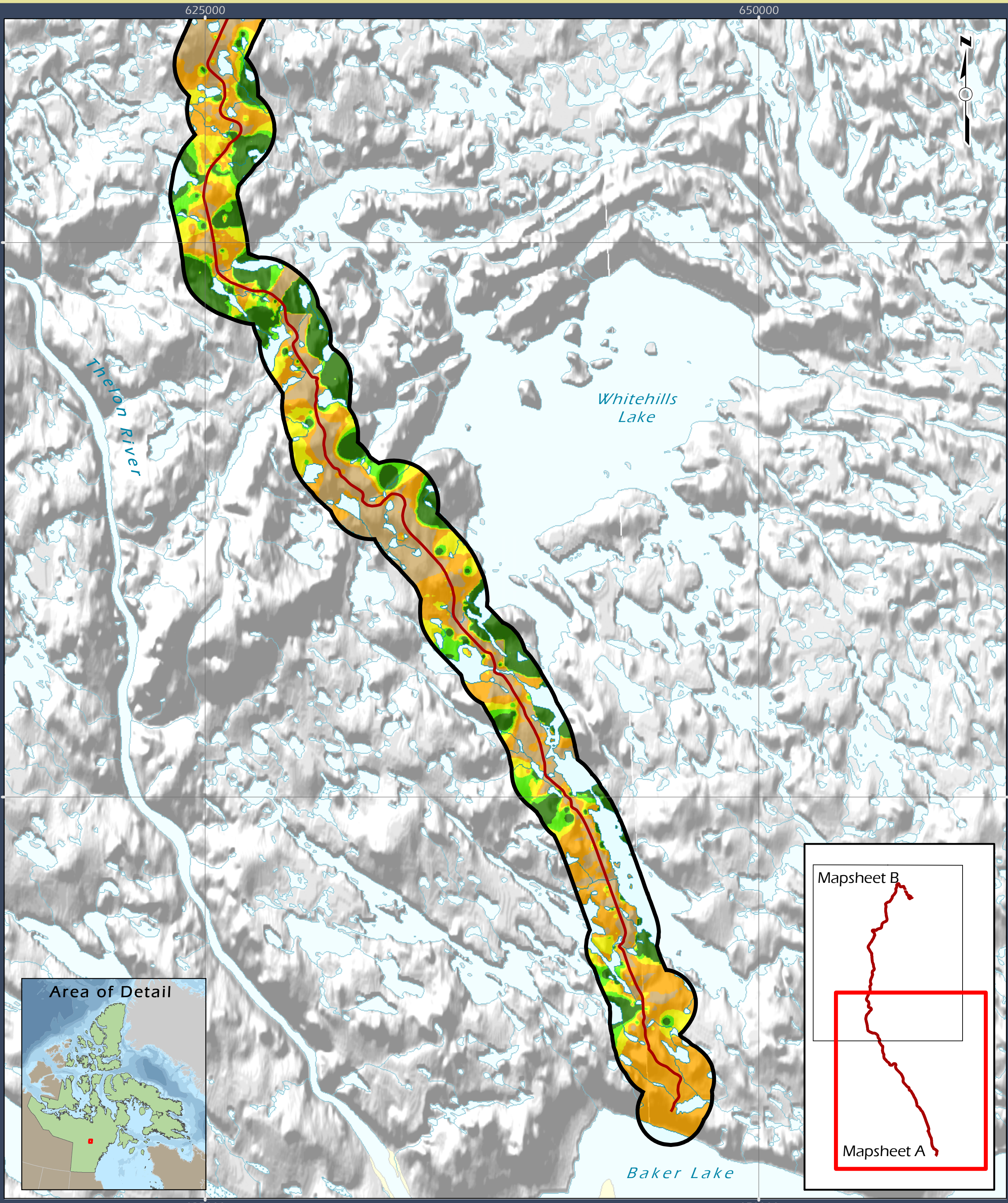
Data Sources:
Natural Resources Canada, GeoBase®
National Topographic Database
Agnico-Eagle Mines Limited.

Figure 4.70: Winter 2008 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

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

0 5 10
Kilometres
Projection: UTM Zone 14 NAD83

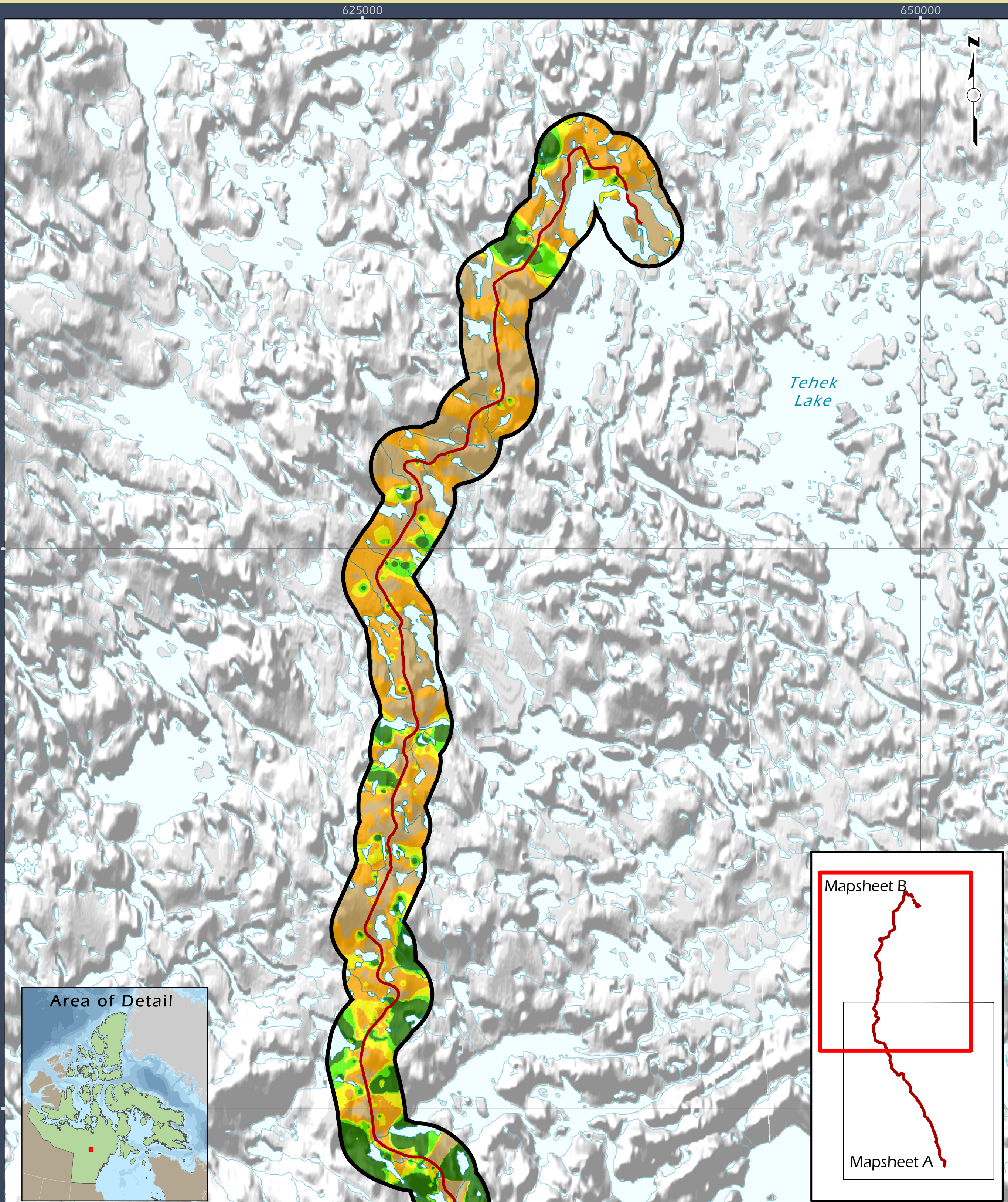
Data Sources:
Natural Resources Canada, GeoBase®
National Topographic Database
Agnico-Eagle Mines Limited.

Figure 4.71: 2008 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.



Legend

Caribou / Ha

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

Caribou / Ha
0
1 - 5
5 - 10
10 - 15
15 - 20
> 20

0 5 10

Kilometres

Projection: UTM Zone 14 NAD83

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

Figure 4.72: 2008 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, 24, 35, 27, and 20 species were sighted in 2008 during spring, summer, fall, and winter surveys, respectively, up from 9, 31, 20, and 17 species within the same periods in 2007. The total number of surveys conducted for Spring, Summer, Fall, and Winter in 2008 was 25, 30, 23, and 84, respectively. Table 4.23 summarizes counts of each species per 10 kilometres surveyed for all species sighted during surveys. Seventy-four (74) and 88 surveys were conducted in 2007 and 2008, respectively.

Table 4.23: The Mean Number of Species Counted per 10 Kilometres of Road Surveyed as a Function of Season (2007 and 2008 Pooled Data). The Number of Surveys per Season in which a Species was Detected in 2007 and 2008 is also Provided.

Species Name	Counts per 10 km Surveyed				# of Surveys where Species Detected Pooled (2007 and 2008) Data				Yearly Detections	
	Spring	Summer	Fall	Winter	Spring	Summer	Fall	Winter	2007	2008
Arctic Fox	0.17	0.06	0.11	0.18	12	8	15	57	32	60
Arctic Ground Squirrel	0.02	0.05	0.01	0.00	2	3	2	0	0	7
Arctic Hare	0.37	0.09	0.03	0.10	15	8	5	36	17	47
Arctic Tern	0.00	0.01	0.00	0.00	0	1	0	0	1	0
Cackling Goose	0.00	0.63	0.95	0.00	0	11	1	1	10	3
Canada Goose	0.12	2.22	1.27	0.00	2	20	8	0	19	11
Caribou	44.48	5.44	10.40	38.38	25	27	20	78	63	87
Common Loon	0.00	0.03	0.00	0.00	0	4	0	0	3	1
Common Merganser	0.00	0.01	0.00	0.00	0	1	0	0	0	1
Common Raven	0.20	0.04	0.01	0.12	7	3	1	24	13	22
Common Redpoll	0.02	0.00	0.00	0.00	1	0	0	0	0	1
Glaucous Gull	0.01	0.67	0.00	0.00	1	5	0	0	5	1
Greater Scaup	0.00	0.34	0.01	0.01	0	9	1	1	8	3
Greater WF Goose	0.02	1.38	0.07	0.00	1	15	1	0	13	4
Gyrfalcon	0.01	0.03	0.01	0.00	1	2	2	1	2	4
Herring Gull	0.04	0.99	0.09	0.00	1	17	6	0	20	4
Horned Lark	0.00	0.00	0.01	0.00	0	0	1	0	1	0
Lapland Longspur	0.00	0.01	0.00	0.00	0	1	0	0	0	1
Lemming	0.00	0.00	0.00	0.00	0	0	0	1	1	0
Long-tailed Duck	0.00	1.00	0.10	0.00	0	16	2	0	16	2
Long-tailed Jaeger	0.00	0.00	0.01	0.00	0	0	1	0	1	0
Muskox	0.31	0.13	0.52	0.11	6	7	12	19	12	32
Northern Pintail	0.01	0.44	0.04	0.00	1	16	1	0	12	6
Owl (unidentified spp.)	0.00	0.01	0.00	0.00	0	1	0	0	1	0
Parasitic Jaeger	0.00	0.01	0.02	0.00	0	1	2	0	2	1
Peregrine Falcon	0.00	0.01	0.01	0.00	0	1	1	1	2	1
Raven	0.01	0.04	0.00	0.00	1	1	0	0	2	0
Red-breasted Merganser	0.00	0.12	0.01	0.00	0	8	1	0	8	1
Rock Ptarmigan	1.59	0.95	0.07	0.65	13	13	2	14	19	23
Ross's Goose	0.14	1.91	0.00	0.00	1	5	0	0	5	1
Sandhill Crane	0.14	1.57	0.36	0.00	2	25	11	0	25	13

Species Name	Counts per 10 km Surveyed				# of Surveys where Species Detected Pooled (2007 and 2008) Data				Yearly Detections	
	Spring	Summer	Fall	Winter	Spring	Summer	Fall	Winter	2007	2008
Snow Bunting	0.02	0.00	0.00	0.00	1	0	0	0	0	1
Snow Goose	0.04	33.63	10.45	0.00	1	6	3	1	5	6
Snowy Owl	0.00	0.00	0.00	0.00	0	0	0	1	1	0
Tundra Swan	0.00	0.22	0.03	0.00	0	7	2	0	8	1
Weasel	0.00	0.01	0.00	0.00	0	1	0	0	1	0
Willow Ptarmigan	0.68	1.55	0.11	0.56	8	18	3	16	24	21
Wolf	0.09	0.01	0.01	0.03	7	1	1	11	4	16
Wolverine	0.02	0.01	0.00	0.01	4	1	0	5	4	6
Ptarmigan (unident. spp.)	0.75	0.00	0.01	0.06	8	0	2	4	7	7

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. Counts per kilometer for Caribou were highest from March until the end of June and from November to January (Figure 4.73). A Spline smoothing function with a tension value of 30 was used to interpolate trends. No Caribou or very low abundances of Caribou were sighted from July to late August in both 2007 and 2008.

4.9.1 Wildlife Mortality along the AWPAR

With road construction beginning in 2007, road-related wildlife mortality was recorded for the first time. In 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.

Table 4.24 summarizes the 2008 wildlife mortality data. In numerous cases, date and cause of death could not be determined in the field; however, Agnico-Eagle environmental personnel attempted to determine the causative factor for each Caribou mortality in accordance with the TEMP. Although down from 2007, the two vehicle-related Caribou deaths in 2008 exceeded the threshold of one (1) outlined in Section 4.4.2.3 (Project-Related Mortality) of the TEMP (Agnico-Eagle 2006), Caribou mortality implications and general wildlife mortality issues are discussed in Section 5.17.1.

Figure 4.73: The Number of Caribou and Muskox Counted per Kilometer of Road Surveyed as a Function of Date.

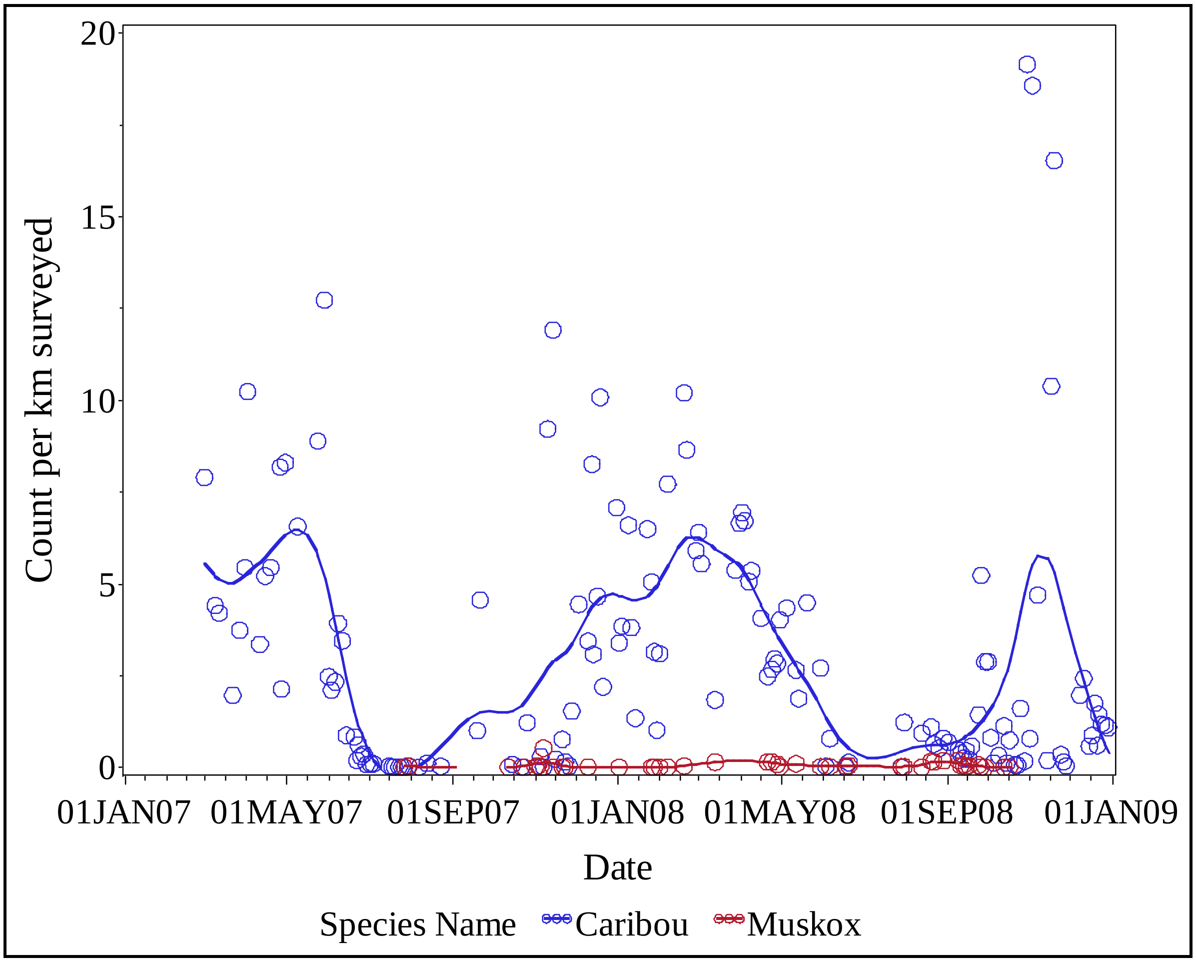


Table 4.24: 2008 AWPAR Wildlife Mortality Data.

Report Date	Species	Location	Comments
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	Likely road kill since on road
27 May	1 Rock Ptarmigan	14W 0626922 7194262	Likely road kill since on road
30 May	1 Rock Ptarmigan	14W 0626340 7188640	Likely road kill since on road
31 May	1 Rock Ptarmigan	14W 0626048 7179363	Road kill
06 Jun	1 Willow Ptarmigan	14W 0631342 7164318	Likely road kill since on road
06 Jun	1 Rock Ptarmigan	14W 0625483 7174368	Likely road kill since on road
06 Jun	1 Rock Ptarmigan	14W 0626873 7194492	Likely road kill since on road
06 Jun	1 Rock Ptarmigan	14W 0627323 7203201	Likely road kill since on road
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	Likely road kill since on road
18 Jun	1 Lapland Longspur*	14W 0626827 7200720	Likely road kill since on road
18 Jun	1 Arctic Ground Squirrel*	14W 0634127 7162081	Likely road kill since on road
13 Aug	1 Arctic Ground Squirrel	15W 0355176 7139683	Likely road kill since on road
13 Aug	1 Lapland Longspur	14W 0634252 7217314	Likely road kill since on road
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.

Report Date	Species	Location	Comments
29 Aug	1 Ptarmigan	14W 0625677 7198936	Likely road kill since on road
09 Sep	1 Arctic Ground Squirrel	14W 0627890 7172731	Likely road kill since on road
10 Sep	1 Caribou	AWPAR km 100	Carcass of caribou (head only); cause of death – hunting.
11 Sep	1 Ptarmigan*	14W 0629557 7169342	Likely road kill since on road
11 Sep	1 Arctic Fox*	14W 0626399 7200081	Killed on road
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
23 Sep	3 Arctic Foxes	AWPAR between km 74 and 80	Dead on road
29 Sep	1 Arctic Hare	AWPAR km 46	Dead on road
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	1 dead fox on the road
07 Nov	1 Arctic Fox*	14W 0640298 7151692	Dead on road
07 Nov	1 Caribou*	14W 0625514 7183994	Apparent road kill
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.
13 Dec	1 Arctic Hare	AWPAR – km 16	Apparent road kill
17 Dec	1 Arctic Fox	14W 0632258 7212615	Apparent road kill
28 Dec	1 Wolf	Near Meadowbank Camp	Killed by Conservation Officer because of proximity to Camp. Report available.

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

4.9.2 Potential Project-Related Variation

4.9.2.1 The Effect of Roaded Transects in 2007 and 2008 on Caribou Abundance

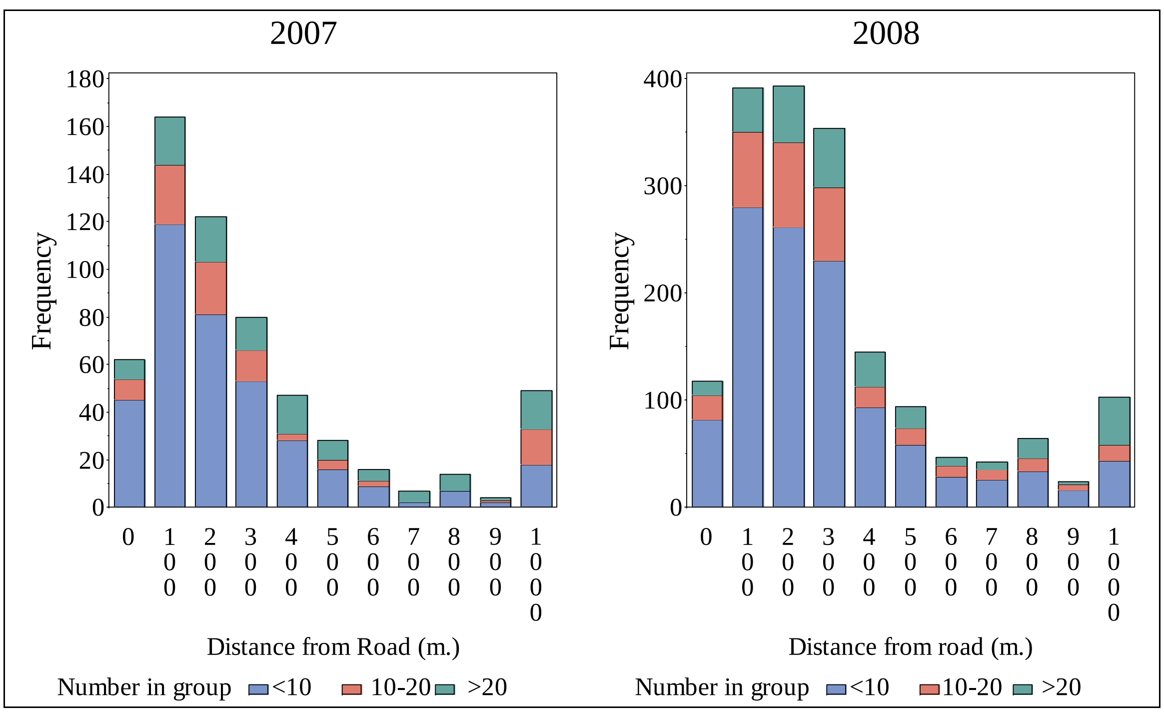
The number of Caribou sightings and observations in 2007 and 2008 were directly proportional to the distance from the road, similar to that which was reported in Section 4.5 - Breeding Bird Transects. The highest number of sightings occurred within the 100-200 metres from the road with a sharp decrease at greater distances. The larger frequency of caribou sighted at distances greater than 1000 metres is the result of data pooling at these greater distance intervals. A larger proportion of caribou were sighted closer to the road in 2008 relative to 2007, which may be due to the larger number of winter surveys conducted in 2008 (where sightability is generally higher). Additional years of data will serve to validate this assumption.

The sighting and observational data was re-organized by distance from the road in 100 m increments (Table 4.25) and the sightability of Caribou was plotted as a function of group size and distance from the road (Figure 4.74).

Table 4.25: 2007 and 2008 Systematic Ground Survey Caribou Total Sightings and Total Number Observed Organized by Distance from Road in 100 m Increments.

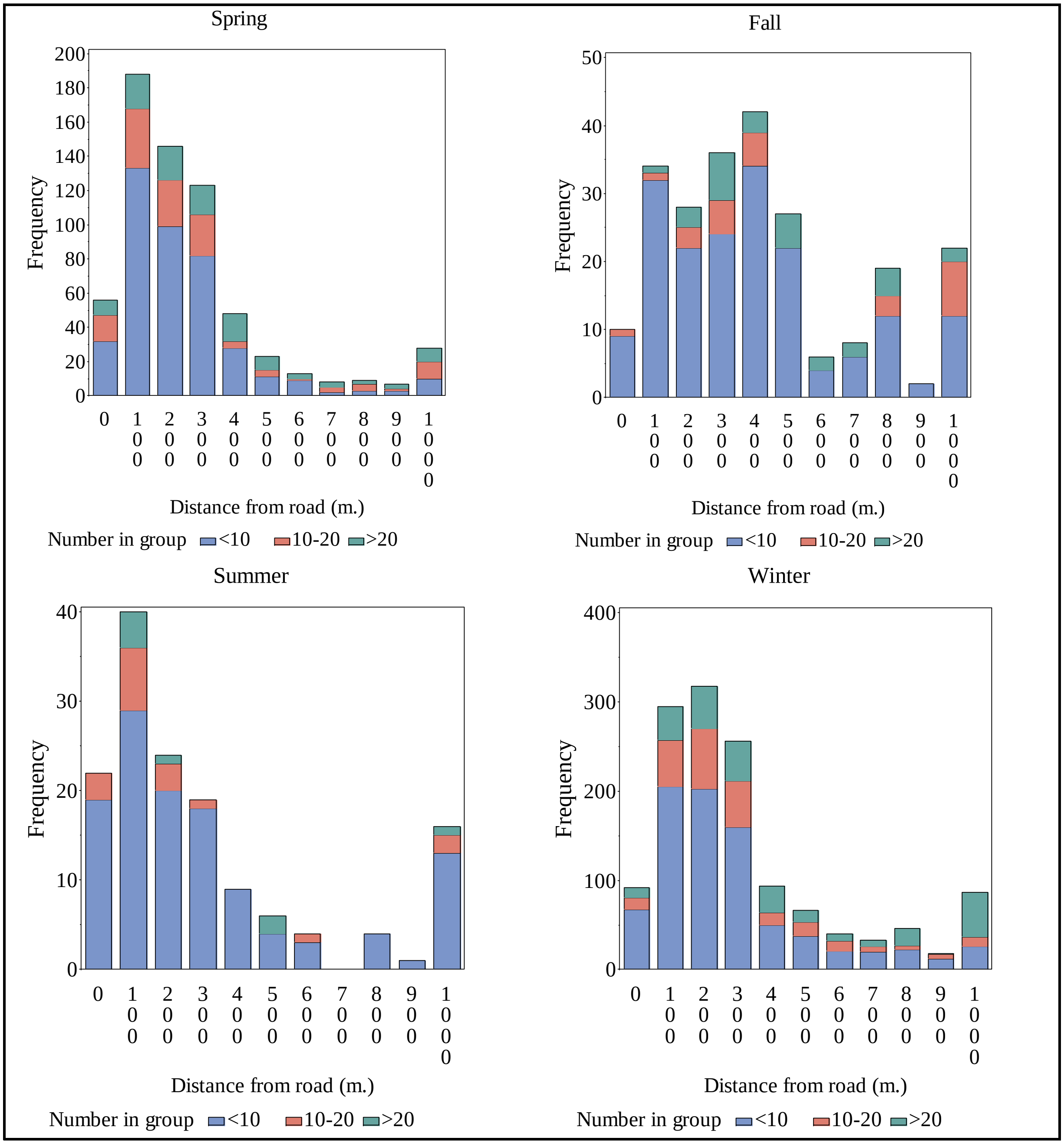
Distance From Road (m)	2007		2008	
	Total Number of Sightings	Total Number Observed	Total Number of Sightings	Total Number Observed
0 - 100	202	2847	5478	428
100 - 200	125	1482	4127	378
200 - 300	98	1197	5513	408
300 - 400	53	1061	2455	168
400 - 500	28	387	1350	98
500 - 600	15	282	638	48
600 - 700	8	254	638	39
700 - 800	15	329	1250	66
800 - 900	4	68	293	24
900 - 1000	50	2837	7961	100
1000+	-	-	43	3

Figure 4.74: Frequencies (Number of Occurrences) of 2007 and 2008 Caribou Observations as a Function of Distance from Road and Group Size of Caribou Sighted.



If the data in Figure 4.74 is evaluated by season, sightability is slightly lower in spring and summer with most observations occurring within 500 meters of the road relative to fall and winter where more observations occur at distance greater than 500 meters (Figure 4.75). In this case, sightability may also be influenced by group size. In summer, the majority of observations are for smaller groups of Caribou as compared to other seasons.

Figure 4.75: Frequencies (Numbers of Occurrences) of 2007 and 2008 Caribou Observations as a Function of Distance from Road and Group Size of Caribou Sighted by Season.



4.9.2.2 The Effect of Roaded Transects in 2007 and 2008 on Waterfowl Abundance

Figure 4.76 (Mapsheet A) and Figure 4.77 (Mapsheet B) illustrate observed waterfowl distribution data within the LSA for the AWPAR for all seasons in 2008.

Similar to the Caribou data, the number of waterfowl sightings and observations were also directly proportional to the distance from the road. Data was re-organized by distance from the road in 100 m increments (Table 4.26).

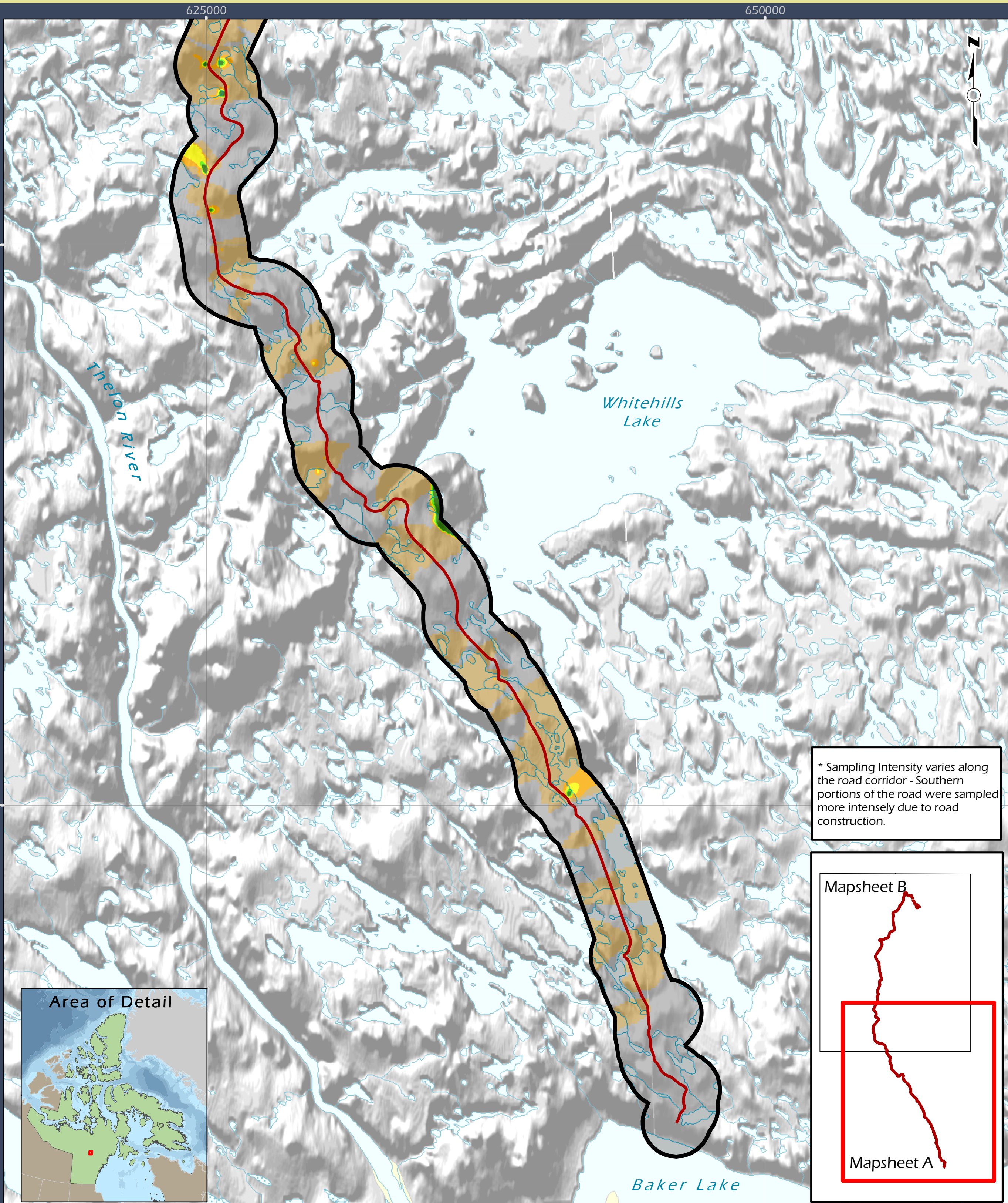
Table 4.26: 2007 and 2008 Systematic Ground Survey Waterfowl Total Sightings and Total Number Observed Organized by Distance from Road in 100 m Increments.

	2007		2008	
Distance From Road	**Total Number of Sightings**	**Total Number Observed**	**Total Number of Sightings**	**Total Number Observed**
0 - 100	229	5,642	1,676	49
100 - 200	53	602	351	28
200 - 300	49	426	653	13
300 - 400	13	50	408	7
400 - 500	6	11	37	2
500 - 600	5	7	4	3
600 - 700	1	31	24	2
700 - 800	3	31	32	2
800+	-	-	9	2

Figure 4.78 illustrates the counts per kilometer surveyed for goose species[9]. Data are plotted on a log scale to ease comparison of low and high counts per kilometer. Spline smoothing curves were fitted to the data with a tension value of 50 for 2007 and 70 for 2008. Snow Geese showed the highest abundance in early June whereas other goose species displayed lower abundance throughout the summer and fall season. Sightings were more intermittent for many goose species in 2008 than in 2007.

Both Caribou and waterfowl distance from road data were plotted against total number of sightings and total number observed, independent of group or season (refer to Figure 4.79 and Figure 4.80, respectively).

[9] Includes Cackling Goose, Canada Goose, Greater White-fronted Goose, Ross's Goose and Snow Goose species.



Legend

Waterfowl / Ha

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

- 0
- 1 - 5
- 5 - 10
- 10 - 15
- 15 - 20
- > 20

0 5 10
Kilometres

Projection: UTM Zone 14 NAD83

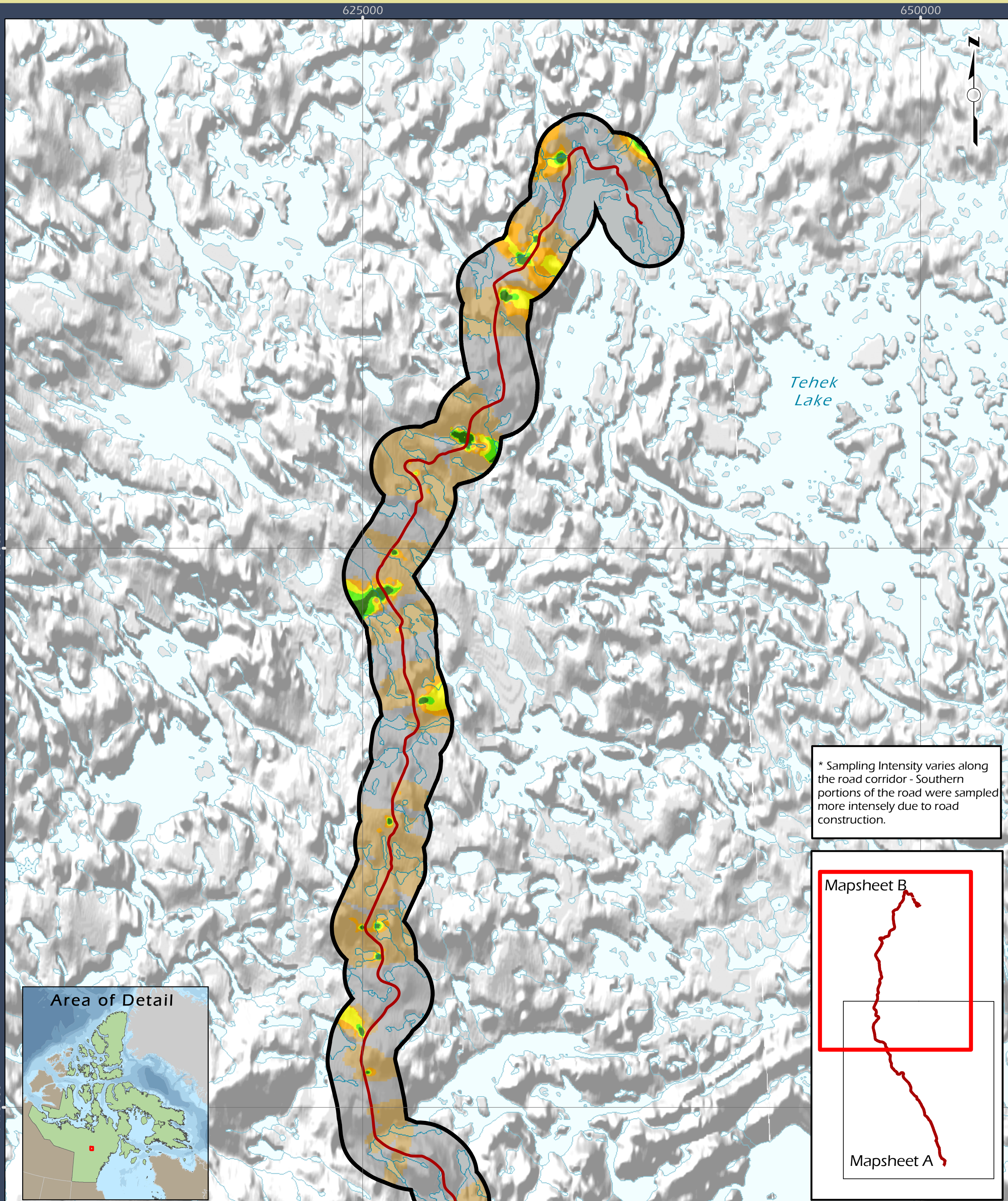
Data Sources:
Natural Resources Canada, GeoBase®
National Topographic Database
Agnico-Eagle Mines Limited.

Figure 4.76: 2008 Ground Survey Observed Waterfowl Distribution within the LSA for the AWPAR Mapsheet A

Meadowbank Gold Project

Prepared for: AGNICO-EAGLE

By: Caslys Consulting Ltd.



Legend

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

Waterfowl / Ha

- 0
- 1 - 5
- 5 - 10
- 10 - 15
- 15 - 20
- > 20

0 5 10
Kilometres

Projection: UTM Zone 14 NAD83

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

Figure 4.77: 2008 Ground Survey Observed Waterfowl Distribution within the LSA for the AWPAR Mapsheet B

Meadowbank Gold Project

Prepared for: AGNICO-EAGLE

By: Caslys Consulting Ltd.

Figure 4.78: Counts per Kilometer for Goose Species from June to the End of July in 2007 and 2008.

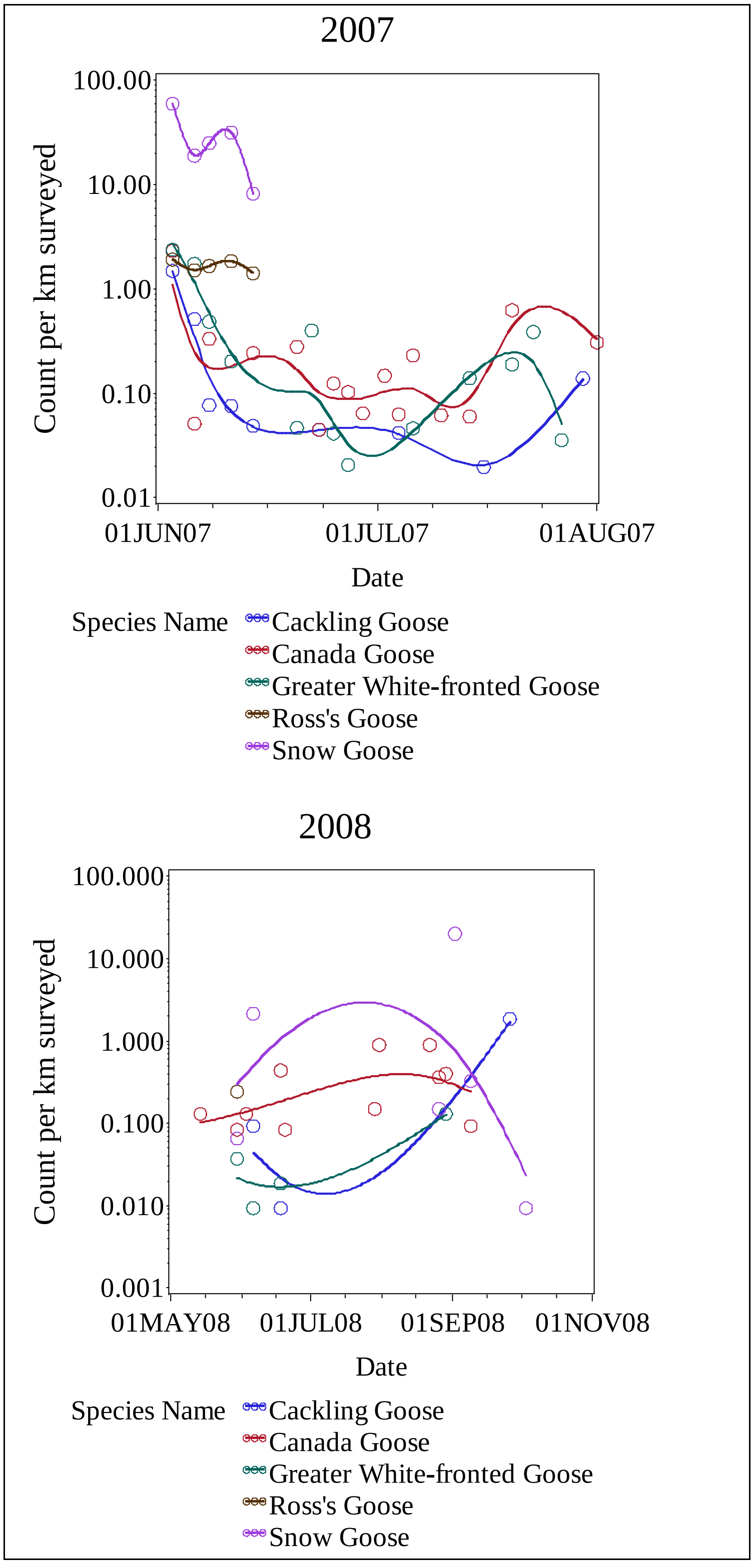


Figure 4.79: 2008 Systematic Ground Surveys – Total Number of Caribou Sightings and Observations Relative to Distance from Road.

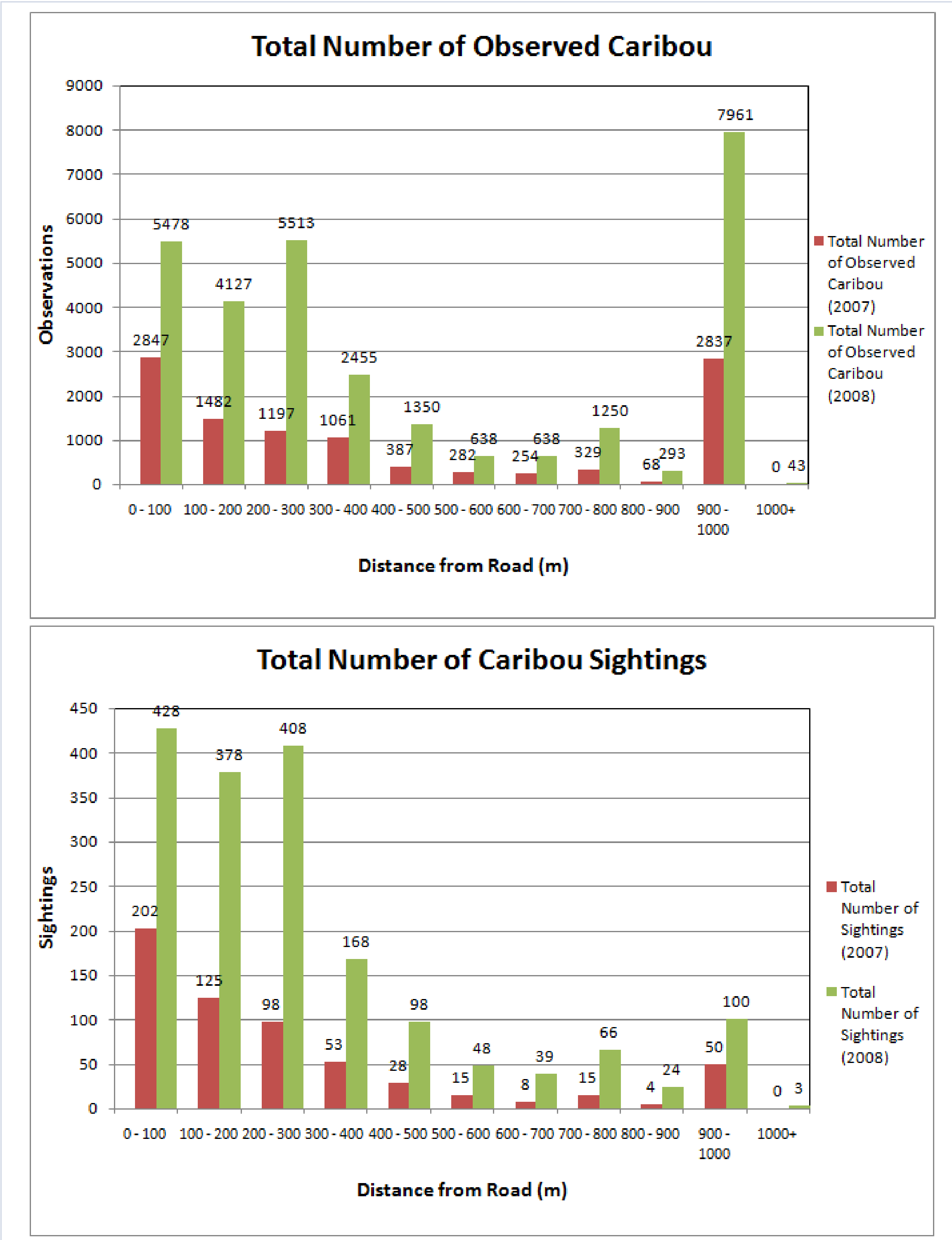
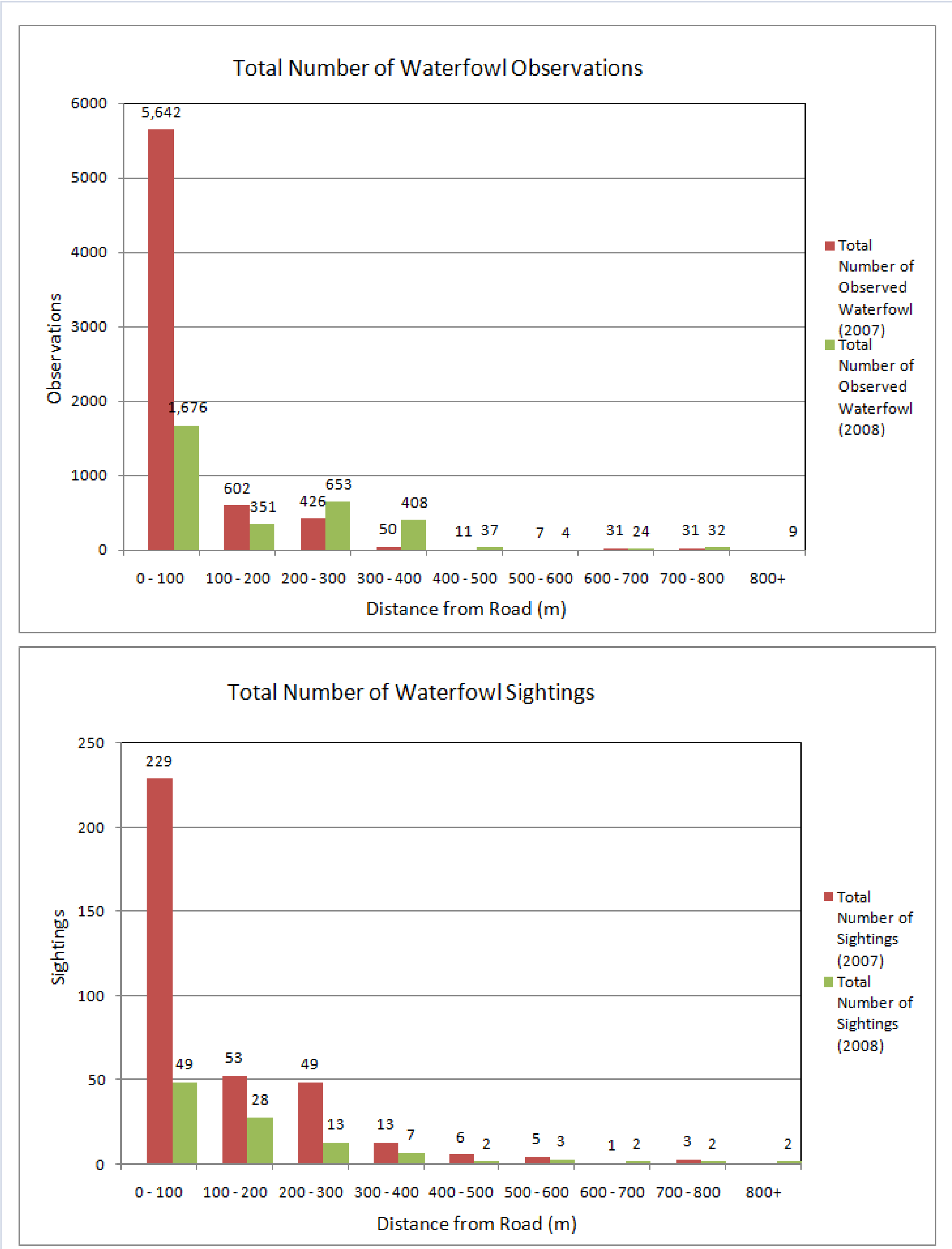


Figure 4.80: 2008 Systematic Ground Surveys – Total Number of Waterfowl Sightings and Observations Relative to Distance from Road.



4.10 HARVEST STUDY

The hunter harvest study was initiated in 2007 and has continued through 2008. 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). Interview and calendar data were compiled and entered into a database for interpretation and graphical analysis. The continuation of the revised strategy coupled to HTO participation is anticipated to further improve harvest data reporting in coming years.

4.10.1 Hunting Results

A graphical representation of terrestrial animals (Caribou, Muskox and Wolverine) harvested per month in 2007 and 2008 is provided in Figure 4.80. An initial inspection of results suggests that the highest month for terrestrial harvests was March (111 animals); however, this month coincided with a large number of interviews in March 2007, as illustrated by the number of participants per month. The data was standardized through the simple division of harvested animals by the number of participants (Figure 4.81), which suggests that harvests over the course of the year were relatively homogeneous with the exception of September, which may have been influenced by the fall Caribou migration. Slightly higher harvest rates relative to other months were also observed in March and October. The number of Caribou harvests per month per participant was plotted separately along with a moving average trendline (Figure 4.82), the results of which suggest that the two largest harvest periods coincide with the spring and fall Caribou migration. Additional years of data will serve to verify this assumption.

The remaining hunter harvest figures illustrate the frequency of successful hunting trips and harvest totals in 2008 for Caribou (Figure 4.83), Muskox (Figure 4.84), Wolverine (Figure 4.85) as well as all terrestrial species included in the study in 2007 and 2008 (Figure 4.86). Figure 4.87 presents an overlay of harvest totals 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. 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 appear to be closely correlated to the AWPAR, with the highest concentration of kills often occurring less than 5 km from the road (Figure 4.83). In 2007, a qualitative analysis of Caribou kills within the study area suggested a preferential use for hunting within and adjacent to the AWPAR corridor; however, a comparison with the NWMB data suggested that these areas had also been used for hunting purposes prior to AWPAR construction (Figure 4.87). With the inclusion of the 2008 data, it is increasingly apparent that certain hunters are preferentially using the AWPAR to readily access remote areas north of Baker Lake. Although NWMB data indicates that hunting has historically occurred in the majority of 2008 kill locations, densities are typically lower, being concentrated further south (towards Baker Lake) and east (Whitehills Lake). Additional years of data will serve to further evaluate hunting trends and potential 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 the areas occupied by the AWPAR. Based on available data, the AWPAR likely has little effect on Muskox and Wolverine hunting patterns.

