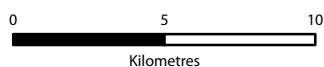


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	All-Weather Access Road	Caribou / Ha	Observation Counts
	Local Study Area - All-Weather Road	0	0 - 5
	Hydrology	1 - 5	6 - 10
		5 - 10	11 - 15
		10 - 15	16 - 20
		15 - 20	> 20
		> 20	



Projection: UTM Zone 14 NAD83

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

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

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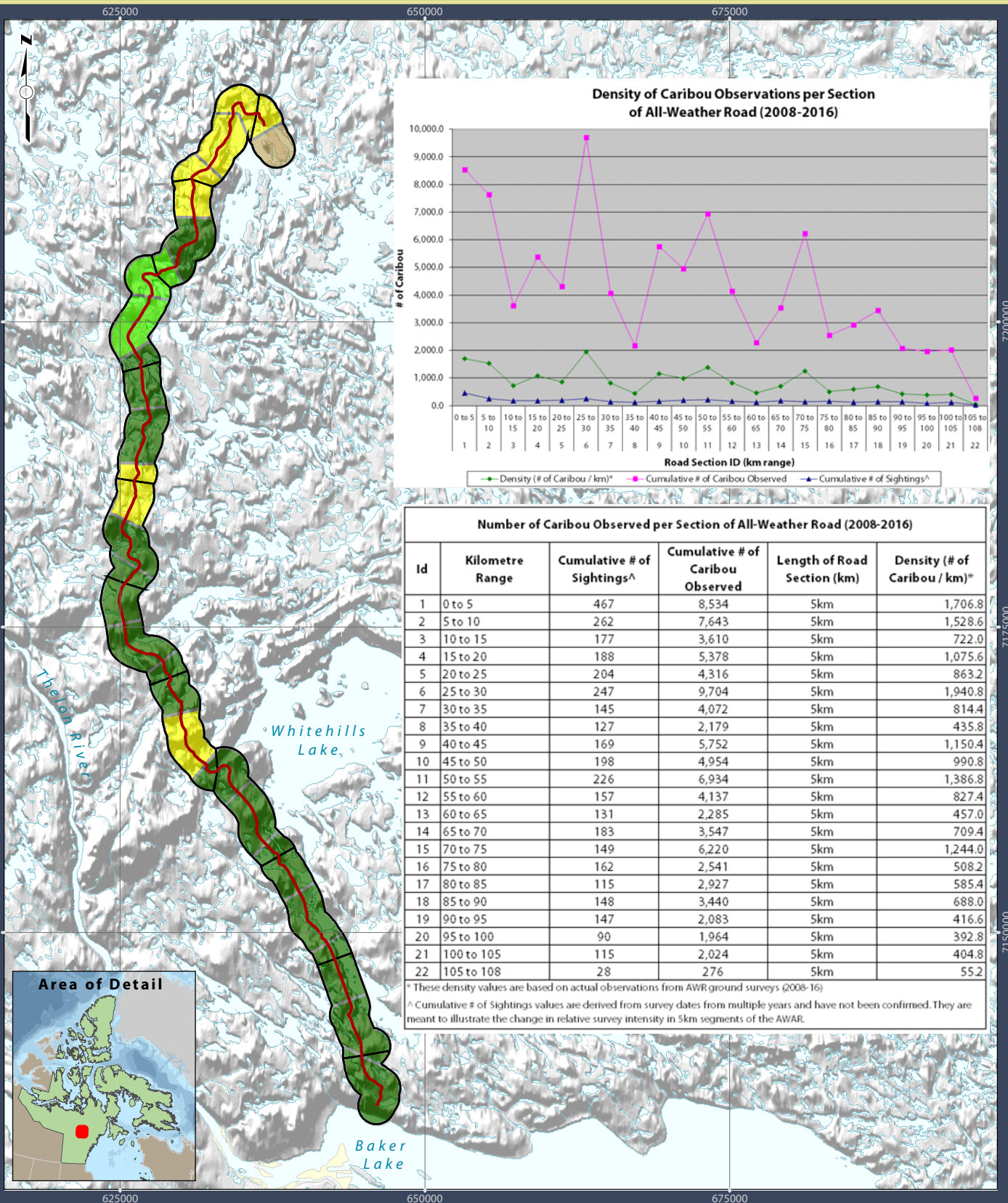


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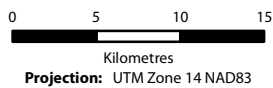
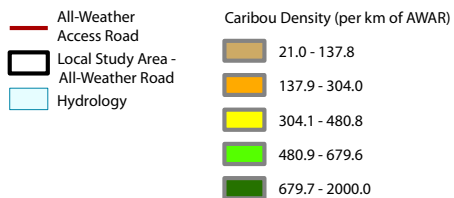
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Data Sources:
 Natural Resources Canada, GeoBase®
 National Topographic Database
 Agnico-Eagle Mines Limited.