Figure 4.81: Terrestrial Animals (Caribou, Muskox and Wolverine) Harvested per Month in 2007 and 2008. Counts of Participants per Month and Animals Harvested Divided by the Number of Participants are also Provided.

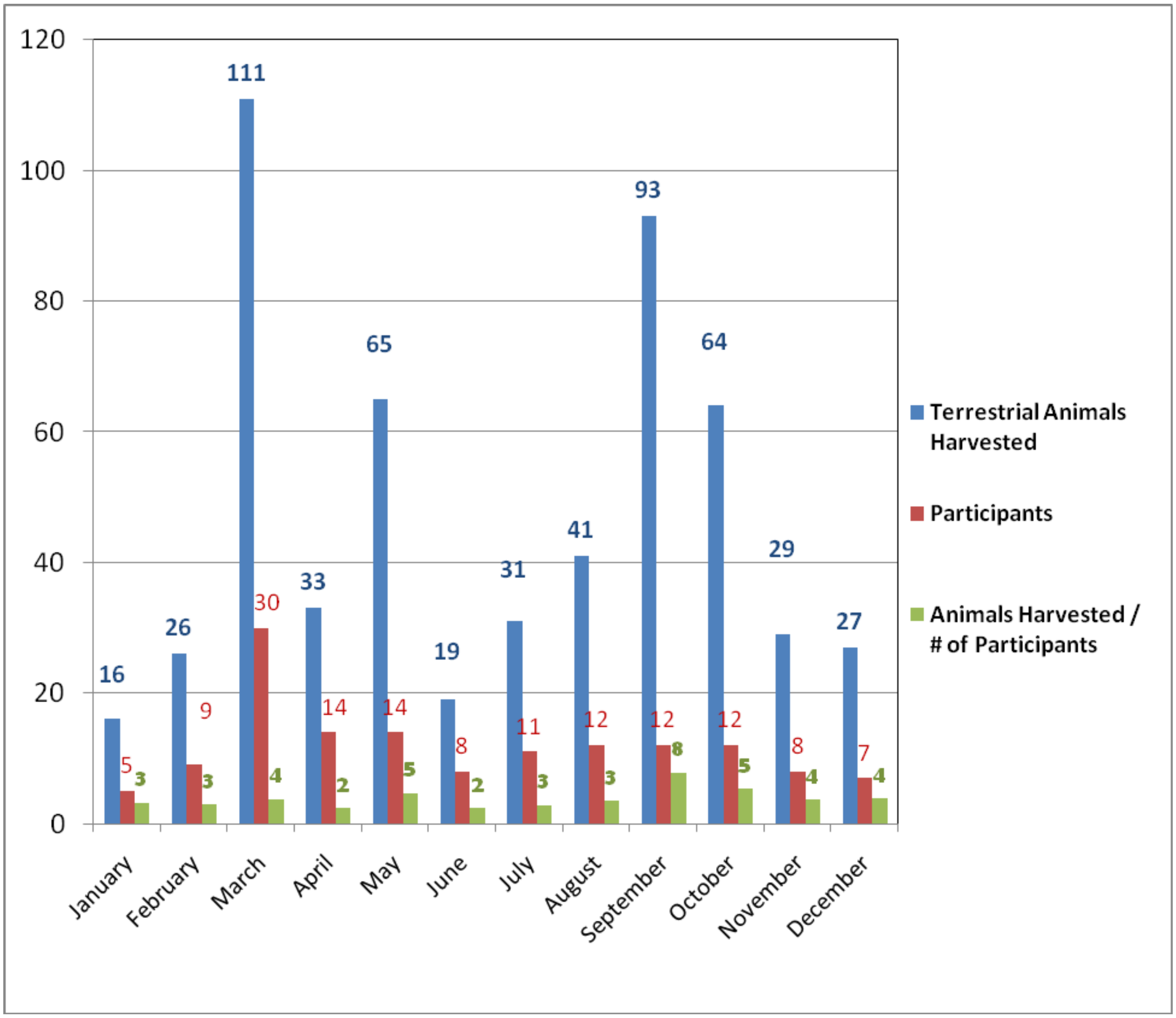


Figure 4.82: Caribou Harvested per Month, per Participant

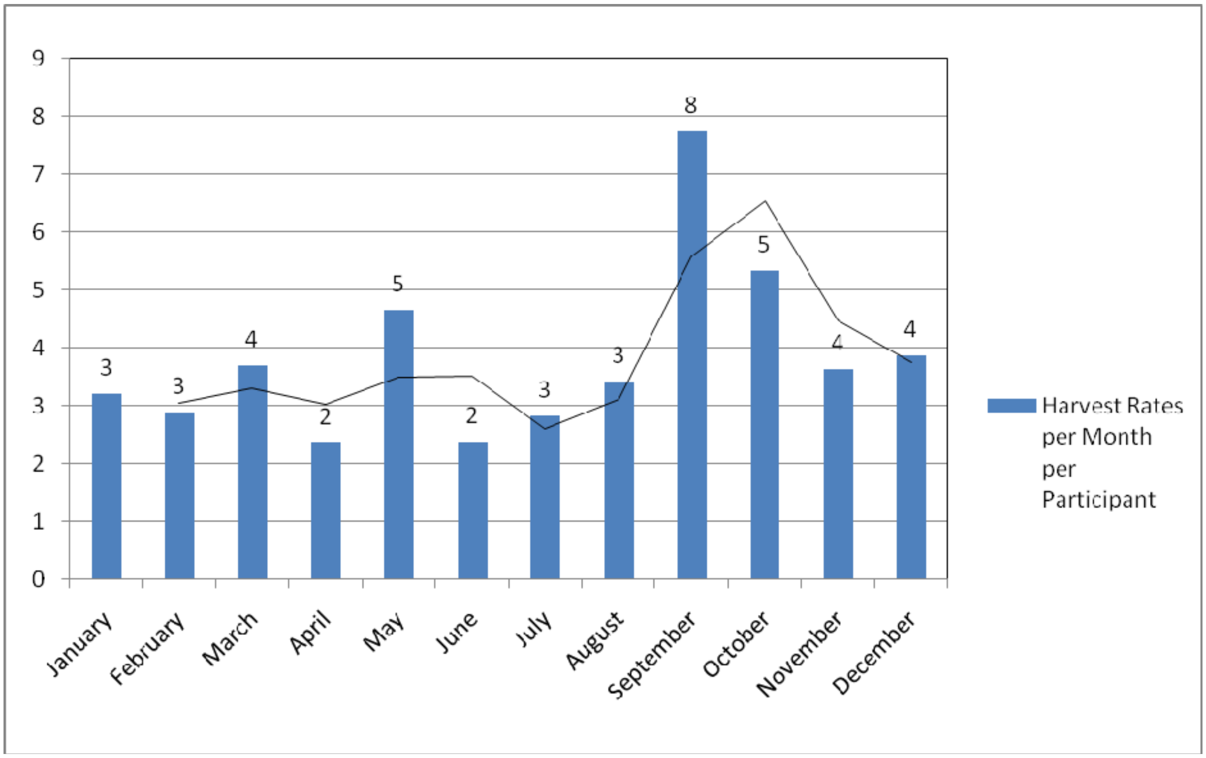
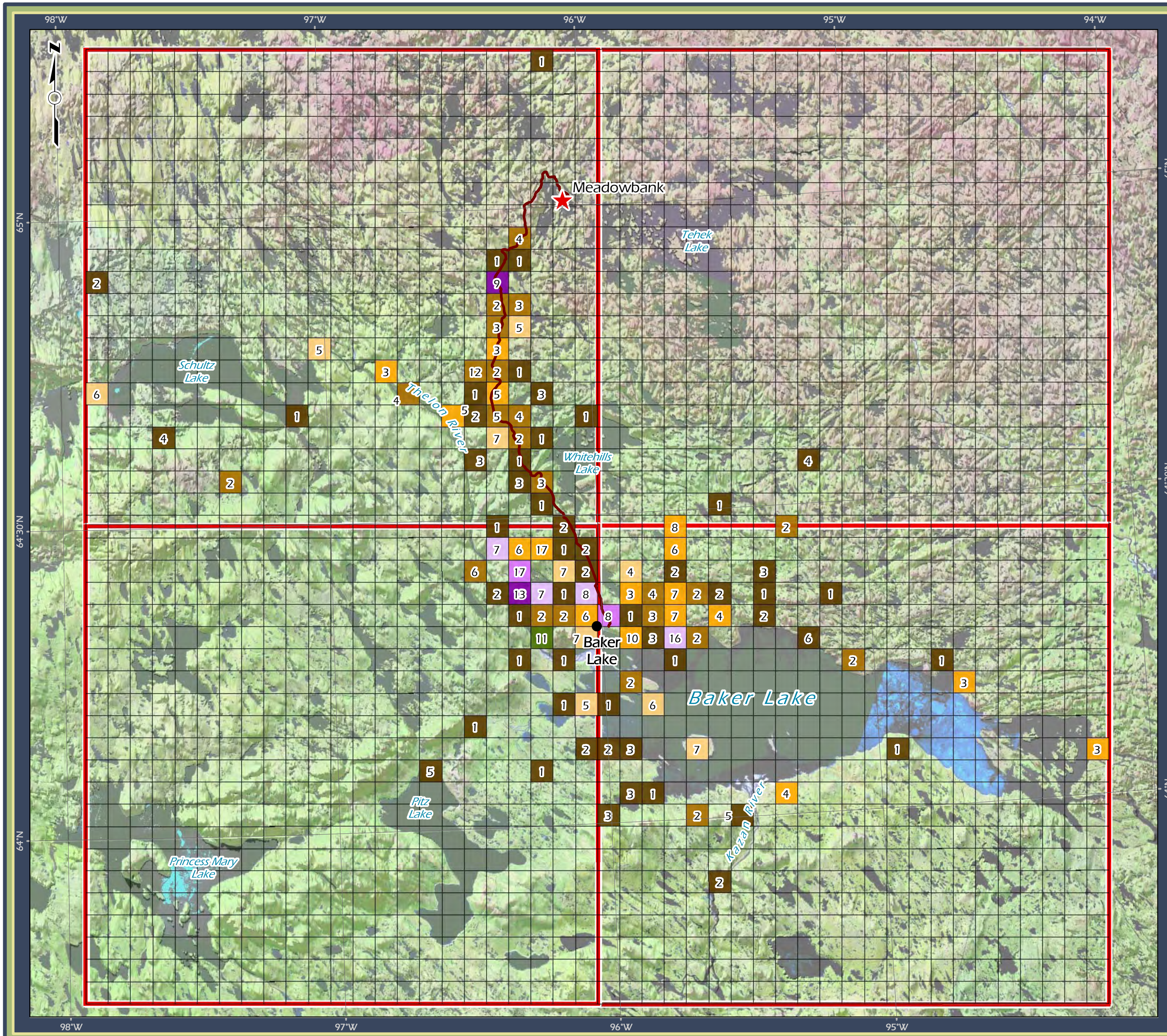


Figure 4.83: Frequency of Successful Hunting Trips and Cumulative Total of Caribou Harvested in 2008



Legend

- All-Weather Private Access Road
- Harvest Study Area

Number of Trips

- No Harvest Reported
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 9
- 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.

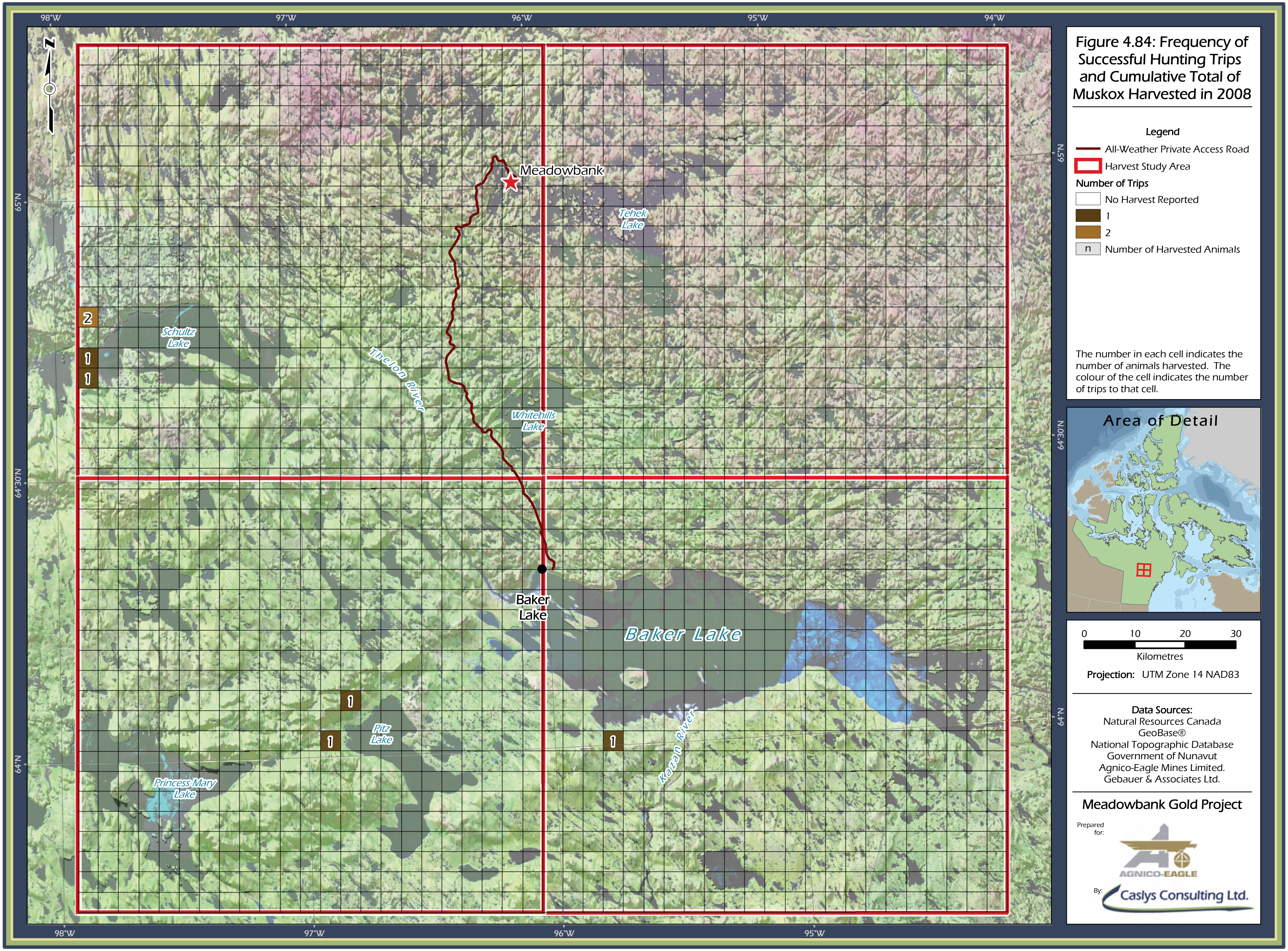


Figure 4.84: Frequency of Successful Hunting Trips and Cumulative Total of Muskox Harvested in 2008

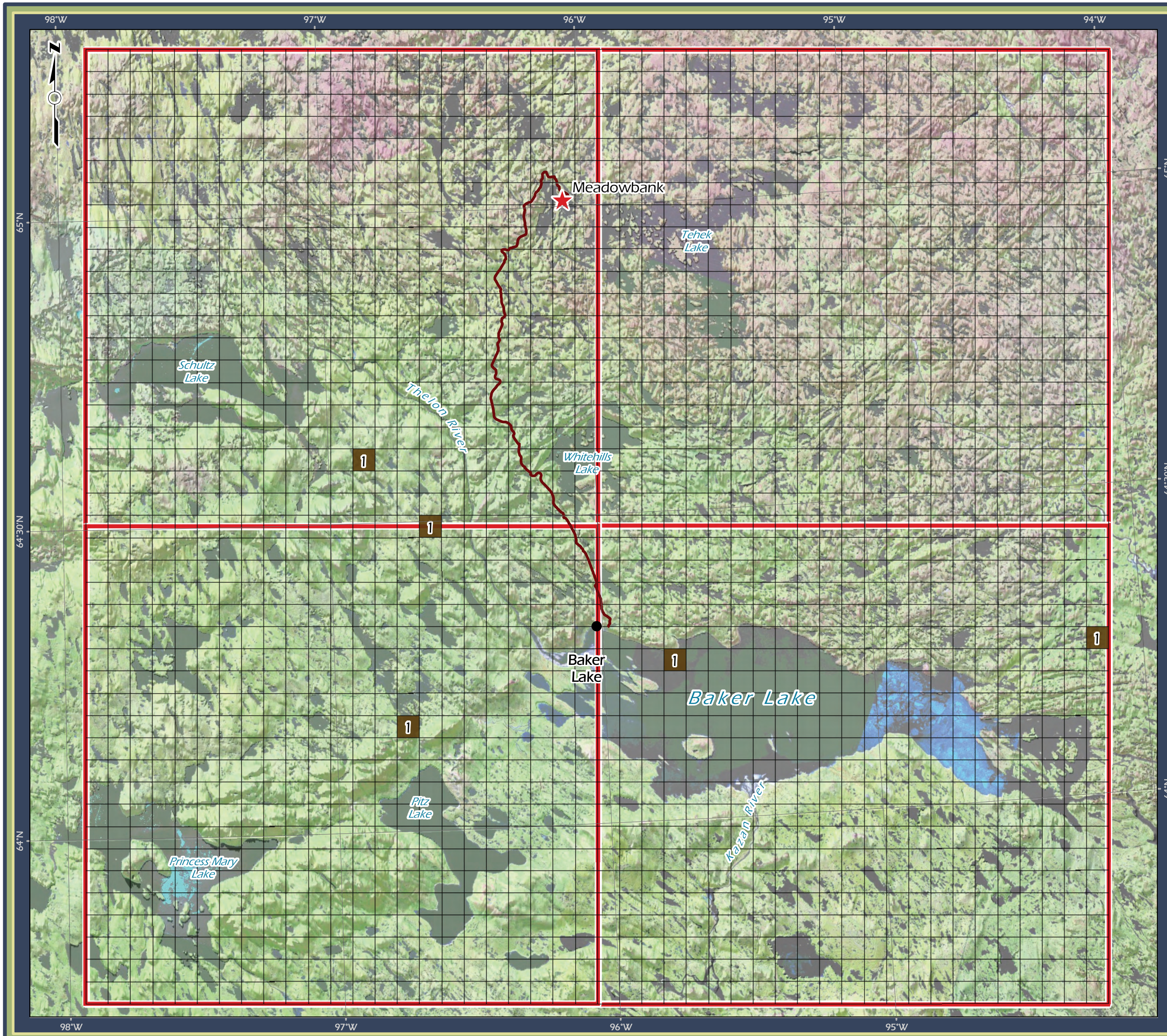


Figure 4.85: Frequency of Successful Hunting Trips and Cumulative Total of Wolverine Harvested in 2008

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.

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.

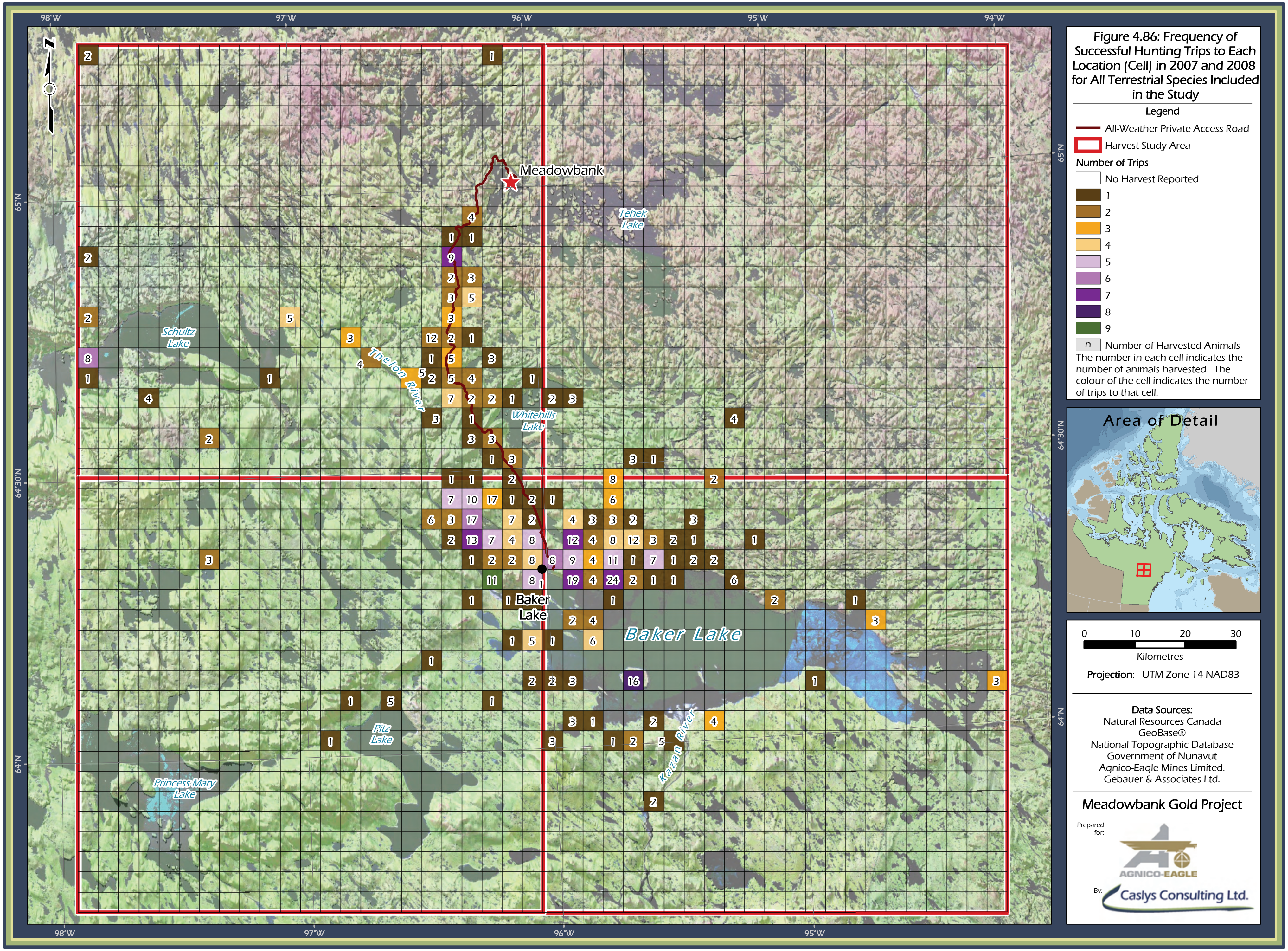


Figure 4.86: Frequency of Successful Hunting Trips to Each Location (Cell) in 2007 and 2008 for All Terrestrial Species Included in the Study

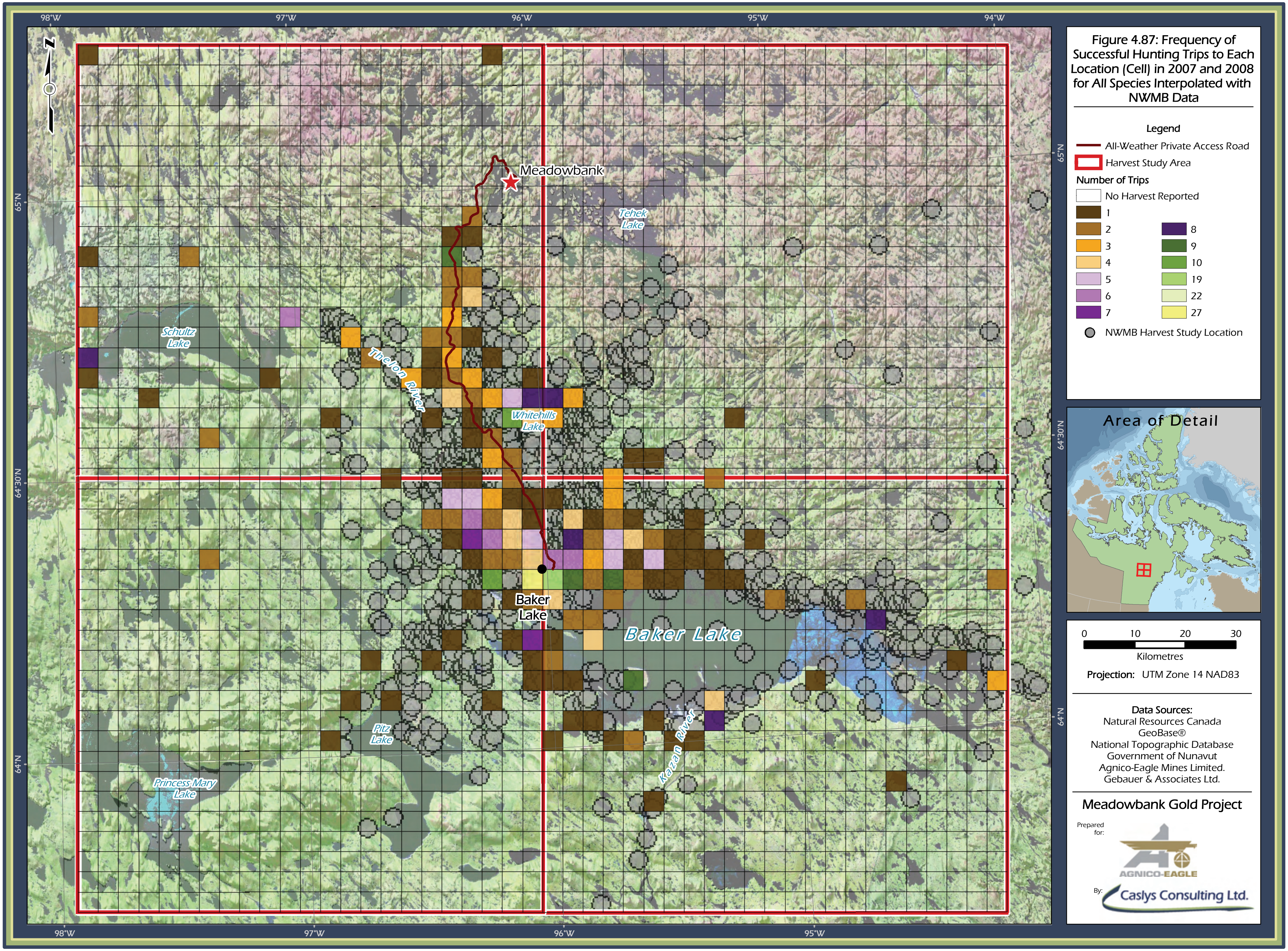


Figure 4.87: Frequency of Successful Hunting Trips to Each Location (Cell) in 2007 and 2008 for All Species Interpolated with NWMB Data
Legend
All-Weather Private Access Road
Harvest Study Area
Number of Trips
No Harvest Reported
1
2
3
4
5
6
7
8
9
10
19
22
27
NWMB Harvest Study Location
Area of Detail
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.
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

4.10.2 Creel Results

A graphical representation of fish harvested per month is provided in Figure 4.88. An initial inspection of 2007 and 2008 creel data suggests the highest fishing rates occur during the late spring and early summer. Data was standardized through the simple division of fish harvested by the number of participants and a moving average trendline was added (Figure 4.89). Standardized results also indicated that the majority of fishing occurred in the spring and summer months. Elevated fishing harvest rates in August and December correspond to a large number of fish caught by a single participant. Additional years of data and increasing participation rates are anticipated to improve the precision of the dataset.

In 2007, nominal creel data was provided by Hunter Harvest study participants, being limited to Lake Trout (count: 210) and Arctic Char (count: 3). Moreover, fishing locations reported in 2007 were limited to only a handful of lakes including Baker Lake, Whitehills Lake, Schultz Lake and three small lakes in the vicinity of the Hamlet of Baker Lake. This preliminary dataset did not contain sufficient data to identify potential fishing trends relating to AWPAR construction and utilization. In 2008, significantly more creel data was provided by Hunter Harvest study participants, including Lake Trout (count: 1,035), Arctic Char (count: 27) and Lake Whitefish (count: 192). Fishing occurred on a variety of lakes between Baker Lake and the mine site (Figure 4.90, Figure 4.91 and Figure 4.92, respectively). The highest fishing densities in 2007 and 2008 were immediately south of the Hamlet of Baker Lake and Whitehills Lake. Although a small proportion of fish were caught further north in 2008 relative to 2007, the majority of fishing were caught well away from the AWPAR, suggesting that fishing location preference continues to be uninfluenced by the presence of the AWPAR. Additional years of data will be required to identify potential trends, if any, associated with AWPAR construction.

Figure 4.88: Fish Harvested per Month

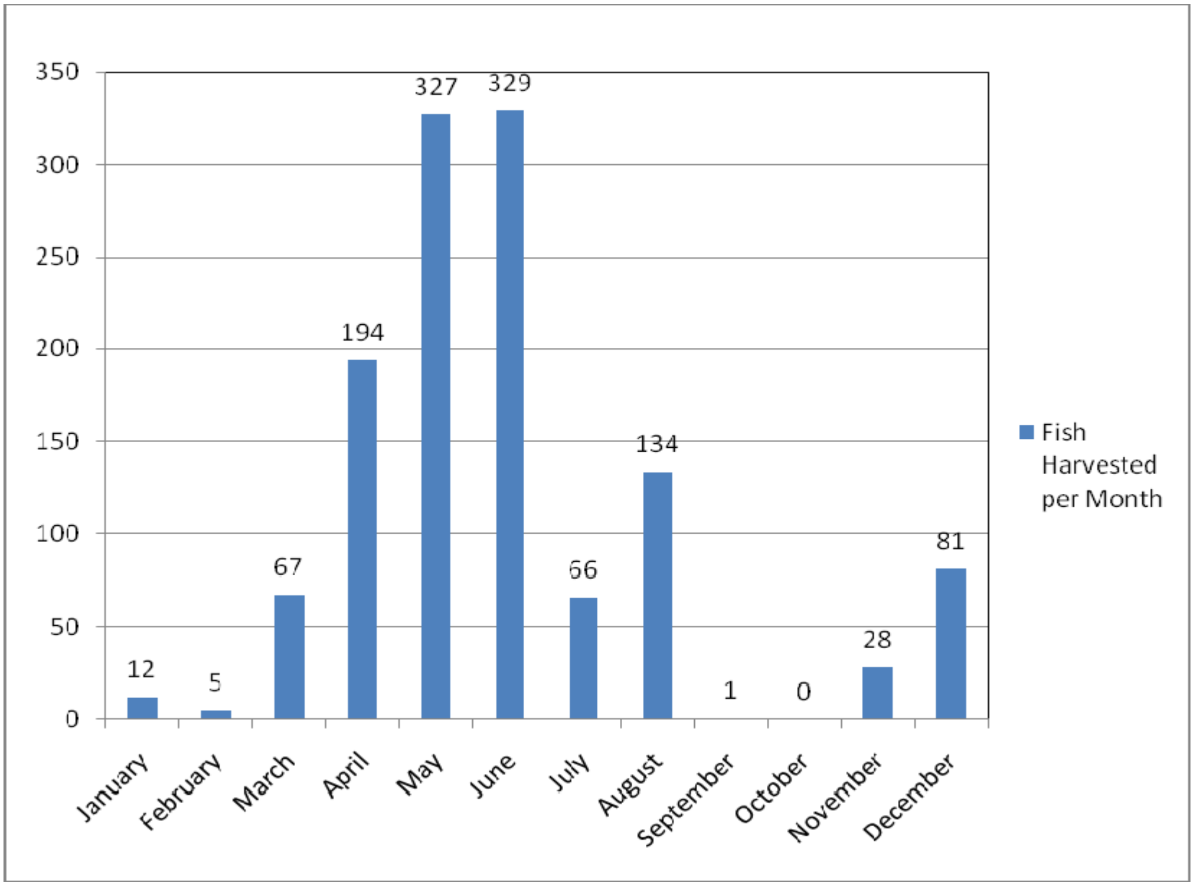
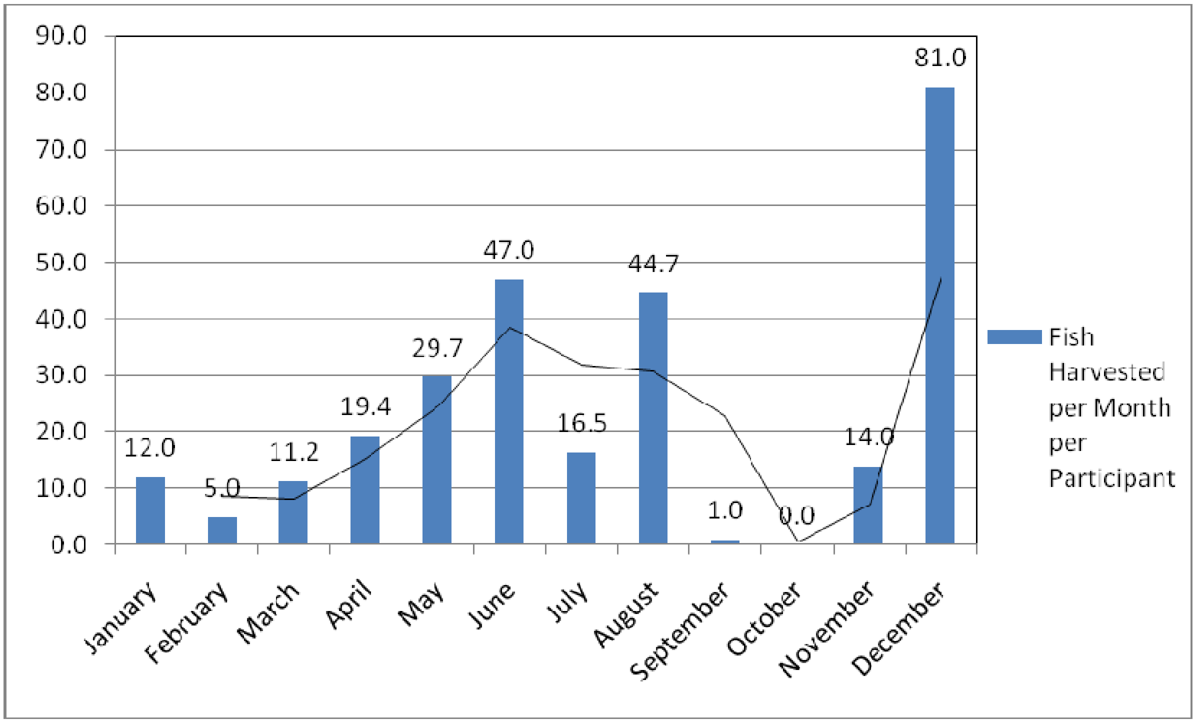


Figure 4.89: Fish Harvested per Month per Participant



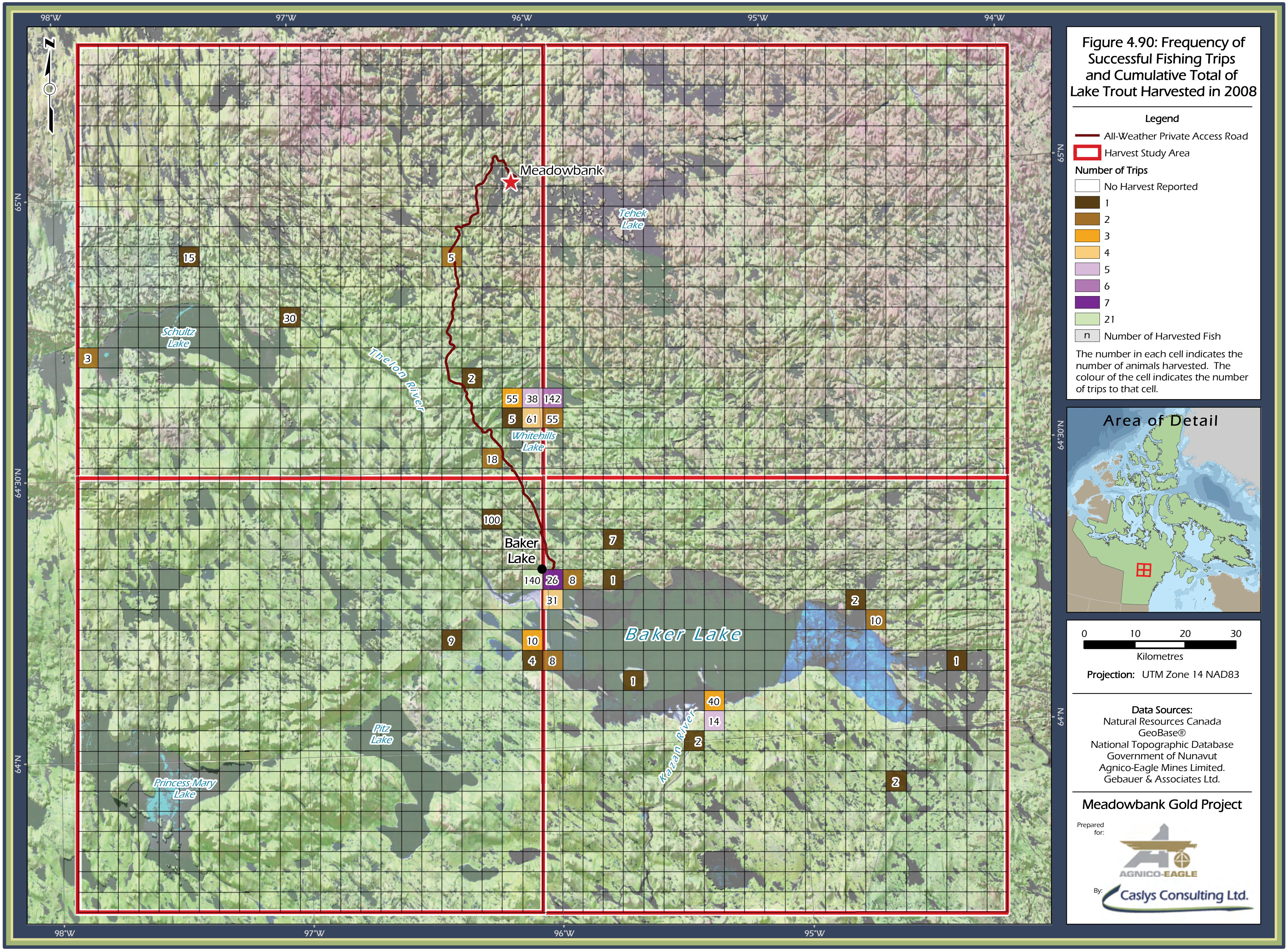


Figure 4.90: Frequency of Successful Fishing Trips and Cumulative Total of Lake Trout Harvested in 2008

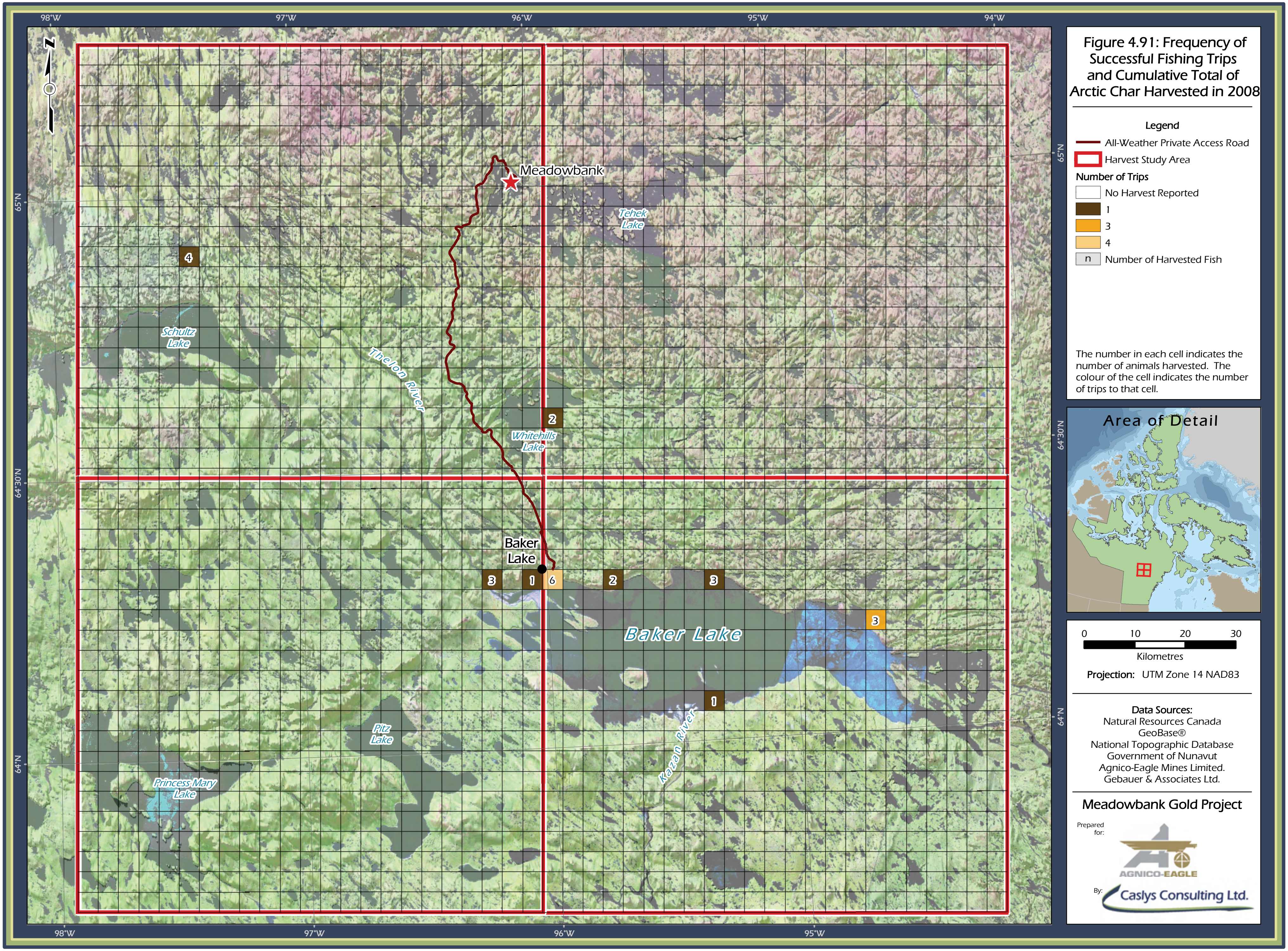
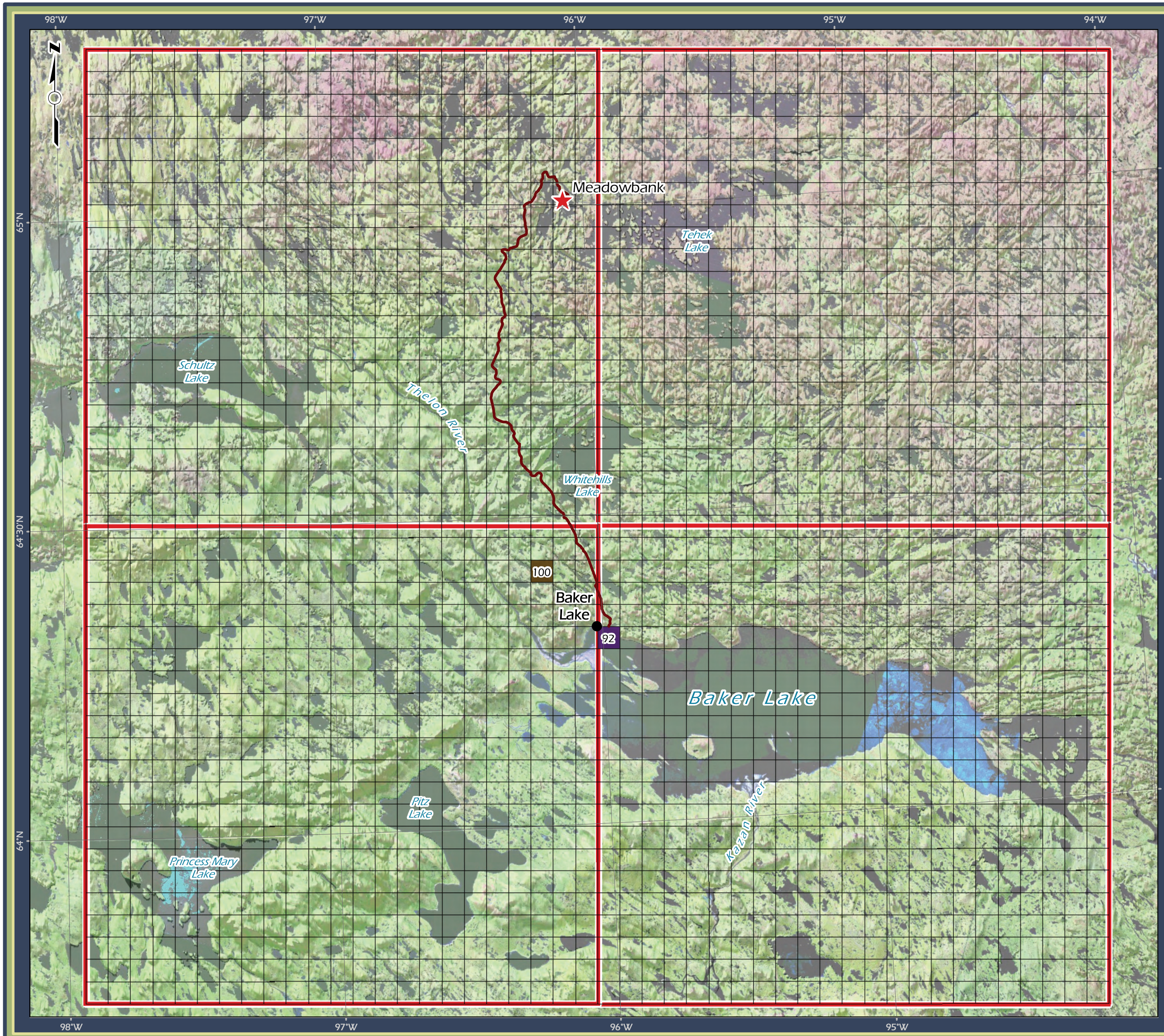


Figure 4.91: Frequency of Successful Fishing Trips and Cumulative Total of Arctic Char Harvested in 2008

Figure 4.92: Frequency of Successful Fishing Trips and Cumulative Total of Lake Whitefish Harvested in 2008



Legend

- All-Weather Private Access Road
- Harvest Study Area

Number of Trips

- No Harvest Reported
- 1
- 8
- n Number of Harvested Fish

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.

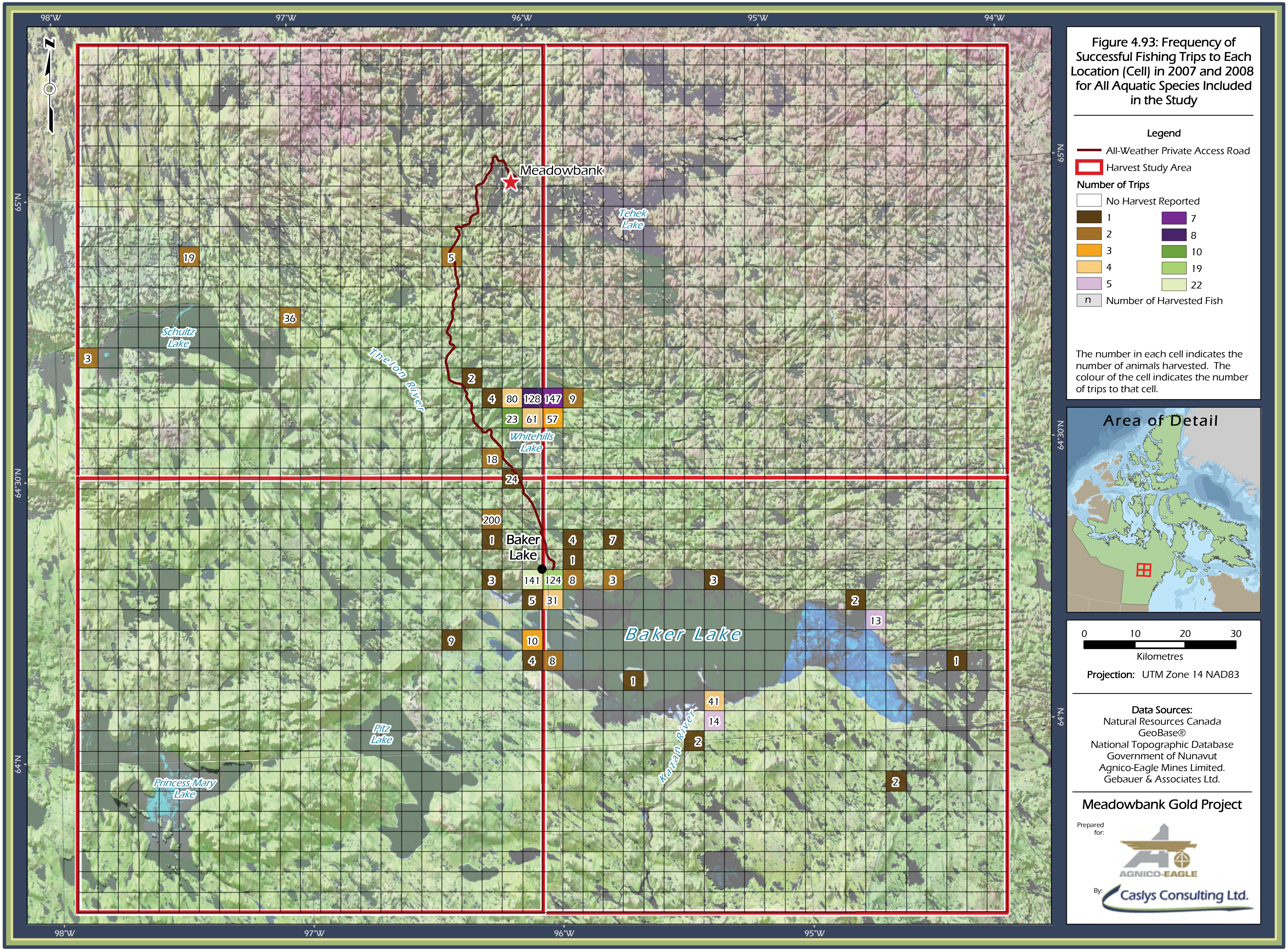


Figure 4.93: Frequency of Successful Fishing Trips to Each Location (Cell) in 2007 and 2008 for All Aquatic Species Included in the Study

4.11 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. The remaining collar was not utilized due to a deficiency and has since been repaired for use in subsequent years. Collar data is regularly[11] retrieved electronically via satellite and distributed to GN and Gebauer and Associates personnel by CLS America, the data-management company. Of the nine collared caribou, only seven were still alive at the end of 2008. Location figures were generated for the spring (April 1 – May 25; Figure 4.94), calving (May 26 – June 25; Figure 4.95), post-calving (June 26 – July 31; Figure 4.96), late summer (August 1 – September 15; Figure 4.97), fall (September 16 - October 31; Figure 4.98), fall rut (October 15 - October 31; Figure 4.99), and early winter (November 1 – December 31; Figure 4.100) seasons. In addition, a figure was generated for each Caribou for all reported dates in 2008 (Figure 4.101). In the 2009, Wildlife Monitoring Summary Report, data for the late winter (January 1 – March 31) will also be provided, which was unavailable this year, given that collaring was not conducted until May.

Preliminary 2008 results indicate that most of the collared cows calve north of the Meadowbank mine site in the vicinity of the Adelaide Peninsula and Chantry Inlet. In winter, cows remain on the barrenlands, primarily remaining north of the Thelon River system. One cow ventured into the NWT. Additional collaring efforts and longer-term data will provide further seasonal information on collared caribou distribution.

4.12 ENVIRONMENTAL HEALTH MONITORING

The Environmental Health Monitoring Program provides a means of routinely evaluating any changes in contaminant exposure and, ultimately, potential risks to wildlife following mine site construction and during mine operation. Samples collected throughout the operational phase of the mine will be compared to baseline samples to assess for potential mine-related effects. Therefore, collection of sufficient and representative baseline data is an important component of the environmental health monitoring program as it forms the basis for all future analyses. In 2008, a second round of soil, lichen, sedge and berries were sampled from ten locations (Table 3.14) for baseline metals analysis. A detailed comparative analysis of the environmental health baseline monitoring data was not conducted in 2008; therefore, data is presented in Appendix G in tabular format for reference and documentation purposes only.

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

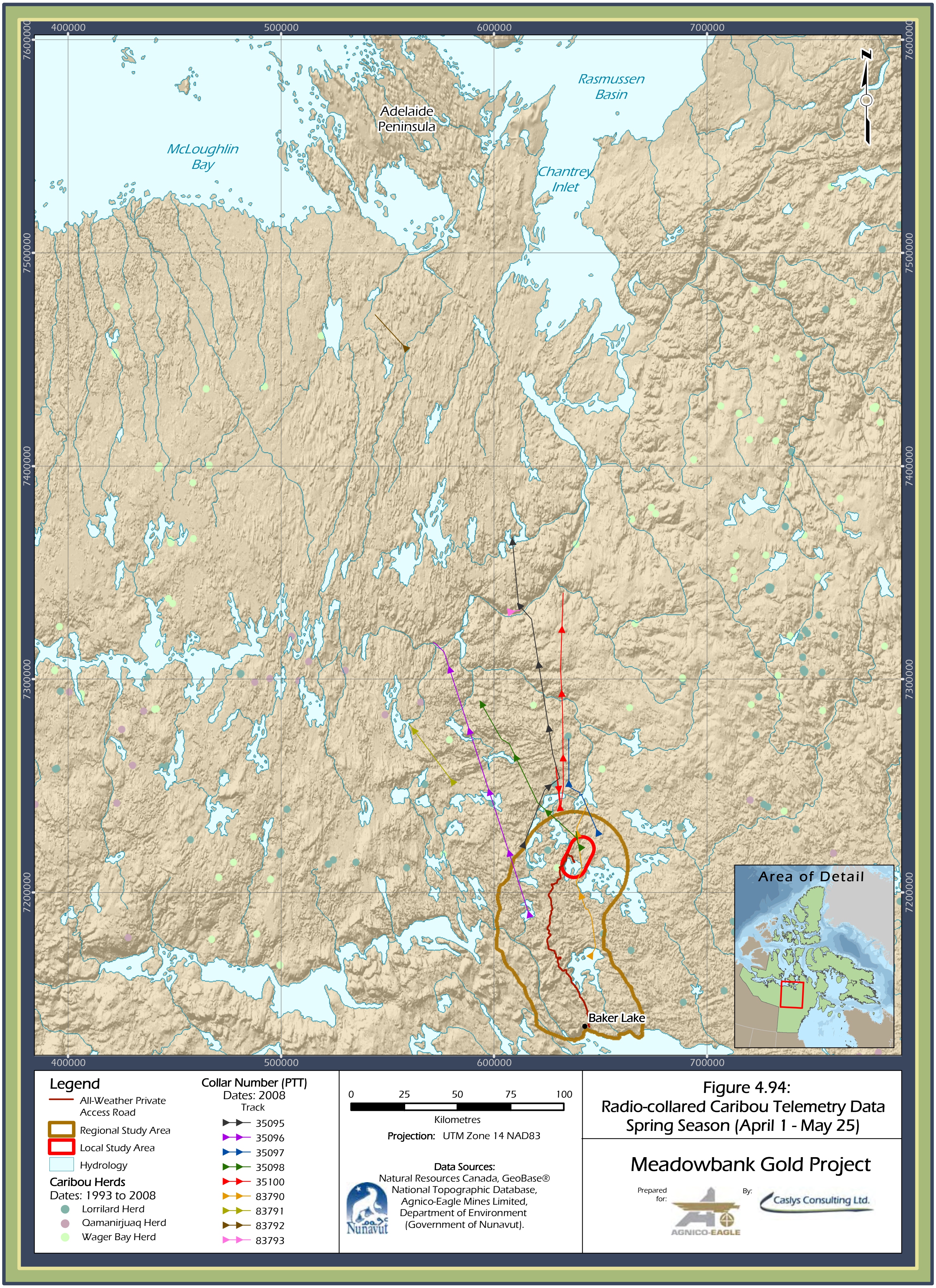
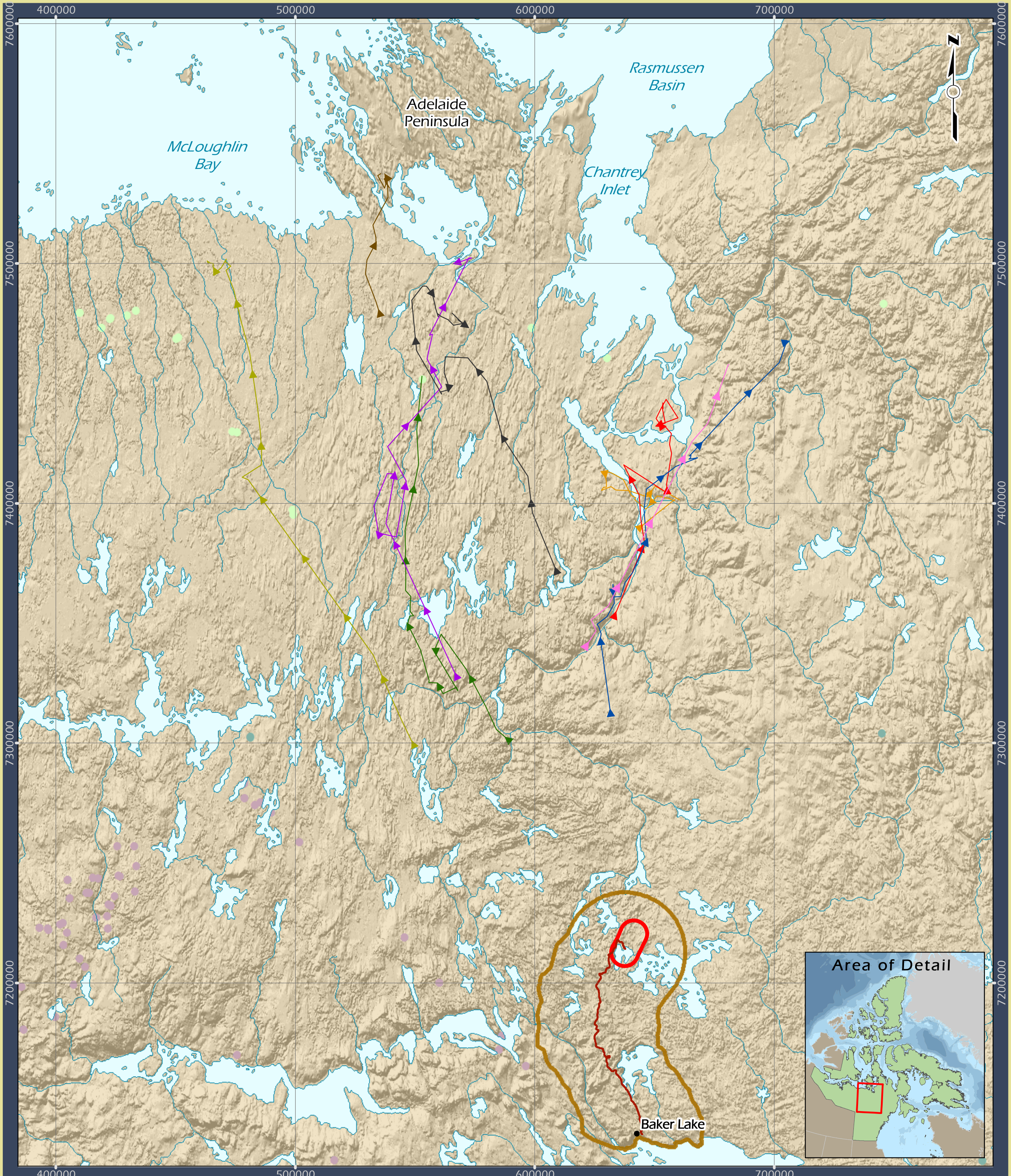


Figure 4.94:
Radio-collared Caribou Telemetry Data
Spring Season (April 1 - May 25)



Legend

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

Caribou Herds
Dates: 1993 to 2008

- Lorrilard Herd
- Qamanirjuaq Herd
- Wager Bay Herd

Collar Number (PTT)
Dates: 2008
Track

- 35095
- 35096
- 35097
- 35098
- 35100
- 83790
- 83791
- 83792
- 83793

0 25 50 75 100
Kilometres

Projection: UTM Zone 14 NAD83

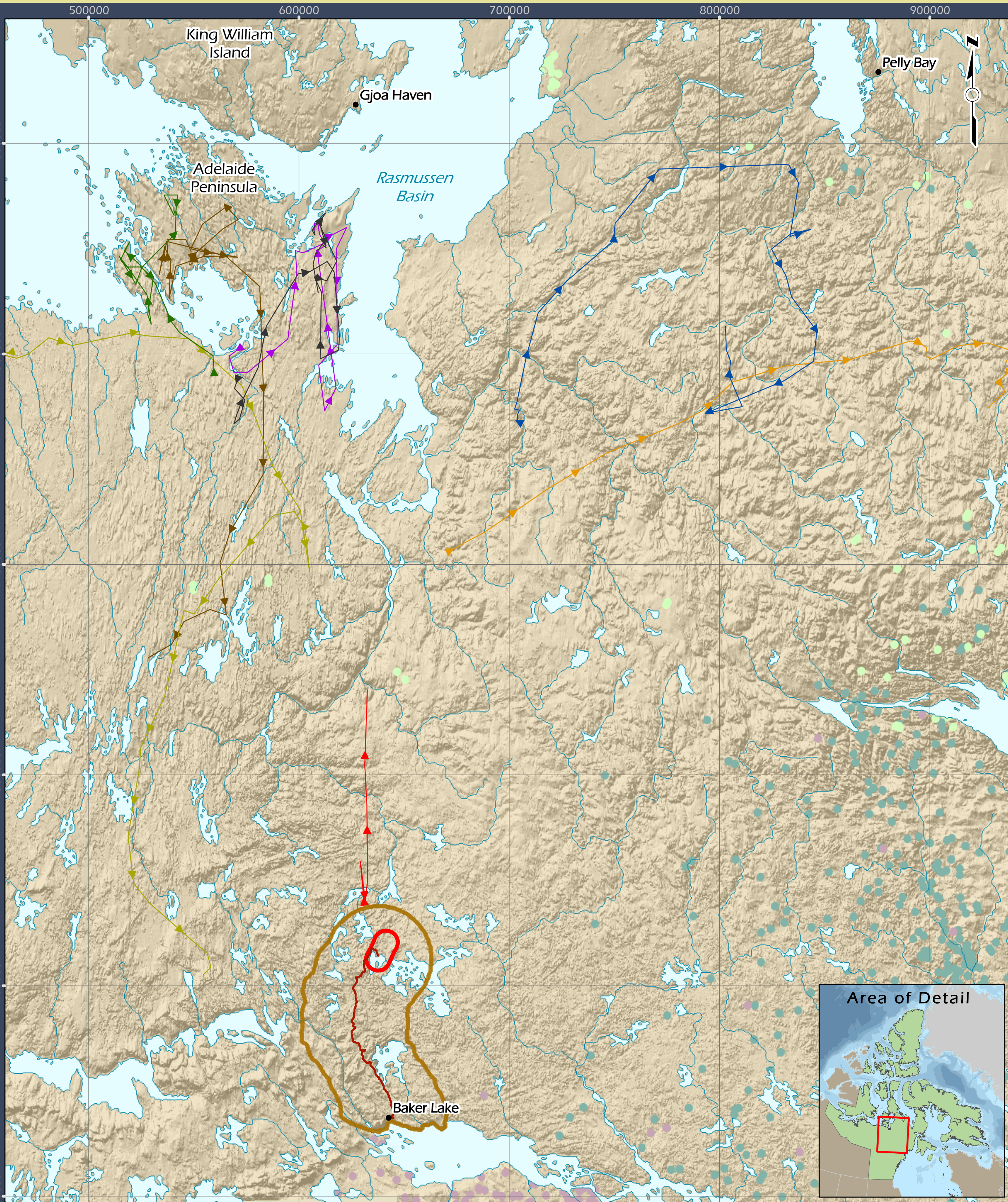
Data Sources:
Natural Resources Canada, GeoBase®
National Topographic Database,
Agnico-Eagle Mines Limited,
Department of Environment
(Government of Nunavut).

Figure 4.95:
Radio-collared Caribou Telemetry Data
Calving Season (May 26 - June 25)

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 2008
Lorrilard Herd
Qamanirjuaq Herd
Wager Bay Herd

Collar Number (PTT)
Dates: 2008
Track
35095
35096
35097
35098
35100
83790
83791
83792

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 4.96:
Radio-collared Caribou Telemetry Data
Post-calving Season (June 26 - July 31)

Meadowbank Gold Project

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

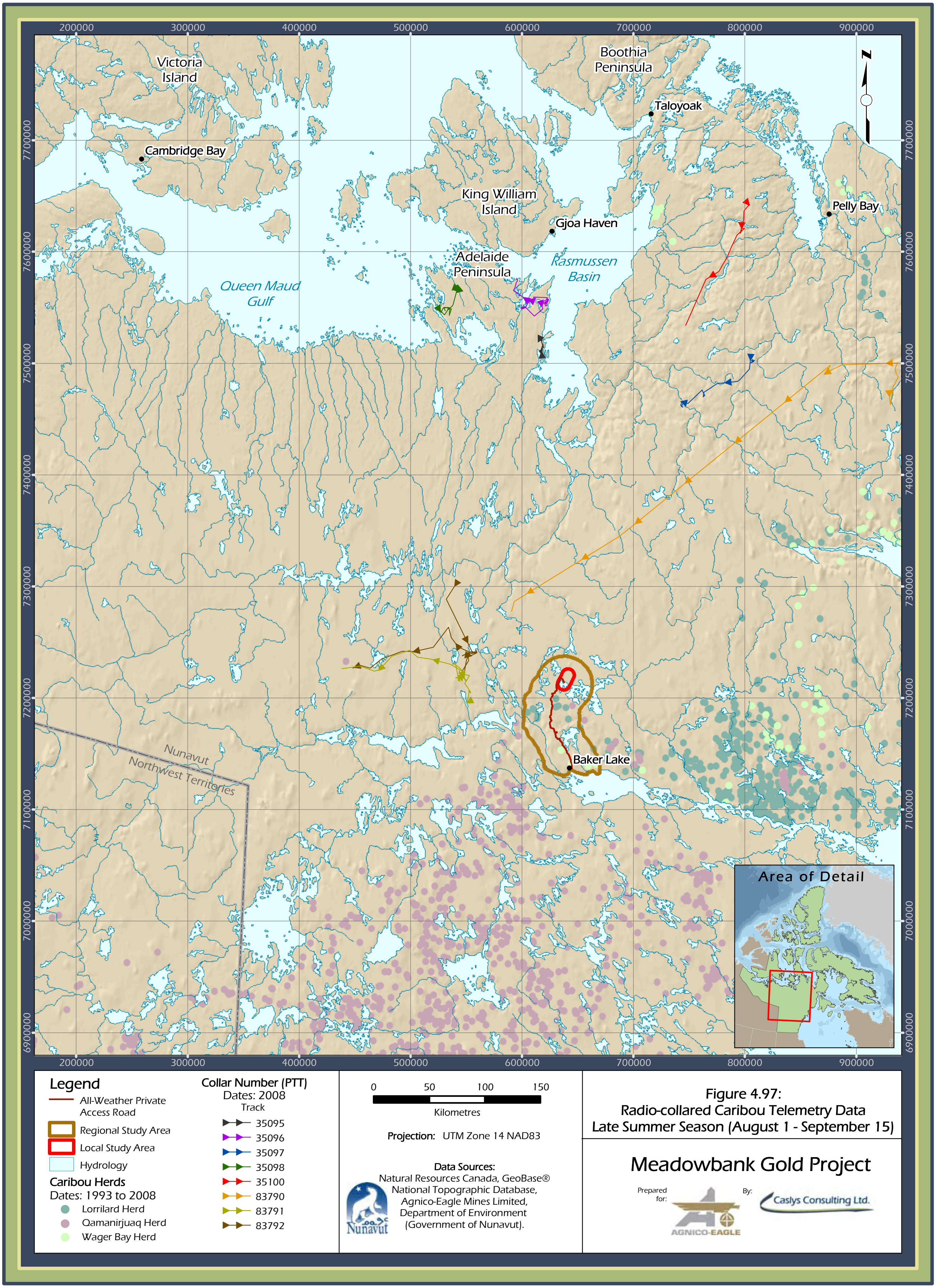
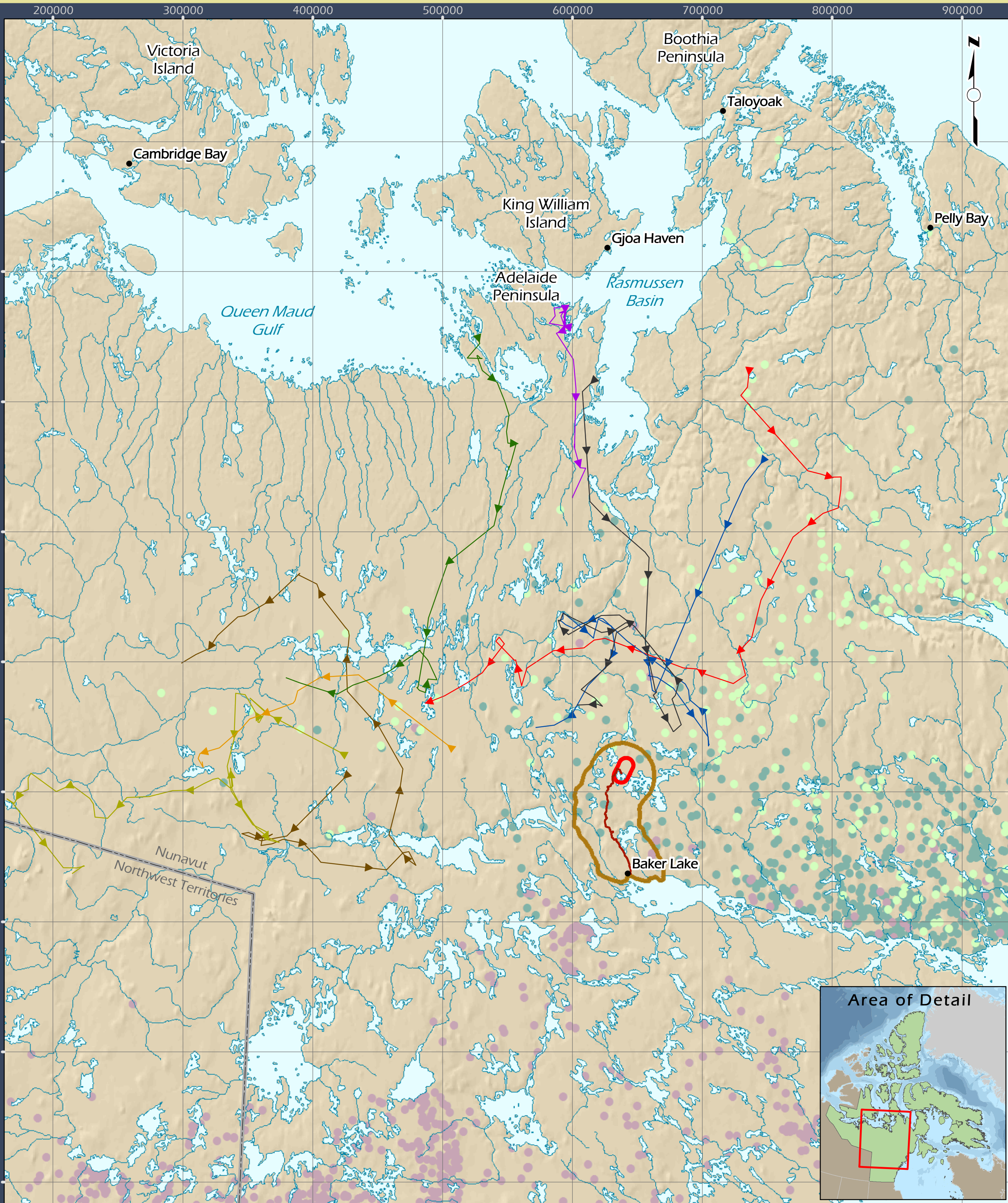


Figure 4.97:
Radio-collared Caribou Telemetry Data
Late Summer Season (August 1 - September 15)



Legend

All-Weather Private Access Road

Regional Study Area

Local Study Area

Hydrology

Caribou Herds
Dates: 1993 to 2008

Lorrilard Herd

Qamanirjuaq Herd

Wager Bay Herd

Collar Number (PTT)
Dates: 2008
Track

35095

35096

35097

35098

35100

83790

83791

83792

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).

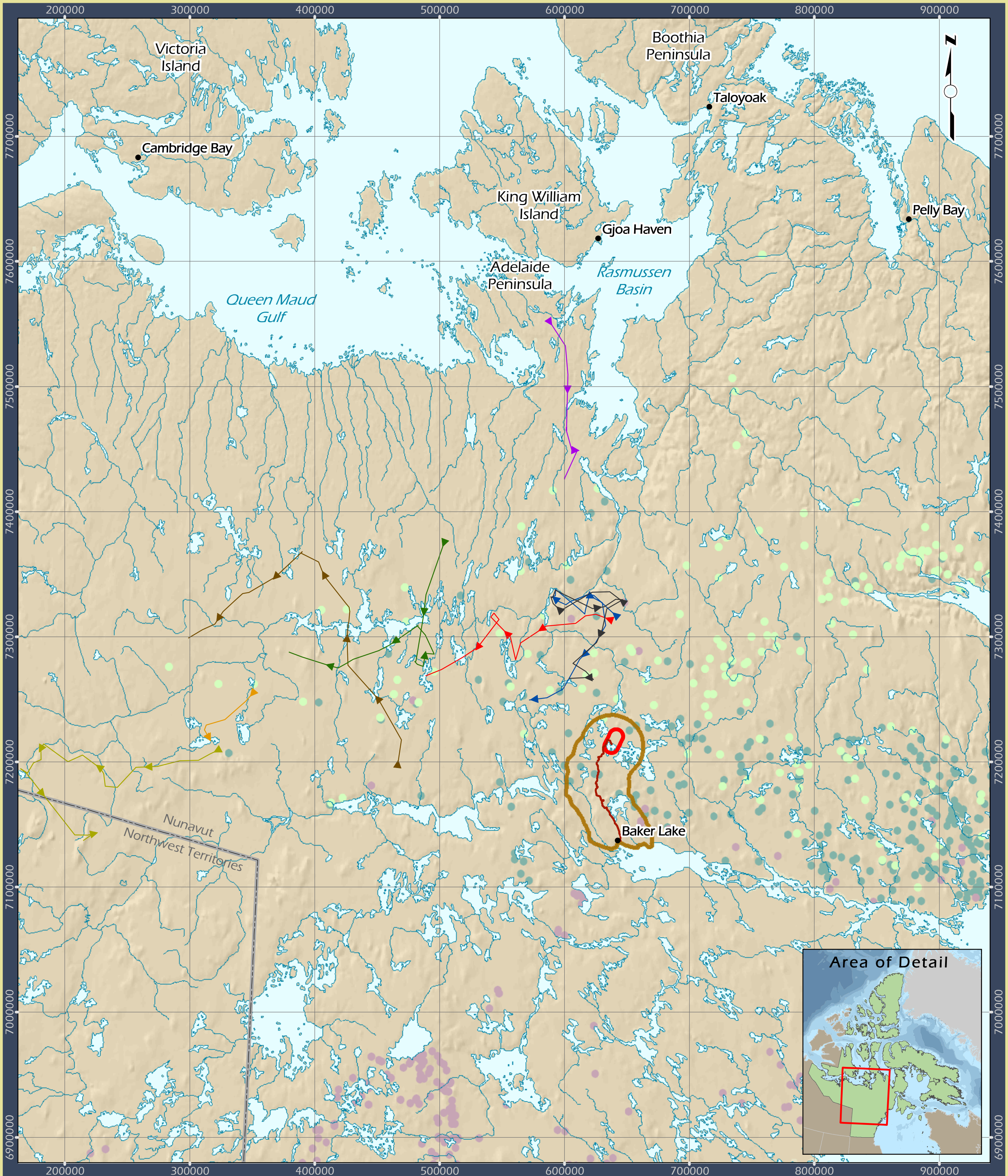
Nunavut

Figure 4.98:
Radio-collared Caribou Telemetry Data
Fall Season (September 16 - October 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 2008

- Lorrilard Herd
- Qamanirjuaq Herd
- Wager Bay Herd

Collar Number (PTT)
Dates: 2008
Track

- 35095
- 35096
- 35097
- 35098
- 35100
- 83790
- 83791
- 83792

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).

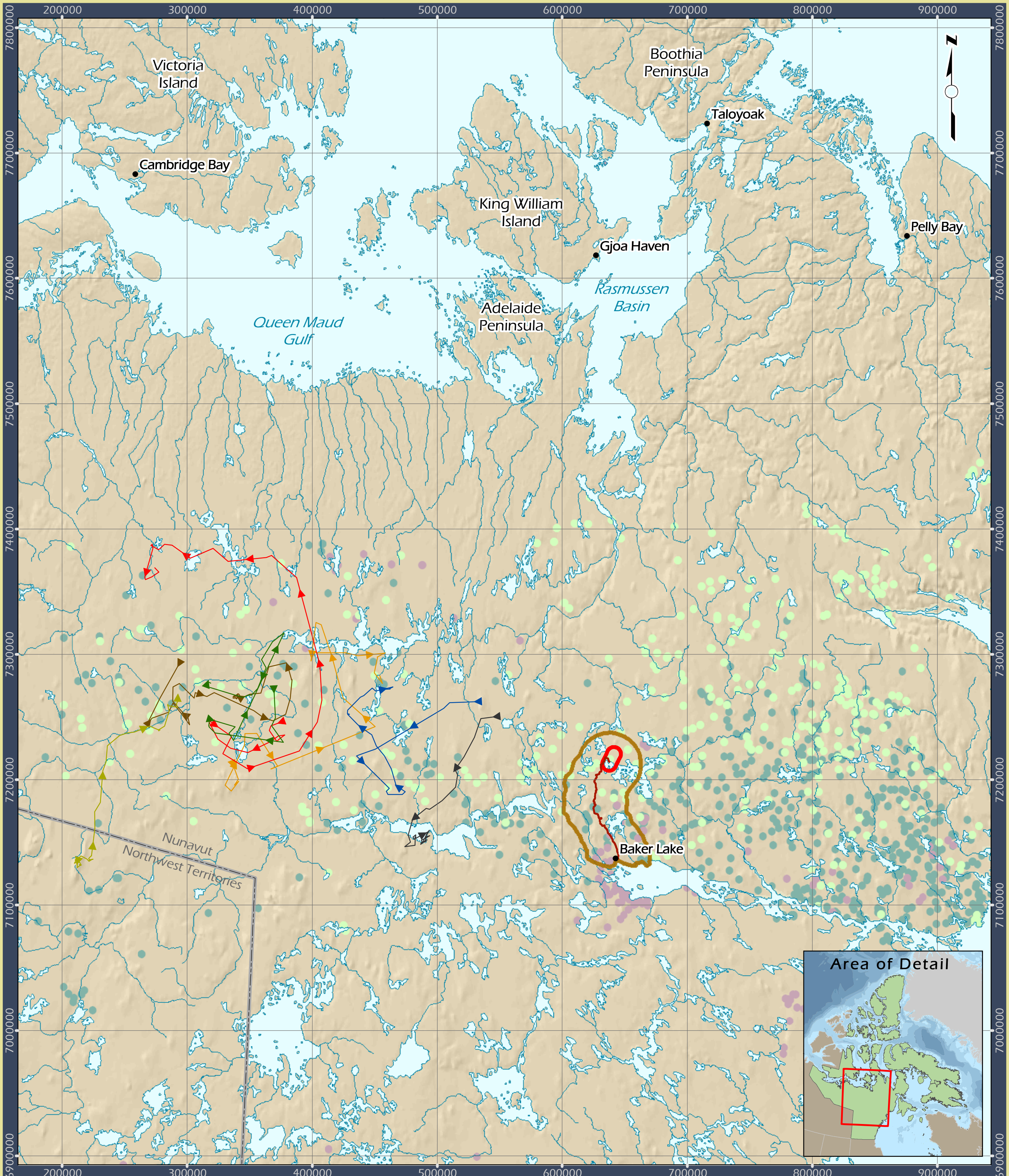
Nunavut

Figure 4.99: Radio-collared Caribou Telemetry Data Fall Rut Season (October 15 - October 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 2008

- Lorrilard Herd
- Qamanirjuaq Herd
- Wager Bay Herd

Collar Number (PTT)
Dates: 2008

Track

- 35095
- 35097
- 35098
- 35100
- 83790
- 83791
- 83792

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).

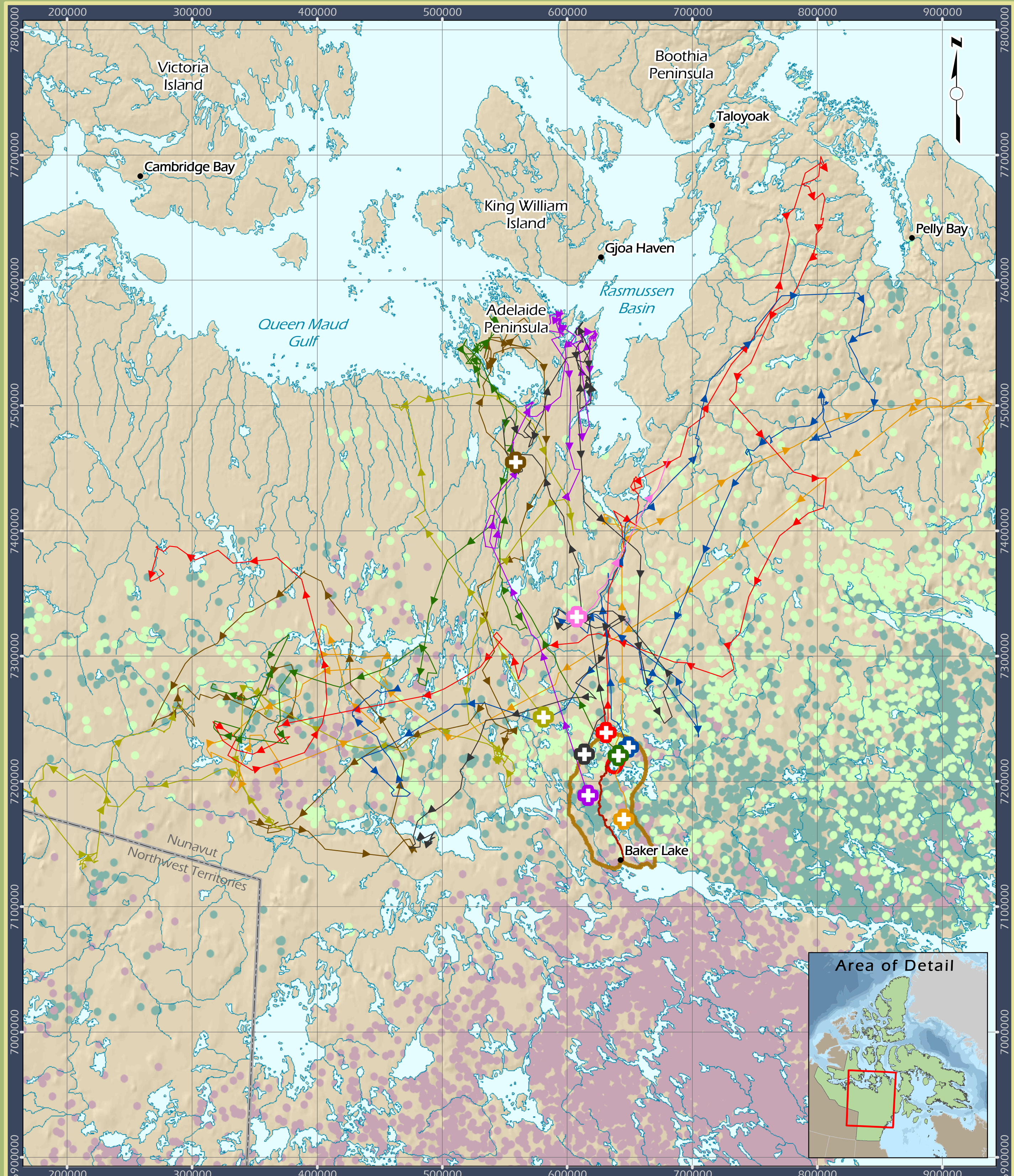
Nunavut

Figure 4.100: 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 2008
Lorrilard Herd
Qamanirjuaq Herd
Wager Bay Herd

Collar Number (PTT)
Dates: 2008

Deployment	Track
	35095
	35096
	35097
	35098
	35100
	83790
	83791
	83792
	83793

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 4.101:
Radio-collared Caribou Telemetry Data
All Reported Dates

Meadowbank Gold Project

Prepared for: AGNICO-EAGLE

By: Caslys Consulting Ltd.

4.13 CHECKLIST SURVEYS

A brief summary of results from the checklist surveys is provided in Table 4.27. First occurrence records are provided in Table 4.28. Bird species abundance counts per month and per year (2003-2008) is provided in Figure 4.102. 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 (2003-2008) is provided in Figure 4.103. Bird diversity was lower in 2008 relative to 2007, and may be partially attributable to survey timing and a reduction in the number of surveys relative to previous years (i.e., 33 surveys in 2007 compared to 24 surveys in 2008). However, a higher number of species were observed in June in previous years, despite a lower number of surveys in 2003, 2004 and 2006 relative to 2008. Additional years of data will be required to examine if a reduction in species diversity is occurring or the result of annual variation.

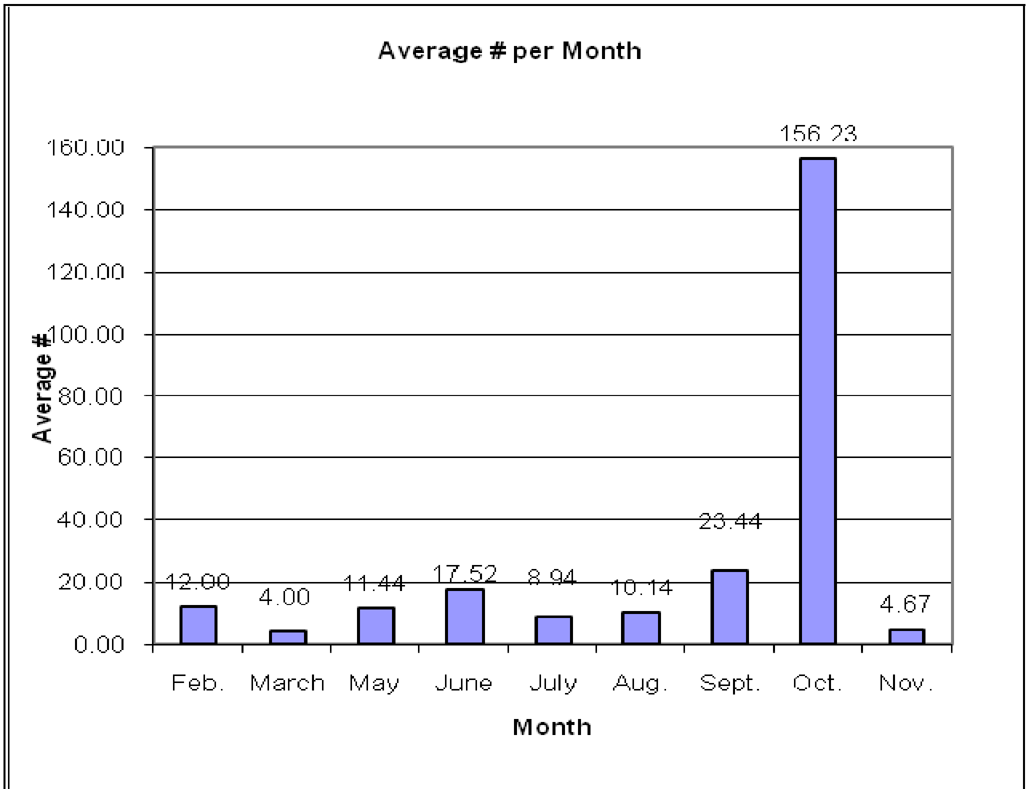
Table 4.27: Bird Species Diversity by Month and Year.

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**	

Table 4.28: 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
BASA	Baird's Sandpiper	29-May-03	PASS	Unidentified passerine species	19-Sep-07
BASW	Barn Swallow	01-Jun-05	PEFA	Peregrine Falcon	16-Jun-06
CACG	Cackling Goose	11-Jun-06	PESA	Pectoral Sandpiper	13-Jun-06
CAGO	Canada Goose	26-May-03	POJA	Pomarine Jaeger	18-Jun-03
COGO	Common Goldeneye	01-Jul-08	PTAR	Ptarmigan	16-May-07
COLO	Common Loon	21-Jun-03	RBME	Red-breasted Merganser	16-Jun-03
COME	Common Merganser	18-Jun-05	REDP	Unidentified redpoll species	07-Jun-05
CORA	Common Raven	26-May-03	RLHA	Rough-legged Hawk	18-Jun-03
CORE	Common Redpoll	29-May-03	ROGO	Ross's Goose	03-Jun-05
DUNL	Dunlin	04-Jun-05	ROPT	Rock Ptarmigan	26-May-03
GLGU	Glaucous Gull	26-May-03	RTLO	Red-throated Loon	27-May-03
GOOS	Unidentified goose species	19-Jun-04	SACR	Sandhill Crane	16-Jun-03
GRSC	Greater Scaup	16-Jun-03	SAVS	Savannah Sparrow	16-Jun-03
GULL	Unidentified gull species	20-Jun-04	SEOW	Short-eared Owl	27-May-03
GWFG	Greater White-fronted Goose	26-May-03	SEPL	Semipalmated Plover	03-Jun-05
GWTE	Green-winged Teal	16-Jun-03	SESA	Semipalmated Sandpiper	16-Jun-03
GYRF	Gyrfalcon	13-Jun-06	SHOR	Unidentified shorebird species	19-Jun-04
HERG	Herring Gull	26-May-03	SNBU	Snow Bunting	29-May-03
HOLA	Horned Lark	16-Jun-03	SNGO	Snow Goose	26-May-03
HORE	Hoary Redpoll	20-Jun-03	SNOW	Snowy Owl	21-Jun-07
JAEG	Unidentified jaeger species	15-Jun-07	TEWA	Tennessee Warbler	27-Jun-08
LALO	Lapland Longspur	26-May-03	THGU	Thayer's Gull	20-Jun-03
LOON	Unidentified loon species	19-Jun-04	TUSW	Tundra Swan	18-Jun-04
LTDU	Long-tailed Duck	16-Jun-03	WCSP	White-crowned Sparrow	27-May-03
LTJA	Long-tailed Jaeger	18-Jun-03	WIPT	Willow Ptarmigan	23-Jun-04
MALL	Mallard	18-Jun-03	WRSA	White-rumped Sandpiper	15-Jun-06

Figure 4.102: Bird Species Abundance Counts per Month and per Year.



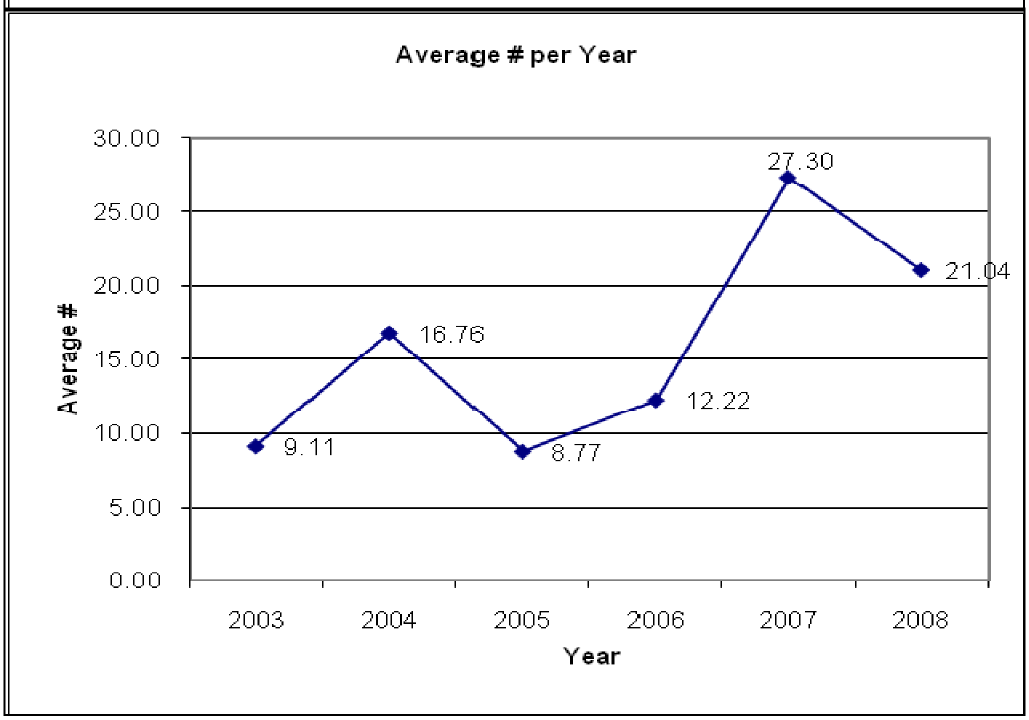
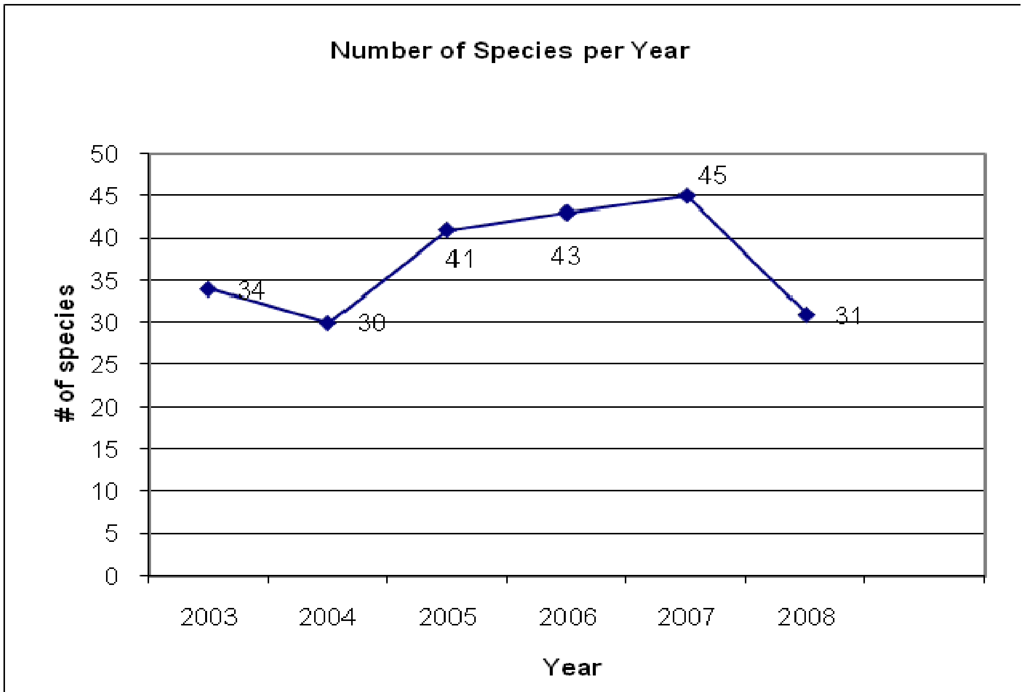
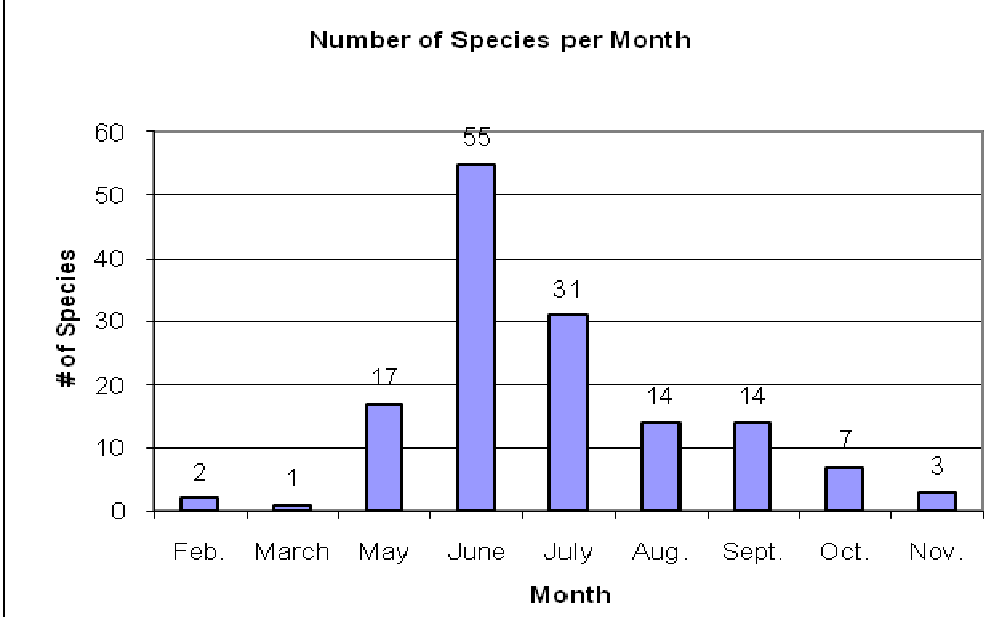


Figure 4.103: Bird Species Diversity Counts per Month and per Year (2003-2008).





4.14 BREEDING BIRD NEST SURVEYS

The breeding bird nest survey program commenced in 2007. The program serves to mitigate potential disturbances to breeding birds and their nests during proposed land clearing activities associated with construction of the mine site and ancillary facilities. Surveys in 2007 were conducted along the AWPAR in accordance with the approved Breeding Bird Nest Monitoring and Management Plan. Adaptive management included the realignment of the AWPAR to protect two identified nests. Eight of the eleven nests monitored in 2007 were successful.

In April 2008, the management plan was updated to address construction activities proposed within the 2008 nesting window (15 May to 31 July). Breeding bird nest surveys were not required along the AWPAR in 2008, given that construction of the road was completed before the nesting window; however, twenty-one (21) surveys were conducted in various locations around the mine site prior to proposed land clearing activities during this period.

In August 2008, Agnico-Eagle issued a 2008 Bird Survey summary report (Appendix E), which summarized the results of the bird surveys conducted at the mine site during site infrastructure construction occurring between 30 May and 31 July 2008 in accordance with the 2008 Breeding Bird Nest Monitoring and Management Plan. No migratory bird nests were identified in areas surveyed prior to land clearing; however, a Horned Lark, Savannah Sparrow and Common Redpoll nest were identified incidentally in areas of high disturbance (i.e., adjacent to the airstrip, within an active construction area and between dishwasher racks, respectively) and subsequently monitored. Exclusion zones for the identified nests were deemed unnecessary, given that the nests were located in areas of high disturbance. Each of the three nests was reported to have resulted in successful offspring.

SECTION 5 • DISCUSSION AND RECOMMENDATIONS

5.1 HABITAT MAPPING

Habitat mapping was not conducted in 2008 as a result of limited principal mine site construction, the majority of which will occur in 2009. It was concluded that ELC analysis following significant 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. Moreover, a comprehensive account of habitat areas affected by the mine site and ancillary facilities will be important when utilized as a statistical covariate for the monitoring protocols discussed herein (e.g., PRISM plot analyses). As a result, habitat mapping of both the mine site and ancillary facilities (including the AWPAR) is tentatively scheduled for the 2009 field season, based on the current construction schedule.

5.2 RSA AERIAL SURVEYS

The negative binomial regression analysis revealed some yearly and seasonal trends in both waterfowl and ungulate populations. For example, the largest estimated populations to date were calculated for both Caribou and Muskox in 2008. As a result, Muskox data to date suggests an increasing density in the RSA study area. The increasing density trend for Caribou is marginally significant; however, due to a large degree of variation, additional years of data are required to be statistically supported. Similarly, the effect, if any, of seasonality on Muskox population abundance remained inconclusive in 2008. In contrast, season no longer influenced Caribou abundance, in contrast to previous years. Given that RSA surveys have been suspended indefinitely, other means would be required to validate these hypotheses, should that be deemed necessary.

Many of the RSA estimates were imprecise (i.e., large standard errors) as a result of the relatively low coverage of surveys (i.e., 9.5% of the area was surveyed with transects) as well as the large degree of spatial variance for many of the species. For this reason, spatial interpretation of the results using IDW mapping is a useful way to further understand the results of surveys. 2008 IDW analyses suggest that the increasing Muskox density within the RSA study area is predominantly the result of higher observed densities in the southeast (summer) and northwest (winter) portions of the study area, relative to previous years. Similarly, relative to all previous RSA study years, a significantly higher density of Caribou was observed south of Whitehills Lake in the fall and winter seasons of 2008. In contrast, waterfowl density was generally lower in 2008 (May, June, August and September), despite the fact that Canada Goose counts in 2008 were the highest to date. In July, density was similar to 2007 and distribution was more heterogeneously distributed within the RSA.

Population estimates and variances from replicated counts contain both sampling and true temporal or process variance. Sampling variance is due to the fact that replicate samples taken in the same survey will result in different estimates. Temporal or process variance is the true variance in the population. Process and sampling variance can be separated (Thompson et al. 1998); however, this would require more years of data than was contained within these surveys. If RSA surveys are reinstated in future years, the collection of covariates (e.g., climatic conditions) that might influence true biological variation may help discern differences between sampling variation and true biological variation.

An inherent assumption of strip transect surveys is that the probability of sighting the focal species is 100% for the strip width (500 meters) on either side of the aircraft. If this assumption is met then it is possible to obtain population estimates for the entire RSA and LSA survey areas based upon counts on each survey transect. This assumption is somewhat relaxed for estimating trends from counts on transects. In this case, it is assumed that the probability of sighting of animals is similar for each survey and that the relative abundance of an animal can be used to estimate trends. The validity of this assumption is difficult to determine unless a double observer method or distance methods are used. Double observers involve two observers counting and noting the GPS location of wildlife during surveys. These two observations are then compared to estimate probability of sighting (Krebs 1998). Distance methods involve the noting of distance of observations from the center of the strip (using markers on the wing struts or windows of airplanes or helicopters) (Buckland et al. 1993; Buckland et al. 2004). The histogram of distances is then used to estimate a detection function and subsequent density of animals on the transect. Distance methods have been successfully applied to estimates of ungulates such as pronghorn (Guenzel 1997). These methods may be considered in the future should RSA surveys be reinstated to further evaluate the assumptions of strip transect surveys.

5.3 LSA AERIAL SURVEYS

The comparison of RSA and LSA densities provides some insight into potential differences between the area immediately surrounding the proposed mine site and the RSA. Densities were estimated using the amount of non-water land areas in the LSA and RSA area to further standardize comparisons. The main hypothesis then becomes whether the trend in wildlife species will be similar between these two areas as the mine site develops. One immediate issue is the relatively low sample size of wildlife species observed in the LSA because of its smaller area compared to the RSA. One potential method to increase sample size in subsequent years should LSA surveys be reinstated would be to sample every other transect (rather than surveying the entire area) and use the remaining plane or helicopter time to survey a larger area.

Another approach to estimate the impacts and zone of influence of the mine is to divide transects up into smaller cells and tabulate counts or numbers of wildlife observed in each cell. The distance of the cell and habitat attributes of the cell is also estimated. These data are then used in an analysis of covariance where species count (or presence/absence) is predicted using habitat attributes, year (in case of yearly trend in the wildlife species) and distance from mine site. This approach has been used to estimate zone of influence of mine sites for Caribou populations in the Northwest Territories (Boulanger et al. 2004).

Certain yearly trends continue to change with the addition of new data. For example, with the addition of the 2008 dataset, Canada Goose density was statistically influenced as a function of season, whereas in previous years, density was statistically independent on seasonal effects. This annual variation suggests that the current database is insufficient for validating long-term population trends within the LSA.

5.4 BREEDING BIRD PLOTS

In previous years, the main objective of analyses was to test whether baseline mine and reference / control site plots were comparable in terms of ELC habitat classifications and basic measures of species abundance, diversity, and richness. Results suggest that they are statistically comparable, particularly when the limited dataset between 2005 and 2008 are considered, as mine site plot locations changed in 2003 and 2004.

In 2008, the main objectives of analyses were to verify the comparability of mine and reference / control plots with the inclusion of an additional year of data, as well as to assess for potential project-related variation at the mine site plots where construction occurred in the 2007-2008 interval. Preliminary results suggest that mine site construction activities do not have an impact on species diversity, but the statistical power is low. A slight increase in species richness and species diversity occurred in mine site plots in the 2007-2008 interval. Further analysis with the Pradel model suggested that the rate of new species occurring in mine site plots was higher in 2008, which also resulted in higher species diversity scores. From an ecological point of view, construction within the PRISM plots could add edge areas resulting in the arrival of new species. The main question becomes if this is a short-term trend, and whether there will be longer-term impacts as a result of mine construction on species productivity and fidelity. Further monitoring of plots over time will better establish longer-term trends in response to the development of mine habitats.

Results to date also suggest that most community indices are temporally variable, 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 to 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.

5.5 BREEDING BIRD TRANSECTS

The results of bird transect surveys document the effects of seasonality and detection probability on the number of birds and species observed, and the spatial variation in transects as a function of year, potential habitat type and presence of roads.

One of the most interesting results in 2007 was the apparent increase in species diversity in transects that were roaded during surveys. In both roaded and non-roaded transects, more birds were sighted towards the center of the transect where survey effort was greatest; however, there was a greater peak in species diversity (which accounts for both the number of birds seen and the number of species seen) where the road bisected the transect for the roaded transects. This peak in diversity could be due to the creation of edge habitat as well as increased sightability of some birds (increased contrast against road) around the recently roaded areas of the transect. Actual overall habitat value may have increased in these areas attracting a higher diversity of birds. Negative effects may include higher predation pressure and potential for disturbance for nesting species.

The results in 2008 suggest a less noticeable effect of the roads on distribution relative to the roads. The Pradel analysis suggested that the rate of new species in transects was lower in transects that were roaded in both 2007 and 2008; however, based on the limited dataset, it is difficult to establish if this effect is an anomaly of the overall lower number of species sighted in 2008. Additional years of data will serve to determine the robustness of this trend.

5.6 RAPTOR NEST SURVEYS

To date, no active raptor nests have been recorded within the mine site and AWPAR LSA; however, several potential nest sites have been documented (Table 4.15). Monitoring of potential nest sites and raptor surveys are scheduled to continue. If an active nest is identified within 500 m of mine facilities, a management plan will be developed to mitigate potential mine-related impacts and adherence to GNDoE recommendations will be followed.

5.7 WATERFOWL NEST SURVEYS

2008 marked the fifth consecutive year that waterfowl nest surveys were conducted at the mine site and the third 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. The baseline waterfowl nest survey data will become increasingly important for comparative purposes following mine site construction.

Waterfowl nest survey results suggest that the shoreline and wetland areas within 200 m of the AWPAR continued to be utilized by waterfowl (five active nests, five old nests and one potential nest site [unconfirmed]) as well as songbirds and shorebirds (twenty active nests, eleven old nests, and four potential nest sites [unconfirmed]). Data collected during subsequent survey years will serve to 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.

5.8 MINE SITE GROUND SURVEYS

Principal mine site construction commenced in mid-2008 and is currently scheduled to be completed in 2009, after which mine site ground surveys will commence. The survey findings are to be included in the 2009 Wildlife Monitoring Summary report contingent on the timing of mine site completion.

5.9 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; however, statistical evaluation of the impact of the road on the actual wildlife is difficult given that there is no control area for comparison. The bird transects that are conducted perpendicular to the road are a better method for documenting the impact of the road on songbird species. It may be possible to apply distance methods (Buckland et al. 1993) to estimate the density of Caribou near the road by modeling the sightability distribution. Resulting density estimates could then be compared to estimates from the aerial surveys, if reinstated in subsequent years; however, differences in habitat types (and corresponding densities) would have to be accounted for to compare actual densities. Alternatively, it may be possible to compare trends in densities or counts from road surveys for Caribou as long as the actual habitat types surveyed by each method and sightability remain constant. This type of analysis would be most meaningful once a longer time series of data is collected. Notably, 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. This type of assumption may be flawed given the reported potential impacts of roads and mines on Caribou distribution for other projects (Boulanger et al. 2004).

In 2008, higher species counts were reported in all seasons (winter, spring, summer, and fall) relative to 2007. In addition, 2008 marked the first year in which Arctic Ground Squirrel (*Spermophilus parryi*), Common Loon (*Gavia immer*), Lapland Longspur and Snow Bunting (*Plectrophenax nivalis*) were reported during the surveys. Variation is anticipated to largely be the result of the increased length of the AWPAR in 2008, but may also be due to surveyor experience, weather conditions (i.e., visibility) and natural variation. Additional years of data will serve to evaluate the primary source(s) and statistical relevance of variation.

Reporting of wildlife mortality along the AWPAR increased in 2008 relative to 2007, which is likely due to a specific request to surveyors to report all mortalities observed during each survey as well as the longer survey distance (and potential for increased wildlife interactions) resulting from AWPAR completion in 2008.

5.10 HARVEST STUDY

The hunter harvest study was strategically revised at the end of 2007 as a result of the low participation rates. Some of the identified issues that needed to be addressed included maintaining participant interest, undertaking regular follow-up and reminders, maintaining up-to-date participant location records, and ensuring that calendars were filled out completely and correctly. As a result of assigning a dedicated field person to work alongside Agnico-Eagle personnel to distribute the calendars, make periodic radio announcements, become acquainted with the participants, conduct the follow-up and distribute the prizes (thereby garnering local interest regarding the study), harvest study participation rates increased markedly in 2008.

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 in 2007 and 2008 suggests that fishing activities have not been influenced by the presence of the AWPAR. The static nature of lakes and rivers coupled to the preferential utilization of traditional waterbodies likely depose any perceived advantage gained by using the AWPAR. Similarly, Wolverine and Muskox hunting did not appear to be influenced by the AWPAR, which is anticipated to be the result of 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 appeared to be closely associated with the AWPAR, often occurring less than 5 km from the road. Relative to the 2007 (during AWPAR construction), 2008 Caribou kills along the AWPAR increased, which is anticipated to be largely the result of increased utilization of the AWPAR for hunting purposes, which was voluntarily conveyed by approximately half the hunters during interviews.

In future years, a series of detailed statistical analyses will be conducted to isolate the effect of the AWPAR road on hunting and fishing 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.

5.11 RADIO COLLARING PROGRAM

As additional Caribou are collared in subsequent years and complete annual datasets are generated, home range and habitat use by season (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.

5.12 ENVIRONMENTAL HEALTH MONITORING

Environmental health monitoring studies in 2008 included the collection of baseline soil and vegetation tissue (lichen, plant and berry) from ten locations (seven locations within the LSA and three reference locations). Baseline data presented in the 2007 Wildlife Monitoring Summary Report included soil and vegetation (2005) and insect (2007) sampling, the results of which have been incorporated into a food chain model previously developed as a component of the WSLRA.

In accordance with the Environmental Health Monitoring Program (Azimuth 2006) and TEMP (Agnico-Eagle 2006), the next collection of soil and tissue samples are 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.

5.13 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.

5.14 BREEDING BIRD NEST SURVEYS

In 2008, breeding bird nest surveys were not required for the remaining portions of AWPAR construction, given that construction was completed prior to the nesting window (15 May to 31 July). Twenty-one (21) surveys were conducted by Agnico-Eagle personnel at the mine-site in accordance with the updated 2008 Breeding Bird Nest Monitoring and Management Plan. Although no migratory bird nests were identified in areas surveyed prior to land clearing, Horned Lark, Savannah Sparrow and Common Redpoll nests were identified incidentally in areas of high disturbance. Each of these nests were monitored regularly and were reported to have each resulted in successful offspring. In 2009, the Breeding Bird Nest Monitoring and Management Plan will be revised to address proposed 2009 construction activities at the mine-site requiring land clearing.

5.15 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. Specifically, in the 2006 wildlife monitoring summary report, statistical analysis of the available LSA and RSA data suggested an apparent natural decline of Caribou abundance and a seasonal variation in Muskox abundance. In contrast, the addition of the 2007 and 2008 Caribou and Muskox abundance data and subsequent statistical analysis of the updated datasets now suggest that Caribou abundance is not affected by year and Muskox abundance is influenced by season. Moreover, the addition of the 2008 data provided sufficient data to statistically identify an increasing trend in Muskox abundance in the RSA. Whereas a similar trend was observed for Caribou, it could not be validated statistically, requiring additional years of data. Thus, the inclusion of additional survey data each year (increase in n-value) from the various implemented monitoring programs will continue to improve the resolution and associated level of confidence in describing natural and potential mine-related variation in Caribou and Muskox populations.

Cumulative aerial survey data for waterfowl suggest that Canada Goose abundance is no longer influenced by season or year, in contrast to the previous year, which suggested a decline in Canada Goose abundance. Additional years of data may reverse or confirm the trend-to-date, exemplifying the need for sufficient data prior to drawing conclusions. For example, Canada Goose population trends may be the result of cyclically influenced predator-prey interactions, variation in seasonal migration patterns, global warming, anthropogenic disturbances or a combination of factors. 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 will improve confidence in trend analysis in subsequent years.

5.16 PROJECT-RELATED VARIATION

Potential project-related variation in species diversity, abundance and richness 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 baseline community metrics or temporal trends between reference / control and mine site breeding bird plots. In contrast, 2007 results suggested that songbird species richness and diversity were highest closest to the AWPAR. Additional statistical analyses conducted on the existing dataset 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 towards the centre of the transect, 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 will serve to determine the robustness of this trend.

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

5.16.1 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 diversity, abundance and richness. Results to date suggest that these measures are generally comparable. As well, ELC classes are generally comparable in both baseline mine and reference / control site plots 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.

RSA surveys to date suggest that Muskox abundance is increasing within the RSA. Caribou abundance in fall and winter was higher in 2008, relative to 2007, and is marginally significant. Canada Goose abundance within the RSA is not influenced by season or year, in contrast to the previous year, which suggested a decline in Canada Goose abundance. This change may be partially attributable to a large number of Canada Goose observations in the 2008 summer season and higher counts in the spring 2008 relative to previous years.

Preliminary statistical analyses in 2007 using the bird transect survey data suggested that the presence of a road across a transect was a predictor of species diversity, which appeared higher in a roaded area relative to a non-roaded (control) area. Statistical analyses of 2008 data suggested the relationship between road presence and species diversity was less robust. Species abundance was higher in 2007 relative to 2005, 2006 and 2008 for many species. Species richness increased from 2005 to 2006 then decreased in 2007 and increased again in 2008. In general, relative abundance of most species decreased in 2007 relative to previous years.

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 is largely the result of data-pooling.

Preliminary results presented for each monitoring program must be interpreted cautiously as they may be influenced by potential artifacts such as sightability, survey intensity, survey timing and edge habitat effects. On-going annual surveys will serve to strengthen or reduce the validity of these predictions and identify natural versus mine-related variation.

5.17 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 constrained by construction activities, which have been limited primarily to AWPAR construction and mine site clearing and grading in preparation for the majority of principal mine site construction in 2009. Thus, the only impact predictions appropriate for discussion at this juncture are:

1. wildlife mortality associated with problem animals at Meadowbank camp;
2. wildlife mortality as a result of AWPAR operation, including vehicle-related collisions; and
3. unauthorized hunting along the AWPAR.

A detailed evaluation of the accuracy of wildlife mortality impact predictions and unauthorized hunting along the AWPAR are provided in Sections 5.17.1 and 5.17.2, 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.

5.17.1 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	YES	YES; discussed in Section 5.18.	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 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 5.18.	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	Annual Raptor Nest Monitoring	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 waterfowl 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 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

5.17.1.1 Ungulates

In 2008, two cases of Caribou mortality via vehicle collision were reported, thereby exceeding the threshold of one (1) as outlined in the TEMP (Agnico-Eagle 2006). Specifically, on 04 October 2008, a deceased Caribou was observed along the AWPAR between kilometre 82 and 83. The Caribou was brought to camp and autopsied to determine the cause of death. The autopsy results suggested that the Caribou had been struck and killed by a vehicle. The incident was not reported to Agnico-Eagle environmental personnel. Similarly, on 07 November 2008, a deceased Caribou was observed along the AWPAR during a routine AWPAR survey. The caribou mortality had not been reported to Agnico-Eagle environmental personnel.

Following the incident on 04 October 2008, Agnico-Eagle environmental personnel issued a staff reminder regarding the speed limit on the road, the animal right-of-way policy and the disciplinary measures for non-compliance to this protocol if the investigation concludes that the accident is the result of negligence. Continued on-going patrols, speed-limit enforcement and enactment of appropriate disciplinary measures are being conducted to mitigate caribou mortality as a result of vehicle collision.

5.17.1.2 Predatory Mammals

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

On 29 November 2008, Agnico-Eagle environmental personnel observed a Wolf (*Canis lupus*) near the Meadowbank landfill, located within the footprint of the licensed waste rock storage area. Surface workers observed the Wolf again on the following day, filing a verbal report to the on-site environmental coordinator. The behaviour of the Wolf suggested that it was ill, either due to natural causes (i.e., parasite or viral/bacterial infection) or as a result of ingestion of landfill waste. The Baker Lake conservation officer was contacted to discuss potential solutions. It was concluded that the Wolf should be disposed of to reduce its suffering. To prevent the potential spread of disease, no autopsy was performed and the Wolf carcass was immediately disposed of in the incinerator. The wildlife incident report was issued to the local Baker Lake conservation officer and appropriate GNDoE, Kivalliq Inuit Association (KIA) and HTO representatives (Appendix H).

On 20 December 2008, Agnico-Eagle environment and security personnel observed a lone Wolf near the East Dyke area, which was successfully scared away with bear bangers. On 28 December 2008, the same wolf was observed close to the mine site on Third Portage Lake and did not illicit a fear response when quickly approached on snowmobile, suggesting it had become habituated to human contact. Agnico-Eagle personnel opted to destroy the animal, noting that the Wolf would continue to have been attracted to the mine site. The carcass was immediately disposed of in the incinerator. The wildlife incident report was issued to the local Baker Lake conservation officer, and appropriate GNDoE, KIA and HTO representatives (Appendix H).

Arctic Foxes were also observed on a regular basis in 2008, demonstrating a particular affinity for the Waste Management Area (WMA), where they have been observed foraging for food around the incinerators and sitting on garbage to be incinerated. Foxes have also been observed near the kitchen area and greywater discharge location.

To minimize the attraction of wolves and foxes to camp, aversive conditioning (e.g., bear-bangers, chasing etc.) should be used when these animals are observed. Moreover, a new incinerator has been installed at the mine site and is currently in use. All garbage to be incinerated is now stored indoors, which is anticipated to further reduce scavenging of garbage.

5.17.2 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 5.2. Only those impact predictions that can be adequately quantified during these early stages of mine site construction are discussed in detail.

Table 5.2: 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.	Not Yet Applicable	Not Yet Applicable	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.	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.	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 5.18.	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
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 access road.	YES; Preliminary Qualitative Assessment	Issue currently under review by NIRB	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

5.17.2.1 Traditional Hunting Patterns

On 10 September 2008, Agnico-Eagle personnel identified a male Caribou carcass at kilometre 100. Environmental personnel were dispatched to the location and observed a healthy male caribou that had been partially scavenged. A closer inspection identified a bullet hole near the base of the neck. The carcass had attracted predators including two Wolves and a Grizzly Bear. The Caribou carcass was removed and disposed of in the incinerator; however, the remains continued to attract predators on the days that followed. Agnico-Eagle contacted the conservation officer stationed in Baker Lake, expressing concern that hunting is continuing along the AWPAR, as predators will be attracted to improperly disposed of animal remains, which may result in vehicle collisions. These concerns were reiterated to the mayor of Baker Lake (16 September 2008), the Baker Lake council (18 September 2008) and the Community Liaison Committee (23 September 2008).

Two Caribou carcasses, suspected to be the result of hunting activities, were observed along the AWPAR during the 2008 AWPAR Ground Surveys. Specifically, one carcass consisted of a potential hunter cache (06 June 2008), the other of which was limited to a Caribou head (29 August 2008), presumed to be the result of hunting activities.

5.18 ADAPTIVE MANAGEMENT IMPLEMENTED IN 2008

In both instances in which a Wolf had to be killed in 2008, the adaptive management protocol set out in the TEMP were followed, which involved contacting the local conservation officer to discuss the preferred course of action. As a result of these incidences, Agnico-Eagle has committed to enforcing garbage segregation and increasing the monitoring of material going to landfill in 2009.

In late October 2008, a large aggregation of Caribou was observed on both sides of the AWPAR between km 70 and 87. The Caribou were observed very close to the road and appeared hesitant to cross. However, upon approach via vehicle, the Caribou would occasionally run towards the herd located on the opposite side of the road. As a precautionary measure, the AWPAR was closed each night between 01 November and 03 November as set out in the TEMP adaptive management protocol. During the daylight hours, the road was open to limited vehicle traffic transporting essential items and personnel to and from the mine site. During this period, security sentry personnel were stationed at km 70 and km 86 to monitor traffic and remind drivers of the proper protocol to avoid collision with crossing Caribou. Once the Caribou herd had dispersed well away from the road on 04 November, the road was re-opened to regular vehicle traffic.

As a proactive and precautionary adaptive management measure, LSA and RSA surveys were suspended indefinitely at the request of GNDoE, citing potential disturbances to Caribou as a result of the low-flying aircraft noise. The surveys, which commenced in 1999, have functioned as a monitoring and management tool serving to establish wildlife presence and distribution within the LSA and RSA survey areas for each season of each survey year. The primary objective of the RSA and LSA surveys were to monitor Caribou; therefore, Agnico-Eagle and the GNDoE concluded that supplementary Caribou radio-collaring would serve to offset the cessation of aerial surveys. Agnico-Eagle committed to the fitting of ten additional collars (for a total of 25 radio-collars).

SECTION 6 • SUMMARY

The 2008 Wildlife Monitoring Summary Report describes data collected to date, investigates the suitability of monitoring programs in assessing trends in wildlife abundance and diversity, and makes preliminary comments on natural variability within populations. In general, 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.

The accumulative datasets suggest increases in population abundance for Caribou (marginal statistical significance) and Muskox (statistically significant) within the RSA. Aerial survey data for waterfowl within the RSA indicated that season and year did not affect Canada Goose and Snow Goose abundance, in contrast to previous years, which reported a potential decline in waterfowl abundance. A preliminary evaluation of potential mine-related effects through a comparison of mine and reference / control bird plots suggests that mine-related construction activities to date are not affecting bird community metrics (abundance, evenness and diversity). Data from the bird transect surveys is not yet robust enough to identify natural and project-related trends. In 2007, roaded transects appeared to coincide with a higher species diversity. This effect was less apparent in 2008, and may be the result of increased sightability, survey intensity, survey timing or the creation of edge habitat. Similarly, data from waterfowl surveys is not yet robust enough to successfully determine trends; however, within 200 metres of the AWPAR nesting waterfowl continued to be observed at a frequency similar to 2007. Ongoing surveys will continue to improve the confidence in describing trends in all wildlife populations and ultimately whether mine-related impacts are occurring.

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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.

Aerial Survey – The collection of data on wildlife diversity, abundance and distribution from a fixed-wing aircraft or helicopter.

***AIC* –** Akaike Information Criterion.

Anthropogenic – caused or influenced by human activities.

***ANOVA* –** ANalysis Of Variance.

***ANCOVA* –** ANalysis Of CO-Variance.

***ARGOS* –** Advanced Research and Global Observation Satellite.

AWPAR – All-Weather Private Access Road.

BACI – Before-After Controlled Impact.

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.

Creel - A basketlike cage for trapping fish; refers to fish caught.

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.

RCMP – Royal Canadian Mounted Police

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 Access 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:______________

400															
350															
300															
250															
200															
150															
100															
50															

0 25 50 75 100 125 150 175 200 225 250 275 300 325 350 375 400

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 Access 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

Baker Lake Harvest Study

2008

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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)

ᖃᒪᓂᑐᐊᕐᒥ ᐊᖑᓇᓱᒃᓂᕐᒧᑦ ᖃᐅᔨᓴᕐᓂᖅ

ᖃᓄᖅ ᐊᑐᒐᐅᒐᐅᓂᖓ ᐅᓪᓗᖅᓯᐅᑎᑦ ᐊᖑᓇᓱᒃᓂᕐᒧᑦ

ᐅᐳᒃᑎᓐᓇᒃᑐᒥ ᐅᔭᕋᒃᑕᕆᐊᒃᑐᑦ ᑕᑯᐊ ᑲᒻᐳᓚᖕᑯᑦ ᐱᓕᕆᖃᑎᖃᖅᑐᑎᒃ ᖃᒪᓂᑐᐊᕐᒥ ᐊᖑᓇᓱᒃᑎᑦ, ᑐᑭᓯᓂᐊᒃᑐᒃ ᖃᒪᓂᑐᐊᕐᒥᐅᑦ ᓂᕐᔪᑎᓂᒃ ᐱᑕᖃᑦᑕᕐᓂᖏᓂᒃ. ᑕᒪᑯᐊ ᐃᖃᓗᐊᕐᓂᓗ ᓂᕐᔪᑎᓗ ᐱᑕᖃᑦᑕᐅᕙᒃᑐᑦ ᖃᐅᔨᓴᑕᐅᒪᑕ ᑐᑭᓯᔭᐅᓯᐊᖃᑎᒃ. ᐊᐳᒃᑎᓐᓇᒃᑐᒥ ᐅᔭᕋᒃᑕᕆᐊᕈᐱᒃ ᐅᑯᐃᐸᓕᐊᑎᓗᒍ ᐅᖓᓯᓂᓕᒃ 75 ᑭᓚᒥᑐᑦ, ᖃᒪᓂᑐᐊᕐᒥᑦ. ᑕᒪᓇ ᐊᖑᓇᓯᓂᖅ ᐊᓯᖑᕐᑯᖏᓇᐸᑎᒍ. ᑐᑭᓯᔪᒪᒥᔪᒍᑦ ᑕᒪᓇ ᐊᐸᕐᑯᑦ ᓴᓇᔭᐅᔪᖅ ᐊᖑᓇᓱᒃᓂᕐᒧᑦ ᐊᓚᖑᖅᑎᑦᓯᓇᔭᕐᒪᖔᑦ.
ᑕᒪᓇ ᑐᑭᓯᔪᒪᐸᓗᒍ ᐱᓕᕆᔪᒍᑦ ᐊᒪᓗ ᐅᑯᐊ ᑐᑭᓯᔪᒪᔭᕗᑦ:

1. ᖃᑉᓯᓂᒃ ᑐᒃᑐᓂᒃ, ᐅᒥᒪᓂᒃᓗ, ᖃᕕᓂᒃᓗ ᐱᑕᔪᕕᑦ ?

2. ᖃᖕᒐᓗ ᓇᓂᓗ ᐊᖑᓇᓱᒍᑎᒋᕙᒃᐱᒋᑦ ?

3. ᓇᓂ ᐃᖃᓚᐊᔪᕕᑦ ᐊᒪᓗ ᖃᓄᐃᑐᓂᒃ ᐃᖃᓗᔪᕕᑦ ?

4. ᖃᖕᒐᒍ ᐃᖃᓚᐊᔪᕕᑦ ?

5. ᐃᖃᓚᐊᕋᖕᒐᕕᑦ, ᓂᕐᔪᑎᓂᒃᓗ ᐊᖑᓇᓱᒃᖃᖕᒐᕕᑦ ᐊᐸᕐᑯᑦ ᐊᑐᖅᑕᓂᐊᖅᐱᐅᒃ ?

6. ᓱᓇ ᐸᕐᓇᖑᑕᐅᔭᕆᐊᖃᖅᐸ ᓂᕐᔪᑎᓗᒃᑕᑦ ᓇᒪᕐᑯᐸᓗᒋᑦ, ᒥᐊᓂᕆᔭᐅᕐᑯᐸᓗᒋᑦ, ᓯᕗᓂᑉᒥ ᐸᒪᓗ ᖃᒪᓂᑐᐊᕐᒥᐅᑦ ᓂᕐᔪᑎᖃᑦᓯᐊᕐᑯᐸᓗᒋᑦ ?

ᑕᒪ ᐅᓪᓗᖅᓯᐅᑦ ᑎᑎᕋᕕᐅᔪᓇᖅᑐᖅ ᓱᓇᓂᒃ ᓂᕐᔪᑎᓂᒃ ᐱᑕᓚᐅᕐᒪᖕᒐᖅᐱᑦ ᑎᑎᕋᒃᑕᓗᒋᑦ.
ᐅᓪᓗᖅᓯᐅᑎᑦ ᑭᖑᓂᐊᓂ ᐊᑎᖑᐊᖅᑕᓕᒃ ᓂᕐᔪᑎᓂᒃ, ᑕᑯᐊ ᖃᐅᔨᓴᖕᒐᐅᒪᑕ ᐱᑕᒐᐅᑕᖅᑐᑦ.
ᑕᒪᑯᐊ ᓂᕐᔪᑎᑦ ᐱᑕᖅᑕᑎᑦ ᑎᑎᕋᒃᑕᓗᒋᑦ ᓄᓇᖑᐊᖅ ᓇᓗᓇᐃᑯᑕᐅᓗᓂ. (ᓄᓇᖑᐊᖅ ᓇᓗᓇᐃᑯᑕᖏᑦ ᑎᑎᕋᒃᓯᒪᔪᑦ)
ᐅᒃᑐᑎᒋᓗᒍ ᔪᓇᐃ 16ᒥ ᑐᑐᑲᕕᑦ, ᐅᖅᐱᑐᔪᒥ ᕿᑭᖅᑕᒥ, ᑎᑎᕋᔭᖅᑐᑎᑦ, 1 ᑐᒃᑐ, ᓇᓴᐅᑎᖓ ᐊᐃ28 ᐊᓪᓗᖅᓯᐅᑎᒥ.
ᖃᐅᔨᓴᖅᑎ ᐅᓪᓚᓗᖅᑲᕐᓂᐊᖅᑐᖅ, ᐃᑲᔪᖅᐸᓗᓂ ᑕᑯᓂᖓ. ᑭᓯᐊᓂ ᑎᑎᕋᒃᑕᑎᑦ ᑎᑎᕋᕈᓂ ᐱᐊᓂᓂᖅᓴᐅᓗᓂ, ᐊᔪᕐᓇᖏᓂᖅᓴᐅᓇᔭᖅ. ᐊᐱᖅᓱᖅᑲᖅᓴᖅᐳᕕᑦ ᓯᕗᓂᒃ ᒪᐃᑯ ᓴᖅᐱ 867 793 4610, ᐅᔭᕋᒃᑕᕆᐊᖅᑎᑦ ᑎᑎᕋᕕᖕᒐᓂ.

Rock Ptarmigan

Damian Power

January | ᔮᓄᐊᕆ 2008

Baker Lake Harvest Study
ᖃᒪᓂᑐᐊᕐᒥ ᐊᖑᓇᓱᒃᓂᕐᒧᑦ ᖃᐅᔨᓴᕐᓂᖅ

Sunday ᓴᓇᑕᐃᓕ	Monday ᓴᓇᑕᐃᓕᐅᒐᓂᓴᖅ	Tuesday ᑐᒃᓯᐊᕐᓇᖅ ᓯᕗᓕᖅ	Wednesday ᐱᖓᒐᔪᐊᑦ	Thursday ᓯᑕᒪᑦ	Friday ᑕᓕᒪᑦ	Saturday ᓂᖃᐃᑐᕐᓇᖅ
		1 New Years Day	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

December 2007

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 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	

Caribou

Martin Gebauer

February | ᕕᑉᕈᐊᕆ 2008

Baker Lake Harvest Study
ᖃᒪᓂᑐᐊᕐᒥ ᐊᖑᓇᓱᒃᓂᕐᒧᑦ ᖃᐅᔨᓴᕐᓂᖅ

January 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		

March 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					

Sunday ᓴᓇᑕᐃᓕ	Monday ᓴᓇᑕᐃᓕᐅᒐᓂᓴᖅ	Tuesday ᑐᒃᓯᐊᕐᓇᖅ ᓯᕗᓕᖅ	Wednesday ᐱᖓᓱᐊᑦ	Thursday ᓯᑕᒪᑦ	Friday ᑕᓕᒪᑦ	Saturday ᓂᖃᐃᑐᕐᓇᖅ
					1	2 Groundhog Day
3	4	5	6 Ash Wednesday	7	8	9
10	11	12	13	14 Valentine's Day	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	

Winter Survey

Damian Power

March | ᒫᔨ 2008

Baker Lake Harvest Study
ᖃᒪᓂᑐᐊᕐᒥ ᐊᖑᓇᓱᒃᓂᕐᒧᑦ ᖃᐅᔨᓴᕐᓂᖅ

February 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			

April 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	

Sunday ᓴᓇᑕᐃᓕ	Monday ᓴᓇᑕᐃᓕᐅᓚᓂᓴᖅ	Tuesday ᑐᒃᓯᐊᕐᓇᖅ ᓯᕗᓕᖅ	Wednesday ᐱᖓᓲᐊᑦ	Thursday ᓯᑕᒪᑦ	Friday ᑕᓕᒪᑦ	Saturday ᓂᖄᐃᑐᕐᓇᖅ
						1
2	3	4	5	6	7	8
9 Daylight Savings Time Begins	10	11	12	13	14	15
16	17 St. Partick's Day	18	19	20 First Day of Spring	21 Good Friday	22
23 Easter Sunday	24 Easter Monday	25	26	27	28	29
30	31					

Caribou near Baker Lake

Damian Power

April | ᐊᐃᓂᓕ 2008

Baker Lake Harvest Study
ᖃᒪᓂᑐᐊᕐᒥ ᐊᖑᓇᓱᒃᓂᕐᒧᑦ ᖃᐅᔨᓴᕐᓂᖅ

Sunday ᓴᓇᑕᐃᓕ	Monday ᓴᓇᑕᐃᓕᐅᒐᓂᓴᖅ	Tuesday ᑐᒃᓯᐊᕐᓇᖅ ᓯᕗᓕᖅ	Wednesday ᐱᖓᓲᐊᑦ	Thursday ᓯᑕᒪᑦ	Friday ᑕᓕᒪᑦ	Saturday ᓂᖃᐃᑐᕐᓇᖅ
March 2008	May 2008	1 April Fool's Day	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20 Passover	21	22 Earth Day	23	24	25	26
27	28	29	30			

March 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					

May 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


Willow Ptarmigan
Claudio Bianchini

May | ᒪᐃ 2008

Baker Lake Harvest Study
ᖃᒪᓂᑐᐊᕐᒥ ᐊᖑᓇᓱᒃᓂᕐᒧᑦ ᖃᐅᔨᓴᕐᓂᖅ

Sunday ᓴᓇᑕᐃᓕ	Monday ᓴᓇᑕᐃᓕᐅᒪᓂᓴᖅ	Tuesday ᑐᒃᓯᐊᕐᓇᖅ ᓯᕗᓕᖅ	Wednesday ᐱᖓᒐᔪᐊᑦ	Thursday ᓯᑕᒪᑦ	Friday ᑕᓕᒪᑦ	Saturday ᓂᖃᐃᑐᕐᓇᖅ
			Hamlet Days (TBA)	1	2	3
4	5	6	7	8	9	10
11 Mother's Day	12	13	14	15	16	17
18	19 Victoria Day	20	21	22	23	24
25	26	27	28	29	30	31

April 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			

June 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					

Common Redpoll Chicks

Martin Gebauer

June | ᔪᓂ 2008

Baker Lake Harvest Study
ᖃᒪᓂᑐᐊᕐᒥ ᐊᖕᒍᓇᓱᒃᓂᕐᒧᑦ ᖃᐅᔨᓴᕐᓂᖅ

Sunday ᓴᓇᑕᐃᓕ	Monday ᓴᓇᑕᐃᓕᐅᒐᓂᓴᖅ	Tuesday ᑐᒃᓯᐊᕐᓇᖅ ᓯᕗᓕᖅ	Wednesday ᐱᖕᒐᔪᐊᑦ	Thursday ᓯᑕᒪᑦ	Friday ᑕᓕᒪᑦ	Saturday ᓂᖃᐃᑐᕐᓇᖅ
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15 Father's Day	16	17	18	19	20 First Day of Summer	21 Nunavut Day
22	23	24	25	26	27	28
29	30					

May 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

July 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		


Arctic Fox Pup

Damian Power

July | ᔪᓚᐃ 2008

Baker Lake Harvest Study
ᖃᒪᓂᑐᐊᕐᒥ ᐊᖑᓇᓱᒃᓂᕐᒧᑦ ᖃᐅᔨᓴᕐᓂᖅ

Sunday ᓴᓇᑕᐃᓕ	Monday ᓴᓇᑕᐃᓕᐅᒐᓂᓴᖅ	Tuesday ᑐᒃᓯᐊᕐᓇᖅ ᓯᕗᓕᖅ	Wednesday ᐱᖕᒐᓱᐊᑦ	Thursday ᓯᑕᒪᑦ	Friday ᑕᓕᒪᑦ	Saturday ᓂᖃᐃᑐᕐᓇᖅ
June 2008	August 2008	1 Canada 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		

June 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					

August 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						

Arctic Fox Vixen with Pups

Claudio Bianchini

August | ᐊᒍᓯ 2008

Baker Lake Harvest Study
ᖃᒪᓂᑐᐊᕐᒥ ᐊᖑᓇᓱᒃᑎᓂᕐᒧᑦ ᖃᐅᔨᓴᕐᓂᖅ

July 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		

September 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				

Sunday ᓴᓇᑕᐃᓕ	Monday ᓴᓇᑕᐃᓕᐅᒐᓂᓴᖅ	Tuesday ᑐᒃᓯᐊᕐᓇᖅ ᓯᕗᓕᖅ	Wednesday ᐱᖓᒐᔪᐊᑦ	Thursday ᓯᑕᒪᑦ	Friday ᑕᓕᒪᑦ	Saturday ᓂᖃᐃᑐᕐᓇᖅ
					1	2
3	4 Civic Holiday	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						

Sik Sik Preparing for Winter

Damian Power

September | ᓯᑎᐱᕆ 2008

Baker Lake Harvest Study
ᖃᒪᓂᑐᐊᕐᒥ ᐊᖑᓇᓱᒃᓂᕐᒧᑦ ᖃᐅᔨᓴᕐᓂᖅ

Sunday ᓴᓇᑕᐃᓕ	Monday ᓴᓇᑕᐃᓕᐅᒐᓂᓴᖅ	Tuesday ᑐᒃᓯᐊᕐᓇᖅ ᓯᕗᓕᖅ	Wednesday ᐱᖓᓱᐊᑦ	Thursday ᓯᑕᒪᑦ	Friday ᑕᓕᒪᑦ	Saturday ᓂᖃᐃᑐᕐᓇᖅ
	1 Labour Day	2	3	4	5	6
7 Grandparent's Day	8	9	10	11	12 Terry Fox at Work Day	13
14 Terry Fox Run	15	16	17	18	19	20
21	22 First Day of Autumn	23	24	25	26 Terry Fox National School Run Day	27
28	29	30				

August 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						

October 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	

Bull Caribou before the Rut

Damian Power

October | ᐅᒃᑐᐱᕆ 2008

Baker Lake Harvest Study
ᖃᒪᓂᑦᑐᐊᕐᒥ ᐊᖑᓇᓱᒃᓂᕐᒧᑦ ᖃᐅᔨᓴᕐᓂᖅ

September 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				

November 2008

S	M	T	W	T	F	S
						1
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30						

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5	6	7	8	9	10	11
12	13 Thanksgiving Day	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31 Halloween	


Arctic Fox

Damian Power

November | ᓄᕕᐱᕆ 2008

Baker Lake Harvest Study
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October 2008

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December 2008

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Sunday ᓴᓇᑕᐃᓕ	Monday ᓴᓇᑕᐃᓕᐅᒐᓂᓴᖅ	Tuesday ᑐᒃᓯᐊᕐᓇᖅ ᓯᕗᓕᖅ	Wednesday ᐱᖕᒐᔪᐊᑦ	Thursday ᓯᑕᒪᑦ	Friday ᑕᓕᒪᑦ	Saturday ᓂᖅᑲᐃᑐᕐᓇᖅ
						1
2 Daylight Savings Time Ends	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						

Arctic Wolf Tracks

Claudio Bianchini

December | ᑎᓯᐱᕆ 2008

Baker Lake Harvest Study
ᖃᒪᓂᑐᐊᕐᒥ ᐊᖕᒍᓇᓱᒃᓂᕐᒧᑦ ᖃᐅᔨᓴᕐᓂᖅ

Sunday ᓴᓇᑕᐃᓕ	Monday ᓴᓇᑕᐃᓕᐅᒐᓂᓴᖅ	Tuesday ᑐᒃᓯᐊᕐᓇᖅ ᓯᕗᓕᖅ	Wednesday ᐱᖕᒐᓲᐊᑦ	Thursday ᓯᑕᒪᑦ	Friday ᑕᓪᓕᒪᑦ	Saturday ᓂᖃᐃᑐᕐᓇᖅ
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7	8	9	10	11	12	13
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21 First Day of Winter	22	23	24	25 Christmas Day	26 Boxing Day	27
28	29	30	31			

November 2008

S	M	T	W	T	F	S
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30						

January 2009

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Caribou Bull
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Damian Power

Damian Power

Caribou Cows
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Muskox Bull
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Damian Power

Damian Power

Muskox Cow & Calf
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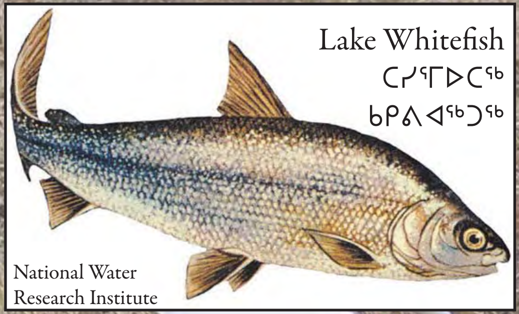

Lake Whitefish
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ᑲᕿᕕᐊᖅᑐᖅ

National Water
Research Institute

Arctic Char - Male & Female
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Randy Baker

Arctic Grayling
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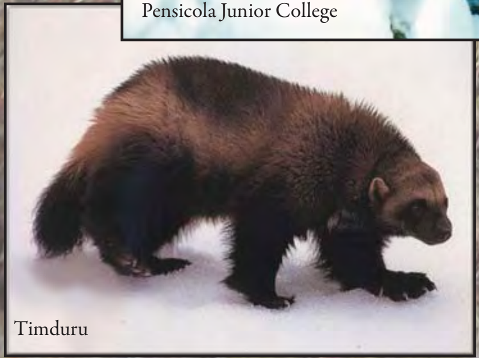
Randy Baker

Pensicola Junior College



Timduru

Wolverine
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Lake Trout
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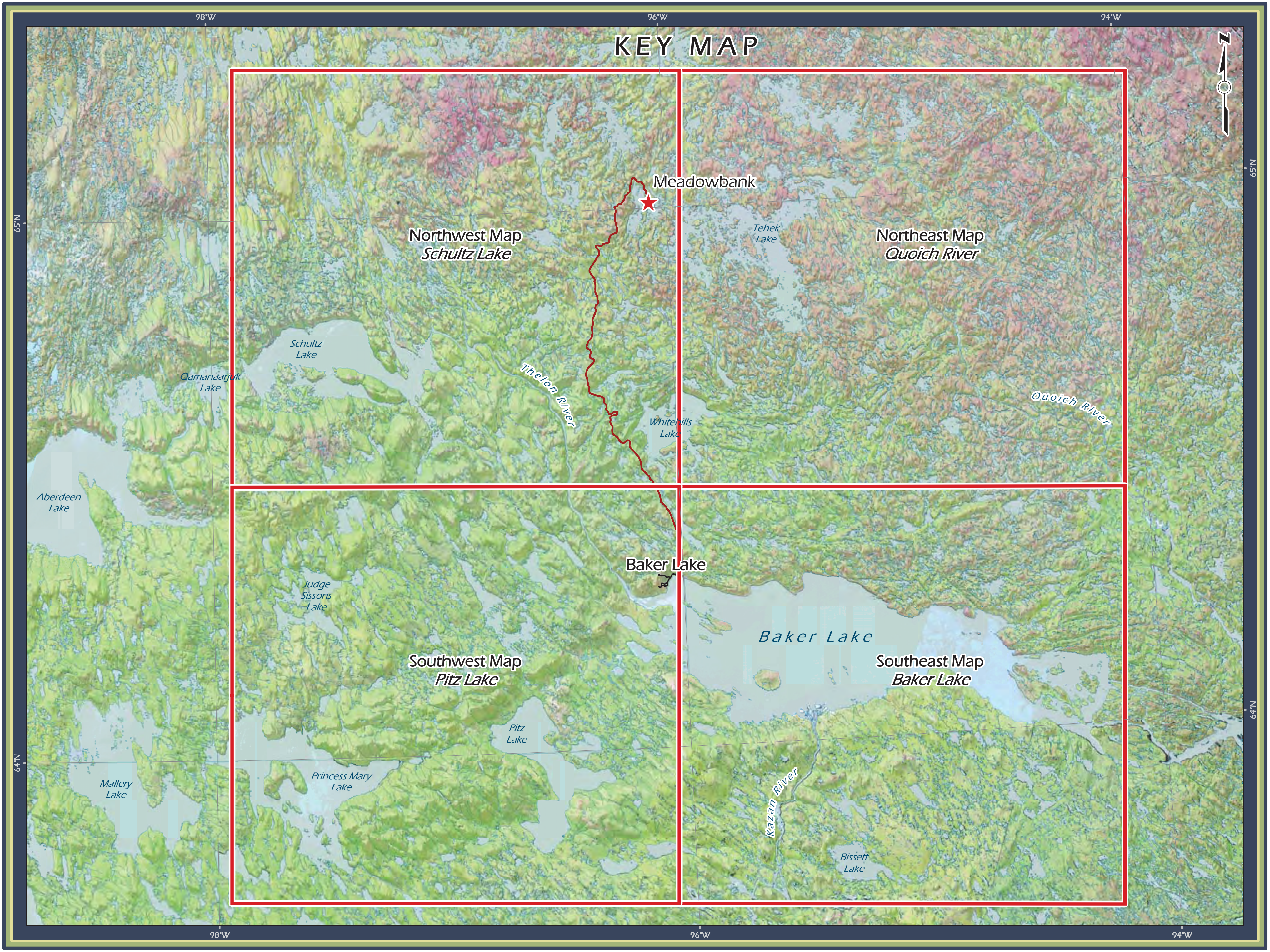
Martin Gebauer

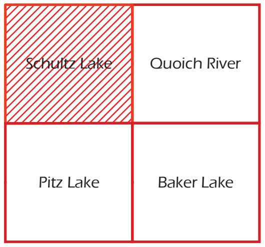


KEY MAP
98°W
96°W
94°W
65°N
64°N
Meadowbank
Northwest Map
Schultz Lake
Northeast Map
Quoich River
Southwest Map
Pitz Lake
Southeast Map
Baker Lake
Baker Lake
Tehek Lake
Schultz Lake
Qamanaarjuk Lake
Thelon River
Whitehills Lake
Quoich River
Aberdeen Lake
Judge Sissons Lake
Baker Lake
Pitz Lake
Princess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

Baker Lake Harvest Study

Northwest Map Schultz Lake

Key Map



0 5 10 15

Kilometres

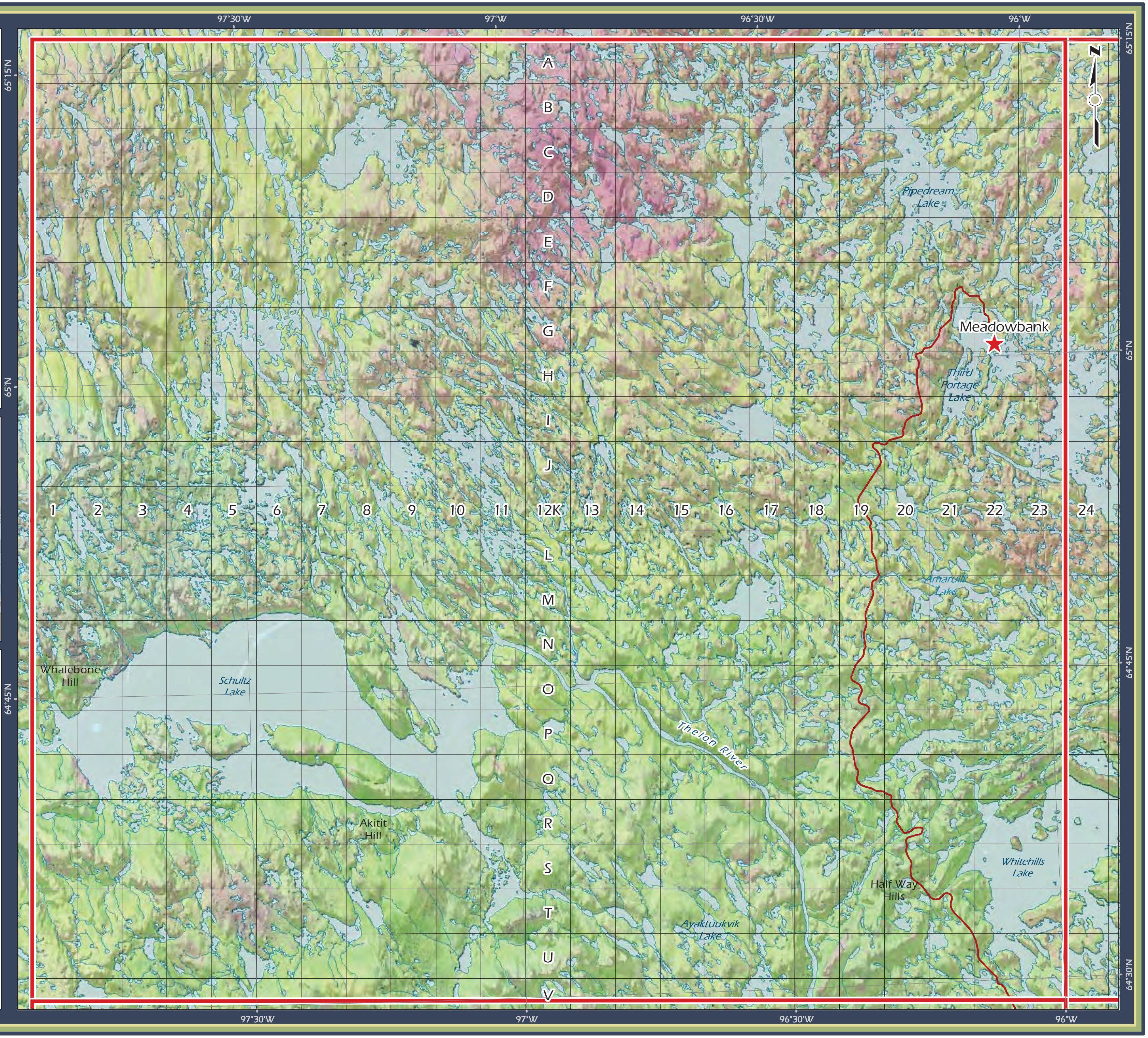
Projection: UTM Zone 14 NAD83

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

Prepared for:

AGNICO-EAGLE

By: Caslys Consulting Ltd.



Baker Lake Harvest Study

Southwest Map Pitz Lake

Key Map

Schultz Lake	Quoich River
Pitz Lake	Baker Lake

0 5 10 15

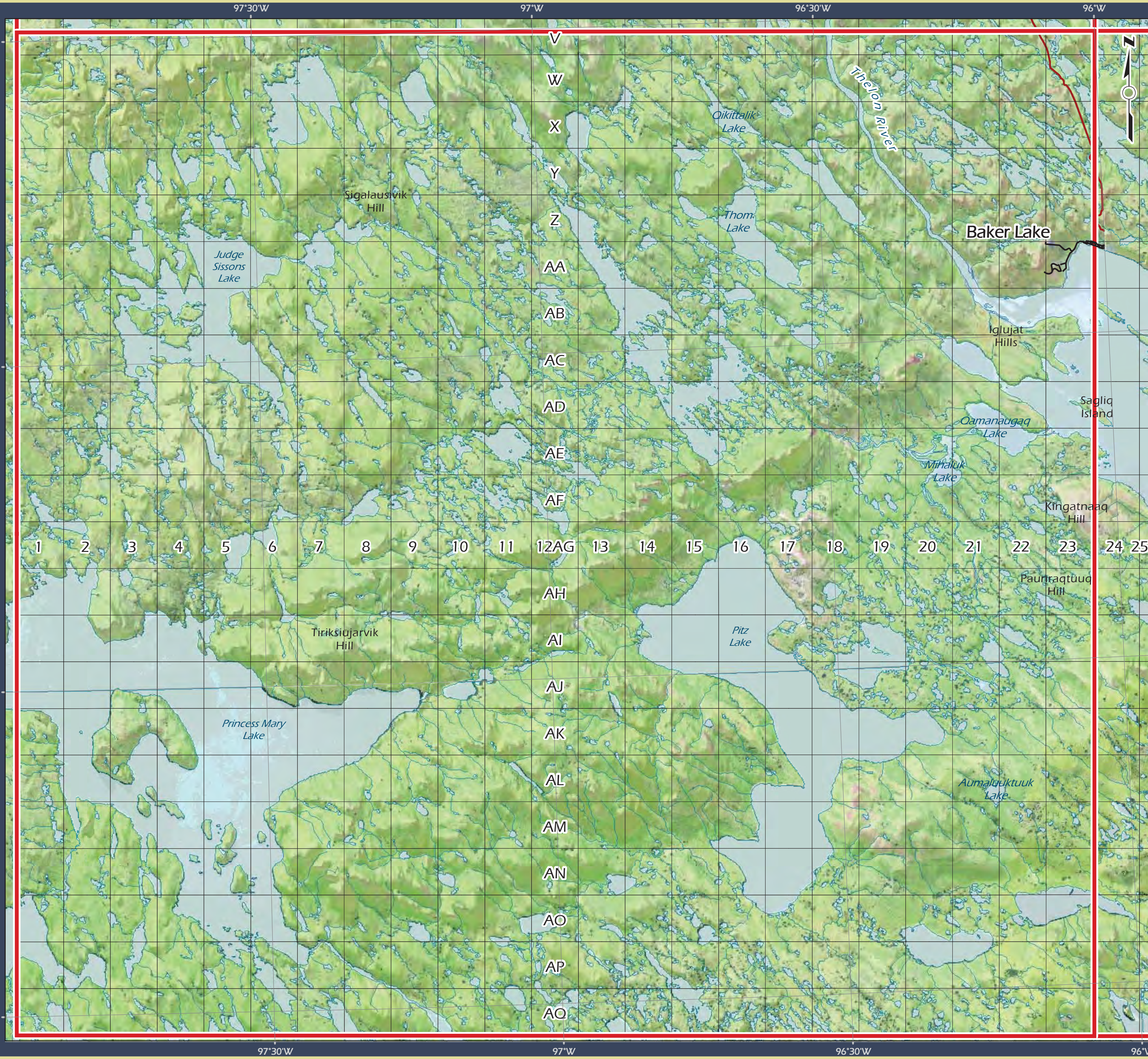
Kilometres

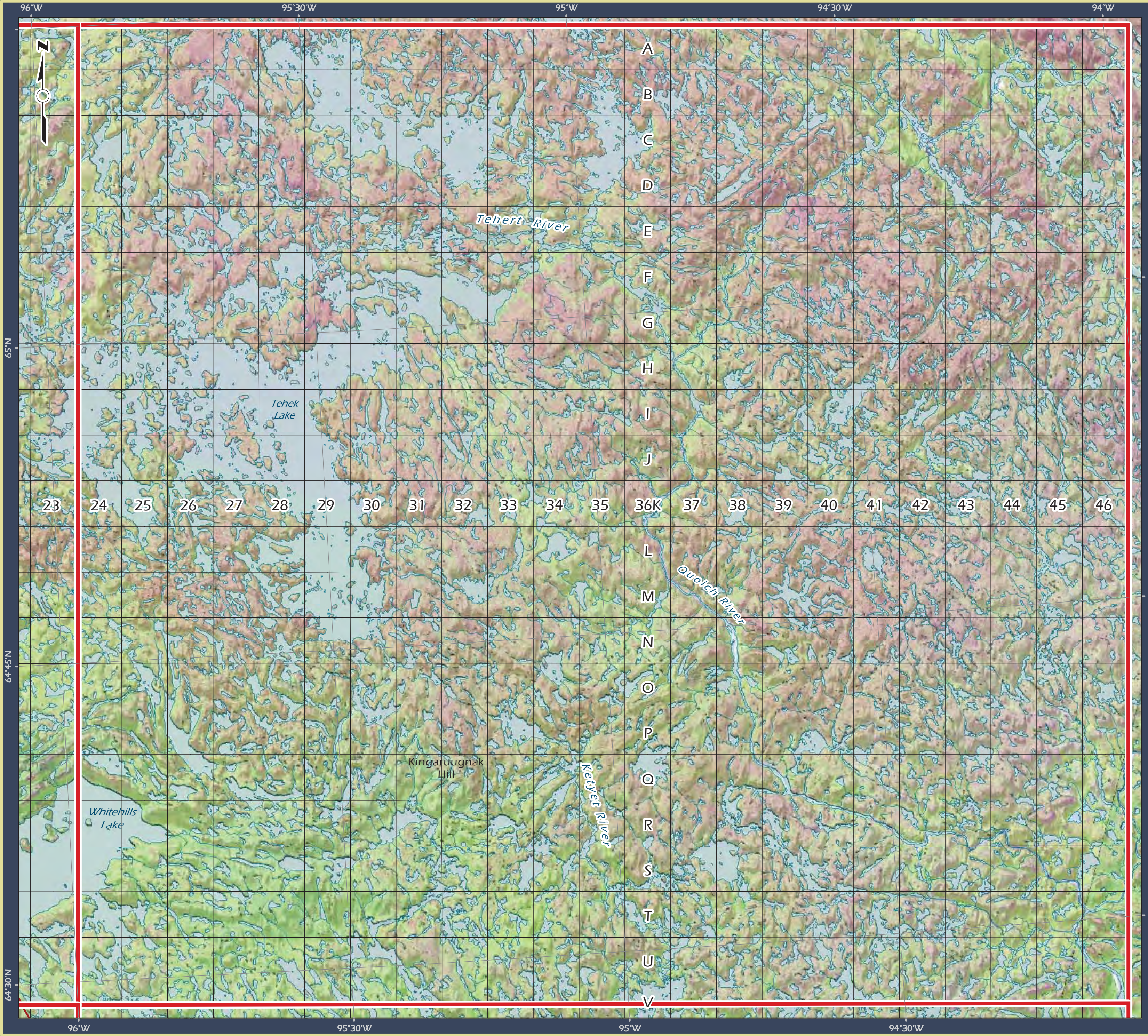
Projection: UTM Zone 14 NAD83

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.

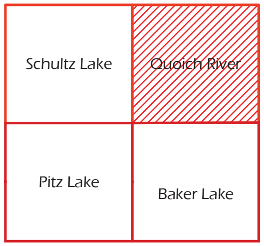




Baker Lake Harvest Study

Northeast Map Quoich River

Key Map



0 5 10 15

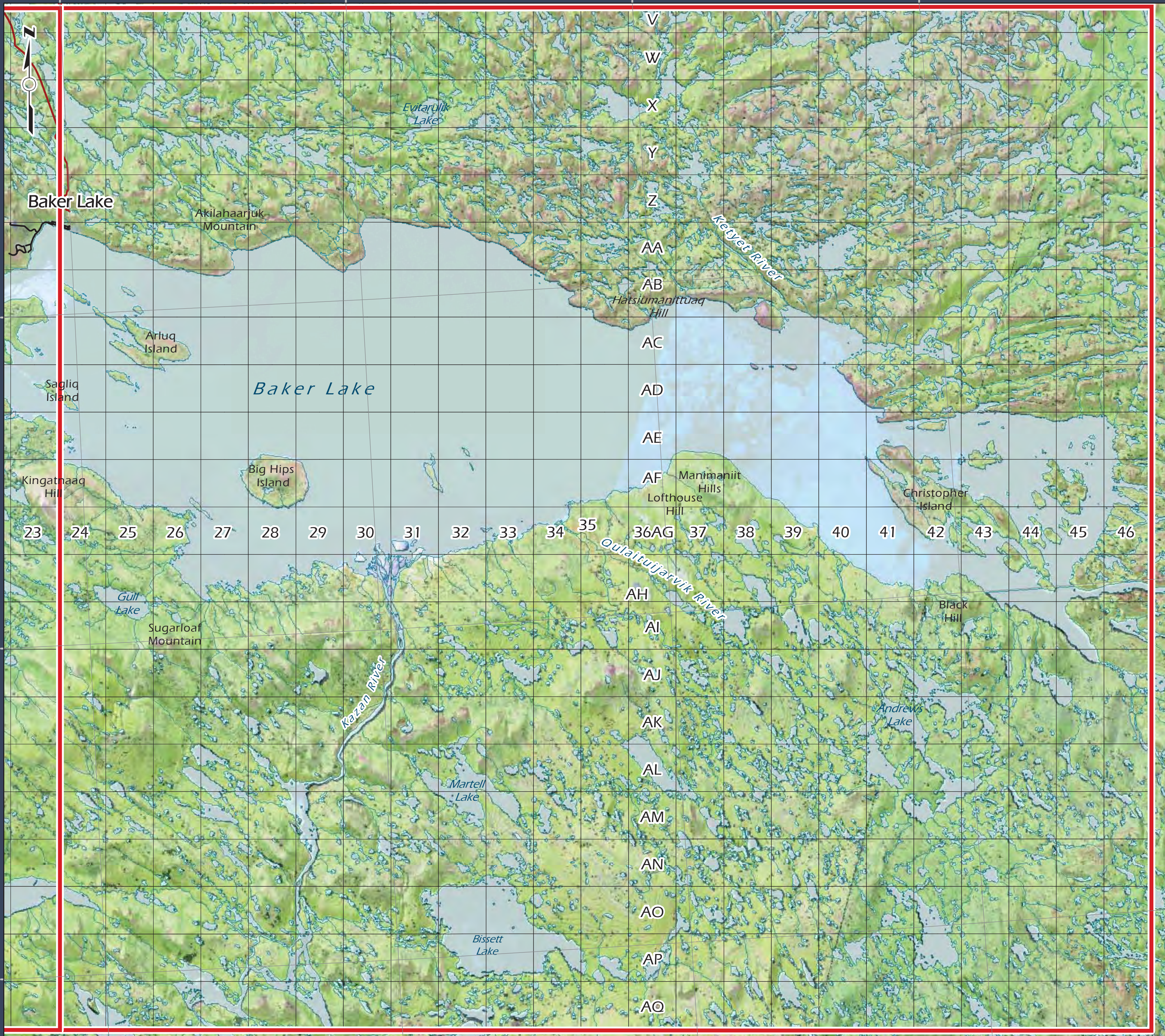
Kilometres

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

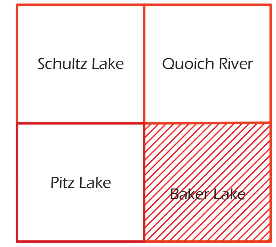
By: Caslys Consulting Ltd.



Baker Lake Harvest Study

Southeast Map Baker Lake

Key Map



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.

AGNICO-EAGLE

Produced By:

Gebauer & Associates
ENVIRONMENTAL CONSULTANTS

and

CASLYS Consulting Ltd.

APPENDIX C

Harvest Study Promotional Materials

2008 Baker Lake
Hunter Harvest Study

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

(some of the 2007 prizes won by Baker Lake residents)

The 2008 Agnico-Eagle Hunter Harvest study is now underway. Attached is a 2008 calendar. Participation is easy! All you have to do is write down the harvest details (date, animal and location) on the calendar each time an animal is harvested. Instructions (maps and animals included in the study) are provided inside the calendar. **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?

If you are interested in participating, please contact Michael Haqpi at Agnico-Eagle's Baker Lake office to be added to our participant list. Additional calendars are available.

867-793-4610
mhaqpi@agnico-eagle.com

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

Prizes will be drawn in early 2009.

2008 ᖃᒪᓂ’ᑐᐊᖅ ᐊᖕᒍᓇᓱᒃᑎᓄᑦ ᖃᐅᔨᓴᕐᓂᖅ

“ᒪᕈᒃ ᓱᓕ ᑕᑦᕿᒃ ᓴᓚᒃᓴᒐᒃᓴᐃᑦ ᓴᓚᒃᓴᒐᐅᔪᓇᖅᑐᑦ”

ᐅᑭᐅᒥ2008ᒥ ᐊᒡᓂᑯ ᐃᑯ ᐅᔭᕋᒃᑕᓇᐊᑦ
ᖃᐅᔨᓴᓂᓕᕐᒪᑕ ᐱᐊᓂᓕᖅᕗᓂ.

ᒪᖃᐃᑎᓗᓯᓗᓂᑦ ᐊᖕᒍᓇᓱᒃᑎᓗᓯᓗᓂᑦ ᐱᑕᓚᐅᑲᓯ ᑎᑎᕋᒃᑕᕐᓗᒥᑦ ᐅᐸᓗᖅᓯᐅᑎᓄᑦ ᑐᓂᔭᐅᓚᐅᖅᑐᒧᑦ. ᓂᕈᐊᑎᑦ ᑐᒃᑐᑦ, ᐅᒥᒪᐃᑦ, ᖃ’ᕕᑦ, ᐃᖃᓗᐃᑦ ᐱᑕᓚᐅᑲᓯ ᑎᑎᕋᒃᑕᕐᓗᒥᑦ ᐅᐸᓗᖅᓯᐅᑎᓄᑦ ᓄᓇᖕᒍᐊᖃᖅᕗᓂ ᑭᖕᒍᓂᐊᓂ.

ᑕᕿᒧᑦ ᐊᑕᐅᓯᕐᒧᑦ ᐊᑎᓕᐅᒐᐅᑕᕐᓂᐊᖅᑐᓯ ᐊᒧᔭᐅᔪᒃᓴᓄᑦ. ᑕᑦᕿᓗᒃᑕᓄᑦ ᐊᑭᐅᒥ ᓂᕈᐊᑎᓂᒃ ᐱᑕᓚᐅᕐᓂᕈᕕᑦ ᐊᑎᓕᐅᖅᑐᓗᐊᖅᑐᑎᑦ, ᐊᒥᓱᐃᕐᓗᑎᑦ. ᑕᑦᕿᓄᑦ ᐊᒥᓱᓄᑦ ᐱᑕᒪᐅᕈᕕᑦ ᓴᓚᒃᓴᕈᓇᕐᑐᑎᑦ ᐊᒥᓱᓂᖅᓴᓂᒃ. ᐊᒥᓱᑎᒥᔪᑦ 15 ᐱᕐᑯᑎᑦ ᓴᓚᒃᓴᒐᐅᔪᓇᖅᑐᑦ.

ᑎᓯᐱᓇ 2008 ᓄᖕᒍᐊᓂ, ᐅᐸᓗᖅᓯᐅᑎᑦ ᑐᓂᓗᒥᑦ ᒪᐃᑯ Hᐊᖅᐱᒧᑦ (793.4612) ᐊᒡᓂᑯ ᐃᑯ ᐅᔭᕋᒃᑕᓇᐊᑦ ᑎᑎᕋᕕᖕᒐᓄᑦ ᑐᓂᔪᓗᐊᒃᓯ, ᐊᑎᑦ ᐃᓕᔭᐅᓂᐊᕐᒪᑦ ᐊᒧᔭᐅᔪᒃᓴᓄᑦ.

ᐊᒧᓯᒥᐊᕐᓂᐊᖅᑐᑦ ᐅᑭᐅᖅ 2009 ᐱᒋᐊᖅᐸᑦ ᐊᒪᓗ ᐅᐸᓗᖅᓯᐅᑎᑦ 2009 ᑐᓂᐅᖃᖅᑕᐅᒥᐊᕐᓂᐊᖅᑐᑦ, ᐃᒪᐅᓱᐊᖅᑐᓄᑦ ᖃᐅᔨᓴᕐᓂᕐᒧᑦ.

2008 Baker Lake
Hunter Harvest Study

"Only 2 months left to be included in the PRIZE DRAW"

The 2008 Agnico-Eagle Hunter Harvest study is *almost* over.

Please remember to write down the locations of your caribou, muskox, wolverine and fish catches in the calendar provided to you earlier this year using the map at the back of the calendar.

For each month you participate, you are assigned one raffle ticket. Therefore, the more you participate, the more likely you'll win. Over 15 prizes are available to be won this year.

At the end of December 2008, please return your calendar to Michael Haqpi (793-4610) at the Agnico-Eagle office to be added to the draw.

Prizes will be drawn in early 2009.

2009 Calendars will be available in early 2009 for those interested.

APPENDIX D

2008 Breeding Bird Nest Monitoring and Management Plan

Agnico-Eagle Mines Ltd.

Meadowbank Gold Project

Breeding Bird Nest Monitoring and Management Plan - 2008

Prepared By:
Martin Gebauer, M.Sc., R.P.Bio
Gebauer & Associates Ltd.
6387 Larch Street
Vancouver, B.C. V6M 4E8

Prepared for:
Rachel Gould
Agnico-Eagle Mines Ltd.
Ste. 375, 555 Burrard Street
Vancovuer, B.C. V7X 1M8

08 April 2008

Introduction

Background

Agnico-Eagles Mines Ltd. is in the process of building infrastructure for the Meadowbank Gold Project north of Baker Lake. Some land clearing activities at the proposed mine site are planned through the summer months. Since disturbance or destruction of the nests of breeding birds is not permitted under Section 6(a) of the Migratory Birds Regulations, a nest monitoring program is required that identifies active nests and provides recommendations for avoiding disturbance at all nests.

Objectives

Specific objectives of this breeding bird nest management plan are:

1) Describe nest survey protocols;
2) Identify suitable nest management tools; and
3) Outline monitoring of individual nests.

Nest Survey Protocols

1) Conduct surveys in proposed disturbance areas between 15 May and 31 July as snow conditions permit;
2) Complete surveys for active nests in proposed construction areas a minimum of four days prior to any disturbance (e.g., topsoil stripping);
3) Traverse the entire proposed disturbance site with two observers spaced a maximum of 10 m apart looking for active nests of breeding birds.
4) Survey an additional 30 m area on all sides of the proposed disturbance area;
5) For all active nests, record coordinates with a hand held GPS and take photos; and
6) To avoid an increased risk of depredation, do not identify nests with artificial markers or flags. Placement of a small rock cairn or pile may be appropriate to facilitate long-term monitoring of the nest.

Nest Management Tools

1) Where feasible, establish and mark a 20 m exclusion zone around all passerine and shorebird nests. Smaller exclusion zones may be necessary for some nest sites depending on site-specific issues and constraints. Exclusion zones will need to be determined on a site-specific basis;
2) For shorebirds such as Semipalmated Plover or American Golden Plover that choose to nest on disturbed surfaces (e.g., road bed with vehicle activity), exclusion zones will be established on a site-specific basis, but will likely be in the order of 5 m.
3) Where feasible, establish and mark a 40 m exclusion zone around all waterfowl, gull and crane nests. Smaller exclusion zones may be necessary for some nest sites depending on site-specific issues and constraints. Exclusion zones will need to be determined on a site-specific basis; and
4) Establish and mark a 100 m exclusion zone around all raptor nests. Smaller exclusion zones may be required for some nest sites to ensure that a small access road can be provided to construction areas outside exclusion sites.

Active Nest Monitoring

1) Monitor all active nests approximately once every two days to observe nesting stage;
2) Observe nests with binoculars or spotting scope to avoid close approaches;
3) If development activities outside the exclusion zone appear to be disturbing nesting birds, increase the width of the exclusion zone; and
4) If nests have been determined to be abandoned or chicks have fledged, remove the exclusion zones around the nest only once a final nest survey in the excluded area has determined that no other active nests are present.

APPENDIX E

Agnico-Eagle Breeding Bird Nest Monitoring Survey Results

MEADOWBANK GOLD PROJECT

BIRD SURVEY SUMMARY

PREPARED BY: SHANNON M[C]FADYEN
AUGUST 2008

TABLE OF CONTENTS

SECTION 1 • INTRODUCTION

Bird surveys were conducted on the Meadowbank gold project mine site between 30 May 2008 and 31 July 2008, as was recommended in the Breeding Bird Nest Monitoring and Management Plan – 2008.

During the building of site infrastructure it is important to monitor nests and breeding grounds in order to ensure they are not being affected by any disturbance, or being destroyed. By conducting surveys ahead of construction it ensures the mines compliance with section 6(a) of the *Migratory Bird Act Regulations*. This requires the identification of any nests that could potentially be disturbed by construction activity and the implementation of protective measures.

OBJECTIVES

The objectives of these surveys included locating active nests in areas of disturbance, taking measures proposed in the *Breeding Bird Nest Management Plan* to ensure nests are not disturbed and observing nests regularly to follow progress.

SECTION 2 • METHODS

Surveys were conducted between 30 May 2008 and 11 July 2008 in areas of proposed disturbance. All surveys were conducted in accordance with the nest survey protocol laid out in the *Breeding Bird Nest Management Plan – 2008.* Each survey was conducted within four days prior to any proposed construction on the site. When conducting the survey each observer stood a maximum of 10 meters apart and walked transects covering the entire area. For every edge of the plot, an additional 30 meters was surveyed.

Upon finding a nest, a GPS coordinate (**table 1**) and photos were taken and the nest was identified in a way that would not increase predation (ie. Stacking rocks).

Exclusion zones were not necessary as none of the bird nests were found in areas of high disturbance.

Nests found were monitored approximately every one to three days and observations were recorded.

SECTION 3 • RESULTS

From 30 May 2008 to 11 July 2008, 21 surveys were conducted and zero nests belonging to migratory bird species were found in areas surveyed (**Table 2**). During this time three Rock Ptarmigan (*Lagopus mutus)* nests were found in areas surveyed. No follow up was conducted for these nests, as they were not listed as a migratory bird species in Nunavut under the *Migratory Bird Act*.

Three other migratory bird nests were found in and around camp. The first nest was found just off the airstrip in an area with a moderate amount of disturbance. The Horned Lark (*Eremophila alpestris)* nest contained three small eggs (**Photo 1 & 2**). The nest was observed from 30 June 2008 to 12 July 2008. Observations were made from 30 June 2008 until 11 July 2008 when the nest was found empty (**Table 3**).

The second nest was found by an employee of Outland on 30 June 2008. The Savannah Sparrow (*Passerculus sandwichensis)* nest was built and the female built her nest despite the construction disturbances of the area so the nest remained where it was built and employees were careful to give space when working in the area (**Photo 3**). The nest was monitored from 30 June 2008 to 15 July 2008 (**Table 4**).

The third nest was found on 2 July 2008. The Common Redpoll (*Carduells flammea*) nest was built on the road between the dorms and the warehouse (**Photo 4**). The nest was built in a stack of dishwasher racks which made observation difficult at times. No management actions were taken on account of how well the mother was protected in her nest by building it in the dishwasher racks. Additionally, little disturbance was immediately affecting the nest. The birds were last seen occupying the nest on 31 July 2008 (**Table 5**).

SECTION 4 • SUMMARY AND CONCLUSION

Our surveys concluded that there was no birds found this season in areas oh high disturbance caused by the building of the mines infrastructure. Three bird species that classify as migratory birds under the *Migratory Bird Act* were found and their nests monitored.

APPENDIX 1. TABLES

Table 1. This table displays the areas surveyed and the quantity of nests found

Date	Areas surveyed	Quantity of nest	Comments
5/30/2008	Western channel, attenuation pond	0	Too cold - Snowed
5/31/2008	Air strip	0	Snowed
6/1/2008	Air strip	0	Snowed
6/2/2008	Between western channel and rock crusher	0	Snowed
6/3/2008	Western channel up stream side towards starter pit	0	Snowed
6/4/2008	Starter pit area	0	Snowed
6/5/2008	Starter Pit (some)	0	None found - saw some Lapland Longspurs flying but no nest found. Sunny and windy.
6/6/2008	New road by w. channel, starter pit and silt fences	0	Snowing, cold and windy, too early. Some Lapland longspurs flying around the area.
6/6/2008	Extension of airstrip	0	Lapland flying around - saw fox eating garbage - cold and windy - a lot of disturbance (construction) in the area
6/7/2008	Around starter pit & road around the other side of the island	0	Found none - sunny and blowing snow - Some Lapland flying around and 2 Canadian Geese in the area
6/8/2008	Road by MTPL-2 (new)	0	No nests found
6/8/2008	Road b/t lake and old camp	0	Ptarmigan made nest ~1ft. From road - No eggs
6/8/2008	Airstrip extension	0	Surveyed extension - Walked newly staked extension only found Ptarmigans flying around

6/9/2008	Starter Pit (rest)	0	Very cold and windy (-10 degrees), no birds seen while doing surveys
6/26/2008	Road to dyke	0	Many birds observed to be flying around but no nests spotted
6/29/2008	New pad at Teardrop Lake	0	Nothing found
6/29/2008	Muster station to the end of proposed airstrip extension	0	Ptarmigan nest found with approx. 5 eggs, no Ptarmigan in site, came back to check twice and nest abandoned
7/8/2008	Airstrip road to refuelling station	0	Very disturbed area already, fox den found close bye, did not observe any bird nests
7/9/2008	Area between two roads by dorms	0	No nests found, Ptarmigans running around and male Lapland seen
7/11/2008	Road proposed to connect both pads over to back of coveralls	0	Ptarmigan nest found with approx. 11 eggs. Nest abandoned
7/12/2008	Area between two roads by dorms (finished)	0	No birds nests observed

Table 2. This table displays the GPS location of each nest

Nest	GPS Location
Horned Lark (*Eremophila alpestris)* nest	14 W 0637590 7214563
Savannah Sparrow (*Passerculus sandwichensis)* nest	14 W 063711 7214692
Common Redpoll (*Carduells flammea*) nest	14 W 0637938 7214055

Table 3. This table displays observations of the Horned Lark (*Eremophila alpestris)* nest

DATE (D/M/Y)	EGGS IN NEST	YOUNG IN NEST	EMPTY NEST	COMMENTS
06/30/2008	3	/	/	Female seen displaying protective behavior
07/01/2008	3	/	/	Female sitting on three eggs
07/04/2008	3	/	/	Female sitting on three eggs
07/08/2008	1	2	/	Female sitting on two young, one egg remains
07/09/2008	1	2	/	Two chicks and one egg remains
07/11/2008	0	0	√	No sign of female, chicks gone
07/12/2008	0	0	√	No sign of female, chicks gone

Table 4. This table displays observations of the Savannah Sparrow (*Passerculus sandwichensis)* nest

DATE (D/M/Y)	EGGS IN NEST	YOUNG IN NEST	EMPTY NEST	COMMENTS
06/03/2008	3	/	/	Nest found. Female is coming and going despite disturbances in area
07/01/2008	3	/	/	Female on nest
07/04/2008	3	/	/	Female not sitting on nest
07/06/2008	3	/	/	Female not sitting on nest
07/09/2008	?	?	/	Not sure how many have hatched can see there is young but female is sitting on nest
07/11/2008	?	?	/	Female is still sitting on some hatchilings, cannot tell how many
07/15/08	0	3	/	Female off the nest briefly approximately three chicks
07/30/08	0	0	√	Outland employees report that female has left nest with three fledglings

Table 5. This table displays observations of the Common Redpoll (*Carduells flammea*) nest

DATE (D/M/Y)	EGGS IN NEST	YOUNG IN NEST	EMPTY NEST	COMMENTS
07/02/2008	3	/	/	Female flew away immediately – hard to identify
07/04/2008	3	/	/	Female flies away as soon as we approach – rarely see female
07/07/2008	?	?	/	Female on nest – kept distance so as to not disturb
07/09/2008	?	?	/	Female on nest – kept distance so as to not disturb
07/11/2008	?	?	/	Some young, female flew off nest when I got too close, through the racks its hard to make out the numer of young in side the nest
07/15/2008	?	?	/	Chicks in nest, don't know how many cant see through the racks, don't want to disturb female
07/16/2008	0	3	/	Three chicks seen in nest
07/31/2008	0	0	√	Nest recorded empty this day by Steve Gaudreault

APPENDIX 2. FIGURES

Photo 1. The Horned Lark (*Eremophila alpestris)* found off the airstrip in an area of moderate disturbance

Photo 2. The Horned Lark (*Eremophila alpestris)* nest containing three eggs

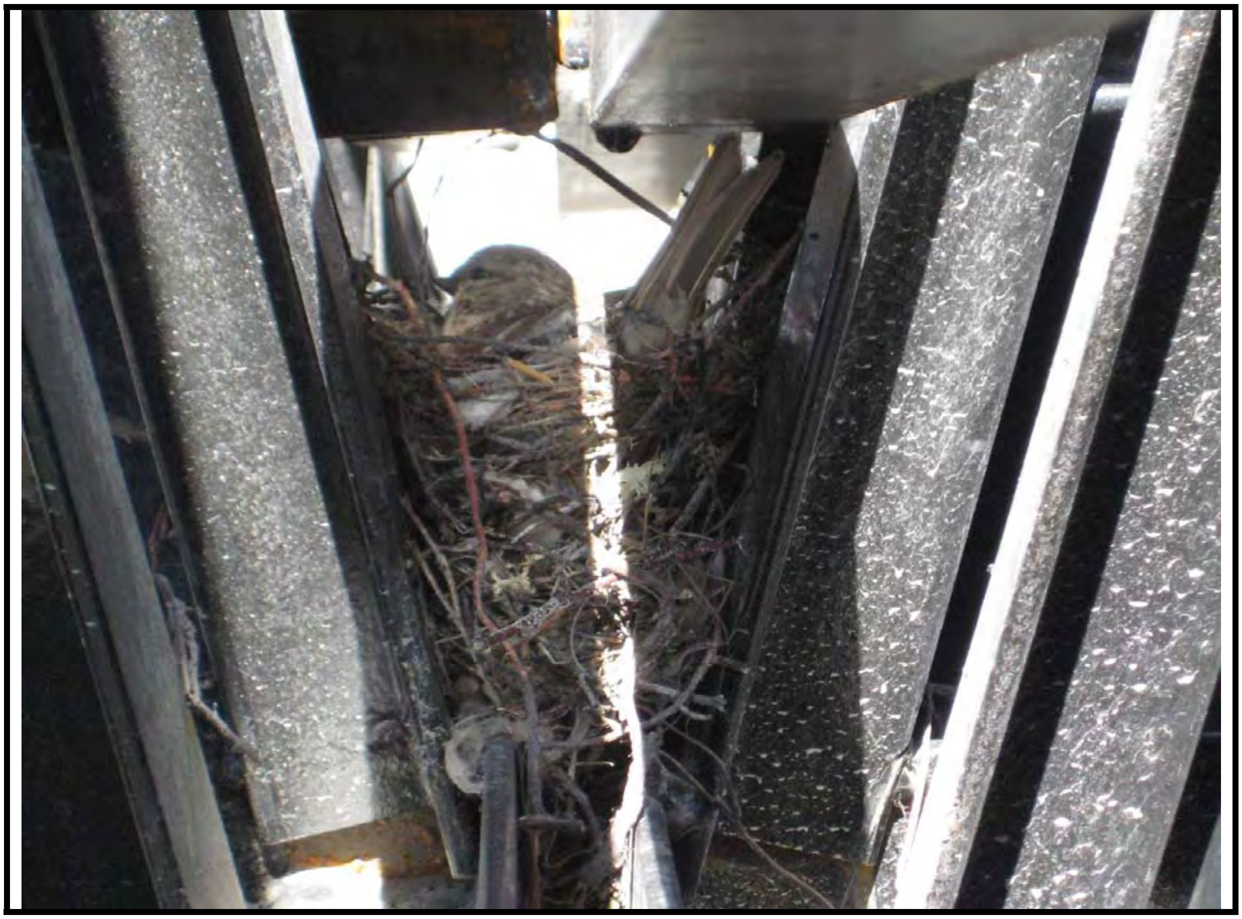


Photo 3. . The Savannah Sparrow (*Passerculus sandwichensis)* nest found built in a stack of stilts by dorm construction

Photo 4. The Common Redpoll (*Carduells flammea*) nest found on the road between the dormitories and the warehouse in a stack of dishwasher racks. Due to the location of the nest this was unfortunately the closest look we could get until it was empty.

SECTION 5 • REFERENCE

Golder (Golder Associates Ltd.), 2008. *Breeding Bird Nest Management Plan S*ubmitted to Agnico-Eagle Mines Limited, dated 2008.

National Geographic Society. 2002. *Field Guide to the Birds of North America Fourth Edition.* National Geographic, Washington DC.

APPENDIX F

2008 Incidental Wildlife Observations

Agnico-Eagle Mines Ltd
Meadowbank camp Wildlife Log - 2008

	Date	Time	Wildlife Species	Quantity	Location	Details/comments	Observer Name
February	2008-02-14	14:30	Caribou	1	Crusher		Saucier/ Vanengen
	2008-02-14	10:00	Caribou	~50	km 3	West side of AWPAR	Ryan VanEngen
	2008-02-14	11:00	Caribou	~20	km 3-6	AWPAR area	Ryan VanEngen
	2008-02-14	12:00	Caribou	50	km 6-20	South of Whitehills; many caribou spread throughout the area	Ryan VanEngen
	2008-02-15	17:00	Arctic Fox	1	Camp	Greywater discharge	Ryan VanEngen
	2008-02-15	10:00	Caribou	1	Camp	Near Tents	Tim
	2008-02-17	11:30	Caribou	3	Camp	Airstrip	Ryan VanEngen
	2008-02-19	14:00	Caribou	2	Camp	Tents: china town	Ryan VanEngen
	2008-02-21	22:00	Caribou	2	Camp	Tents: china town	Ryan VanEngen
	2008-02-22	14:30	Arctic Fox	2	Camp	Airstrip	Ryan VanEngen
March	2008-03-15	18:00	Arctic Fox	2	Airstrip	playing with fox	Evelyn
	2008-03-15	11:00	Caribou	50	AWPAR	near forward camp	RV
	2008-03-15	11:30	Caribou	30	AWPAR	S of whitehills	RV
	2008-03-15	n/a	Muskox	20	AWPAR	Near Quarry 22	Jeannoel
	2008-03-16	n/a	Wolves	5	AWPAR	Near Quarry 10	Jeannoel
	2008-03-16	n/a	Wolf	1	AWPAR	Near Quarry 22	Jeannoel
	2008-03-16	14:20	Wolverine	1	AWPAR	km 57; side of hill	Joan Guertin
	2008-03-16	19:00	Arctic Fox	1	Camp	Incinerator	RV
	2008-03-17	12:00	Arctic Fox	1	Camp	Waste Management Area	RV
	2008-03-19	14:00	Arctic Fox	2	Camp	Airstrip	RV
	2008-03-20	15:30	Arctic Fox	2	Camp	Incinerator	RV
	2008-03-21	16:30	Arctic Fox	1	Camp	Incinerator	RV
	2008-03-27	13:00	Muskox	4	Camp	12 km east of camp	Damian Power
April	2008-04-11	11:00	Wolves	2	AWPAR	N of Whitehills feeding on Caribou	RV
	2008-04-11	10:30	Caribou	15	AWPAR	Near BL	RV
	2008-04-12	10:00	Arctic Fox	2	Camp	Incinerator near WMA	RV
	2008-04-13	10:00	Caribou	150	AWPAR	Cumulative amount observed along AWPAR	RV
	2008-04-16	14:30	Kim	2	AWPAR	Standing/Resting	Kim
	2008-04-17	14:00	Wolf	1	AWPAR	Amarulik lk	Stanley
	2008-04-18	10:00	Caribou	50	AWPAR	Small herds of 50, S of Whitehills lk	RV
	2008-04-18	7:00	Wolf	1	Town	Baker Lk	Guy Gamelin
	2008-04-19	13:00	Caribou	5	Camp	Tents	RV and SD
	2008-04-19	17:00	Caribou	12	AWPAR	Between camp and emulsion plant	RV and SD
	2008-04-19	20:00	Arctic Fox	2	Camp	Grey water discharge	Christine
	2008-04-23	16:30	Muskox	16	AWPAR	km 87; top of hill	Joan Guertin
	2008-04-24	18:30	Muskox	16	AWPAR	km 87; top of hill	Joan Guertin
	2008-04-24	18:00	Muskox	16	AWPAR	km 87; top of hill	Joan Guertin
May	2008-05-26	n/a	Caribou	2	km 10		RV
	2008-05-26	n/a	Sandhill crane	1	R02		RV
	2008-05-26	n/a	Caribou	2	1/2 way hill		RV
	2008-05-26	14:45	Caribou	35	km 80		RV
	2008-05-26	n/a	Caribou	20	km 82		RV
	2008-05-26	n/a	Caribou	7	TPL 90		RV
	2008-05-26	n/a	Caribou	12	TPL 100		RV
	2008-05-31	11:11	Grey falcon	1	Q22		SM
	2008-05-31	12:20	Snow geese	20	km 81		SM
	2008-05-31	12:45	Caribou	3	km 60		SM
	2008-05-31	12:45	Caribou	15	km 57		SM
	2008-05-31	n/a	Sandhill crane	1	3 km before R05		RV
	2008-05-31	n/a	Geese	2	Close to R05		RV
	2008-05-31	n/a	Regansas	2	PC10		SM
	2008-05-31	n/a	Sandhill crane	1	PC10		SM
	2008-05-31	n/a	Snow geese	10	PC10		SM
	2008-05-31	n/a	Caribou	1	km 46		SM
	2008-05-31	n/a	Arctic hare	1	km 67		SM
	2008-05-31	n/a	Caribou	9	R19		SM
	2008-05-31	n/a	Caribou	15	km 85		
June	2008-06-02	14:02	Ptarmigan	2	Western channel	Sitting close to construction	SM
	2008-06-02	15:14	Ptarmigan	2	Western channel	Flying over construction	SM
	2008-06-02	10:10	Raven	1	Refueling station		Pierre Surveyor
	2008-06-03	10:00	Arctic Hare	1	km 15	AWPAR	RV
	2008-06-03	11:00	Caribou	2	km 30	AWPAR	RV
	2008-06-03	11:30	Muskox	4	km 42	AWPAR	RV
	2008-06-03	11:30	Caribou	1	km 42	AWPAR	RV
	2008-06-03	n/a	Muskox	8	Q 11	AWPAR	RV
	2008-06-05	16:10	lapland longsup	10	Starter pit	Flying around	SM
	2008-06-06	9:35	lapland longsup	2	Starterpit	Flying around	SM
	2008-06-06	9:43	Ptarmigan	2	Western channel	Flying around	SM
	2008-06-06	9:40	Snow geese	5	Starter pit	Flying over starter pit	SM
	2008-06-06	9:30	Snow geese	2	Starter pit	Flying over head	SM
	2008-06-06	n/a	Ptarmigan	1	Q18	Mortality	SM
	2008-06-20	10:00	muskox	20	km 25 AWPAR	300m E of road	NS
	2008-06-20	10:05	canada geese	7	km 29 AWPAR		NS
	2008-06-20	10:45	muskox	3	km 50 AWPAR	50m W of road	NS
	2008-06-20	11:00	Ptarmigan	1	km 61 AWPAR	middle of the road	NS
	2008-06-20	11:25	Caribou	1	km 75 AWPAR	200 E of road	NS
	2008-06-25	n/a	Fox	1	Incinerator	Mine Site	RV
	2008-06-25	17:00	Muskok Male	1	4.75 km w. of camp		Damian Power
	2008-06-26	17:15	Muskok Male	1	3 km south of explor. Camp		Damian Power
	2008-06-27	16:30	Tessessee Warbler	1	By china town tents		Damian Power
	2008-06-28	n/a	Caribou	2	Q 10	AWPAR	RV
	2008-06-28	n/a	Bull Muskox	1	Q 3	AWPAR	RV
	2008-06-28	n/a	Muskox	10	Q 3	Heard along the AWPAR	RV
	2008-06-30	14:00	Caribou	1	km 67	Bull AWPAR	RV
	2008-06-30	14:00	Ptarmigan Family	12	Halfway Hills		RV
July	2008-07-02	16:40	Caribou	4	6 km nw of meadowbank	w/ calf	Damian Power
	2008-07-02	16:45	Muskox	13	4.75 km sw of camp		Damian Power

Agnico-Eagle Mines Ltd
Meadowbank camp Wildlife Log - 2008

	Date	Time	Wildlife Species	Quantity	Location	Details/comments	Observer Name
	2008-07-02	n/a	Caribou	2	3 km N of camp		Damian Power
	2008-07-02	n/a	Caribou	1	7.5 km N of camp		Damian Power
	2008-07-02	n/a	Muskox	1	10 km N of camp		Damian Power
	2008-07-02	19:45	Muskox	1	12.5 km N of camp		Damian Power
	2008-07-02	12:00	Caribou	10	km 67 survival shack	Crossing the AWPAR	RV
	2008-07-03	10:00	Arctic Hare	1	AWPAR	km 15	RV
	2008-07-03	11:00	Caribou	2	AWPAR	km 30	RV
	2008-07-03	11:30	Muskox	17	AWPAR	km 42	RV
	2008-07-03	11:30	Caribou	1	AWPAR	km 42	RV
	2008-07-03	11:30	Muskox	8	AWPAR	Q11	RV
	2008-07-04	11:20	Muskox	12	10 km SSW of camp		Damian Power
	2008-07-05	n/a	Snow geese	12	Western channel	Flying	SM
	2008-07-07	8:15	Arctic Hare	1	By muster station	Eating	SM
	2008-07-09	10:30	Ptarmigan	2	By dormatory	Male and female	SM
	2008-07-10	11:48	Sand Piper	3	AWPAR	Feeding	SM
	2008-07-12	11:45	Bull Caribou	1	Blind hill Q21	alone, eating	JK
	2008-07-12	11:00	Tundra Swans	2	AWPAR	Two in water	SM
	2008-07-12	9:00	Ptarmigan	5	AWPAR	Female with 4 chicks	SM
	2008-07-16	17:30	Tundra Swans	2	AWPAR	Two in water	SM
	2008-07-07	8:!5	Arctic Hare	1	By muster station	Eating	SM
	2008-07-09	10:30	Ptarmigan	2	By dormatory	Male and female	SM
	2008-07-10	11:48	Sand Piper	3	AWPAR	Feeding	SM
	2008-07-12	11:45	Bull Caribou	1	Blind hill Q21	alone, eating	JK
	2008-07-12	11:00	Tundra Swans	2	AWPAR	Two in water	SM
	2008-07-12	9:00	Ptarmigan	5	AWPAR	Female with 4 chicks	SM
	2008-07-16	17:30	Tundra Swans	2	AWPAR	Two in water	SM
August	2008-08-02	14:00	Caribou	200	km 40-80	AWPAR	Serge S
	2008-08-02	n/a	Muskox	2	km 50	AWPAR	Serge S
	2008-08-02	n/a	Wolf	1	Emulsion Plant	Mine site	Serge S
	2008-08-07	11:30	Sand Piper	1	China town	Feeding	SG
	2008-08-07	15:30	Arctic Fox	1	In a seacan by incinerators	Looking for food	SM
	2008-08-07	15:09	Bull Caribou	1	Tank Farm Road	Walking towards airstrip	SM
	2008-08-07	14:30	Arctic Fox	1	Incinerator garbage	Sitting	SM
	2008-08-07	11:30	Sand Piper	1	China town	Feeding	SM
	2008-08-07	15:30	Arctic Fox	1	In a seacan by incinerators	Looking for food	SM
	2008-08-07	15:09	Bull Caribou	1	Tank Farm Road	Walking towards airstrip	SM
	2008-08-07	14:30	Arctic Fox	1	Incinerator garbage	Sitting	
	2008-08-08	n/a	Sandhill Crane	2	AWPAR	Standing	RT
	2008-08-09	17:45	Ptarmigan	7	Grey water pipe end	Waddling around	SG & JK
	2008-08-09	n/a	Arctic Hare	1	Mustet Staion	Sitting	SM
	2008-08-09	n/a	Peregrine Falcon	1	AWPAR	Flying	SM
	2008-08-11	n/a	Canadian Geese	16	Q3	Eating	Shannon
	2008-08-11	n/a	Arctic Hare	2	km 47	Eating	Jocelyn Gagne
	2008-08-11	n/a	Muskox	1	Q17	Feeding	Bruno Gagnon
	2008-08-11	n/a	Caribou	~10	AWPAR b/t Q 17 & 18	Feeding	Jocelyn Gagne
	2008-08-16	8:55	Ptarmigan	1	On pickup near main office	Observe and awaiting	SG
	2008-08-18	7:25	Arctic Young Fox	1	Near old kitchen	Passing	SG
	2008-08-18	7:27	Arctic Mum Fox	1	Incinerator garbage	Passing	SG
	2008-08-18	7:30	Sik Sik	1	2.1 km from MBK South	Sitting	RT
	2008-08-18	8:04	Rock Ptarmigan	1	11 km from MBK South	Running	RT
	2008-08-18	10:21	Peregrine Falcon	1	Near Q16	Flying	RV
	2008-08-20	18:00	Caribou	20	Btw km 68-80	AWPAR W. side	RV
	2008-08-24	16:00	Fox	3	Camp	Incinerator	RV
	2008-08-24	8:04	Fox	1	by Incinerator	Looking for food	RT
	2008-08-25	9:15	Sea-Gull	1	by Incinerator	Looking for food	RT
	2008-08-25	14:00	Fox	1	by Incinerator	Looking for food	RT
	2008-08-25	15:00	Sea-Gull	1	by Incinerator	Looking for food	RT
	2008-08-26	10:00	Muskox	2	km 15	West side of road	RV
	2008-08-26	9:00	Caribou	5	km 70	Small cluster	RV
	2008-08-26	10:00	Caribou	3	km 80	Bulls	RT
	2008-08-26	10:30	Caribou	3	km 86	Bulls	RT
	2008-08-26	13:45	Caribou	10	AWPAR, km 80	feeding	RT
	2008-08-26	n/a	Caribou	8	" , km 70	feeding	RT
	2008-08-26	n/a	Caribou	7	km 65	feeding	RT
	2008-08-26	n/a	Caribou	9	km 60	feeding	RT
	2008-08-26	n/a	Parasitic Jaeger	1	km 50	flying south east	RT
	2008-08-26	n/a	Arctic Ground Squirrel (sik sik)	1	km 45	Standing	RT
	2008-08-26	n/a	Snowgeese/Canada Geese	30/10	km 15	resting	RT
	2008-08-27	n/a	Caribou	1	km 69	feeding	RT
	2008-08-27	n/a	Caribou	3	km 74	feeding	RT
	2008-08-27	n/a	Caribou	1	Q 21	resting	RT
	2008-08-28	n/a	Caribou	2	Q10	AWPAR	RV
	2008-08-28	n/a	Bull Muskox	1	Q3	AWPAR	RV
	2008-08-28	n/a	Muskox	10	km 67	Herd along AWPAR	RV
	2008-08-30	n/a	Ptarmigan	12	Half way hills		RV
	2008-08-30	16:00	caribou	1	km 67	AWPAR	RV
	2008-08-30	n/a	Caribou	many small group	With in 5 km of camp	Migrating south bound	Damien crew
	2008-08-31	7:50	Caribou	1	km 96	resting	RT
	2008-08-31	8:04	Snow geese	40	Q 21	resting	RT
	2008-08-31	8:04	Caribou	22	Q 21	7 bulls on west side/ 15 female, calfs on east	RT
	2008-08-31	8:11	Caribou	2	Blind hill # 11	2 cows; west side, feeding	RT
	2008-08-31	8:12	Caribou	4	km 85	resting	RT
	2008-08-31	n/a	Rock Ptarmigan	6	south of Q 19	feeding, walking	RT
	2008-08-31	n/a	Caribou	4	km 78	resting	RT
	2008-08-31	n/a	Canada Geese	2	km 78	walking south	RT
	2008-08-31	n/a	Caribou	6	South of Q 18	feeding, east side	RT
	2008-08-31	n/a	Caribou	6	South of Q 18	cows feeding, east of road	RT
	2008-08-31	n/a	Sandhill Crane	1	km 76	standing, west of road	RT
	2008-08-31	n/a	Caribou	2	Blind hill # 10	feeding	RT
	2008-08-31	n/a	Caribou	10	km 67	Bulls feeding	RT

Agnico-Eagle Mines Ltd
Meadowbank camp Wildlife Log - 2008

	Date	Time	Wildlife Species	Quantity	Location	Details/comments	Observer Name
	2008-08-31	n/a	Snow geese	20	Blind hill # 4	resting, west of road	RT
	2008-08-31	n/a	Arctic Ground Squirrel	1	km 46	running south on road	RT
	2008-08-31	n/a	Sandhill Crane	1	km 37	standing, west of road	RT
	2008-08-31	n/a	Arctic Hare	1	south of Q 6, on road	road kill	RT
	2008-08-31	n/a	Raven	1	south of Q 6, on road	feeding on Arctic Hare	RT
	2008-08-31	n/a	Sea-Gull	2	south of Q 6, on road	feeding on Arctic Hare	RT
	2008-08-31	n/a	Snow geese	20	km 17, by Hill side	resting	RT
	2008-08-31	n/a	Willow Ptarmigan	5	km 17, east of road	feeding	RT
	2008-08-31	n/a	Snow geese	80	km 17, on small lake	swimming, cleaning feathers	RT
	2008-08-31	n/a	Sea-Gull	1	km 37.5	standing east of road	RT
	2008-08-31	n/a	Arctic Ground Squirrel	1	km 46.4	standing west of road	RT
	2008-08-31	n/a	Caribou	1	km 67	bull, feeding, east of road	RT
	2008-08-31	14:23	Caribou	5	km 74.4, Q 17	feeding, east of road	RT
	2008-08-31	14:36	Caribou	7	km 76	feeding, east of road	RT
	2008-08-31	14:40	Snow geese	8	km 80.2	flying southeast	RT
	2008-08-31	14:45	Caribou	7	Q 18 east side	feeding	RT
	2008-08-31	14:45	Canada Geese	2	Q 18 east side	feeding	RT
	2008-08-31	14:50	Snowgeese/Canada geese	4, 10	km 84, east of road	feeding	SM
	2008-08-31	14:55	Snow geese	200	km 85.4, east of road	resting, feeding	SG
	2008-08-31	14:55	Caribou	15	km 85.7, east of road	feeding	SG
	2008-08-31	15:05	Caribou	2	km 91.2, west of road	feeding	SG
	2008-08-31	15:10	Snow geese	60	km 95, west of road	walking north	SM
	2008-08-31	15:15	Caribou	4	km 96, west of road	resting	SM
	2008-08-31	15:20	Caribou	4	km 98	feeding	SM
	2008-08-31	15:29	Rock Ptarmigan	5	km 99	walking, feeding	SM
	2008-08-31	15:35	Caribou	7	km 102.6	feeding east of road	SG & JK
September	2008-09-01	16:50	Fox	1	Mine site, by re-fueling station	walking around	RT
	2008-09-02	5:30-6:30	Arctic Fox	1	Main Camp		Kyle KK
	2008-09-03	9:45	Gyr Falcon	1	Service building	Flying around steel	Woody
	2008-09-03	1:30-3:00	Snow Geese	>100	AWPAR	Flying	Shannon
	2008-09-03	4-6am	Rock Ptarmigan	Few	AWPAR		Jocelyn Gagne
	2008-09-03	20:00	Hawk (epervier)	1	Quarry 22	Flying aournd the quarry	Bruno Gagnon
	2008-09-04	19:00	Grizzly Bear	1	AWPAR		Jocelyn Gagne
	2008-09-04	19:00	Fox	1	AWPAR		Jocelyn Gagne
	2008-09-04	20:00	Arctic Hare	1	AWPAR		Jocelyn Gagne
	2008-09-04	21:00	Caribou	Many	AWPAR		Jocelyn Gagne
	2008-09-04	21:30	Grizzly Bear	1	77 km	2 km on the right	Bruno Gagnon
	2008-09-06	20:00	Snow Geese	8	km 100		Corey Undine
	2008-09-06	6 am - 6 pm	Cariou	many	AWPAR		Jocelyn Gagne
	2008-09-06	6 am - 6 pm	Snow Geese	Many	AWPAR		Jocelyn Gagne
	2008-09-06	6 am - 6 pm	Arctic Hare	1	AWPAR		Jocelyn Gagne
	2008-09-07	6 am - 6 pm	Arctic Fox	1	AWPAR		Jocelyn Gagne
	2008-09-07	6 am - 6 pm	Perrgrine Falcon	1	AWPAR		Jocelyn Gagne
	2008-09-09	17:30	Sand Hill Crane	3	AWPAR	Flying	SM
	2008-09-10	11:00	Arctic Wolf	2	km 100		SM
	2008-09-10	15:45	Loon	1	Third Portage Lake	Calling	SM
	2008-09-10	23:45	Arctic Wolf	2	km 102	Took down caribou	Unknown
	2008-09-11	20:20	Caribou	5	South of airstrip	Browzing	Unknown
	2008-09-13	11:00	Fox	1	Tear Drop Lake Road		SM
	2008-09-13	n/a	Ptarmigan	8	Ice Road		SM
	2008-09-13	13:49	Bull Caribou	5	Far side of airstrip	Eating	SM
	2008-09-17	9:27	Horned lark	1	km 11	Flying North	RT
	2008-09-17	9:32	Horned lark	2	km 15	Flying East	RT
	2008-09-17	9:36	Horned lark	1	km 19.9	Flying East	RT
	2008-09-17	9:51	Horned lark	2	Q4	Flying West	RT
	2008-09-17	10:16	Raven	1	Q11	Flying West	RT
	2008-09-17	10:23	Seagul	1	Q12	Flying Southeast	RT
	2008-09-17	10:36	Perrgrine Falcon	1	Q16	Flying South	RT
	2008-09-17	10:48	Caribou	15	km 25	Feeding, east of road	RT
	2008-09-21	15:33	Caribou	2	Close to china town	walking around	Unknown
	2008-09-22	15:00	Arctic Fox	1	Near Lake/ quarry		Dario Evangelista
	2008-09-23	10:08	Caribou	2	Exploration camp	Feeding	RT
	2008-09-23	10:12	Caribou	40	Q21	Feeding	RT
	2008-09-23	10:17	Caribou	5	Q20	Feeding	RT
	2008-09-23	10:32	Fox	2	km 78	Road kill	RT
	2008-09-23	10:50	Fox	1	km 75	Road kill	RT
	2008-09-26	9:23	Caribou	15	km 48	Feeding West of the road	RT
	2008-09-26	9:25	Caribou	1	km 50	Feeding West of the road	RT
	2008-09-26	9:28	Caribou	20	km 52	Feeding West of the road	RT
	2008-09-26	9:28	Ptarmigan	20	km 52	Feeding West of the road	RT
	2008-09-26	9:31	Caribou	5	km 57	Feeding West of the road	RT
	2008-09-26	9:32	Caribou	4	km 58	Feeding West of the road	RT
	2008-09-26	9:34	Caribou	2	km 62	Feeding West of the road	RT
	2008-09-26	9:36	Caribou	20	km 63	Feeding West of the road	RT
October	2008-10-01	n/a	Wolveriene	1	Q9	Running	Issac (Driver)
	2008-10-02	14:00	Ptarmigan	>100	Along the AWPAR		SM
	2008-10-02	14:35	Caribou	>50	Along the AWPAR	Eating	SM
	2008-10-03	12:00	Arctic Fox	1	b/t whearhouse and dorms	Playing	SM
	2008-10-05	n/a	Arctic Fox	1	On road	Sees fox every night	SM
	2008-10-05	n/a	Grizzley Bear	1	By dyke area	Approached camp, dissappeared in the distance after	SM
	2008-10-06	14:00	Snowy Owl (Male)	1	km 2	Perched on rock/ flew over head	SM
	2008-10-06	late at night	Arctic Wolf	1	AWPAR	Has seen the wolf one other night as well	Christian Tapp
	2008-10-06	15:40	Caribou	>200	AWPAR by switchback	Running	SM
	2008-10-08	during ride to town	Arctic Hare	6	AWPAR	All seeking shelter behind rocks close to the road	SM
	2008-10-08	during ride to town	Arctic Fox	3	AWPAR	Running close to the road	SM
	2008-10-08	during ride to town	Ptarmigan	Many	AWPAR	Many hiding in rocks along the road	SM
	2008-10-08	during ride to town	Snow Buntings?	Many	AWPAR	Flying along the side of the road…	SM
	2008-10-22	16:30	Snowy Owl	1	km 83	in the air	Bruno G.
	2008-10-23	14:20	Arctic Fox	1	mine site; water intake	fox approached to within four feet	P. Cobham
	2008-10-23	2:00	Wolverine	1	west channel	hopped across road	Peter O.

Agnico-Eagle Mines Ltd
Meadowbank camp Wildlife Log - 2008

	Date	Time	Wildlife Species	Quantity	Location	Details/comments	Observer Name
	2008-10-25	10:00	wolves	2	km 43	switchback	Eric O.
November	2008-11-04	11:00	Caribou	1000	km 19	on the lake	Bruno G.
	2008-11-06	16:30	Arctic Fox	1	North of east dike	close to building	Mathieu G.
	2008-11-07	n/a	Wolverine	1	km 81		MB
	2008-11-07	21:45	Wolverine	1	km 58 AWPAR	chasing foxes	SD
	2008-11-08	13:53	Raven	1	km 16	standing on the ground	RT
	2008-11-08	14:07	Caribou	6	km 27 West side	grazing	RT/JK
	2008-11-08	14:15	Caribou	8	km 31	walking	RT/JK
	2008-11-08	14:55	Caribou	14	km 59 East side	walking	RT
	2008-11-08	15:43	Fox	1	km 97	crossing road	RT
	2008-11-10	n/a	Wolverine	1	km 81	along AWPAR	Martin Bergeron
	2008-11-11	16:30	Caribou	8	blind hill 6	close to road	Richard Dion (secur.)
	2008-11-12	n/a	Arctic wolf	1	Q19		MB
	2008-11-12	16:10	Ravens	3	Beside incinerator	eating scattered organic waste	NS
	2008-11-13	17:30	Caribou	25	km 62	moving north	Ryan V.
	2008-11-14	4:30	Black Fox	1	mine site	went under camp	Luc Gauthier
	2008-11-14	17:00	wolves	5	km 59	near a hill; reported by pick - up on AWPAR	Ryan V.
	2008-11-17	17:00	fox	11	incinerator		Ryan V.
	2008-11-23	19:30	wolf	1	km 101	crossing road	Martin Bergeron
December							
	2008-12-07	14:00	Wolverine	1	Bridge 2	km 7 AWPAR	Martin Bergeron
	2008-12-08	13:00	Caribou	40	km 46	feeding, moving east	Russell T.
	2008-12-11	12:00	Caribou	3	km 20		RV
	2008-12-11	12:30	Wolverine	1	km 24		RV
	2008-12-11	13:00	Caribou	7	km 40		RV
	2008-12-11	13:30	Hare	2	km 49		RV
	2008-12-12	10:33	Caribou	4	km 49	feeding, east of road	Russell T.
	2008-12-12	13:30	Caribou	7	km 26	feeding, east of road	Russell T.
	2008-12-12	13:32	Fox	1	km 26	walking west	Russell T.
	2008-12-13	n/a	Arctic Hare	1	km 16	road kill	Russell T.
	2008-12-13	n/a	Caribou	8	km 26	feeding 200 m east	Russell T.
	2008-12-13	n/a	Caribou	3	km 29	walking south 50 m west	Russell T.
	2008-12-13	n/a	Caribou	2	km 50	walking west	Russell T.
	2008-12-14	n/a	Caribou	4	km 49	walking south on lake	Russell T.
	2008-12-14	n/a	Ptarmigan	20	Q 15	flying northeast	Russell T.
	2008-12-15	12:41	Snowy Owl	1	km 91	flying south west	Russell T.
	2008-12-15	1:26	Ptarmigan	9	km 52	flying east	Russell T.
	2008-12-15	1:39	Fox	1	km 37	walking west (marked fox; black)	Russell T.
	2008-12-15	2:25	Caribou	2	km 36	walking north west, feeding	Russell T.
	2008-12-15	2:35	Fox	1	km 44	2 meters east of road walking west	Russell T.
	2008-12-15	2:40	Caribou	1	km 46	walking north, feeding	Russell T.
	2008-12-16	12:15	Caribou	5	km 49	east of road, walking east	Russell T.
	2008-12-16	12:16	Caribou	15	km 49.2	east of road, walking east	Russell T.
	2008-12-18	14:30	Caribou	2	km 36	West of road, feeding	Steve G.
	2008-12-18	14:45	Caribou	>100	km 89	West of road, feeding, running	Steve G.
	2008-12-19	10:20	Fox	4	incinerator	Moving around & eat ashes	Steve G.
	2008-12-19	10:20	Raven	6	incinerator	Waiting	Steve G.
	2008-12-19	13:00	wolves	5	km 63	resting	Kevin M
	2008-12-20	3:00	Wolf	1	Around camp/east dike	Moving around	William security
	2008-12-20	11:00	Wolf	1	South east of MBK camp	Sleeping	Steve G.
	2008-12-20	8:30	Fox	4	Landfill	Sneaking for food	Steve G.
	2008-12-20	9:00	Fox	3	incinerator	Moving around & eat ashes	Steve G.
	2008-12-20	9:00	Raven	3	incinerator	Sneaking for food	Steve G.
	2008-12-20	23:00	Wolf	1	Mine site, by re-fueling station	Going south on the road	Bertin P.
	2008-12-21	8:00	Fox	3	incinerator	Sneaking for food	Steve G.
	2008-12-21	14:00	Raven	2	Landfill	Sneaking for food	Steve G.
	2008-12-21	14:30	Fox	2	incinerator	Sneaking for food	Steve G.
	2008-12-23	7:00	Wolverine	1	Near by kitchen	Walking around	Joe (JN crew)
	2008-12-28	5:00	Wolverine	1	near assay lab	walking east	Nahanni worker
	2008-12-29	11:00	Fox	3	near blue cover-all	walking west	Russell T.
	2008-12-29	11:30	Wolverine	1	blasters seacan b4 "EMR"	walking east	Peter Tiktaalaaq

APPENDIX G

2008 Environmental Health Monitoring –

Soil and Vegetation Tissue (Lichen, Plant and Berry) Analytical Results

Table 1 (1 of 5)
Surface Soil Analytical Results
Total Metals
Agnico-Eagle
Meadowbank

Location	RDL	T1 NEAR FIELD	T1 NEAR FIELD	T1 NEAR FIELD	T1 NEAR FIELD	T1 NEAR FIELD	T2 FAR FIELD	T2 FAR FIELD	T2 FAR FIELD	T2 FAR FIELD	T2 FAR FIELD
Site #		1	2	3	4	5	1	2	3	4	5
Sample Depth (m)		surface	surface	surface	surface	surface	surface	surface	surface	surface	surface
Date Sampled		30-AUG-08	30-AUG-08	30-AUG-08	30-AUG-08	30-AUG-08	31-AUG-08	31-AUG-08	31-AUG-08	31-AUG-08	31-AUG-08
Aluminum	-	-	-	-	-	-	-	-	-	-	-
Antimony	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Arsenic	5	5.6	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Barium	1	52.1	20.6	21.7	43.2	23.3	28.1	25.2	41.5	37.7	41.5
Beryllium	0.5	0.57	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.55	0.52	0.61
Bismuth	-	-	-	-	-	-	-	-	-	-	-
Cadmium	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Calcium	-	-	-	-	-	-	-	-	-	-	-
Chromium	2	43.4	18.4	17.1	31.3	17.3	15.3	13.6	26.7	23.3	17.8
Cobalt	2	7.3	6.8	4.5	6.3	4.2	4.2	4.1	5.3	5.2	5.8
Copper	1	12.6	9.7	4.0	8.1	4.5	4.6	3.9	7.0	6.5	5.7
Lead	30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
Lithium	-	-	-	-	-	-	-	-	-	-	-
Magnesium	-	-	-	-	-	-	-	-	-	-	-
Manganese	-	-	-	-	-	-	-	-	-	-	-
Mercury	0.005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0393
Molybdenum	4	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Nickel	5	23.1	12.3	9.9	16.7	9.5	8.2	6.9	13.1	12.3	8.3
Selenium	2-4	<2.0	<2.0	<3.0	<2.0	<2.0	<2.0	<2.0	<3.0	<2.0	<2.0
Silver	2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Strontium	-	-	-	-	-	-	-	-	-	-	-
Thallium	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Tin	5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Uranium	-	-	-	-	-	-	-	-	-	-	-
Vanadium	2	22.2	12.2	12.7	18.7	12.9	13.0	11.6	17.5	15.3	15.4
Zinc	1	63.2	23.6	25.2	46.6	23.5	32.7	22.3	35.8	35.4	33.9

Conventional Parameters											
pH	0.01	5.73	6.58	6.43	6.53	6.36	6.58	6.09	6.79	6.66	4.80

NOTES:
All concentrations in micrograms per gram (µg/g) [parts per million (ppm)]
RDL Reported Detection Limit
< Less than reported detection limit
- Not analyzed

Table 1 (2 of 5)
Surface Soil Analytical Results
Total Metals
Agnico-Eagle
Meadowbank

Location Site # Sample Depth (m) Date Sampled	RDL	T3 NEAR FIELD 1 surface 31-AUG-08	T3 NEAR FIELD 2 surface 31-AUG-08	T3 NEAR FIELD 3 surface 31-AUG-08	T3 NEAR FIELD 4 surface 31-AUG-08	T3 NEAR FIELD 5 surface 31-AUG-08	T4 FAR FIELD 1 surface 31-AUG-08	T4 FAR FIELD 2 surface 31-AUG-08	T4 FAR FIELD 3 surface 31-AUG-08	T4 FAR FIELD 4 surface 31-AUG-08	T4 FAR FIELD 5 surface 31-AUG-08
Aluminum	-	-	-	-	-	-	-	-	-	-	-
Antimony	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Arsenic	5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Barium	1	28.9	46.4	35.0	31.8	25.0	55.8	74.2	31.9	40.3	32.5
Beryllium	0.5	0.57	0.59	0.51	<0.50	0.53	0.61	0.72	<0.50	<0.50	<0.50
Bismuth	-	-	-	-	-	-	-	-	-	-	-
Cadmium	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Calcium	-	-	-	-	-	-	-	-	-	-	-
Chromium	2	20.0	33.3	26.8	23.8	14.1	31.1	36.5	16.6	21.5	16.9
Cobalt	2	5.6	6.7	6.5	5.3	4.3	8.1	7.7	4.7	5.5	4.8
Copper	1	5.6	9.3	6.3	5.8	4.1	9.5	12.4	4.9	6.7	5.2
Lead	30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
Lithium	-	-	-	-	-	-	-	-	-	-	-
Magnesium	-	-	-	-	-	-	-	-	-	-	-
Manganese	-	-	-	-	-	-	-	-	-	-	-
Mercury	0.005	<0.0050	0.0065	0.0071	<0.0050	0.0132	0.0094	0.0073	<0.0050	<0.0050	<0.0050
Molybdenum	4	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Nickel	5	11.2	16.7	14.7	13.2	7.8	15.2	17.6	8.8	11.3	9.2
Selenium	2-4	<2.0	<2.0	<2.0	<2.0	<3.0	<3.0	<2.0	<2.0	<3.0	<3.0
Silver	2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Strontium	-	-	-	-	-	-	-	-	-	-	-
Thallium	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Tin	5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Uranium	-	-	-	-	-	-	-	-	-	-	-
Vanadium	2	16.6	21.3	17.8	15.5	12.6	21.5	25.7	13.6	17.2	14.7
Zinc	1	32.3	46.3	34.9	30.0	29.5	44.7	47.8	28.4	48.8	29.1

Conventional Parameters											
pH	0.01	6.30	6.20	5.60	6.49	5.72	5.55	6.26	5.99	6.59	6.47

NOTES:
All concentrations in micrograms per gram (µg/g) [parts per million (ppm)]
RDL Reported Detection Limit
< Less than reported detection limit
- Not analyzed

Table 1 (3 of 5)
Surface Soil Analytical Results
Total Metals
Agnico-Eagle
Meadowbank

Location	RDL	T5 FARFIELD	T5 FARFIELD	T5 FARFIELD	T5 FARFIELD	T5 FARFIELD	T6 MINE	T6 MINE	T6 MINE	T6 MINE	T7 NEAR FIELD
Site #		**1**	**2**	**3**	**4**	**5**	**1**	**2**	**3**	**4**	**1**
Sample Depth (m)		**surface**	**surface**	**surface**	**surface**	**surface**	**surface**	**surface**	**surface**	**surface**	**surface**
Date Sampled		**30-AUG-08**	**30-AUG-08**	**30-AUG-08**	**30-AUG-08**	**30-AUG-08**	**30-AUG-08**	**30-AUG-08**	**30-AUG-08**	**30-AUG-08**	**31-AUG-08**
Aluminum	-	-	-	-	-	-	-	-	-	-	-
Antimony	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Arsenic	5	6.5	<5.0	9.2	<5.0	11.1	<5.0	<5.0	<5.0	<5.0	44.2
Barium	1	51.1	47.6	77.3	23.4	35.9	104	33.5	33.3	21.5	35.4
Beryllium	0.5	<0.50	<0.50	0.72	<0.50	<0.50	0.76	<0.50	<0.50	<0.50	<0.50
Bismuth	-	-	-	-	-	-	-	-	-	-	-
Cadmium	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Calcium	-	-	-	-	-	-	-	-	-	-	-
Chromium	2	88.9	63.0	102	58.2	96.4	52.4	25.4	27.4	24.9	46.0
Cobalt	2	8.6	8.3	9.9	6.0	8.5	9.9	5.3	5.4	4.1	15.5
Copper	1	15.0	10.2	19.7	5.8	11.0	19.5	6.3	7.3	4.4	22.4
Lead	30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
Lithium	-	-	-	-	-	-	-	-	-	-	-
Magnesium	-	-	-	-	-	-	-	-	-	-	-
Manganese	-	-	-	-	-	-	-	-	-	-	-
Mercury	0.005	<0.0050	0.0082	0.0227	<0.0050	0.0080	0.0098	<0.0050	0.0056	<0.0050	<0.0050
Molybdenum	4	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Nickel	5	40.3	28.0	41.4	24.2	36.2	27.5	13.5	13.5	11.3	33.7
Selenium	2-4	<2.0	<2.0	<4.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<5.0
Silver	2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Strontium	-	-	-	-	-	-	-	-	-	-	-
Thallium	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Tin	5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Uranium	-	-	-	-	-	-	-	-	-	-	-
Vanadium	2	23.5	24.0	31.1	15.2	24.0	35.5	16.2	18.1	14.1	23.1
Zinc	1	37.7	38.2	59.0	23.0	34.1	63.3	27.2	35.3	19.3	52.4

Conventional Parameters											
pH	0.01	7.42	5.80	5.42	6.36	5.79	6.63	6.58	6.33	6.36	6.45

NOTES:
All concentrations in micrograms per gram (µg/g) [parts per million (ppm)]

RDL	Reported Detection Limit
<	Less than reported detection limit
-	Not analyzed

Table 1 (4 of 5)
Surface Soil Analytical Results
Total Metals
Agnico-Eagle
Meadowbank

Location	RDL	T7 NEAR FIELD	T7 NEAR FIELD	T7 NEAR FIELD	T7 NEAR FIELD	C1 EXT REF	C1 EXT REF	C1 EXT REF	C1 EXT REF	C1 EXT REF	C2 EXT REF
Site #		2	3	4	5	1	2	3	4	5	1
Sample Depth (m)		surface	surface	surface	surface	surface	surface	surface	surface	surface	surface
Date Sampled		31-AUG-08	31-AUG-08	31-AUG-08	31-AUG-08	01-SEP-08	01-SEP-08	01-SEP-08	01-SEP-08	01-SEP-08	01-SEP-08
Aluminum	-	-	-	-	-	-	-	-	-	-	-
Antimony	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Arsenic	5	18.7	41.6	60.8	25.8	<5.0	<5.0	<5.0	6.6	<5.0	8.9
Barium	1	24.5	35.5	42.2	29.3	38.2	29.9	31.3	55.4	24.1	53.1
Beryllium	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.64	<0.50	<0.50
Bismuth	-	-	-	-	-	-	-	-	-	-	-
Cadmium	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Calcium	-	-	-	-	-	-	-	-	-	-	-
Chromium	2	35.3	68.9	47.2	48.8	36.2	37.1	27.0	55.0	23.8	155
Cobalt	2	11.3	9.9	12.6	12.7	6.3	5.0	5.5	8.2	4.7	15.0
Copper	1	15.5	17.8	18.8	18.9	7.2	4.4	5.5	9.6	3.6	19.2
Lead	30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
Lithium	-	-	-	-	-	-	-	-	-	-	-
Magnesium	-	-	-	-	-	-	-	-	-	-	-
Manganese	-	-	-	-	-	-	-	-	-	-	-
Mercury	0.005	<0.0050	0.0526	0.0469	<0.0050	<0.0050	0.0292	<0.0050	0.0070	0.0244	0.0073
Molybdenum	4	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Nickel	5	25.9	37.1	31.6	32.3	20.8	18.4	15.9	31.1	12.4	88.9
Selenium	2-4	<3.0	<3.0	<3.0	<3.0	<2.0	<2.0	<2.0	<2.0	<2.0	<3.0
Silver	2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Strontium	-	-	-	-	-	-	-	-	-	-	-
Thallium	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Tin	5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Uranium	-	-	-	-	-	-	-	-	-	-	-
Vanadium	2	20.0	27.3	27.6	22.8	16.9	18.3	13.9	24.7	15.8	34.8
Zinc	1	40.7	53.8	72.1	64.1	29.4	36.1	24.4	50.1	23.2	54.0

Conventional Parameters											
pH	0.01	6.37	4.97	4.65	5.90	6.66	5.29	6.11	5.91	4.96	5.73

NOTES:

All concentrations in micrograms per gram (µg/g) [parts per million (ppm)]

RDL Reported Detection Limit

< Less than reported detection limit

\- Not analyzed

Table 1 (5 of 5)
Surface Soil Analytical Results
Total Metals
Agnico-Eagle
Meadowbank

Location	RDL	C2 EXT REF	C2 EXT REF	C2 EXT REF	C2 EXT REF	C3 EXT REF	C3 EXT REF	C3 EXT REF	C3 EXT REF	C3 EXT REF
Site #		2	3	4	5	1	2	3	4	5
Sample Depth (m)		surface	surface	surface	surface	surface	surface	surface	surface	surface
Date Sampled		01-SEP-08	01-SEP-08	01-SEP-08	01-SEP-08	01-SEP-08	01-SEP-08	01-SEP-08	01-SEP-08	01-SEP-08
Aluminum	-	-	-	-	-	-	-	-	-	-
Antimony	10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Arsenic	5	9.3	9.1	11.1	9.0	8.3	30.6	11.0	7.7	8.2
Barium	1	59.0	37.0	48.9	40.2	34.9	37.6	33.7	37.4	38.2
Beryllium	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Bismuth	-	-	-	-	-	-	-	-	-	-
Cadmium	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Calcium	-	-	-	-	-	-	-	-	-	-
Chromium	2	170	146	127	126	117	128	125	137	154
Cobalt	2	17.2	14.0	14.0	13.9	12.6	14.5	11.4	16.7	13.8
Copper	1	82.2	11.6	17.5	17.8	14.2	24.7	70.3	18.3	13.9
Lead	30	<30	<30	<30	<30	<30	<30	<30	<30	<30
Lithium	-	-	-	-	-	-	-	-	-	-
Magnesium	-	-	-	-	-	-	-	-	-	-
Manganese	-	-	-	-	-	-	-	-	-	-
Mercury	0.005	0.0076	0.0174	0.0098	0.0072	<0.0050	0.0139	0.0271	<0.0050	0.0130
Molybdenum	4	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Nickel	5	102	80.0	75.0	75.6	68.8	70.1	60.8	92.0	77.8
Selenium	2-4	<4.0	<4.0	<2.0	<3.0	<2.0	<2.0	<3.0	<2.0	<3.0
Silver	2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Strontium	-	-	-	-	-	-	-	-	-	-
Thallium	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Tin	5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Uranium	-	-	-	-	-	-	-	-	-	-
Vanadium	2	36.3	30.2	33.6	30.3	26.3	32.0	33.9	27.0	33.5
Zinc	1	70.0	55.5	45.6	46.3	39.1	55.0	92.7	39.9	48.5

Conventional Parameters										
pH	0.01	5.79	5.47	5.83	5.78	6.20	5.87	4.15	5.81	5.68

NOTES:
All concentrations in micrograms per gram (µg/g) [parts per million (ppm)]

RDL	Reported Detection Limit
<	Less than reported detection limit
-	Not analyzed

Certificate of Analysis

GEBAUER & ASSOCIATES LTD.
ATTN: MARTIN GEBAUER
6387 LARCH STREET
VANCOVUER BC V6M 4E8

Reported On: 31-OCT-08 06:30 PM
Revision: 1

Lab Work Order #: **L682842** **Date Received:** **15-SEP-08**

Project P.O. #:
Job Reference: AGNICO-EAGLE MEADOW
Legal Site Desc:
CofC Numbers: C064453

Other Information:

Comments: Please note that certain metals detection limits have been increased for some of the samples due to the interferences encountered during the analysis.

NATASHA MARKOVIC-MIROVIC
Account Manager

ALS LABORATORY GROUP ANALYTICAL REPORT

Grouping	Analyte	L682842-1	L682842-5	L682842-9	L682842-13	L682842-17
	Sample ID	L682842-1	L682842-5	L682842-9	L682842-13	L682842-17
	Description					
	Sampled Date	30-AUG-08	30-AUG-08	30-AUG-08	30-AUG-08	30-AUG-08
	Sampled Time	09:07	08:40	09:30	10:18	09:57
	Client ID	T5 FARFIELD SITE #1 SOIL	T5 FARFIELD SITE #2 SOIL	T5 FARFIELD SITE #3 SOIL	T5 FARFIELD SITE #4 SOIL	T5 FARFIELD SITE #5 SOIL
SOIL						
Physical Tests	pH (pH)	7.42	5.80	5.42	6.36	5.79
Metals	Antimony (Sb) (mg/kg)	<10	<10	<10	<10	<10
	Arsenic (As) (mg/kg)	6.5	<5.0	9.2	<5.0	11.1
	Barium (Ba) (mg/kg)	51.1	47.6	77.3	23.4	35.9
	Beryllium (Be) (mg/kg)	<0.50	<0.50	0.72	<0.50	<0.50
	Cadmium (Cd) (mg/kg)	<0.50	<0.50	<0.50	<0.50	<0.50
	Chromium (Cr) (mg/kg)	88.9	63.0	102	58.2	96.4
	Cobalt (Co) (mg/kg)	8.6	8.3	9.9	6.0	8.5
	Copper (Cu) (mg/kg)	15.0	10.2	19.7	5.8	11.0
	Lead (Pb) (mg/kg)	<30	<30	<30	<30	<30
	Mercury (Hg) (mg/kg)	<0.0050	0.0082	0.0227	<0.0050	0.0080
	Molybdenum (Mo) (mg/kg)	<4.0	<4.0	<4.0	<4.0	<4.0
	Nickel (Ni) (mg/kg)	40.3	28.0	41.4	24.2	36.2
	Selenium (Se) (mg/kg)	<2.0	<2.0	<4.0	<2.0	<2.0
	Silver (Ag) (mg/kg)	<2.0	<2.0	<2.0	<2.0	<2.0
	Thallium (Tl) (mg/kg)	<1.0	<1.0	<1.0	<1.0	<1.0
	Tin (Sn) (mg/kg)	<5.0	<5.0	<5.0	<5.0	<5.0
	Vanadium (V) (mg/kg)	23.5	24.0	31.1	15.2	24.0
	Zinc (Zn) (mg/kg)	37.7	38.2	59.0	23.0	34.1

ALS LABORATORY GROUP ANALYTICAL REPORT

	Sample ID	L682842-21	L682842-25	L682842-29	L682842-33	L682842-37
	Description					
	Sampled Date	30-AUG-08	30-AUG-08	30-AUG-08	30-AUG-08	30-AUG-08
	Sampled Time	12:22	12:57	13:21	13:40	14:11
	Client ID	T1 NEAR FIELD SITE #1 SOIL	T1 NEAR FIELD SITE #2 SOIL	T1 NEAR FIELD SITE #3 SOIL	T1 NEAR FIELD SITE #4 SOIL	T1 NEAR FIELD SITE #5 SOIL
Grouping	**Analyte**					
SOIL						
Physical Tests	pH (pH)	5.73	6.58	6.43	6.53	6.36
Metals	Antimony (Sb) (mg/kg)	<10	<10	<10	<10	<10
	Arsenic (As) (mg/kg)	5.6	<5.0	<5.0	<5.0	<5.0
	Barium (Ba) (mg/kg)	52.1	20.6	21.7	43.2	23.3
	Beryllium (Be) (mg/kg)	0.57	<0.50	<0.50	<0.50	<0.50
	Cadmium (Cd) (mg/kg)	<0.50	<0.50	<0.50	<0.50	<0.50
	Chromium (Cr) (mg/kg)	43.4	18.4	17.1	31.3	17.3
	Cobalt (Co) (mg/kg)	7.3	6.8	4.5	6.3	4.2
	Copper (Cu) (mg/kg)	12.6	9.7	4.0	8.1	4.5
	Lead (Pb) (mg/kg)	<30	<30	<30	<30	<30
	Mercury (Hg) (mg/kg)	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
	Molybdenum (Mo) (mg/kg)	<4.0	<4.0	<4.0	<4.0	<4.0
	Nickel (Ni) (mg/kg)	23.1	12.3	9.9	16.7	9.5
	Selenium (Se) (mg/kg)	<2.0	<2.0	<3.0	<2.0	<2.0
	Silver (Ag) (mg/kg)	<2.0	<2.0	<2.0	<2.0	<2.0
	Thallium (Tl) (mg/kg)	<1.0	<1.0	<1.0	<1.0	<1.0
	Tin (Sn) (mg/kg)	<5.0	<5.0	<5.0	<5.0	<5.0
	Vanadium (V) (mg/kg)	22.2	12.2	12.7	18.7	12.9
	Zinc (Zn) (mg/kg)	63.2	23.6	25.2	46.6	23.5

ALS LABORATORY GROUP ANALYTICAL REPORT

Grouping	Analyte	L682842-41	L682842-45	L682842-49	L682842-53	L682842-57
	Description					
	Sampled Date	30-AUG-08	30-AUG-08	30-AUG-08	30-AUG-08	31-AUG-08
	Sampled Time	15:50	16:30	17:00	15:22	09:36
	Client ID	T6 MINE SITE #1 SOIL	T6 MINE SITE #2 SOIL	T6 MINE SITE #3 SOIL	T6 MINE SITE #4 SOIL	T4 FAR FIELD SITE #1 SOIL
SOIL						
Physical Tests	pH (pH)	6.63	6.58	6.33	6.36	5.55
Metals	Antimony (Sb) (mg/kg)	<10	<10	<10	<10	<10
	Arsenic (As) (mg/kg)	<5.0	<5.0	<5.0	<5.0	<5.0
	Barium (Ba) (mg/kg)	104	33.5	33.3	21.5	55.8
	Beryllium (Be) (mg/kg)	0.76	<0.50	<0.50	<0.50	0.61
	Cadmium (Cd) (mg/kg)	<0.50	<0.50	<0.50	<0.50	<0.50
	Chromium (Cr) (mg/kg)	52.4	25.4	27.4	24.9	31.1
	Cobalt (Co) (mg/kg)	9.9	5.3	5.4	4.1	8.1
	Copper (Cu) (mg/kg)	19.5	6.3	7.3	4.4	9.5
	Lead (Pb) (mg/kg)	<30	<30	<30	<30	<30
	Mercury (Hg) (mg/kg)	0.0098	<0.0050	0.0056	<0.0050	0.0094
	Molybdenum (Mo) (mg/kg)	<4.0	<4.0	<4.0	<4.0	<4.0
	Nickel (Ni) (mg/kg)	27.5	13.5	13.5	11.3	15.2
	Selenium (Se) (mg/kg)	<2.0	<2.0	<2.0	<2.0	<3.0
	Silver (Ag) (mg/kg)	<2.0	<2.0	<2.0	<2.0	<2.0
	Thallium (Tl) (mg/kg)	<1.0	<1.0	<1.0	<1.0	<1.0
	Tin (Sn) (mg/kg)	<5.0	<5.0	<5.0	<5.0	<5.0
	Vanadium (V) (mg/kg)	35.5	16.2	18.1	14.1	21.5
	Zinc (Zn) (mg/kg)	63.3	27.2	35.3	19.3	44.7

ALS LABORATORY GROUP ANALYTICAL REPORT

	Sample ID	L682842-61	L682842-65	L682842-69	L682842-73	L682842-77
	Description					
	Sampled Date	31-AUG-08	31-AUG-08	31-AUG-08	31-AUG-08	31-AUG-08
	Sampled Time	08:45	10:22	09:12	10:00	11:50
	Client ID	T4 FAR FIELD SITE #2 SOIL	T4 FAR FIELD SITE #3 SOIL	T4 FAR FIELD SITE #4 SOIL	T4 FAR FIELD SITE #5 SOIL	T3 NEAR FIELD SITE #1 SOIL
Grouping	**Analyte**					
SOIL						
Physical Tests	pH (pH)	6.26	5.99	6.59	6.47	6.30
Metals	Antimony (Sb) (mg/kg)	<10	<10	<10	<10	<10
	Arsenic (As) (mg/kg)	<5.0	<5.0	<5.0	<5.0	<5.0
	Barium (Ba) (mg/kg)	74.2	31.9	40.3	32.5	28.9
	Beryllium (Be) (mg/kg)	0.72	<0.50	<0.50	<0.50	0.57
	Cadmium (Cd) (mg/kg)	<0.50	<0.50	<0.50	<0.50	<0.50
	Chromium (Cr) (mg/kg)	36.5	16.6	21.5	16.9	20.0
	Cobalt (Co) (mg/kg)	7.7	4.7	5.5	4.8	5.6
	Copper (Cu) (mg/kg)	12.4	4.9	6.7	5.2	5.6
	Lead (Pb) (mg/kg)	<30	<30	<30	<30	<30
	Mercury (Hg) (mg/kg)	0.0073	<0.0050	<0.0050	<0.0050	<0.0050
	Molybdenum (Mo) (mg/kg)	<4.0	<4.0	<4.0	<4.0	<4.0
	Nickel (Ni) (mg/kg)	17.6	8.8	11.3	9.2	11.2
	Selenium (Se) (mg/kg)	<2.0	<2.0	<3.0	<3.0	<2.0
	Silver (Ag) (mg/kg)	<2.0	<2.0	<2.0	<2.0	<2.0
	Thallium (Tl) (mg/kg)	<1.0	<1.0	<1.0	<1.0	<1.0
	Tin (Sn) (mg/kg)	<5.0	<5.0	<5.0	<5.0	<5.0
	Vanadium (V) (mg/kg)	25.7	13.6	17.2	14.7	16.6
	Zinc (Zn) (mg/kg)	47.8	28.4	48.8	29.1	32.3

ALS LABORATORY GROUP ANALYTICAL REPORT

	Sample ID	L682842-81	L682842-85	L682842-89	L682842-93	L682842-97
	Description					
	Sampled Date	31-AUG-08	31-AUG-08	31-AUG-08	31-AUG-08	31-AUG-08
	Sampled Time	12:05	13:11	12:26	12:46	14:41
	Client ID	T3 NEAR FIELD SITE #2 SOIL	T3 NEAR FIELD SITE #3 SOIL	T3 NEAR FIELD SITE #4 SOIL	T3 NEAR FIELD SITE #5 SOIL	T2 FAR FIELD SITE #1 SOIL
Grouping	**Analyte**					
SOIL						
Physical Tests	pH (pH)	6.20	5.60	6.49	5.72	6.58
Metals	Antimony (Sb) (mg/kg)	<10	<10	<10	<10	<10
	Arsenic (As) (mg/kg)	<5.0	<5.0	<5.0	<5.0	<5.0
	Barium (Ba) (mg/kg)	46.4	35.0	31.8	25.0	28.1
	Beryllium (Be) (mg/kg)	0.59	0.51	<0.50	0.53	<0.50
	Cadmium (Cd) (mg/kg)	<0.50	<0.50	<0.50	<0.50	<0.50
	Chromium (Cr) (mg/kg)	33.3	26.8	23.8	14.1	15.3
	Cobalt (Co) (mg/kg)	6.7	6.5	5.3	4.3	4.2
	Copper (Cu) (mg/kg)	9.3	6.3	5.8	4.1	4.6
	Lead (Pb) (mg/kg)	<30	<30	<30	<30	<30
	Mercury (Hg) (mg/kg)	0.0065	0.0071	<0.0050	0.0132	<0.0050
	Molybdenum (Mo) (mg/kg)	<4.0	<4.0	<4.0	<4.0	<4.0
	Nickel (Ni) (mg/kg)	16.7	14.7	13.2	7.8	8.2
	Selenium (Se) (mg/kg)	<2.0	<2.0	<2.0	<3.0	<2.0
	Silver (Ag) (mg/kg)	<2.0	<2.0	<2.0	<2.0	<2.0
	Thallium (Tl) (mg/kg)	<1.0	<1.0	<1.0	<1.0	<1.0
	Tin (Sn) (mg/kg)	<5.0	<5.0	<5.0	<5.0	<5.0
	Vanadium (V) (mg/kg)	21.3	17.8	15.5	12.6	13.0
	Zinc (Zn) (mg/kg)	46.3	34.9	30.0	29.5	32.7

ALS LABORATORY GROUP ANALYTICAL REPORT

Grouping	Analyte	L682842-101	L682842-105	L682842-109	L682842-113	L682842-117
	Sample ID	L682842-101	L682842-105	L682842-109	L682842-113	L682842-117
	Description					
	Sampled Date	31-AUG-08	31-AUG-08	31-AUG-08	31-AUG-08	31-AUG-08
	Sampled Time	15:23	15:04	14:20	14:00	16:41
	Client ID	T2 FAR FIELD SITE #2 SOIL	T2 FAR FIELD SITE #3 SOIL	T2 FAR FIELD SITE #4 SOIL	T2 FAR FIELD SITE #5 SOIL	T7 NEAR FIELD SITE #1 SOIL
SOIL						
Physical Tests	pH (pH)	6.09	6.79	6.66	4.80	6.45
Metals	Antimony (Sb) (mg/kg)	<10	<10	<10	<10	<10
	Arsenic (As) (mg/kg)	<5.0	<5.0	<5.0	<5.0	44.2
	Barium (Ba) (mg/kg)	25.2	41.5	37.7	41.5	35.4
	Beryllium (Be) (mg/kg)	<0.50	0.55	0.52	0.61	<0.50
	Cadmium (Cd) (mg/kg)	<0.50	<0.50	<0.50	<0.50	<0.50
	Chromium (Cr) (mg/kg)	13.6	26.7	23.3	17.8	46.0
	Cobalt (Co) (mg/kg)	4.1	5.3	5.2	5.8	15.5
	Copper (Cu) (mg/kg)	3.9	7.0	6.5	5.7	22.4
	Lead (Pb) (mg/kg)	<30	<30	<30	<30	<30
	Mercury (Hg) (mg/kg)	<0.0050	<0.0050	<0.0050	0.0393	<0.0050
	Molybdenum (Mo) (mg/kg)	<4.0	<4.0	<4.0	<4.0	<4.0
	Nickel (Ni) (mg/kg)	6.9	13.1	12.3	8.3	33.7
	Selenium (Se) (mg/kg)	<2.0	<3.0	<2.0	<2.0	<5.0
	Silver (Ag) (mg/kg)	<2.0	<2.0	<2.0	<2.0	<2.0
	Thallium (Tl) (mg/kg)	<1.0	<1.0	<1.0	<1.0	<1.0
	Tin (Sn) (mg/kg)	<5.0	<5.0	<5.0	<5.0	<5.0
	Vanadium (V) (mg/kg)	11.6	17.5	15.3	15.4	23.1
	Zinc (Zn) (mg/kg)	22.3	35.8	35.4	33.9	52.4

ALS LABORATORY GROUP ANALYTICAL REPORT

Grouping	Analyte	L682842-121	L682842-125	L682842-129	L682842-133	L682842-137
	Sample ID	L682842-121	L682842-125	L682842-129	L682842-133	L682842-137
	Description					
	Sampled Date	31-AUG-08	31-AUG-08	31-AUG-08	31-AUG-08	01-SEP-08
	Sampled Time	17:00	17:17	17:46	16:17	10:45
	Client ID	T7 NEAR FIELD SITE #2 SOIL	T7 NEAR FIELD SITE #3 SOIL	T7 NEAR FIELD SITE #4 SOIL	T7 NEAR FIELD SITE #5 SOIL	C1 EXT REF. SITE #1 SOIL
SOIL						
Physical Tests	pH (pH)	6.37	4.97	4.65	5.90	6.66
Metals	Antimony (Sb) (mg/kg)	<10	<10	<10	<10	<10
	Arsenic (As) (mg/kg)	18.7	41.6	60.8	25.8	<5.0
	Barium (Ba) (mg/kg)	24.5	35.5	42.2	29.3	38.2
	Beryllium (Be) (mg/kg)	<0.50	<0.50	<0.50	<0.50	<0.50
	Cadmium (Cd) (mg/kg)	<0.50	<0.50	<0.50	<0.50	<0.50
	Chromium (Cr) (mg/kg)	35.3	68.9	47.2	48.8	36.2
	Cobalt (Co) (mg/kg)	11.3	9.9	12.6	12.7	6.3
	Copper (Cu) (mg/kg)	15.5	17.8	18.8	18.9	7.2
	Lead (Pb) (mg/kg)	<30	<30	<30	<30	<30
	Mercury (Hg) (mg/kg)	<0.0050	0.0526	0.0469	<0.0050	<0.0050
	Molybdenum (Mo) (mg/kg)	<4.0	<4.0	<4.0	<4.0	<4.0
	Nickel (Ni) (mg/kg)	25.9	37.1	31.6	32.3	20.8
	Selenium (Se) (mg/kg)	<3.0	<3.0	<3.0	<3.0	<2.0
	Silver (Ag) (mg/kg)	<2.0	<2.0	<2.0	<2.0	<2.0
	Thallium (Tl) (mg/kg)	<1.0	<1.0	<1.0	<1.0	<1.0
	Tin (Sn) (mg/kg)	<5.0	<5.0	<5.0	<5.0	<5.0
	Vanadium (V) (mg/kg)	20.0	27.3	27.6	22.8	16.9
	Zinc (Zn) (mg/kg)	40.7	53.8	72.1	64.1	29.4

ALS LABORATORY GROUP ANALYTICAL REPORT

Grouping	Analyte	L682842-141	L682842-145	L682842-149	L682842-153	L682842-157
	Description					
	Sampled Date	01-SEP-08	01-SEP-08	01-SEP-08	01-SEP-08	01-SEP-08
	Sampled Time	10:25	11:05	11:26	11:50	14:20
	Client ID	C1 EXT REF. SITE #2 SOIL	C1 EXT REF. SITE #3 SOIL	C1 EXT REF. SITE #4 SOIL	C1 EXT REF. SITE #5 SOIL	C2 EXT REF. SITE #1 SOIL
SOIL						
Physical Tests	pH (pH)	5.29	6.11	5.91	4.96	5.73
Metals	Antimony (Sb) (mg/kg)	<10	<10	<10	<10	<10
	Arsenic (As) (mg/kg)	<5.0	<5.0	6.6	<5.0	8.9
	Barium (Ba) (mg/kg)	29.9	31.3	55.4	24.1	53.1
	Beryllium (Be) (mg/kg)	<0.50	<0.50	0.64	<0.50	<0.50
	Cadmium (Cd) (mg/kg)	<0.50	<0.50	<0.50	<0.50	<0.50
	Chromium (Cr) (mg/kg)	37.1	27.0	55.0	23.8	155
	Cobalt (Co) (mg/kg)	5.0	5.5	8.2	4.7	15.0
	Copper (Cu) (mg/kg)	4.4	5.5	9.6	3.6	19.2
	Lead (Pb) (mg/kg)	<30	<30	<30	<30	<30
	Mercury (Hg) (mg/kg)	0.0292	<0.0050	0.0070	0.0244	0.0073
	Molybdenum (Mo) (mg/kg)	<4.0	<4.0	<4.0	<4.0	<4.0
	Nickel (Ni) (mg/kg)	18.4	15.9	31.1	12.4	88.9
	Selenium (Se) (mg/kg)	<2.0	<2.0	<2.0	<2.0	<3.0
	Silver (Ag) (mg/kg)	<2.0	<2.0	<2.0	<2.0	<2.0
	Thallium (Tl) (mg/kg)	<1.0	<1.0	<1.0	<1.0	<1.0
	Tin (Sn) (mg/kg)	<5.0	<5.0	<5.0	<5.0	<5.0
	Vanadium (V) (mg/kg)	18.3	13.9	24.7	15.8	34.8
	Zinc (Zn) (mg/kg)	36.1	24.4	50.1	23.2	54.0

ALS LABORATORY GROUP ANALYTICAL REPORT

Grouping	Analyte	L682842-161	L682842-165	L682842-169	L682842-173	L682842-177
	Description					
	Sampled Date	01-SEP-08	01-SEP-08	01-SEP-08	01-SEP-08	01-SEP-08
	Sampled Time	14:05	13:47	13:32	13:15	16:38
	Client ID	C2 EXT REF. SITE #2 SOIL	C2 EXT REF. SITE #3 SOIL	C2 EXT REF. SITE #4 SOIL	C2 EXT REF. SITE #5 SOIL	C3 EXT REF. SITE #1 SOIL
SOIL						
Physical Tests	pH (pH)	5.79	5.47	5.83	5.78	6.20
Metals	Antimony (Sb) (mg/kg)	<10	<10	<10	<10	<10
	Arsenic (As) (mg/kg)	9.3	9.1	11.1	9.0	8.3
	Barium (Ba) (mg/kg)	59.0	37.0	48.9	40.2	34.9
	Beryllium (Be) (mg/kg)	<0.50	<0.50	<0.50	<0.50	<0.50
	Cadmium (Cd) (mg/kg)	<0.50	<0.50	<0.50	<0.50	<0.50
	Chromium (Cr) (mg/kg)	170	146	127	126	117
	Cobalt (Co) (mg/kg)	17.2	14.0	14.0	13.9	12.6
	Copper (Cu) (mg/kg)	82.2	11.6	17.5	17.8	14.2
	Lead (Pb) (mg/kg)	<30	<30	<30	<30	<30
	Mercury (Hg) (mg/kg)	0.0076	0.0174	0.0098	0.0072	<0.0050
	Molybdenum (Mo) (mg/kg)	<4.0	<4.0	<4.0	<4.0	<4.0
	Nickel (Ni) (mg/kg)	102	80.0	75.0	75.6	68.8
	Selenium (Se) (mg/kg)	<4.0	<4.0	<2.0	<3.0	<2.0
	Silver (Ag) (mg/kg)	<2.0	<2.0	<2.0	<2.0	<2.0
	Thallium (Tl) (mg/kg)	<1.0	<1.0	<1.0	<1.0	<1.0
	Tin (Sn) (mg/kg)	<5.0	<5.0	<5.0	<5.0	<5.0
	Vanadium (V) (mg/kg)	36.3	30.2	33.6	30.3	26.3
	Zinc (Zn) (mg/kg)	70.0	55.5	45.6	46.3	39.1

ALS LABORATORY GROUP ANALYTICAL REPORT

Grouping	Analyte	L682842-181	L682842-185	L682842-189	L682842-193
	Description				
	Sampled Date	01-SEP-08	01-SEP-08	01-SEP-08	01-SEP-08
	Sampled Time	16:20	16:02	15:42	17:00
	Client ID	C3 EXT REF. SITE #2 SOIL	C3 EXT REF. SITE #3 SOIL	C3 EXT REF. SITE #4 SOIL	C3 EXT REF. SITE #5 SOIL
SOIL					
Physical Tests	pH (pH)	5.87	4.15	5.81	5.68
Metals	Antimony (Sb) (mg/kg)	<10	<10	<10	<10
	Arsenic (As) (mg/kg)	30.6	11.0	7.7	8.2
	Barium (Ba) (mg/kg)	37.6	33.7	37.4	38.2
	Beryllium (Be) (mg/kg)	<0.50	<0.50	<0.50	<0.50
	Cadmium (Cd) (mg/kg)	<0.50	<0.50	<0.50	<0.50
	Chromium (Cr) (mg/kg)	128	125	137	154
	Cobalt (Co) (mg/kg)	14.5	11.4	16.7	13.8
	Copper (Cu) (mg/kg)	24.7	70.3	18.3	13.9
	Lead (Pb) (mg/kg)	<30	<30	<30	<30
	Mercury (Hg) (mg/kg)	0.0139	0.0271	<0.0050	0.0130
	Molybdenum (Mo) (mg/kg)	<4.0	<4.0	<4.0	<4.0
	Nickel (Ni) (mg/kg)	70.1	60.8	92.0	77.8
	Selenium (Se) (mg/kg)	<2.0	<3.0	<2.0	<3.0
	Silver (Ag) (mg/kg)	<2.0	<2.0	<2.0	<2.0
	Thallium (Tl) (mg/kg)	<1.0	<1.0	<1.0	<1.0
	Tin (Sn) (mg/kg)	<5.0	<5.0	<5.0	<5.0
	Vanadium (V) (mg/kg)	32.0	33.9	27.0	33.5
	Zinc (Zn) (mg/kg)	55.0	92.7	39.9	48.5

ALS LABORATORY GROUP ANALYTICAL REPORT

Grouping	Analyte	L682842-2	L682842-3	L682842-4	L682842-6	L682842-7
	Description					
	Sampled Date	30-AUG-08	30-AUG-08	30-AUG-08	30-AUG-08	30-AUG-08
	Sampled Time	09:07	09:07	09:07	08:40	08:40
	Client ID	T5 FARFIELD SITE #1 LICHEN	T5 FARFIELD SITE #1 SEDGE	T5 FARFIELD SITE #1 BERRIES	T5 FARFIELD SITE #2 LICHEN	T5 FARFIELD SITE #2 SEDGE
TISSUE						
Physical Tests	% Moisture (%)	67.0	72.8	88.1	67.8	72.7
Metals	Aluminum (Al)-Total (mg/kg wwt)	530	26.8	4.6	153	28.4
	Antimony (Sb)-Total (mg/kg wwt)	<0.020	<0.020	<0.010	<0.020	<0.010
	Arsenic (As)-Total (mg/kg wwt)	0.235	<0.020	<0.010	0.086	0.023
	Barium (Ba)-Total (mg/kg wwt)	10.8	6.36	0.582	9.25	5.90
	Beryllium (Be)-Total (mg/kg wwt)	<0.20	<0.20	<0.10	<0.20	<0.10
	Bismuth (Bi)-Total (mg/kg wwt)	<0.060	<0.060	<0.030	<0.060	<0.030
	Cadmium (Cd)-Total (mg/kg wwt)	0.057	0.018	<0.0050	0.040	0.0117
	Calcium (Ca)-Total (mg/kg wwt)	1090	486	83.6	1020	468
	Chromium (Cr)-Total (mg/kg wwt)	6.05	0.40	0.29	1.86	0.48
	Cobalt (Co)-Total (mg/kg wwt)	0.421	<0.040	<0.020	0.173	0.034
	Copper (Cu)-Total (mg/kg wwt)	1.35	1.17	0.676	0.649	0.753
	Lead (Pb)-Total (mg/kg wwt)	1.22	0.111	<0.020	0.667	0.089
	Lithium (Li)-Total (mg/kg wwt)	0.42	<0.20	<0.10	<0.20	<0.10
	Magnesium (Mg)-Total (mg/kg wwt)	321	205	60.6	220	203
	Manganese (Mn)-Total (mg/kg wwt)	67.0	114	7.08	94.9	115
	Mercury (Hg)-Total (mg/kg wwt)	0.0576	0.0065	0.0078	0.0447	0.0042
	Molybdenum (Mo)-Total (mg/kg wwt)	0.107	0.410	0.040	0.043	0.320
	Nickel (Ni)-Total (mg/kg wwt)	3.41	0.69	0.34	1.13	0.54
	Selenium (Se)-Total (mg/kg wwt)	<0.40	<0.40	<0.20	<0.40	<0.20
	Strontium (Sr)-Total (mg/kg wwt)	3.27	2.00	0.141	2.62	1.94
	Thallium (Tl)-Total (mg/kg wwt)	<0.020	<0.020	<0.010	<0.020	<0.010
	Tin (Sn)-Total (mg/kg wwt)	<0.10	<0.10	0.075	<0.10	<0.050
	Uranium (U)-Total (mg/kg wwt)	0.131	0.0061	<0.0020	0.0438	0.0064
	Vanadium (V)-Total (mg/kg wwt)	0.86	<0.20	<0.10	0.30	<0.10
	Zinc (Zn)-Total (mg/kg wwt)	12.1	25.6	1.34	9.01	13.5

ALS LABORATORY GROUP ANALYTICAL REPORT

Grouping	Analyte	L682842-8	L682842-10	L682842-11	L682842-12	L682842-14
	Description					
	Sampled Date	30-AUG-08	30-AUG-08	30-AUG-08	30-AUG-08	30-AUG-08
	Sampled Time	08:40	09:30	09:30	09:30	10:18
	Client ID	T5 FARFIELD SITE #2 BERRIES	T5 FARFIELD SITE #3 LICHEN	T5 FARFIELD SITE #3 SEDGE	T5 FARFIELD SITE #3 BERRIES	T5 FARFIELD SITE #4 LICHEN
TISSUE						
Physical Tests	% Moisture (%)	86.5	65.5	74.1	86.8	66.6
Metals	Aluminum (Al)-Total (mg/kg wwt)	7.3	201	103	6.4	299
	Antimony (Sb)-Total (mg/kg wwt)	0.020	<0.020	<0.010	<0.010	<0.020
	Arsenic (As)-Total (mg/kg wwt)	<0.010	0.218	0.218	<0.010	0.147
	Barium (Ba)-Total (mg/kg wwt)	0.603	6.90	7.21	0.482	11.6
	Beryllium (Be)-Total (mg/kg wwt)	<0.10	<0.20	<0.10	<0.10	<0.20
	Bismuth (Bi)-Total (mg/kg wwt)	<0.030	<0.060	<0.030	<0.030	<0.060
	Cadmium (Cd)-Total (mg/kg wwt)	<0.0050	0.036	0.0226	<0.0050	0.073
	Calcium (Ca)-Total (mg/kg wwt)	94.5	975	685	98.1	1220
	Chromium (Cr)-Total (mg/kg wwt)	0.47	1.67	1.36	0.24	2.84
	Cobalt (Co)-Total (mg/kg wwt)	<0.020	0.159	0.160	<0.020	0.204
	Copper (Cu)-Total (mg/kg wwt)	0.669	0.642	1.48	0.567	1.11
	Lead (Pb)-Total (mg/kg wwt)	<0.020	0.882	0.294	<0.020	1.17
	Lithium (Li)-Total (mg/kg wwt)	<0.10	<0.20	0.10	<0.10	<0.20
	Magnesium (Mg)-Total (mg/kg wwt)	66.4	216	222	63.7	284
	Manganese (Mn)-Total (mg/kg wwt)	5.84	72.3	59.3	7.78	62.5
	Mercury (Hg)-Total (mg/kg wwt)	<0.0010	0.0487	0.0103	0.0011	0.0467
	Molybdenum (Mo)-Total (mg/kg wwt)	0.058	0.043	0.217	0.030	0.074
	Nickel (Ni)-Total (mg/kg wwt)	0.50	1.11	1.53	0.26	1.84
	Selenium (Se)-Total (mg/kg wwt)	<0.20	<0.40	<0.20	<0.20	<0.40
	Strontium (Sr)-Total (mg/kg wwt)	0.199	2.43	2.85	0.145	3.94
	Thallium (Tl)-Total (mg/kg wwt)	<0.010	<0.020	<0.010	<0.010	<0.020
	Tin (Sn)-Total (mg/kg wwt)	<0.050	<0.10	<0.050	<0.050	<0.10
	Uranium (U)-Total (mg/kg wwt)	<0.0020	0.0309	0.0384	<0.0020	0.0935
	Vanadium (V)-Total (mg/kg wwt)	<0.10	0.36	0.21	<0.10	0.55
	Zinc (Zn)-Total (mg/kg wwt)	5.03	7.53	25.7	7.73	14.9

ALS LABORATORY GROUP ANALYTICAL REPORT

Grouping	Analyte	L682842-15	L682842-16	L682842-18	L682842-19	L682842-20
	Description					
	Sampled Date	30-AUG-08	30-AUG-08	30-AUG-08	30-AUG-08	30-AUG-08
	Sampled Time	10:18	10:18	09:57	09:57	09:57
	Client ID	T5 FARFIELD SITE #4 SEDGE	T5 FARFIELD SITE #4 BERRIES	T5 FARFIELD SITE #5 LICHEN	T5 FARFIELD SITE #5 SEDGE	T5 FARFIELD SITE #5 BERRIES
TISSUE						
Physical Tests	% Moisture (%)	72.1	87.3	66.2	70.8	86.9
Metals	Aluminum (Al)-Total (mg/kg wwt)	1210	3.8	259	396	4.7
	Antimony (Sb)-Total (mg/kg wwt)	<0.010	<0.010	<0.020	<0.020	<0.010
	Arsenic (As)-Total (mg/kg wwt)	0.785	<0.010	0.214	1.38	<0.010
	Barium (Ba)-Total (mg/kg wwt)	14.2	0.679	9.19	9.81	0.743
	Beryllium (Be)-Total (mg/kg wwt)	<0.10	<0.10	<0.20	<0.20	<0.10
	Bismuth (Bi)-Total (mg/kg wwt)	0.062	<0.030	<0.060	<0.060	<0.030
	Cadmium (Cd)-Total (mg/kg wwt)	0.0297	<0.0050	0.046	0.033	<0.0050
	Calcium (Ca)-Total (mg/kg wwt)	954	131	1220	866	92.1
	Chromium (Cr)-Total (mg/kg wwt)	10.6	0.22	2.43	13.6	0.21
	Cobalt (Co)-Total (mg/kg wwt)	1.83	<0.020	0.271	1.03	<0.020
	Copper (Cu)-Total (mg/kg wwt)	4.32	0.624	0.725	2.39	0.823
	Lead (Pb)-Total (mg/kg wwt)	1.54	<0.020	0.930	0.888	<0.020
	Lithium (Li)-Total (mg/kg wwt)	1.57	<0.10	<0.20	0.69	<0.10
	Magnesium (Mg)-Total (mg/kg wwt)	743	65.9	264	543	63.7
	Manganese (Mn)-Total (mg/kg wwt)	46.7	7.17	76.1	91.4	6.34
	Mercury (Hg)-Total (mg/kg wwt)	0.0089	0.0010	0.0483	0.0104	<0.0010
	Molybdenum (Mo)-Total (mg/kg wwt)	0.396	0.028	0.041	0.331	0.206
	Nickel (Ni)-Total (mg/kg wwt)	9.81	0.30	1.48	7.71	0.29
	Selenium (Se)-Total (mg/kg wwt)	<0.20	<0.20	<0.40	<0.40	<0.20
	Strontium (Sr)-Total (mg/kg wwt)	5.49	0.183	3.56	3.29	0.259
	Thallium (Tl)-Total (mg/kg wwt)	0.025	<0.010	<0.020	<0.020	<0.010
	Tin (Sn)-Total (mg/kg wwt)	<0.050	0.053	<0.10	<0.10	0.053
	Uranium (U)-Total (mg/kg wwt)	0.777	<0.0020	0.0629	0.0856	<0.0020
	Vanadium (V)-Total (mg/kg wwt)	1.94	<0.10	0.47	0.92	<0.10
	Zinc (Zn)-Total (mg/kg wwt)	26.9	6.27	9.10	26.7	2.83

ALS LABORATORY GROUP ANALYTICAL REPORT

Grouping	Analyte	L682842-22	L682842-23	L682842-24	L682842-26	L682842-27
	Description					
	Sampled Date	30-AUG-08	30-AUG-08	30-AUG-08	30-AUG-08	30-AUG-08
	Sampled Time	12:22	12:22	12:22	12:57	12:57
	Client ID	T1 NEAR FIELD SITE #1 LICHEN	T1 NEAR FIELD SITE #1 SEDGE	T1 NEAR FIELD SITE #1 BERRIES	T1 NEAR FIELD SITE #2 LICHEN	T1 NEAR FIELD SITE #2 SEDGE
TISSUE						
Physical Tests	% Moisture (%)	68.4	72.6	87.2	58.0	68.1
Metals	Aluminum (Al)-Total (mg/kg wwt)	149	96.4	7.1	269	294
	Antimony (Sb)-Total (mg/kg wwt)	<0.020	<0.020	<0.010	<0.020	<0.020
	Arsenic (As)-Total (mg/kg wwt)	0.081	0.041	<0.010	0.201	0.136
	Barium (Ba)-Total (mg/kg wwt)	4.23	8.98	0.936	8.29	11.2
	Beryllium (Be)-Total (mg/kg wwt)	<0.20	<0.20	<0.10	<0.20	<0.20
	Bismuth (Bi)-Total (mg/kg wwt)	<0.060	<0.060	<0.030	<0.060	<0.060
	Cadmium (Cd)-Total (mg/kg wwt)	0.042	0.021	0.0086	0.033	0.020
	Calcium (Ca)-Total (mg/kg wwt)	812	858	231	856	1040
	Chromium (Cr)-Total (mg/kg wwt)	0.95	1.06	0.34	1.45	2.40
	Cobalt (Co)-Total (mg/kg wwt)	0.082	0.106	<0.020	0.433	0.167
	Copper (Cu)-Total (mg/kg wwt)	0.630	1.48	0.897	1.31	1.55
	Lead (Pb)-Total (mg/kg wwt)	0.373	0.148	<0.020	0.752	0.259
	Lithium (Li)-Total (mg/kg wwt)	<0.20	<0.20	<0.10	0.21	0.35
	Magnesium (Mg)-Total (mg/kg wwt)	257	376	82.0	236	420
	Manganese (Mn)-Total (mg/kg wwt)	36.6	93.5	11.2	61.6	119
	Mercury (Hg)-Total (mg/kg wwt)	0.0200	0.0086	0.0011	0.0405	0.0076
	Molybdenum (Mo)-Total (mg/kg wwt)	0.040	0.483	0.060	0.048	0.852
	Nickel (Ni)-Total (mg/kg wwt)	0.69	1.17	0.41	1.27	1.70
	Selenium (Se)-Total (mg/kg wwt)	<0.40	<0.40	<0.20	<0.40	<0.40
	Strontium (Sr)-Total (mg/kg wwt)	3.05	4.27	0.309	3.59	5.15
	Thallium (Tl)-Total (mg/kg wwt)	<0.020	<0.020	<0.010	<0.020	<0.020
	Tin (Sn)-Total (mg/kg wwt)	<0.10	<0.10	0.082	<0.10	<0.10
	Uranium (U)-Total (mg/kg wwt)	0.101	0.0949	<0.0020	0.0413	0.126
	Vanadium (V)-Total (mg/kg wwt)	0.25	<0.20	<0.10	0.41	0.49
	Zinc (Zn)-Total (mg/kg wwt)	12.8	19.1	15.3	6.70	24.0

ALS LABORATORY GROUP ANALYTICAL REPORT

	Sample ID	L682842-28	L682842-30	L682842-31	L682842-32	L682842-34
	Description					
	Sampled Date	30-AUG-08	30-AUG-08	30-AUG-08	30-AUG-08	30-AUG-08
	Sampled Time	12:57	13:21	13:21	13:21	13:40
	Client ID	T1 NEAR FIELD SITE #2 BERRIES	T1 NEAR FIELD SITE #3 LICHEN	T1 NEAR FIELD SITE #3 SEDGE	T1 NEAR FIELD SITE #3 BERRIES	T1 NEAR FIELD SITE #4 LICHEN
Grouping	**Analyte**					
TISSUE						
Physical Tests	% Moisture (%)	87.1	54.7	72.1	88.0	61.8
Metals	Aluminum (Al)-Total (mg/kg wwt)	4.9	252	75.8	5.0	110
	Antimony (Sb)-Total (mg/kg wwt)	<0.010	<0.020	<0.020	<0.010	<0.020
	Arsenic (As)-Total (mg/kg wwt)	<0.010	0.116	0.039	<0.010	0.092
	Barium (Ba)-Total (mg/kg wwt)	0.536	10.4	9.04	0.467	4.74
	Beryllium (Be)-Total (mg/kg wwt)	<0.10	<0.20	<0.20	<0.10	<0.20
	Bismuth (Bi)-Total (mg/kg wwt)	<0.030	<0.060	<0.060	<0.030	<0.060
	Cadmium (Cd)-Total (mg/kg wwt)	<0.0050	0.068	0.032	<0.0050	0.062
	Calcium (Ca)-Total (mg/kg wwt)	167	2090	969	92.8	1310
	Chromium (Cr)-Total (mg/kg wwt)	0.21	1.22	1.41	0.11	1.26
	Cobalt (Co)-Total (mg/kg wwt)	0.021	0.189	0.067	<0.020	0.080
	Copper (Cu)-Total (mg/kg wwt)	0.617	1.06	1.28	0.617	0.573
	Lead (Pb)-Total (mg/kg wwt)	<0.020	0.928	0.124	<0.020	0.273
	Lithium (Li)-Total (mg/kg wwt)	<0.10	<0.20	<0.20	<0.10	<0.20
	Magnesium (Mg)-Total (mg/kg wwt)	58.3	446	358	57.6	261
	Manganese (Mn)-Total (mg/kg wwt)	6.99	98.2	81.5	5.98	39.4
	Mercury (Hg)-Total (mg/kg wwt)	<0.0010	0.0666	0.0124	<0.0010	0.0338
	Molybdenum (Mo)-Total (mg/kg wwt)	0.025	0.042	0.410	0.018	0.065
	Nickel (Ni)-Total (mg/kg wwt)	0.29	1.01	1.24	0.17	0.79
	Selenium (Se)-Total (mg/kg wwt)	<0.20	<0.40	<0.40	<0.20	<0.40
	Strontium (Sr)-Total (mg/kg wwt)	0.213	6.51	4.81	0.168	4.38
	Thallium (Tl)-Total (mg/kg wwt)	<0.010	<0.020	<0.020	<0.010	<0.020
	Tin (Sn)-Total (mg/kg wwt)	0.059	<0.10	<0.10	<0.050	<0.10
	Uranium (U)-Total (mg/kg wwt)	<0.0020	0.141	0.0514	<0.0020	0.0552
	Vanadium (V)-Total (mg/kg wwt)	<0.10	0.41	<0.20	<0.10	0.22
	Zinc (Zn)-Total (mg/kg wwt)	16.2	14.0	13.7	3.47	8.56

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	Sample ID	L682842-35	L682842-36	L682842-38	L682842-39	L682842-40
	Description					
	Sampled Date	30-AUG-08	30-AUG-08	30-AUG-08	30-AUG-08	30-AUG-08
	Sampled Time	13:40	13:40	14:11	14:11	14:11
	Client ID	T1 NEAR FIELD SITE #4 SEDGE	T1 NEAR FIELD SITE #4 BERRIES	T1 NEAR FIELD SITE #5 LICHEN	T1 NEAR FIELD SITE #5 SEDGE	T1 NEAR FIELD SITE #5 BERRIES
Grouping	**Analyte**					
TISSUE						
Physical Tests	% Moisture (%)	70.2	86.2	57.1	74.3	87.7
Metals	Aluminum (Al)-Total (mg/kg wwt)	102	6.7	567	64.9	10.1
	Antimony (Sb)-Total (mg/kg wwt)	<0.020	<0.010	<0.020	<0.010	<0.010
	Arsenic (As)-Total (mg/kg wwt)	0.061	<0.010	2.07	0.033	<0.010
	Barium (Ba)-Total (mg/kg wwt)	9.86	0.654	9.57	8.41	0.739
	Beryllium (Be)-Total (mg/kg wwt)	<0.20	<0.10	<0.20	<0.10	<0.10
	Bismuth (Bi)-Total (mg/kg wwt)	<0.060	<0.030	<0.060	<0.030	<0.030
	Cadmium (Cd)-Total (mg/kg wwt)	0.047	<0.0050	0.053	0.0172	<0.0050
	Calcium (Ca)-Total (mg/kg wwt)	1480	185	998	648	131
	Chromium (Cr)-Total (mg/kg wwt)	1.31	0.18	2.52	1.32	0.61
	Cobalt (Co)-Total (mg/kg wwt)	0.140	<0.020	0.367	0.101	<0.020
	Copper (Cu)-Total (mg/kg wwt)	1.48	0.782	1.58	1.48	0.651
	Lead (Pb)-Total (mg/kg wwt)	0.201	<0.020	1.50	0.112	<0.020
	Lithium (Li)-Total (mg/kg wwt)	<0.20	<0.10	0.25	<0.10	<0.10
	Magnesium (Mg)-Total (mg/kg wwt)	431	63.3	424	294	63.9
	Manganese (Mn)-Total (mg/kg wwt)	75.7	8.44	78.0	93.3	6.69
	Mercury (Hg)-Total (mg/kg wwt)	0.0150	<0.0010	0.0990	0.0068	<0.0010
	Molybdenum (Mo)-Total (mg/kg wwt)	0.220	0.031	0.072	0.424	0.066
	Nickel (Ni)-Total (mg/kg wwt)	1.18	0.21	1.62	1.41	0.48
	Selenium (Se)-Total (mg/kg wwt)	<0.40	<0.20	<0.40	<0.20	<0.20
	Strontium (Sr)-Total (mg/kg wwt)	6.38	0.277	3.67	3.34	0.382
	Thallium (Tl)-Total (mg/kg wwt)	<0.020	<0.010	<0.020	<0.010	<0.010
	Tin (Sn)-Total (mg/kg wwt)	<0.10	<0.050	<0.10	<0.050	<0.050
	Uranium (U)-Total (mg/kg wwt)	0.0724	0.0021	0.0978	0.0319	0.0022
	Vanadium (V)-Total (mg/kg wwt)	0.21	<0.10	0.68	0.12	<0.10
	Zinc (Zn)-Total (mg/kg wwt)	32.9	18.9	17.8	6.66	13.4

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	Sample ID	L682842-42	L682842-43	L682842-44	L682842-46	L682842-47
	Description					
	Sampled Date	30-AUG-08	30-AUG-08	30-AUG-08	30-AUG-08	30-AUG-08
	Sampled Time	15:50	15:50	15:50	16:30	16:30
	Client ID	T6 MINE SITE #1 LICHEN	T6 MINE SITE #1 SEDGE	T6 MINE SITE #1 BERRIES	T6 MINE SITE #2 LICHEN	T6 MINE SITE #2 SEDGE
Grouping	**Analyte**					
TISSUE						
Physical Tests	% Moisture (%)	59.0	74.0	85.2	51.1	67.8
Metals	Aluminum (Al)-Total (mg/kg wwt)	1890	593	72.6	2380	1200
	Antimony (Sb)-Total (mg/kg wwt)	<0.020	<0.020	<0.010	<0.020	<0.010
	Arsenic (As)-Total (mg/kg wwt)	0.383	0.132	0.015	0.527	0.260
	Barium (Ba)-Total (mg/kg wwt)	20.4	14.0	1.32	29.3	19.5
	Beryllium (Be)-Total (mg/kg wwt)	<0.20	<0.20	<0.10	<0.20	<0.10
	Bismuth (Bi)-Total (mg/kg wwt)	<0.060	<0.060	<0.030	<0.060	<0.030
	Cadmium (Cd)-Total (mg/kg wwt)	0.052	0.036	<0.0050	0.107	0.0261
	Calcium (Ca)-Total (mg/kg wwt)	3570	1560	180	6800	2600
	Chromium (Cr)-Total (mg/kg wwt)	20.1	9.18	1.35	20.8	32.0
	Cobalt (Co)-Total (mg/kg wwt)	1.40	0.566	0.064	1.97	1.09
	Copper (Cu)-Total (mg/kg wwt)	3.38	2.17	0.935	4.52	3.08
	Lead (Pb)-Total (mg/kg wwt)	0.913	0.305	0.034	1.55	0.545
	Lithium (Li)-Total (mg/kg wwt)	1.71	0.62	0.16	2.40	1.22
	Magnesium (Mg)-Total (mg/kg wwt)	1590	724	125	2340	1080
	Manganese (Mn)-Total (mg/kg wwt)	123	114	15.5	144	102
	Mercury (Hg)-Total (mg/kg wwt)	0.0226	0.0070	<0.0010	0.0428	0.0085
	Molybdenum (Mo)-Total (mg/kg wwt)	0.319	0.435	0.150	0.370	0.776
	Nickel (Ni)-Total (mg/kg wwt)	10.4	5.68	1.03	13.9	15.7
	Selenium (Se)-Total (mg/kg wwt)	<0.40	<0.40	<0.20	<0.40	<0.20
	Strontium (Sr)-Total (mg/kg wwt)	21.2	8.92	0.751	34.5	15.6
	Thallium (Tl)-Total (mg/kg wwt)	<0.020	<0.020	<0.010	<0.020	0.010
	Tin (Sn)-Total (mg/kg wwt)	<0.10	<0.10	0.061	<0.10	<0.050
	Uranium (U)-Total (mg/kg wwt)	0.185	0.0838	0.0081	0.187	0.175
	Vanadium (V)-Total (mg/kg wwt)	4.04	1.45	0.17	5.57	2.76
	Zinc (Zn)-Total (mg/kg wwt)	20.7	27.7	3.57	20.5	9.26

ALS LABORATORY GROUP ANALYTICAL REPORT

Grouping	Analyte	L682842-48	L682842-50	L682842-51	L682842-52	L682842-54
	Description					
	Sampled Date	30-AUG-08	30-AUG-08	30-AUG-08	30-AUG-08	30-AUG-08
	Sampled Time	16:30	17:00	17:00	17:00	15:22
	Client ID	T6 MINE SITE #2 BERRIES	T6 MINE SITE #3 LICHEN	T6 MINE SITE # 3 SEDGE	T6 MINE SITE # 3 BERRIES	T6 MINE SITE #4 LICHEN
TISSUE						
Physical Tests	% Moisture (%)	86.0	44.9	41.2	84.5	54.0
Metals	Aluminum (Al)-Total (mg/kg wwt)	83.6	2690	3490	1550	875
	Antimony (Sb)-Total (mg/kg wwt)	<0.010	<0.020	<0.030	<0.020	<0.020
	Arsenic (As)-Total (mg/kg wwt)	0.021	0.632	0.903	1.13	0.267
	Barium (Ba)-Total (mg/kg wwt)	1.67	24.4	40.5	28.7	15.6
	Beryllium (Be)-Total (mg/kg wwt)	<0.10	<0.20	<0.30	<0.20	<0.20
	Bismuth (Bi)-Total (mg/kg wwt)	<0.030	0.113	<0.090	<0.060	<0.060
	Cadmium (Cd)-Total (mg/kg wwt)	<0.0050	0.065	0.214	0.038	0.067
	Calcium (Ca)-Total (mg/kg wwt)	221	3950	4690	1140	2090
	Chromium (Cr)-Total (mg/kg wwt)	2.81	44.2	138	3.25	8.17
	Cobalt (Co)-Total (mg/kg wwt)	0.093	2.35	3.68	0.834	0.662
	Copper (Cu)-Total (mg/kg wwt)	0.965	4.33	8.53	2.82	1.77
	Lead (Pb)-Total (mg/kg wwt)	0.039	2.41	2.00	1.90	1.94
	Lithium (Li)-Total (mg/kg wwt)	0.14	3.23	3.93	1.01	0.71
	Magnesium (Mg)-Total (mg/kg wwt)	134	2090	2750	524	737
	Manganese (Mn)-Total (mg/kg wwt)	17.3	151	282	267	61.2
	Mercury (Hg)-Total (mg/kg wwt)	0.0012	0.0508	0.0155	<0.0010	0.0919
	Molybdenum (Mo)-Total (mg/kg wwt)	0.279	0.568	2.92	0.139	0.135
	Nickel (Ni)-Total (mg/kg wwt)	1.98	17.8	49.2	1.72	4.83
	Selenium (Se)-Total (mg/kg wwt)	<0.20	<0.40	<0.60	<0.40	<0.40
	Strontium (Sr)-Total (mg/kg wwt)	0.894	18.8	26.6	5.77	10.3
	Thallium (Tl)-Total (mg/kg wwt)	<0.010	0.030	<0.030	<0.020	<0.020
	Tin (Sn)-Total (mg/kg wwt)	<0.050	<0.10	<0.15	<0.10	<0.10
	Uranium (U)-Total (mg/kg wwt)	0.0098	0.303	0.415	0.0602	0.114
	Vanadium (V)-Total (mg/kg wwt)	0.19	6.37	8.81	4.21	1.75
	Zinc (Zn)-Total (mg/kg wwt)	4.39	18.9	36.7	15.1	11.9

ALS LABORATORY GROUP ANALYTICAL REPORT

Grouping	Analyte	L682842-55	L682842-56	L682842-58	L682842-59	L682842-60
	Description					
	Sampled Date	30-AUG-08	30-AUG-08	31-AUG-08	31-AUG-08	31-AUG-08
	Sampled Time	15:22	15:22	09:36	09:36	09:36
	Client ID	T6 MINE SITE #4 SEDGE	T6 MINE SITE #4 BERRIES	T4 FAR FIELD SITE #1 LICHEN	T4 FAR FIELD SITE #1 SEDGE	T4 FAR FIELD SITE #1 BERRIES
TISSUE						
Physical Tests	% Moisture (%)	54.8	87.3	51.6	75.5	86.4
Metals	Aluminum (Al)-Total (mg/kg wwt)	503	23.3	82.2	39.8	4.6
	Antimony (Sb)-Total (mg/kg wwt)	<0.020	<0.010	<0.020	<0.010	<0.010
	Arsenic (As)-Total (mg/kg wwt)	0.160	<0.010	0.061	0.016	<0.010
	Barium (Ba)-Total (mg/kg wwt)	19.8	0.868	7.54	11.5	0.543
	Beryllium (Be)-Total (mg/kg wwt)	<0.20	<0.10	<0.20	<0.10	<0.10
	Bismuth (Bi)-Total (mg/kg wwt)	<0.060	<0.030	<0.060	<0.030	<0.030
	Cadmium (Cd)-Total (mg/kg wwt)	0.036	<0.0050	0.036	0.0135	<0.0050
	Calcium (Ca)-Total (mg/kg wwt)	2430	107	997	715	102
	Chromium (Cr)-Total (mg/kg wwt)	10.8	1.00	0.80	0.52	0.71
	Cobalt (Co)-Total (mg/kg wwt)	0.487	0.028	0.060	0.049	<0.020
	Copper (Cu)-Total (mg/kg wwt)	2.08	0.646	0.878	0.925	0.838
	Lead (Pb)-Total (mg/kg wwt)	0.571	<0.020	0.445	0.076	<0.020
	Lithium (Li)-Total (mg/kg wwt)	0.47	<0.10	<0.20	<0.10	<0.10
	Magnesium (Mg)-Total (mg/kg wwt)	706	72.8	211	268	60.0
	Manganese (Mn)-Total (mg/kg wwt)	99.3	7.59	145	113	11.9
	Mercury (Hg)-Total (mg/kg wwt)	0.0125	<0.0010	0.0322	0.0036	<0.0010
	Molybdenum (Mo)-Total (mg/kg wwt)	0.927	0.117	0.070	0.955	0.105
	Nickel (Ni)-Total (mg/kg wwt)	5.98	0.79	0.54	0.91	0.60
	Selenium (Se)-Total (mg/kg wwt)	<0.40	<0.20	<0.40	<0.20	<0.20
	Strontium (Sr)-Total (mg/kg wwt)	12.6	0.374	2.70	3.56	0.143
	Thallium (Tl)-Total (mg/kg wwt)	<0.020	<0.010	<0.020	<0.010	<0.010
	Tin (Sn)-Total (mg/kg wwt)	<0.10	<0.050	<0.10	<0.050	<0.050
	Uranium (U)-Total (mg/kg wwt)	0.0693	0.0024	0.0510	0.0238	<0.0020
	Vanadium (V)-Total (mg/kg wwt)	1.21	<0.10	<0.20	<0.10	<0.10
	Zinc (Zn)-Total (mg/kg wwt)	33.8	1.11	23.0	13.4	5.17

ALS LABORATORY GROUP ANALYTICAL REPORT

Grouping	Analyte	L682842-62	L682842-63	L682842-64	L682842-66	L682842-67
	Description					
	Sampled Date	31-AUG-08	31-AUG-08	31-AUG-08	31-AUG-08	31-AUG-08
	Sampled Time	08:45	08:45	08:45	10:22	10:22
	Client ID	T4 FAR FIELD SITE #2 LICHEN	T4 FAR FIELD SITE #2 SEDGE	T4 FAR FIELD SITE #2 BERRIES	T4 FAR FIELD SITE #3 LICHEN	T4 FAR FIELD SITE #3 SEDGE
TISSUE						
Physical Tests	% Moisture (%)	43.6	73.7	86.7	47.1	65.6
Metals	Aluminum (Al)-Total (mg/kg wwt)	240	390	5.0	271	66.9
	Antimony (Sb)-Total (mg/kg wwt)	<0.030	<0.020	<0.010	<0.030	<0.020
	Arsenic (As)-Total (mg/kg wwt)	0.094	0.107	<0.010	0.103	0.026
	Barium (Ba)-Total (mg/kg wwt)	11.3	12.2	0.896	8.12	11.5
	Beryllium (Be)-Total (mg/kg wwt)	<0.30	<0.20	<0.10	<0.30	<0.20
	Bismuth (Bi)-Total (mg/kg wwt)	<0.090	<0.060	<0.030	<0.090	<0.060
	Cadmium (Cd)-Total (mg/kg wwt)	0.066	0.027	<0.0050	0.054	0.015
	Calcium (Ca)-Total (mg/kg wwt)	910	832	200	1410	522
	Chromium (Cr)-Total (mg/kg wwt)	1.98	2.05	0.41	5.87	0.86
	Cobalt (Co)-Total (mg/kg wwt)	0.131	0.283	<0.020	0.222	0.075
	Copper (Cu)-Total (mg/kg wwt)	0.887	1.34	0.734	0.809	1.31
	Lead (Pb)-Total (mg/kg wwt)	0.935	0.346	<0.020	1.46	0.120
	Lithium (Li)-Total (mg/kg wwt)	<0.30	0.47	<0.10	0.33	<0.20
	Magnesium (Mg)-Total (mg/kg wwt)	220	365	63.5	278	287
	Manganese (Mn)-Total (mg/kg wwt)	43.9	72.0	13.0	61.6	98.5
	Mercury (Hg)-Total (mg/kg wwt)	0.0448	0.0069	0.0011	0.0814	0.0043
	Molybdenum (Mo)-Total (mg/kg wwt)	0.089	0.666	0.060	0.114	1.48
	Nickel (Ni)-Total (mg/kg wwt)	0.86	1.67	0.35	2.89	0.87
	Selenium (Se)-Total (mg/kg wwt)	<0.60	<0.40	<0.20	<0.60	<0.40
	Strontium (Sr)-Total (mg/kg wwt)	3.24	4.02	0.225	6.55	3.57
	Thallium (Tl)-Total (mg/kg wwt)	<0.030	<0.020	<0.010	<0.030	<0.020
	Tin (Sn)-Total (mg/kg wwt)	<0.15	<0.10	<0.050	<0.15	<0.10
	Uranium (U)-Total (mg/kg wwt)	0.0719	0.313	<0.0020	0.0900	0.0234
	Vanadium (V)-Total (mg/kg wwt)	0.40	0.50	<0.10	0.54	<0.20
	Zinc (Zn)-Total (mg/kg wwt)	15.8	24.4	19.2	11.4	11.9

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Grouping	Analyte	L682842-68	L682842-70	L682842-71	L682842-72	L682842-74
	Description					
	Sampled Date	31-AUG-08	31-AUG-08	31-AUG-08	31-AUG-08	31-AUG-08
	Sampled Time	10:22	09:12	09:12	09:12	10:00
	Client ID	T4 FAR FIELD SITE #3 BERRIES	T4 FAR FIELD SITE #4 LICHEN	T4 FAR FIELD SITE #4 SEDGE	T4 FAR FIELD SITE #4 BERRIES	T4 FAR FIELD SITE #5 LICHEN
TISSUE						
Physical Tests	% Moisture (%)	88.3	51.2	59.6	87.2	58.6
Metals	Aluminum (Al)-Total (mg/kg wwt)	5.2	193	34.7	6.2	293
	Antimony (Sb)-Total (mg/kg wwt)	<0.010	<0.030	<0.020	<0.010	<0.020
	Arsenic (As)-Total (mg/kg wwt)	<0.010	0.098	<0.020	<0.010	0.129
	Barium (Ba)-Total (mg/kg wwt)	0.543	8.29	13.1	0.628	9.36
	Beryllium (Be)-Total (mg/kg wwt)	<0.10	<0.30	<0.20	<0.10	<0.20
	Bismuth (Bi)-Total (mg/kg wwt)	<0.030	<0.090	<0.060	<0.030	0.162
	Cadmium (Cd)-Total (mg/kg wwt)	<0.0050	0.036	0.016	<0.0050	0.054
	Calcium (Ca)-Total (mg/kg wwt)	76.3	728	802	102	693
	Chromium (Cr)-Total (mg/kg wwt)	0.70	2.16	0.63	0.46	2.24
	Cobalt (Co)-Total (mg/kg wwt)	<0.020	0.100	0.052	<0.020	0.198
	Copper (Cu)-Total (mg/kg wwt)	0.726	0.677	1.47	0.759	0.784
	Lead (Pb)-Total (mg/kg wwt)	<0.020	0.897	0.109	<0.020	1.61
	Lithium (Li)-Total (mg/kg wwt)	<0.10	<0.30	<0.20	<0.10	0.30
	Magnesium (Mg)-Total (mg/kg wwt)	54.1	158	311	59.4	227
	Manganese (Mn)-Total (mg/kg wwt)	8.04	59.9	152	6.87	51.6
	Mercury (Hg)-Total (mg/kg wwt)	<0.0010	0.0441	0.0054	<0.0010	0.0817
	Molybdenum (Mo)-Total (mg/kg wwt)	0.073	0.052	0.747	0.059	0.056
	Nickel (Ni)-Total (mg/kg wwt)	0.51	1.12	0.84	0.39	1.15
	Selenium (Se)-Total (mg/kg wwt)	<0.20	<0.60	<0.40	<0.20	<0.40
	Strontium (Sr)-Total (mg/kg wwt)	0.132	2.09	4.06	0.186	2.58
	Thallium (Tl)-Total (mg/kg wwt)	<0.010	<0.030	<0.020	<0.010	<0.020
	Tin (Sn)-Total (mg/kg wwt)	0.054	<0.15	<0.10	<0.050	<0.10
	Uranium (U)-Total (mg/kg wwt)	<0.0020	0.0327	0.0075	<0.0020	0.0680
	Vanadium (V)-Total (mg/kg wwt)	<0.10	0.38	<0.20	<0.10	0.56
	Zinc (Zn)-Total (mg/kg wwt)	1.74	16.8	22.3	6.61	7.15

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Grouping	Analyte	L682842-75	L682842-76	L682842-78	L682842-79	L682842-80
	Description					
	Sampled Date	31-AUG-08	31-AUG-08	31-AUG-08	31-AUG-08	31-AUG-08
	Sampled Time	10:00	10:00	11:50	11:50	11:50
	Client ID	T4 FAR FIELD SITE #5 SEDGE	T4 FAR FIELD SITE #5 BERRIES	T3 NEAR FIELD SITE #1 LICHEN	T3 NEAR FIELD SITE #1 SEDGE	T3 NEAR FIELD SITE #1 BERRIES
TISSUE						
Physical Tests	% Moisture (%)	73.9	86.7	51.2	66.7	86.9
Metals	Aluminum (Al)-Total (mg/kg wwt)	131	3.9	761	86.2	6.4
	Antimony (Sb)-Total (mg/kg wwt)	<0.010	<0.010	<0.020	<0.020	<0.010
	Arsenic (As)-Total (mg/kg wwt)	0.029	<0.010	0.284	0.032	<0.010
	Barium (Ba)-Total (mg/kg wwt)	9.07	0.852	17.1	9.68	0.451
	Beryllium (Be)-Total (mg/kg wwt)	<0.10	<0.10	<0.20	<0.20	<0.10
	Bismuth (Bi)-Total (mg/kg wwt)	<0.030	<0.030	<0.060	<0.060	<0.030
	Cadmium (Cd)-Total (mg/kg wwt)	0.0305	<0.0050	0.103	0.016	<0.0050
	Calcium (Ca)-Total (mg/kg wwt)	805	100	1700	778	89.5
	Chromium (Cr)-Total (mg/kg wwt)	1.87	0.23	8.01	1.00	1.13
	Cobalt (Co)-Total (mg/kg wwt)	0.130	<0.020	0.470	0.196	<0.020
	Copper (Cu)-Total (mg/kg wwt)	1.03	0.734	1.44	1.45	0.784
	Lead (Pb)-Total (mg/kg wwt)	0.134	<0.020	2.06	0.212	<0.020
	Lithium (Li)-Total (mg/kg wwt)	0.16	<0.10	0.69	<0.20	<0.10
	Magnesium (Mg)-Total (mg/kg wwt)	295	68.1	477	351	67.3
	Manganese (Mn)-Total (mg/kg wwt)	97.6	4.98	71.7	100	7.64
	Mercury (Hg)-Total (mg/kg wwt)	0.0049	<0.0010	0.137	0.0070	<0.0010
	Molybdenum (Mo)-Total (mg/kg wwt)	1.32	0.035	0.192	0.466	0.158
	Nickel (Ni)-Total (mg/kg wwt)	1.56	0.22	3.96	0.94	0.91
	Selenium (Se)-Total (mg/kg wwt)	<0.20	<0.20	<0.40	<0.40	<0.20
	Strontium (Sr)-Total (mg/kg wwt)	3.61	0.400	6.53	4.03	0.137
	Thallium (Tl)-Total (mg/kg wwt)	<0.010	<0.010	<0.020	<0.020	<0.010
	Tin (Sn)-Total (mg/kg wwt)	<0.050	<0.050	<0.10	<0.10	0.051
	Uranium (U)-Total (mg/kg wwt)	0.0738	<0.0020	0.241	0.0419	0.0038
	Vanadium (V)-Total (mg/kg wwt)	0.20	<0.10	1.23	<0.20	<0.10
	Zinc (Zn)-Total (mg/kg wwt)	20.8	1.87	23.4	12.8	1.57

ALS LABORATORY GROUP ANALYTICAL REPORT

Grouping	Analyte	L682842-82	L682842-83	L682842-84	L682842-86	L682842-87
	Description					
	Sampled Date	31-AUG-08	31-AUG-08	31-AUG-08	31-AUG-08	31-AUG-08
	Sampled Time	12:05	12:05	12:05	13:11	13:11
	Client ID	T3 NEAR FIELD SITE #2 LICHEN	T3 NEAR FIELD SITE #2 SEDGE	T3 NEAR FIELD SITE #2 BERRIES	T3 NEAR FIELD SITE #3 LICHEN	T3 NEAR FIELD SITE #3 SEDGE
TISSUE						
Physical Tests	% Moisture (%)	53.3	70.7	86.7	49.4	66.4
Metals	Aluminum (Al)-Total (mg/kg wwt)	475	94.7	4.9	345	63.1
	Antimony (Sb)-Total (mg/kg wwt)	<0.020	<0.020	<0.010	<0.020	<0.020
	Arsenic (As)-Total (mg/kg wwt)	0.181	0.033	<0.010	0.130	0.027
	Barium (Ba)-Total (mg/kg wwt)	7.05	8.25	0.622	11.0	12.2
	Beryllium (Be)-Total (mg/kg wwt)	<0.20	<0.20	<0.10	<0.20	<0.20
	Bismuth (Bi)-Total (mg/kg wwt)	<0.060	<0.060	<0.030	<0.060	<0.060
	Cadmium (Cd)-Total (mg/kg wwt)	0.070	0.027	<0.0050	0.085	0.020
	Calcium (Ca)-Total (mg/kg wwt)	954	658	101	1300	953
	Chromium (Cr)-Total (mg/kg wwt)	2.57	0.83	0.23	4.01	0.92
	Cobalt (Co)-Total (mg/kg wwt)	0.370	0.110	<0.020	0.460	0.070
	Copper (Cu)-Total (mg/kg wwt)	1.31	1.28	0.828	1.09	1.60
	Lead (Pb)-Total (mg/kg wwt)	1.62	0.176	<0.020	1.52	0.115
	Lithium (Li)-Total (mg/kg wwt)	0.37	<0.20	<0.10	0.24	<0.20
	Magnesium (Mg)-Total (mg/kg wwt)	384	297	64.6	386	337
	Manganese (Mn)-Total (mg/kg wwt)	39.8	79.8	7.10	103	107
	Mercury (Hg)-Total (mg/kg wwt)	0.0984	0.0077	<0.0010	0.0496	0.0097
	Molybdenum (Mo)-Total (mg/kg wwt)	0.071	0.910	0.052	0.079	0.737
	Nickel (Ni)-Total (mg/kg wwt)	1.67	0.83	0.24	2.03	0.66
	Selenium (Se)-Total (mg/kg wwt)	<0.40	<0.40	<0.20	<0.40	<0.40
	Strontium (Sr)-Total (mg/kg wwt)	3.78	3.48	0.144	5.29	4.63
	Thallium (Tl)-Total (mg/kg wwt)	<0.020	<0.020	<0.010	<0.020	<0.020
	Tin (Sn)-Total (mg/kg wwt)	<0.10	<0.10	<0.050	<0.10	<0.10
	Uranium (U)-Total (mg/kg wwt)	0.160	0.0233	<0.0020	0.0606	0.0124
	Vanadium (V)-Total (mg/kg wwt)	0.85	<0.20	<0.10	0.64	<0.20
	Zinc (Zn)-Total (mg/kg wwt)	60.3	15.0	1.21	17.9	17.9

ALS LABORATORY GROUP ANALYTICAL REPORT

Grouping	Analyte	L682842-88	L682842-90	L682842-91	L682842-92	L682842-94
	Sample ID	L682842-88	L682842-90	L682842-91	L682842-92	L682842-94
	Description					
	Sampled Date	31-AUG-08	31-AUG-08	31-AUG-08	31-AUG-08	31-AUG-08
	Sampled Time	13:11	12:26	12:26	12:26	12:46
	Client ID	T3 NEAR FIELD SITE #3 BERRIES	T3 NEAR FIELD SITE #4 LICHEN	T3 NEAR FIELD SITE #4 SEDGE	T3 NEAR FIELD SITE #4 BERRIES	T3 NEAR FIELD SITE #5 LICHEN
TISSUE						
Physical Tests	% Moisture (%)	86.0	54.8	72.5	88.0	37.5
Metals	Aluminum (Al)-Total (mg/kg wwt)	6.4	496	78.9	4.7	1090
	Antimony (Sb)-Total (mg/kg wwt)	<0.010	0.011	<0.010	<0.010	0.017
	Arsenic (As)-Total (mg/kg wwt)	<0.010	0.206	0.027	<0.010	0.354
	Barium (Ba)-Total (mg/kg wwt)	0.841	16.0	10.7	0.482	24.3
	Beryllium (Be)-Total (mg/kg wwt)	<0.10	<0.10	<0.10	<0.10	<0.10
	Bismuth (Bi)-Total (mg/kg wwt)	<0.030	<0.030	<0.030	<0.030	0.096
	Cadmium (Cd)-Total (mg/kg wwt)	<0.0050	0.0977	0.0163	<0.0050	0.186
	Calcium (Ca)-Total (mg/kg wwt)	128	2040	524	86.1	2910
	Chromium (Cr)-Total (mg/kg wwt)	0.40	3.92	0.58	0.49	7.57
	Cobalt (Co)-Total (mg/kg wwt)	<0.020	0.334	0.149	<0.020	0.573
	Copper (Cu)-Total (mg/kg wwt)	0.760	1.07	1.19	0.695	2.52
	Lead (Pb)-Total (mg/kg wwt)	<0.020	1.52	0.113	<0.020	1.94
	Lithium (Li)-Total (mg/kg wwt)	<0.10	0.42	<0.10	<0.10	1.03
	Magnesium (Mg)-Total (mg/kg wwt)	70.0	497	382	62.6	768
	Manganese (Mn)-Total (mg/kg wwt)	8.04	129	96.5	9.64	142
	Mercury (Hg)-Total (mg/kg wwt)	<0.0010	0.0793	0.0054	<0.0010	0.162
	Molybdenum (Mo)-Total (mg/kg wwt)	0.055	0.136	0.229	0.043	0.256
	Nickel (Ni)-Total (mg/kg wwt)	0.39	2.33	0.67	0.38	4.45
	Selenium (Se)-Total (mg/kg wwt)	<0.20	<0.20	<0.20	<0.20	0.31
	Strontium (Sr)-Total (mg/kg wwt)	0.264	6.18	2.84	0.164	10.4
	Thallium (Tl)-Total (mg/kg wwt)	<0.010	0.013	<0.010	<0.010	0.018
	Tin (Sn)-Total (mg/kg wwt)	0.063	<0.050	<0.050	<0.050	0.071
	Uranium (U)-Total (mg/kg wwt)	<0.0020	0.208	0.0432	<0.0020	0.472
	Vanadium (V)-Total (mg/kg wwt)	<0.10	0.75	0.10	<0.10	1.56
	Zinc (Zn)-Total (mg/kg wwt)	2.86	65.7	10.5	0.85	27.8

ALS LABORATORY GROUP ANALYTICAL REPORT

Grouping	Analyte	L682842-95	L682842-96	L682842-98	L682842-99	L682842-100
	Description					
	Sampled Date	31-AUG-08	31-AUG-08	31-AUG-08	31-AUG-08	31-AUG-08
	Sampled Time	12:46	12:46	14:41	14:41	14:41
	Client ID	T3 NEAR FIELD SITE #5 SEDGE	T3 NEAR FIELD SITE #5 BERRIES	T2 FAR FIELD SITE #1 LICHEN	T2 FAR FIELD SITE #1 SEDGE	T2 FAR FIELD SITE #1 BERRIES
TISSUE						
Physical Tests	% Moisture (%)	75.1	87.8	46.9	68.0	86.0
Metals	Aluminum (Al)-Total (mg/kg wwt)	107	3.5	161	110	6.5
	Antimony (Sb)-Total (mg/kg wwt)	<0.020	<0.010	<0.010	<0.010	<0.010
	Arsenic (As)-Total (mg/kg wwt)	0.044	<0.010	0.070	0.030	<0.010
	Barium (Ba)-Total (mg/kg wwt)	7.00	0.401	7.95	17.9	0.661
	Beryllium (Be)-Total (mg/kg wwt)	<0.20	<0.10	<0.10	<0.10	<0.10
	Bismuth (Bi)-Total (mg/kg wwt)	<0.060	<0.030	<0.030	<0.030	<0.030
	Cadmium (Cd)-Total (mg/kg wwt)	0.014	<0.0050	0.0287	0.0228	<0.0050
	Calcium (Ca)-Total (mg/kg wwt)	777	98.8	591	995	93.8
	Chromium (Cr)-Total (mg/kg wwt)	1.11	0.11	2.05	0.68	0.12
	Cobalt (Co)-Total (mg/kg wwt)	0.130	<0.020	0.093	0.135	<0.020
	Copper (Cu)-Total (mg/kg wwt)	1.56	0.778	0.515	1.42	0.677
	Lead (Pb)-Total (mg/kg wwt)	0.145	<0.020	0.796	0.686	<0.020
	Lithium (Li)-Total (mg/kg wwt)	<0.20	<0.10	0.11	<0.10	<0.10
	Magnesium (Mg)-Total (mg/kg wwt)	271	59.4	133	323	59.6
	Manganese (Mn)-Total (mg/kg wwt)	67.3	7.10	64.6	122	6.56
	Mercury (Hg)-Total (mg/kg wwt)	0.0048	<0.0010	0.0306	0.0085	<0.0010
	Molybdenum (Mo)-Total (mg/kg wwt)	0.281	0.014	0.047	0.739	0.019
	Nickel (Ni)-Total (mg/kg wwt)	0.85	0.12	1.04	0.98	0.13
	Selenium (Se)-Total (mg/kg wwt)	<0.40	<0.20	<0.20	<0.20	<0.20
	Strontium (Sr)-Total (mg/kg wwt)	4.28	0.129	2.09	5.61	0.231
	Thallium (Tl)-Total (mg/kg wwt)	<0.020	<0.010	<0.010	<0.010	<0.010
	Tin (Sn)-Total (mg/kg wwt)	<0.10	<0.050	<0.050	<0.050	<0.050
	Uranium (U)-Total (mg/kg wwt)	0.0409	<0.0020	0.0750	0.0885	<0.0020
	Vanadium (V)-Total (mg/kg wwt)	<0.20	<0.10	0.26	<0.10	<0.10
	Zinc (Zn)-Total (mg/kg wwt)	38.5	1.82	7.13	20.9	1.42

ALS LABORATORY GROUP ANALYTICAL REPORT

Grouping	Analyte	L682842-102	L682842-103	L682842-104	L682842-106	L682842-107
	Description					
	Sampled Date	31-AUG-08	31-AUG-08	31-AUG-08	31-AUG-08	31-AUG-08
	Sampled Time	15:23	15:23	15:23	15:04	15:04
	Client ID	T2 FAR FIELD SITE #2 LICHEN	T2 FAR FIELD SITE #2 SEDGE	T2 FAR FIELD SITE #2 BERRIES	T2 FAR FIELD SITE #3 LICHEN	T2 FAR FIELD SITE #3 SEDGE
TISSUE						
Physical Tests	% Moisture (%)	47.5	71.6	88.3	46.4	69.4
Metals	Aluminum (Al)-Total (mg/kg wwt)	468	51.1	6.2	344	175
	Antimony (Sb)-Total (mg/kg wwt)	0.011	<0.010	<0.010	0.012	<0.010
	Arsenic (As)-Total (mg/kg wwt)	0.163	0.023	<0.010	0.132	0.234
	Barium (Ba)-Total (mg/kg wwt)	11.7	10.1	0.826	12.3	8.84
	Beryllium (Be)-Total (mg/kg wwt)	<0.10	<0.10	<0.10	<0.10	<0.10
	Bismuth (Bi)-Total (mg/kg wwt)	0.033	<0.030	<0.030	<0.030	<0.030
	Cadmium (Cd)-Total (mg/kg wwt)	0.0827	0.0212	<0.0050	0.0835	0.0147
	Calcium (Ca)-Total (mg/kg wwt)	1450	650	113	1050	672
	Chromium (Cr)-Total (mg/kg wwt)	7.81	0.43	0.25	2.95	2.61
	Cobalt (Co)-Total (mg/kg wwt)	0.391	0.056	<0.020	0.186	0.158
	Copper (Cu)-Total (mg/kg wwt)	0.955	1.10	0.622	1.13	1.14
	Lead (Pb)-Total (mg/kg wwt)	1.68	0.178	<0.020	2.37	0.293
	Lithium (Li)-Total (mg/kg wwt)	0.47	<0.10	<0.10	0.16	0.25
	Magnesium (Mg)-Total (mg/kg wwt)	373	232	49.8	256	324
	Manganese (Mn)-Total (mg/kg wwt)	119	104	6.18	60.6	85.3
	Mercury (Hg)-Total (mg/kg wwt)	0.0594	0.0061	<0.0010	0.0634	0.0044
	Molybdenum (Mo)-Total (mg/kg wwt)	0.145	0.470	0.031	0.063	0.775
	Nickel (Ni)-Total (mg/kg wwt)	3.75	0.45	0.24	1.61	1.62
	Selenium (Se)-Total (mg/kg wwt)	<0.20	<0.20	<0.20	<0.20	<0.20
	Strontium (Sr)-Total (mg/kg wwt)	5.57	3.14	0.263	4.00	3.63
	Thallium (Tl)-Total (mg/kg wwt)	0.024	<0.010	<0.010	<0.010	<0.010
	Tin (Sn)-Total (mg/kg wwt)	0.070	<0.050	<0.050	<0.050	<0.050
	Uranium (U)-Total (mg/kg wwt)	0.286	0.0248	<0.0020	0.167	0.102
	Vanadium (V)-Total (mg/kg wwt)	0.81	<0.10	<0.10	0.59	0.28
	Zinc (Zn)-Total (mg/kg wwt)	15.1	15.5	4.53	15.6	11.4

ALS LABORATORY GROUP ANALYTICAL REPORT

Grouping	Analyte	L682842-108	L682842-110	L682842-111	L682842-112	L682842-114
	Description					
	Sampled Date	31-AUG-08	31-AUG-08	31-AUG-08	31-AUG-08	31-AUG-08
	Sampled Time	15:04	14:20	14:20	14:20	14:00
	Client ID	T2 FAR FIELD SITE #3 BERRIES	T2 FAR FIELD SITE #4 LICHEN	T2 FAR FIELD SITE #4 SEDGE	T2 FAR FIELD SITE #4 BERRIES	T2 FAR FIELD SITE #5 LICHEN
TISSUE						
Physical Tests	% Moisture (%)	87.2	38.6	65.5	90.1	56.7
Metals	Aluminum (Al)-Total (mg/kg wwt)	4.8	240	189	4.7	341
	Antimony (Sb)-Total (mg/kg wwt)	<0.010	0.010	<0.010	<0.010	<0.010
	Arsenic (As)-Total (mg/kg wwt)	<0.010	0.134	0.044	<0.010	0.103
	Barium (Ba)-Total (mg/kg wwt)	0.784	14.6	17.1	0.664	11.4
	Beryllium (Be)-Total (mg/kg wwt)	<0.10	<0.10	<0.10	<0.10	<0.10
	Bismuth (Bi)-Total (mg/kg wwt)	<0.030	<0.030	<0.030	<0.030	<0.030
	Cadmium (Cd)-Total (mg/kg wwt)	<0.0050	0.0685	0.0490	<0.0050	0.0506
	Calcium (Ca)-Total (mg/kg wwt)	172	1400	1120	98.2	976
	Chromium (Cr)-Total (mg/kg wwt)	0.35	1.46	1.16	<0.10	2.73
	Cobalt (Co)-Total (mg/kg wwt)	<0.020	0.122	0.189	<0.020	0.211
	Copper (Cu)-Total (mg/kg wwt)	0.679	0.909	1.81	0.666	1.14
	Lead (Pb)-Total (mg/kg wwt)	<0.020	1.73	0.251	<0.020	0.912
	Lithium (Li)-Total (mg/kg wwt)	<0.10	0.14	0.19	<0.10	0.24
	Magnesium (Mg)-Total (mg/kg wwt)	64.3	277	360	55.8	266
	Manganese (Mn)-Total (mg/kg wwt)	5.11	148	163	9.61	80.2
	Mercury (Hg)-Total (mg/kg wwt)	<0.0010	0.0505	0.0114	<0.0010	0.0407
	Molybdenum (Mo)-Total (mg/kg wwt)	0.024	0.050	0.780	0.011	0.076
	Nickel (Ni)-Total (mg/kg wwt)	0.29	0.96	1.49	<0.10	1.52
	Selenium (Se)-Total (mg/kg wwt)	<0.20	<0.20	<0.20	<0.20	<0.20
	Strontium (Sr)-Total (mg/kg wwt)	0.322	4.06	6.54	0.233	4.53
	Thallium (Tl)-Total (mg/kg wwt)	<0.010	0.017	<0.010	<0.010	0.013
	Tin (Sn)-Total (mg/kg wwt)	<0.050	<0.050	<0.050	<0.050	0.068
	Uranium (U)-Total (mg/kg wwt)	<0.0020	0.113	0.311	<0.0020	0.145
	Vanadium (V)-Total (mg/kg wwt)	<0.10	0.39	0.18	<0.10	0.52
	Zinc (Zn)-Total (mg/kg wwt)	21.6	14.7	16.5	1.05	14.2

ALS LABORATORY GROUP ANALYTICAL REPORT

Grouping	Analyte	L682842-115	L682842-116	L682842-118	L682842-119	L682842-120
	Description					
	Sampled Date	31-AUG-08	31-AUG-08	31-AUG-08	31-AUG-08	31-AUG-08
	Sampled Time	14:00	14:00	16:41	16:41	16:41
	Client ID	T2 FAR FIELD SITE #5 SEDGE	T2 FAR FIELD SITE #5 BERRIES	T7 NEAR FIELD SITE #1 LICHEN	T7 NEAR FIELD SITE #1 SEDGE	T7 NEAR FIELD SITE #1 BERRIES
TISSUE						
Physical Tests	% Moisture (%)	66.9	87.7	45.7	68.3	87.5
Metals	Aluminum (Al)-Total (mg/kg wwt)	37.6	2.3	374	267	20.9
	Antimony (Sb)-Total (mg/kg wwt)	<0.010	<0.010	<0.010	<0.010	<0.010
	Arsenic (As)-Total (mg/kg wwt)	0.029	<0.010	0.561	0.513	0.035
	Barium (Ba)-Total (mg/kg wwt)	11.3	0.417	12.9	11.2	0.691
	Beryllium (Be)-Total (mg/kg wwt)	<0.10	<0.10	<0.10	<0.10	<0.10
	Bismuth (Bi)-Total (mg/kg wwt)	<0.030	<0.030	<0.030	<0.030	<0.030
	Cadmium (Cd)-Total (mg/kg wwt)	0.0171	<0.0050	0.142	0.222	<0.0050
	Calcium (Ca)-Total (mg/kg wwt)	628	66.3	1360	903	94.4
	Chromium (Cr)-Total (mg/kg wwt)	0.77	<0.10	2.60	2.75	0.62
	Cobalt (Co)-Total (mg/kg wwt)	0.097	<0.020	0.414	0.298	<0.020
	Copper (Cu)-Total (mg/kg wwt)	2.61	0.440	1.68	1.90	0.691
	Lead (Pb)-Total (mg/kg wwt)	0.103	<0.020	2.81	0.689	0.028
	Lithium (Li)-Total (mg/kg wwt)	<0.10	<0.10	0.28	0.22	<0.10
	Magnesium (Mg)-Total (mg/kg wwt)	267	42.8	354	310	57.8
	Manganese (Mn)-Total (mg/kg wwt)	91.2	6.46	138	73.4	4.76
	Mercury (Hg)-Total (mg/kg wwt)	0.0046	<0.0010	0.0711	0.0107	<0.0010
	Molybdenum (Mo)-Total (mg/kg wwt)	0.196	<0.010	0.071	0.173	0.049
	Nickel (Ni)-Total (mg/kg wwt)	1.11	<0.10	1.78	2.26	0.48
	Selenium (Se)-Total (mg/kg wwt)	<0.20	<0.20	<0.20	<0.20	<0.20
	Strontium (Sr)-Total (mg/kg wwt)	3.85	0.122	4.19	4.40	0.284
	Thallium (Tl)-Total (mg/kg wwt)	<0.010	<0.010	0.016	<0.010	<0.010
	Tin (Sn)-Total (mg/kg wwt)	<0.050	<0.050	<0.050	<0.050	0.055
	Uranium (U)-Total (mg/kg wwt)	0.0304	<0.0020	0.0773	0.0533	0.0021
	Vanadium (V)-Total (mg/kg wwt)	<0.10	<0.10	0.62	0.42	<0.10
	Zinc (Zn)-Total (mg/kg wwt)	9.56	2.26	13.7	24.9	3.63

ALS LABORATORY GROUP ANALYTICAL REPORT

Grouping	Analyte	L682842-122	L682842-123	L682842-124	L682842-126	L682842-127
	Description					
	Sampled Date	31-AUG-08	31-AUG-08	31-AUG-08	31-AUG-08	31-AUG-08
	Sampled Time	17:00	17:00	17:00	17:17	17:17
	Client ID	T7 NEAR FIELD SITE #2 LICHEN	T7 NEAR FIELD SITE #2 SEDGE	T7 NEAR FIELD SITE #2 BERRIES	T7 NEAR FIELD SITE #3 LICHEN	T7 NEAR FIELD SITE #3 SEDGE
TISSUE						
Physical Tests	% Moisture (%)	47.3	81.8	86.9	38.8	66.7
Metals	Aluminum (Al)-Total (mg/kg wwt)	605	487	9.7	352	49.0
	Antimony (Sb)-Total (mg/kg wwt)	0.014	<0.010	<0.010	<0.030	<0.020
	Arsenic (As)-Total (mg/kg wwt)	0.893	2.25	0.022	0.852	0.252
	Barium (Ba)-Total (mg/kg wwt)	9.78	5.66	0.589	10.0	7.44
	Beryllium (Be)-Total (mg/kg wwt)	<0.10	<0.10	<0.10	<0.30	<0.20
	Bismuth (Bi)-Total (mg/kg wwt)	<0.030	<0.030	<0.030	<0.090	<0.060
	Cadmium (Cd)-Total (mg/kg wwt)	0.117	0.0534	<0.0050	0.073	0.031
	Calcium (Ca)-Total (mg/kg wwt)	906	779	138	1520	1030
	Chromium (Cr)-Total (mg/kg wwt)	4.96	3.28	0.12	3.39	0.78
	Cobalt (Co)-Total (mg/kg wwt)	0.764	0.500	<0.020	0.408	0.170
	Copper (Cu)-Total (mg/kg wwt)	1.63	2.31	0.755	1.08	1.53
	Lead (Pb)-Total (mg/kg wwt)	4.01	1.21	<0.020	1.34	0.175
	Lithium (Li)-Total (mg/kg wwt)	0.25	0.60	<0.10	<0.30	<0.20
	Magnesium (Mg)-Total (mg/kg wwt)	299	359	63.7	392	255
	Manganese (Mn)-Total (mg/kg wwt)	40.7	81.1	7.39	97.4	80.0
	Mercury (Hg)-Total (mg/kg wwt)	0.132	0.0039	<0.0010	0.0677	0.0060
	Molybdenum (Mo)-Total (mg/kg wwt)	0.099	0.272	0.016	0.071	0.326
	Nickel (Ni)-Total (mg/kg wwt)	3.22	2.27	0.19	2.08	0.89
	Selenium (Se)-Total (mg/kg wwt)	<0.20	<0.20	<0.20	<0.60	<0.40
	Strontium (Sr)-Total (mg/kg wwt)	4.19	3.53	0.156	4.47	4.67
	Thallium (Tl)-Total (mg/kg wwt)	0.012	<0.010	<0.010	<0.030	<0.020
	Tin (Sn)-Total (mg/kg wwt)	0.063	<0.050	0.061	<0.15	<0.10
	Uranium (U)-Total (mg/kg wwt)	0.142	0.316	<0.0020	0.111	0.0149
	Vanadium (V)-Total (mg/kg wwt)	0.84	0.75	<0.10	0.58	<0.20
	Zinc (Zn)-Total (mg/kg wwt)	12.0	18.6	10.4	12.5	18.8

ALS LABORATORY GROUP ANALYTICAL REPORT

Grouping	Analyte	L682842-128	L682842-130	L682842-131	L682842-132	L682842-134
	Description					
	Sampled Date	31-AUG-08	31-AUG-08	31-AUG-08	31-AUG-08	31-AUG-08
	Sampled Time	17:17	17:46	17:46	17:46	16:17
	Client ID	T7 NEAR FIELD SITE #3 BERRIES	T7 NEAR FIELD SITE #4 LICHEN	T7 NEAR FIELD SITE #4 SEDGE	T7 NEAR FIELD SITE #4 BERRIES	T7 NEAR FIELD SITE #5 LICHEN
TISSUE						
Physical Tests	% Moisture (%)	87.7	38.5	72.6	87.2	33.6
Metals	Aluminum (Al)-Total (mg/kg wwt)	6.5	300	529	6.3	322
	Antimony (Sb)-Total (mg/kg wwt)	<0.010	<0.030	<0.010	<0.010	<0.030
	Arsenic (As)-Total (mg/kg wwt)	0.012	0.407	1.72	<0.010	0.340
	Barium (Ba)-Total (mg/kg wwt)	0.903	14.1	7.97	0.662	13.1
	Beryllium (Be)-Total (mg/kg wwt)	<0.10	<0.30	<0.10	<0.10	<0.30
	Bismuth (Bi)-Total (mg/kg wwt)	<0.030	<0.090	<0.030	<0.030	<0.090
	Cadmium (Cd)-Total (mg/kg wwt)	<0.0050	0.179	0.138	<0.0050	0.105
	Calcium (Ca)-Total (mg/kg wwt)	98.9	2520	1360	92.4	1370
	Chromium (Cr)-Total (mg/kg wwt)	0.34	1.91	4.12	0.90	4.66
	Cobalt (Co)-Total (mg/kg wwt)	<0.020	0.508	0.383	<0.020	0.300
	Copper (Cu)-Total (mg/kg wwt)	0.839	1.11	3.08	0.839	1.17
	Lead (Pb)-Total (mg/kg wwt)	<0.020	1.89	2.19	<0.020	1.36
	Lithium (Li)-Total (mg/kg wwt)	<0.10	<0.30	0.66	<0.10	<0.30
	Magnesium (Mg)-Total (mg/kg wwt)	63.8	454	378	57.5	333
	Manganese (Mn)-Total (mg/kg wwt)	7.75	143	42.5	4.89	95.7
	Mercury (Hg)-Total (mg/kg wwt)	<0.0010	0.0781	0.0059	<0.0010	0.113
	Molybdenum (Mo)-Total (mg/kg wwt)	0.037	0.061	0.400	0.065	0.091
	Nickel (Ni)-Total (mg/kg wwt)	0.35	1.64	2.58	0.63	2.16
	Selenium (Se)-Total (mg/kg wwt)	<0.20	<0.60	<0.20	<0.20	<0.60
	Strontium (Sr)-Total (mg/kg wwt)	0.191	7.71	6.24	0.191	4.38
	Thallium (Tl)-Total (mg/kg wwt)	<0.010	<0.030	<0.010	<0.010	<0.030
	Tin (Sn)-Total (mg/kg wwt)	<0.050	0.22	<0.050	<0.050	<0.15
	Uranium (U)-Total (mg/kg wwt)	<0.0020	0.153	0.221	<0.0020	0.104
	Vanadium (V)-Total (mg/kg wwt)	<0.10	0.47	0.81	<0.10	0.53
	Zinc (Zn)-Total (mg/kg wwt)	1.50	29.6	36.9	1.63	15.6

ALS LABORATORY GROUP ANALYTICAL REPORT

Grouping	Analyte	L682842-135	L682842-136	L682842-138	L682842-139	L682842-140
	Description					
	Sampled Date	31-AUG-08	31-AUG-08	01-SEP-08	01-SEP-08	01-SEP-08
	Sampled Time	16:17	16:17	10:45	10:45	10:45
	Client ID	T7 NEAR FIELD SITE #5 SEDGE	T7 NEAR FIELD SITE #5 BERRIES	C1 EXT REF. SITE #1 LICHEN	C1 EXT REF. SITE #1 SEDGE	C1 EXT REF. SITE #1 BERRIES
TISSUE						
Physical Tests	% Moisture (%)	45.9	87.2	50.5	52.7	86.7
Metals	Aluminum (Al)-Total (mg/kg wwt)	93.0	5.0	489	196	6.4
	Antimony (Sb)-Total (mg/kg wwt)	<0.030	<0.010	<0.030	<0.020	<0.010
	Arsenic (As)-Total (mg/kg wwt)	0.665	<0.010	0.181	0.078	<0.010
	Barium (Ba)-Total (mg/kg wwt)	14.4	0.834	14.6	18.5	0.674
	Beryllium (Be)-Total (mg/kg wwt)	<0.30	<0.10	<0.30	<0.20	<0.10
	Bismuth (Bi)-Total (mg/kg wwt)	<0.090	<0.030	<0.090	<0.060	<0.030
	Cadmium (Cd)-Total (mg/kg wwt)	0.089	<0.0050	0.079	0.022	<0.0050
	Calcium (Ca)-Total (mg/kg wwt)	2290	106	1320	901	162
	Chromium (Cr)-Total (mg/kg wwt)	1.45	0.30	4.52	6.55	0.16
	Cobalt (Co)-Total (mg/kg wwt)	0.137	<0.020	0.427	0.336	<0.020
	Copper (Cu)-Total (mg/kg wwt)	2.27	0.694	1.21	2.05	0.525
	Lead (Pb)-Total (mg/kg wwt)	0.286	<0.020	2.25	0.384	<0.020
	Lithium (Li)-Total (mg/kg wwt)	<0.30	<0.10	<0.30	<0.20	<0.10
	Magnesium (Mg)-Total (mg/kg wwt)	571	61.0	448	452	49.1
	Manganese (Mn)-Total (mg/kg wwt)	168	8.39	69.9	117	3.61
	Mercury (Hg)-Total (mg/kg wwt)	0.0090	<0.0010	0.0626	0.0152	<0.0010
	Molybdenum (Mo)-Total (mg/kg wwt)	1.26	0.023	0.096	0.184	0.019
	Nickel (Ni)-Total (mg/kg wwt)	1.32	0.28	2.89	4.55	0.21
	Selenium (Se)-Total (mg/kg wwt)	<0.60	<0.20	<0.60	<0.40	<0.20
	Strontium (Sr)-Total (mg/kg wwt)	9.33	0.228	6.30	6.09	0.502
	Thallium (Tl)-Total (mg/kg wwt)	<0.030	<0.010	<0.030	<0.020	<0.010
	Tin (Sn)-Total (mg/kg wwt)	<0.15	<0.050	<0.15	<0.10	0.051
	Uranium (U)-Total (mg/kg wwt)	0.0303	<0.0020	0.174	0.0484	<0.0020
	Vanadium (V)-Total (mg/kg wwt)	<0.30	<0.10	0.83	0.34	<0.10
	Zinc (Zn)-Total (mg/kg wwt)	18.2	7.87	37.4	39.0	17.1

ALS LABORATORY GROUP ANALYTICAL REPORT

Grouping	Analyte	L682842-142	L682842-143	L682842-144	L682842-146	L682842-147
	Description					
	Sampled Date	01-SEP-08	01-SEP-08	01-SEP-08	01-SEP-08	01-SEP-08
	Sampled Time	10:25	10:25	10:25	11:05	11:05
	Client ID	C1 EXT REF. SITE #2 LICHEN	C1 EXT REF. SITE #2 SEDGE	C1 EXT REF. SITE #2 BERRIES	C1 EXT REF. SITE #3 LICHEN	C1 EXT REF. SITE #3 SEDGE
TISSUE						
Physical Tests	% Moisture (%)	42.3	50.2	88.9	42.6	58.3
Metals	Aluminum (Al)-Total (mg/kg wwt)	554	74.4	7.8	143	78.7
	Antimony (Sb)-Total (mg/kg wwt)	<0.030	<0.020	<0.010	<0.030	<0.020
	Arsenic (As)-Total (mg/kg wwt)	0.194	0.029	<0.010	0.085	0.032
	Barium (Ba)-Total (mg/kg wwt)	10.3	19.2	0.528	11.3	13.8
	Beryllium (Be)-Total (mg/kg wwt)	<0.30	<0.20	<0.10	<0.30	<0.20
	Bismuth (Bi)-Total (mg/kg wwt)	<0.090	<0.060	<0.030	<0.090	<0.060
	Cadmium (Cd)-Total (mg/kg wwt)	0.057	0.027	<0.0050	0.055	0.043
	Calcium (Ca)-Total (mg/kg wwt)	972	918	98.9	851	940
	Chromium (Cr)-Total (mg/kg wwt)	6.60	1.90	0.20	1.08	2.61
	Cobalt (Co)-Total (mg/kg wwt)	0.286	0.125	<0.020	0.111	0.277
	Copper (Cu)-Total (mg/kg wwt)	1.15	1.45	0.477	0.670	1.08
	Lead (Pb)-Total (mg/kg wwt)	2.08	0.219	<0.020	1.30	0.302
	Lithium (Li)-Total (mg/kg wwt)	<0.30	<0.20	<0.10	<0.30	<0.20
	Magnesium (Mg)-Total (mg/kg wwt)	256	427	44.8	205	374
	Manganese (Mn)-Total (mg/kg wwt)	48.7	204	4.29	44.9	181
	Mercury (Hg)-Total (mg/kg wwt)	0.110	0.0127	<0.0010	0.0349	0.0121
	Molybdenum (Mo)-Total (mg/kg wwt)	0.113	2.18	0.021	0.037	0.344
	Nickel (Ni)-Total (mg/kg wwt)	3.38	1.90	0.20	0.75	1.90
	Selenium (Se)-Total (mg/kg wwt)	<0.60	<0.40	<0.20	<0.60	<0.40
	Strontium (Sr)-Total (mg/kg wwt)	3.96	7.51	0.251	3.84	4.96
	Thallium (Tl)-Total (mg/kg wwt)	<0.030	<0.020	<0.010	<0.030	<0.020
	Tin (Sn)-Total (mg/kg wwt)	<0.15	<0.10	<0.050	<0.15	<0.10
	Uranium (U)-Total (mg/kg wwt)	0.117	0.0192	<0.0020	0.0380	0.0467
	Vanadium (V)-Total (mg/kg wwt)	0.96	<0.20	<0.10	<0.30	<0.20
	Zinc (Zn)-Total (mg/kg wwt)	8.80	15.7	6.77	17.3	31.9

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Grouping	Analyte	L682842-148	L682842-150	L682842-151	L682842-152	L682842-154
	Sample ID	L682842-148	L682842-150	L682842-151	L682842-152	L682842-154
	Description					
	Sampled Date	01-SEP-08	01-SEP-08	01-SEP-08	01-SEP-08	01-SEP-08
	Sampled Time	11:05	11:26	11:26	11:26	11:50
	Client ID	C1 EXT REF. SITE #3 BERRIES	C1 EXT REF. SITE #4 LICHEN	C1 EXT REF. SITE #4 SEDGE	C1 EXT REF. SITE #4 BERRIES	C1 EXT REF. SITE #5 LICHEN
TISSUE						
Physical Tests	% Moisture (%)	87.0	56.9	59.1	87.0	55.2
Metals	Aluminum (Al)-Total (mg/kg wwt)	4.8	322	59.8	3.7	302
	Antimony (Sb)-Total (mg/kg wwt)	<0.010	<0.020	<0.020	<0.010	<0.020
	Arsenic (As)-Total (mg/kg wwt)	<0.010	0.126	0.038	<0.010	0.114
	Barium (Ba)-Total (mg/kg wwt)	0.603	10.3	16.9	0.627	10.4
	Beryllium (Be)-Total (mg/kg wwt)	<0.10	<0.20	<0.20	<0.10	<0.20
	Bismuth (Bi)-Total (mg/kg wwt)	<0.030	<0.060	<0.060	<0.030	<0.060
	Cadmium (Cd)-Total (mg/kg wwt)	<0.0050	0.059	0.014	<0.0050	0.118
	Calcium (Ca)-Total (mg/kg wwt)	110	1020	1080	146	2430
	Chromium (Cr)-Total (mg/kg wwt)	0.14	3.01	0.92	0.18	1.88
	Cobalt (Co)-Total (mg/kg wwt)	<0.020	0.315	0.101	<0.020	0.260
	Copper (Cu)-Total (mg/kg wwt)	0.596	0.794	1.54	0.521	0.779
	Lead (Pb)-Total (mg/kg wwt)	<0.020	1.58	0.159	<0.020	2.12
	Lithium (Li)-Total (mg/kg wwt)	<0.10	<0.20	<0.20	<0.10	<0.20
	Magnesium (Mg)-Total (mg/kg wwt)	49.1	302	410	54.8	294
	Manganese (Mn)-Total (mg/kg wwt)	3.51	42.4	155	7.12	62.1
	Mercury (Hg)-Total (mg/kg wwt)	<0.0010	0.0458	0.0083	<0.0010	0.0488
	Molybdenum (Mo)-Total (mg/kg wwt)	0.019	0.068	0.242	0.024	0.061
	Nickel (Ni)-Total (mg/kg wwt)	0.16	1.99	2.29	0.22	1.41
	Selenium (Se)-Total (mg/kg wwt)	<0.20	<0.40	<0.40	<0.20	<0.40
	Strontium (Sr)-Total (mg/kg wwt)	0.277	5.14	7.41	0.335	8.51
	Thallium (Tl)-Total (mg/kg wwt)	<0.010	<0.020	<0.020	<0.010	<0.020
	Tin (Sn)-Total (mg/kg wwt)	<0.050	<0.10	<0.10	<0.050	<0.10
	Uranium (U)-Total (mg/kg wwt)	<0.0020	0.135	0.0206	<0.0020	0.128
	Vanadium (V)-Total (mg/kg wwt)	<0.10	0.52	<0.20	<0.10	0.49
	Zinc (Zn)-Total (mg/kg wwt)	14.1	32.3	22.7	16.2	24.9

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Sample ID		L682842-155	L682842-156	L682842-158	L682842-159	L682842-160
Description						
Sampled Date		01-SEP-08	01-SEP-08	01-SEP-08	01-SEP-08	01-SEP-08
Sampled Time		11:50	11:50	14:20	14:20	14:20
Client ID		C1 EXT REF. SITE #5 SEDGE	C1 EXT REF. SITE #5 BERRIES	C2 EXT REF. SITE #1 LICHEN	C2 EXT REF. SITE #1 SEDGE	C2 EXT REF. SITE #1 BERRIES
Grouping	**Analyte**					
TISSUE						
Physical Tests	% Moisture (%)	71.7	86.5	71.3	69.3	87.4
Metals	Aluminum (Al)-Total (mg/kg wwt)	30.5	8.9	248	144	86.9
	Antimony (Sb)-Total (mg/kg wwt)	<0.010	<0.010	<0.020	<0.020	<0.010
	Arsenic (As)-Total (mg/kg wwt)	0.024	<0.010	0.085	0.076	0.042
	Barium (Ba)-Total (mg/kg wwt)	10.8	0.739	6.75	16.0	1.40
	Beryllium (Be)-Total (mg/kg wwt)	<0.10	<0.10	<0.20	<0.20	<0.10
	Bismuth (Bi)-Total (mg/kg wwt)	<0.030	<0.030	<0.060	<0.060	<0.030
	Cadmium (Cd)-Total (mg/kg wwt)	0.0340	<0.0050	0.036	0.065	<0.0050
	Calcium (Ca)-Total (mg/kg wwt)	605	148	1330	1040	179
	Chromium (Cr)-Total (mg/kg wwt)	0.74	0.25	1.82	2.21	2.75
	Cobalt (Co)-Total (mg/kg wwt)	0.373	<0.020	0.133	0.211	0.097
	Copper (Cu)-Total (mg/kg wwt)	1.43	0.603	0.669	4.04	0.732
	Lead (Pb)-Total (mg/kg wwt)	0.064	<0.020	0.766	0.207	0.052
	Lithium (Li)-Total (mg/kg wwt)	<0.10	<0.10	<0.20	<0.20	<0.10
	Magnesium (Mg)-Total (mg/kg wwt)	433	55.8	185	553	135
	Manganese (Mn)-Total (mg/kg wwt)	120	8.13	50.6	84.8	9.72
	Mercury (Hg)-Total (mg/kg wwt)	0.0093	<0.0010	0.0387	0.0111	<0.0010
	Molybdenum (Mo)-Total (mg/kg wwt)	1.70	0.027	0.045	0.344	0.190
	Nickel (Ni)-Total (mg/kg wwt)	1.80	0.24	1.09	2.72	1.90
	Selenium (Se)-Total (mg/kg wwt)	<0.20	<0.20	<0.40	<0.40	<0.20
	Strontium (Sr)-Total (mg/kg wwt)	3.71	0.269	2.48	5.36	0.526
	Thallium (Tl)-Total (mg/kg wwt)	<0.010	<0.010	<0.020	<0.020	<0.010
	Tin (Sn)-Total (mg/kg wwt)	<0.050	<0.050	<0.10	0.65	<0.050
	Uranium (U)-Total (mg/kg wwt)	0.0168	0.0020	0.0361	0.0297	0.0093
	Vanadium (V)-Total (mg/kg wwt)	<0.10	<0.10	0.44	0.26	0.20
	Zinc (Zn)-Total (mg/kg wwt)	16.5	14.7	51.8	15.1	12.8

ALS LABORATORY GROUP ANALYTICAL REPORT

Grouping	Analyte	L682842-162	L682842-163	L682842-164	L682842-166	L682842-167
	Sample ID	L682842-162	L682842-163	L682842-164	L682842-166	L682842-167
	Description					
	Sampled Date	01-SEP-08	01-SEP-08	01-SEP-08	01-SEP-08	01-SEP-08
	Sampled Time	14:05	14:05	14:05	13:47	13:47
	Client ID	C2 EXT REF. SITE #2 LICHEN	C2 EXT REF. SITE #2 SEDGE	C2 EXT REF. SITE #2 BERRIES	C2 EXT REF. SITE #3 LICHEN	C2 EXT REF. SITE #3 SEDGE
TISSUE						
Physical Tests	% Moisture (%)	62.5	76.2	88.1	59.7	74.2
Metals	Aluminum (Al)-Total (mg/kg wwt)	104	49.0	7.2	184	41.0
	Antimony (Sb)-Total (mg/kg wwt)	<0.020	<0.010	<0.010	<0.020	<0.020
	Arsenic (As)-Total (mg/kg wwt)	0.057	0.042	<0.010	0.093	0.052
	Barium (Ba)-Total (mg/kg wwt)	1.63	6.37	0.697	2.77	6.04
	Beryllium (Be)-Total (mg/kg wwt)	<0.20	<0.10	<0.10	<0.20	<0.20
	Bismuth (Bi)-Total (mg/kg wwt)	<0.060	<0.030	<0.030	0.109	<0.060
	Cadmium (Cd)-Total (mg/kg wwt)	0.031	0.0356	<0.0050	0.072	0.046
	Calcium (Ca)-Total (mg/kg wwt)	367	710	114	825	965
	Chromium (Cr)-Total (mg/kg wwt)	0.97	0.85	0.31	2.39	5.17
	Cobalt (Co)-Total (mg/kg wwt)	0.059	0.281	<0.020	0.118	0.224
	Copper (Cu)-Total (mg/kg wwt)	0.372	1.04	0.482	0.595	1.95
	Lead (Pb)-Total (mg/kg wwt)	0.698	0.092	<0.020	1.34	0.063
	Lithium (Li)-Total (mg/kg wwt)	<0.20	<0.10	<0.10	<0.20	<0.20
	Magnesium (Mg)-Total (mg/kg wwt)	75.1	260	67.8	135	270
	Manganese (Mn)-Total (mg/kg wwt)	5.00	121	5.13	11.7	146
	Mercury (Hg)-Total (mg/kg wwt)	0.0317	0.0063	<0.0010	0.0951	0.0027
	Molybdenum (Mo)-Total (mg/kg wwt)	0.022	0.306	0.030	0.073	0.971
	Nickel (Ni)-Total (mg/kg wwt)	0.58	1.76	0.45	1.17	5.61
	Selenium (Se)-Total (mg/kg wwt)	<0.40	<0.20	<0.20	<0.40	<0.40
	Strontium (Sr)-Total (mg/kg wwt)	0.939	2.95	0.174	2.45	4.29
	Thallium (Tl)-Total (mg/kg wwt)	<0.020	<0.010	<0.010	<0.020	<0.020
	Tin (Sn)-Total (mg/kg wwt)	<0.10	<0.050	<0.050	<0.10	<0.10
	Uranium (U)-Total (mg/kg wwt)	0.0102	0.0171	<0.0020	0.0188	0.0185
	Vanadium (V)-Total (mg/kg wwt)	0.20	<0.10	<0.10	0.33	<0.20
	Zinc (Zn)-Total (mg/kg wwt)	20.3	23.0	10.3	47.2	29.2

ALS LABORATORY GROUP ANALYTICAL REPORT

Grouping	Analyte	L682842-168	L682842-170	L682842-171	L682842-172	L682842-174
	Description					
	Sampled Date	01-SEP-08	01-SEP-08	01-SEP-08	01-SEP-08	01-SEP-08
	Sampled Time	13:47	13:32	13:32	13:32	13:15
	Client ID	C2 EXT REF. SITE #3 BERRIES	C2 EXT REF. SITE #4 LICHEN	C2 EXT REF. SITE #4 SEDGE	C2 EXT REF. SITE #4 BERRIES	C2 EXT REF. SITE #5 LICHEN
TISSUE						
Physical Tests	% Moisture (%)	88.4	64.9	69.2	86.7	63.5
Metals	Aluminum (Al)-Total (mg/kg wwt)	7.0	350	104	12.7	546
	Antimony (Sb)-Total (mg/kg wwt)	<0.010	<0.010	<0.020	<0.010	<0.020
	Arsenic (As)-Total (mg/kg wwt)	<0.010	0.130	0.052	<0.010	0.204
	Barium (Ba)-Total (mg/kg wwt)	1.19	9.21	12.6	0.753	13.8
	Beryllium (Be)-Total (mg/kg wwt)	<0.10	<0.10	<0.20	<0.10	<0.20
	Bismuth (Bi)-Total (mg/kg wwt)	<0.030	<0.030	<0.060	<0.030	<0.060
	Cadmium (Cd)-Total (mg/kg wwt)	<0.0050	0.0444	0.050	<0.0050	0.069
	Calcium (Ca)-Total (mg/kg wwt)	121	1240	916	157	1810
	Chromium (Cr)-Total (mg/kg wwt)	0.36	3.70	2.78	0.86	4.58
	Cobalt (Co)-Total (mg/kg wwt)	<0.020	0.246	0.237	0.025	0.381
	Copper (Cu)-Total (mg/kg wwt)	0.516	0.801	2.25	0.664	1.11
	Lead (Pb)-Total (mg/kg wwt)	<0.020	0.982	0.252	<0.020	1.62
	Lithium (Li)-Total (mg/kg wwt)	<0.10	0.16	<0.20	<0.10	0.27
	Magnesium (Mg)-Total (mg/kg wwt)	67.5	220	330	67.2	374
	Manganese (Mn)-Total (mg/kg wwt)	12.0	17.5	97.1	6.60	32.4
	Mercury (Hg)-Total (mg/kg wwt)	<0.0010	0.0429	0.0088	<0.0010	0.0830
	Molybdenum (Mo)-Total (mg/kg wwt)	0.033	0.071	0.385	0.053	0.079
	Nickel (Ni)-Total (mg/kg wwt)	0.34	2.32	3.47	0.72	3.16
	Selenium (Se)-Total (mg/kg wwt)	<0.20	<0.20	<0.40	<0.20	<0.40
	Strontium (Sr)-Total (mg/kg wwt)	0.251	3.53	4.29	0.244	5.88
	Thallium (Tl)-Total (mg/kg wwt)	<0.010	<0.010	<0.020	<0.010	<0.020
	Tin (Sn)-Total (mg/kg wwt)	0.107	<0.050	<0.10	0.059	<0.10
	Uranium (U)-Total (mg/kg wwt)	<0.0020	0.0449	0.0188	<0.0020	0.0537
	Vanadium (V)-Total (mg/kg wwt)	<0.10	0.70	<0.20	<0.10	0.97
	Zinc (Zn)-Total (mg/kg wwt)	1.98	16.2	39.7	19.5	19.6

ALS LABORATORY GROUP ANALYTICAL REPORT

Grouping	Analyte	L682842-175	L682842-176	L682842-178	L682842-179	L682842-180
	Description					
	Sampled Date	01-SEP-08	01-SEP-08	01-SEP-08	01-SEP-08	01-SEP-08
	Sampled Time	13:15	13:15	16:38	16:38	16:38
	Client ID	C2 EXT REF. SITE #5 SEDGE	C2 EXT REF. SITE #5 BERRIES	C3 EXT REF. SITE #1 LICHEN	C3 EXT REF. SITE #1 SEDGE	C3 EXT REF. SITE #1 BERRIES
TISSUE						
Physical Tests	% Moisture (%)	70.8	88.0	64.5	82.5	87.2
Metals	Aluminum (Al)-Total (mg/kg wwt)	178	4.7	286	8.1	5.4
	Antimony (Sb)-Total (mg/kg wwt)	<0.020	<0.010	<0.020	<0.010	<0.010
	Arsenic (As)-Total (mg/kg wwt)	0.082	<0.010	0.258	0.012	<0.010
	Barium (Ba)-Total (mg/kg wwt)	6.32	0.624	6.20	2.04	0.604
	Beryllium (Be)-Total (mg/kg wwt)	<0.20	<0.10	<0.20	<0.10	<0.10
	Bismuth (Bi)-Total (mg/kg wwt)	<0.060	<0.030	<0.060	<0.030	<0.030
	Cadmium (Cd)-Total (mg/kg wwt)	0.028	<0.0050	0.054	0.0139	<0.0050
	Calcium (Ca)-Total (mg/kg wwt)	812	149	1570	380	126
	Chromium (Cr)-Total (mg/kg wwt)	3.30	0.13	5.24	0.34	0.32
	Cobalt (Co)-Total (mg/kg wwt)	0.180	<0.020	0.568	0.062	<0.020
	Copper (Cu)-Total (mg/kg wwt)	1.77	0.690	0.717	0.692	0.607
	Lead (Pb)-Total (mg/kg wwt)	0.376	<0.020	0.925	0.037	<0.020
	Lithium (Li)-Total (mg/kg wwt)	<0.20	<0.10	<0.20	<0.10	<0.10
	Magnesium (Mg)-Total (mg/kg wwt)	353	61.1	732	151	63.1
	Manganese (Mn)-Total (mg/kg wwt)	50.9	4.71	33.8	41.3	4.87
	Mercury (Hg)-Total (mg/kg wwt)	0.0056	<0.0010	0.0644	0.0047	<0.0010
	Molybdenum (Mo)-Total (mg/kg wwt)	0.238	0.011	0.054	0.585	0.038
	Nickel (Ni)-Total (mg/kg wwt)	3.46	0.22	12.2	0.75	0.62
	Selenium (Se)-Total (mg/kg wwt)	<0.40	<0.20	<0.40	<0.20	<0.20
	Strontium (Sr)-Total (mg/kg wwt)	2.62	0.174	3.29	0.993	0.160
	Thallium (Tl)-Total (mg/kg wwt)	<0.020	<0.010	<0.020	<0.010	<0.010
	Tin (Sn)-Total (mg/kg wwt)	<0.10	<0.050	<0.10	<0.050	0.067
	Uranium (U)-Total (mg/kg wwt)	0.0210	<0.0020	0.101	<0.0020	<0.0020
	Vanadium (V)-Total (mg/kg wwt)	0.34	<0.10	0.61	<0.10	<0.10
	Zinc (Zn)-Total (mg/kg wwt)	14.8	9.75	25.5	11.8	13.6

ALS LABORATORY GROUP ANALYTICAL REPORT

Grouping	Analyte	L682842-182	L682842-183	L682842-184	L682842-186	L682842-187
	Description					
	Sampled Date	01-SEP-08	01-SEP-08	01-SEP-08	01-SEP-08	01-SEP-08
	Sampled Time	16:20	16:20	16:20	16:02	16:02
	Client ID	C3 EXT REF. SITE #2 LICHEN	C3 EXT REF. SITE #2 SEDGE	C3 EXT REF. SITE #2 BERRIES	C3 EXT REF. SITE #3 LICHEN	C3 EXT REF. SITE #3 SEDGE
TISSUE						
Physical Tests	% Moisture (%)	63.8	78.0	87.8	64.2	78.9
Metals	Aluminum (Al)-Total (mg/kg wwt)	1100	68.6	6.5	1340	39.0
	Antimony (Sb)-Total (mg/kg wwt)	<0.020	<0.010	<0.010	<0.010	<0.010
	Arsenic (As)-Total (mg/kg wwt)	0.936	0.054	<0.010	0.284	0.039
	Barium (Ba)-Total (mg/kg wwt)	9.82	4.90	0.666	7.87	4.07
	Beryllium (Be)-Total (mg/kg wwt)	<0.20	<0.10	<0.10	<0.10	<0.10
	Bismuth (Bi)-Total (mg/kg wwt)	<0.060	<0.030	<0.030	<0.030	<0.030
	Cadmium (Cd)-Total (mg/kg wwt)	0.062	0.0153	<0.0050	0.0811	0.0367
	Calcium (Ca)-Total (mg/kg wwt)	1700	652	107	2370	641
	Chromium (Cr)-Total (mg/kg wwt)	8.77	3.01	0.19	7.82	0.65
	Cobalt (Co)-Total (mg/kg wwt)	0.688	0.137	<0.020	0.724	0.093
	Copper (Cu)-Total (mg/kg wwt)	2.08	0.932	0.598	1.73	0.868
	Lead (Pb)-Total (mg/kg wwt)	2.05	0.135	<0.020	1.62	0.087
	Lithium (Li)-Total (mg/kg wwt)	0.78	<0.10	<0.10	1.12	<0.10
	Magnesium (Mg)-Total (mg/kg wwt)	547	233	58.8	707	152
	Manganese (Mn)-Total (mg/kg wwt)	25.8	28.4	3.84	40.0	21.2
	Mercury (Hg)-Total (mg/kg wwt)	0.0456	0.0036	<0.0010	0.0735	0.0030
	Molybdenum (Mo)-Total (mg/kg wwt)	0.154	0.155	0.020	0.105	0.180
	Nickel (Ni)-Total (mg/kg wwt)	5.40	2.56	0.32	5.65	1.50
	Selenium (Se)-Total (mg/kg wwt)	<0.40	<0.20	<0.20	<0.20	<0.20
	Strontium (Sr)-Total (mg/kg wwt)	4.76	1.73	0.140	5.33	1.61
	Thallium (Tl)-Total (mg/kg wwt)	<0.020	<0.010	<0.010	<0.010	<0.010
	Tin (Sn)-Total (mg/kg wwt)	<0.10	<0.050	<0.050	<0.050	<0.050
	Uranium (U)-Total (mg/kg wwt)	0.0832	0.0120	<0.0020	0.0654	0.0089
	Vanadium (V)-Total (mg/kg wwt)	1.79	0.14	<0.10	2.26	<0.10
	Zinc (Zn)-Total (mg/kg wwt)	28.9	22.1	8.61	27.2	9.15

ALS LABORATORY GROUP ANALYTICAL REPORT

Grouping	Analyte	L682842-188	L682842-190	L682842-191	L682842-192	L682842-194
	Description					
	Sampled Date	01-SEP-08	01-SEP-08	01-SEP-08	01-SEP-08	01-SEP-08
	Sampled Time	16:02	15:42	15:42	15:42	17:00
	Client ID	C3 EXT REF. SITE #3 BERRIES	C3 EXT REF. SITE #4 LICHEN	C3 EXT REF. SITE #4 SEDGE	C3 EXT REF. SITE #4 BERRIES	C3 EXT REF. SITE #5 LICHEN
TISSUE						
Physical Tests	% Moisture (%)	88.4	65.8	77.6	86.5	60.6
Metals	Aluminum (Al)-Total (mg/kg wwt)	9.9	111	71.0	9.2	532
	Antimony (Sb)-Total (mg/kg wwt)	<0.010	<0.010	<0.010	<0.010	<0.020
	Arsenic (As)-Total (mg/kg wwt)	<0.010	0.073	0.058	<0.010	0.234
	Barium (Ba)-Total (mg/kg wwt)	0.624	5.88	5.14	0.744	9.87
	Beryllium (Be)-Total (mg/kg wwt)	<0.10	<0.10	<0.10	<0.10	<0.20
	Bismuth (Bi)-Total (mg/kg wwt)	<0.030	<0.030	<0.030	<0.030	<0.060
	Cadmium (Cd)-Total (mg/kg wwt)	<0.0050	0.0403	0.0145	<0.0050	0.106
	Calcium (Ca)-Total (mg/kg wwt)	121	934	766	107	1720
	Chromium (Cr)-Total (mg/kg wwt)	0.10	1.04	0.99	0.33	4.72
	Cobalt (Co)-Total (mg/kg wwt)	0.024	0.111	0.142	<0.020	0.422
	Copper (Cu)-Total (mg/kg wwt)	0.562	0.454	1.34	0.503	1.35
	Lead (Pb)-Total (mg/kg wwt)	<0.020	0.829	0.082	<0.020	1.77
	Lithium (Li)-Total (mg/kg wwt)	<0.10	<0.10	<0.10	<0.10	0.25
	Magnesium (Mg)-Total (mg/kg wwt)	50.4	186	249	59.9	365
	Manganese (Mn)-Total (mg/kg wwt)	3.73	43.4	67.1	5.97	38.8
	Mercury (Hg)-Total (mg/kg wwt)	<0.0010	0.0222	0.0030	<0.0010	0.110
	Molybdenum (Mo)-Total (mg/kg wwt)	<0.010	0.034	0.742	0.035	0.076
	Nickel (Ni)-Total (mg/kg wwt)	0.26	0.80	1.90	0.52	3.28
	Selenium (Se)-Total (mg/kg wwt)	<0.20	<0.20	<0.20	<0.20	<0.40
	Strontium (Sr)-Total (mg/kg wwt)	0.181	2.05	2.15	0.189	4.68
	Thallium (Tl)-Total (mg/kg wwt)	<0.010	<0.010	<0.010	<0.010	<0.020
	Tin (Sn)-Total (mg/kg wwt)	<0.050	<0.050	<0.050	<0.050	<0.10
	Uranium (U)-Total (mg/kg wwt)	<0.0020	0.0212	0.0136	<0.0020	0.0577
	Vanadium (V)-Total (mg/kg wwt)	<0.10	0.23	0.13	<0.10	1.00
	Zinc (Zn)-Total (mg/kg wwt)	14.1	35.2	8.07	8.51	42.0

ALS LABORATORY GROUP ANALYTICAL REPORT

	Sample ID	L682842-195	L682842-196			
	Description					
	Sampled Date	01-SEP-08	01-SEP-08			
	Sampled Time	17:00	17:00			
	Client ID	C3 EXT REF. SITE #5 SEDGE	C3 EXT REF. SITE #5 BERRIES			
Grouping	**Analyte**					
TISSUE						
Physical Tests	% Moisture (%)	73.3	87.5			
Metals	Aluminum (Al)-Total (mg/kg wwt)	60.4	5.7			
	Antimony (Sb)-Total (mg/kg wwt)	<0.020	<0.010			
	Arsenic (As)-Total (mg/kg wwt)	0.063	<0.010			
	Barium (Ba)-Total (mg/kg wwt)	6.18	0.479			
	Beryllium (Be)-Total (mg/kg wwt)	<0.20	<0.10			
	Bismuth (Bi)-Total (mg/kg wwt)	<0.060	<0.030			
	Cadmium (Cd)-Total (mg/kg wwt)	0.017	<0.0050			
	Calcium (Ca)-Total (mg/kg wwt)	823	76.9			
	Chromium (Cr)-Total (mg/kg wwt)	1.63	0.28			
	Cobalt (Co)-Total (mg/kg wwt)	0.126	<0.020			
	Copper (Cu)-Total (mg/kg wwt)	1.63	0.491			
	Lead (Pb)-Total (mg/kg wwt)	0.093	<0.020			
	Lithium (Li)-Total (mg/kg wwt)	<0.20	<0.10			
	Magnesium (Mg)-Total (mg/kg wwt)	211	52.5			
	Manganese (Mn)-Total (mg/kg wwt)	57.3	2.82			
	Mercury (Hg)-Total (mg/kg wwt)	0.0050	<0.0010			
	Molybdenum (Mo)-Total (mg/kg wwt)	0.623	0.022			
	Nickel (Ni)-Total (mg/kg wwt)	2.28	0.36			
	Selenium (Se)-Total (mg/kg wwt)	<0.40	<0.20			
	Strontium (Sr)-Total (mg/kg wwt)	1.88	0.133			
	Thallium (Tl)-Total (mg/kg wwt)	<0.020	<0.010			
	Tin (Sn)-Total (mg/kg wwt)	<0.10	<0.050			
	Uranium (U)-Total (mg/kg wwt)	0.0101	<0.0020			
	Vanadium (V)-Total (mg/kg wwt)	<0.20	<0.10			
	Zinc (Zn)-Total (mg/kg wwt)	9.39	3.14			

Reference Information

Additional Comments for Sample Listed:

Samplenum	Matrix	Report Remarks	Sample Comments

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Analytical Method Reference(Based On)
HG-CCME-CVAFS-VA	Soil	CVAFS Hg in Soil (CCME)	CCME

This analysis is carried out using procedures from CSR Analytical Method 8 "Strong Acid Leachable Metals (SALM) in Soil", BC Ministry of Environment, Lands and Parks, 26 June 2001, and procedures adapted from "Test Methods for Evaluating Solid Waste", SW-846 Method 3050B United States Environmental Protection Agency (EPA). The sample is manually homogenized, dried at 60 degrees Celsius, sieved through a 2 mm (10 mesh) sieve, and a representative subsample of the dry material is weighed. The sample is then digested at 90 degrees Celsius for 2 hours by block digester using a 1:1 ratio of concentrated nitric and hydrochloric acids. Instrumental analysis is by atomic fluorescence spectrophotometry (EPA Method 7000 series).

Method Limitation: This method is not a total digestion technique. It is a very strong acid digestion that is intended to dissolve those metals that may be environmentally available. By design, elements bound in silicate structures are not normally dissolved by this procedure as they are not usually mobile in the environment.

HG-WET-CVAFS-VA	Tissue	Mercury in Tissue by CVAFS	PUGET SOUND PROTOCOLS

This analysis is carried out using procedures adapted from "Recommended Guidelines for Measuring Metals in Puget Sound Marine Water, Sediment, and Tissue Samples" prepared for the United States Environmental Protection Agency and the Puget Sound Water Quality Authority, 1995. Tissue samples are homogenized either mechanically or manually prior to digestion. The hotplate or block digestion involves the use of nitric acid followed by repeated additions of hydrogen peroxide. Instrumental analysis is by atomic fluorescence spectrophotometry (EPA Method 245.7).

MET-CSR-FULL-ICP-VA	Soil	Metals in Soil by ICPOES (CSR SALM)	BCMELP CSR SALM METHOD 8

This analysis is carried out using procedures from CSR Analytical Method 8 "Strong Acid Leachable Metals (SALM) in Soil", BC Ministry of Environment, Lands and Parks, 26 June 2001, and procedures adapted from "Test Methods for Evaluating Solid Waste", SW-846 Method 3050B United States Environmental Protection Agency (EPA). The sample is manually homogenized, dried at 60 degrees Celsius, sieved through a 2 mm (10 mesh) sieve, and a representative subsample of the dry material is weighed. The sample is then digested at 90 degrees Celsius for 2 hours by block digester using a 1:1 ratio of concentrated nitric and hydrochloric acids. Instrumental analysis is by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).

Method Limitation: This method is not a total digestion technique. It is a very strong acid digestion that is intended to dissolve those metals that may be environmentally available. By design, elements bound in silicate structures are not normally dissolved by this procedure as they are not usually mobile in the environment.

MET-WET-MS-VA	Tissue	Metals in Tissue by ICPMS	PUGET SOUND PROTOCOLS, EPA 6020A

This analysis is carried out using procedures adapted from "Recommended Guidelines for Measuring Metals in Puget Sound Marine Water, Sediment, and Tissue Samples" prepared for the United States Environmental Protection Agency and the Puget Sound Water Quality Authority, 1995. Tissue samples are homogenized either mechanically or manually prior to digestion. The hotplate or block digestion involves the use of nitric acid followed by repeated additions of hydrogen peroxide. Instrumental analysis is by inductively coupled plasma - mass spectrometry (EPA Method 6020A).

MOISTURE-TISS-VA	Tissue	% Moisture in Tissues	ASTM METHOD D2794-00

This analysis is carried out gravimetrically by drying the sample at 105 C for a minimum of six hours.

PH-1:2-VA	Soil	CSR pH by 1:2 Water Leach	BC WLAP METHOD: PH, ELECTROMETRIC, SOIL

This analysis is carried out in accordance with procedures described in the pH, Electrometric in Soil and Sediment method - Section B Physical/Inorganic and Misc. Constituents, BC Environmental Laboratory Manual 2007. The procedure involves mixing the dried (at <60°C) and sieved (10 mesh /2mm) sample with deionized/distilled water at a 1:2 ratio of sediment to water. The pH of the solution is then measured using a standard pH probe.

TL-CSR-MS-VA	Soil	ICPMS Tl in Soil by CSR SALM	BCMELP CSR SALM Method 8

This analysis is carried out using procedures from CSR Analytical Method 8 "Strong Acid Leachable Metals (SALM) in Soil", BC Ministry of Environment, Lands and Parks, 26 June 2001, and procedures adapted from "Test Methods for Evaluating Solid Waste", SW-846 Method 3050B United States Environmental Protection Agency (EPA). The sample is manually homogenized, dried at 60 degrees Celsius, sieved through a 2 mm (10 mesh) sieve, and a representative subsample of the dry material is weighed. The sample is then digested at 90 degrees Celsius for 2 hours by either hotplate or block digester using a 1:1 ratio of concentrated nitric and hydrochloric acids. Instrumental analysis is by inductively coupled plasma - mass spectrometry (EPA Method 6020A).

Method Limitation: This method is not a total digestion technique. It is a very strong acid digestion that is intended to dissolve those metals that may

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Analytical Method Reference(Based On)

be environmentally available. By design, elements bound in silicate structures are not normally dissolved by this procedure as they are not usually mobile in the environment.

** Laboratory Methods employed follow in-house procedures, which are generally based on nationally or internationally accepted methodologies.
The last two letters of the above ALS Test Code column indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location	Laboratory Definition Code	Laboratory Location
VA	ALS LABORATORY GROUP - VANCOUVER, BC, CANADA		

GLOSSARY OF REPORT TERMS
Surr - A surrogate is an organic compound that is similar to the target analyte(s) in chemical composition and behavior but not normally detected in enviromental samples. Prior to sample processing, samples are fortified with one or more surrogate compounds.
The reported surrogate recovery value provides a measure of method efficiency.
mg/kg (units) - unit of concentration based on mass, parts per million
mg/L (units) - unit of concentration based on volume, parts per million
N/A - Result not available. Refer to qualifier code and definition for explanation

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Although test results are generated under strict QA/QC protocols, any unsigned test reports, faxes, or emails are considered preliminary.

ALS Laboratory Group has an extensive QA/QC program where all analytical data reported is analyzed using approved referenced procedures followed by checks and reviews by senior managers and quality assurance personnel. However, since the results are obtained from chemical measurements and thus cannot be guaranteed, ALS Laboratory Group assumes no liability for the use or interpretation of the results.

APPENDIX H

2008 Wildlife Incident Reports

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.

Meadowbank Division

Environment

Wildlife Incident Report: Wolf Mortality on Third Portage Lake

Date: December 29, 2008

For: Joel Rose, Lisette Self (GN DOE), Steve Hartman, Jackson Lindell (KIA), Rhoda Webster, Hunters and Trappers Organization (HTO)
CC: Stephane Robert, Denis Gourd

Incident Description:

On December 20, 2008, during his daily inspection, Steve Gaudreault (AEM Environmental Technician) and Denis Contre (AEM Senior Security) observed a wolf near the East dyke area; they had successfully scared it away with bear bangers.

During the following week, Truck drivers had observed the wolf around the mine site and by night shift workers very close to camp at many times. By the afternoon of the 28th, Russell Toolooktook (AEM Environmental Technician) and William Scottie (AEM Security Officer) while in search of the wolverine that had been in camp, the same wolf previously scared off was spotted as it had returned close to the mine site (see picture).

The wolf showed that it was not scared of the snowmobile by walking slowly on the lake, as it had gotten used to human contact.

Action:

After trying the first solution with little effect, it was clear that the wolf will continue to be attracted to the mine site; thus it was decided to shoot it. The wolf was skinned as did not look diseased and the carcass was immediately disposed of into the incinerator.

AEM will continue to take preventative measures when dealing wolves and wolverines on site.