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

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2016 WILDLIFE MONITORING SUMMARY

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

7.6.3 Wildlife Mortality – AWAR

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

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

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

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

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

¹ Two confirmed roadkill cases

² Two apparent roadkill cases

³ Cause of death unconfirmed

⁴ One cause of death unknown

7.7 ACCURACY OF IMPACT PREDICTIONS

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

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

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

7.8 MANAGEMENT RECOMMENDATIONS

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

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

SECTION 8 • HUNTER HARVEST STUDY

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

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

SECTION 9 • CARIBOU SATELLITE-COLLARING PROGRAM

9.1 OVERVIEW

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

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

9.2 OBJECTIVES

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

9.3 DURATION

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

9.4 METHODOLOGY

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

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

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

9.5 HISTORICAL RESULTS

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

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

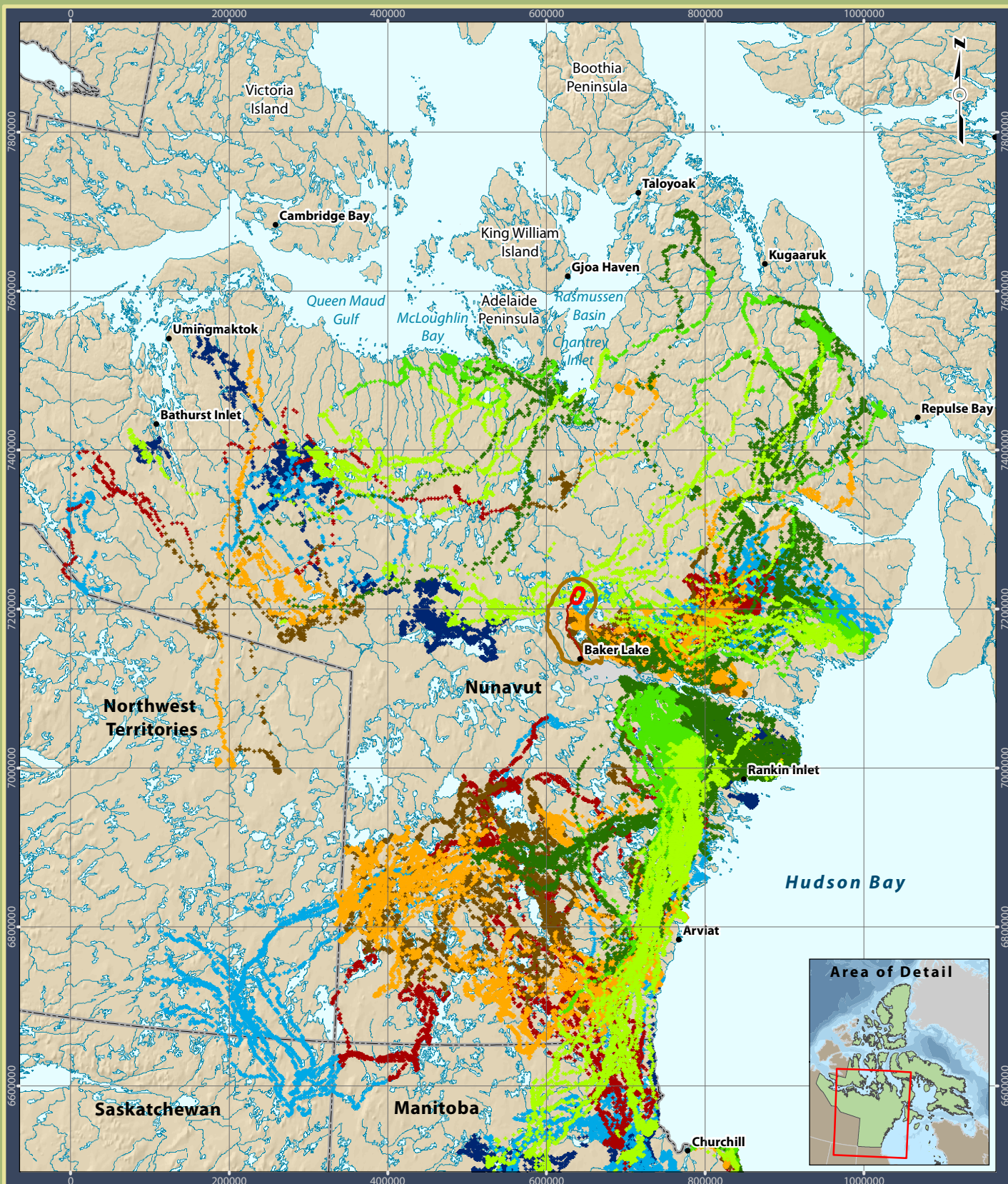
Historical collar data have all been assigned to one of the five major sub-populations, as discussed above. Also included in **Section 9** figures are collared Caribou from the Qamanirjuaq herd, which are part of a separate GN program. These telemetry data are included because of the proximity of animals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

9.6 2016 RESULTS

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

Late Winter (January 1 to March 31)

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



Legend

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

2016 Satellite-collared Caribou by Season

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

0 50 100 150
Kilometres

Projection: UTM Zone 14 NAD83

Data Sources:

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



**Figure 9.1: 2016 Government of Nunavut
Telemetry Program Collar Locations**

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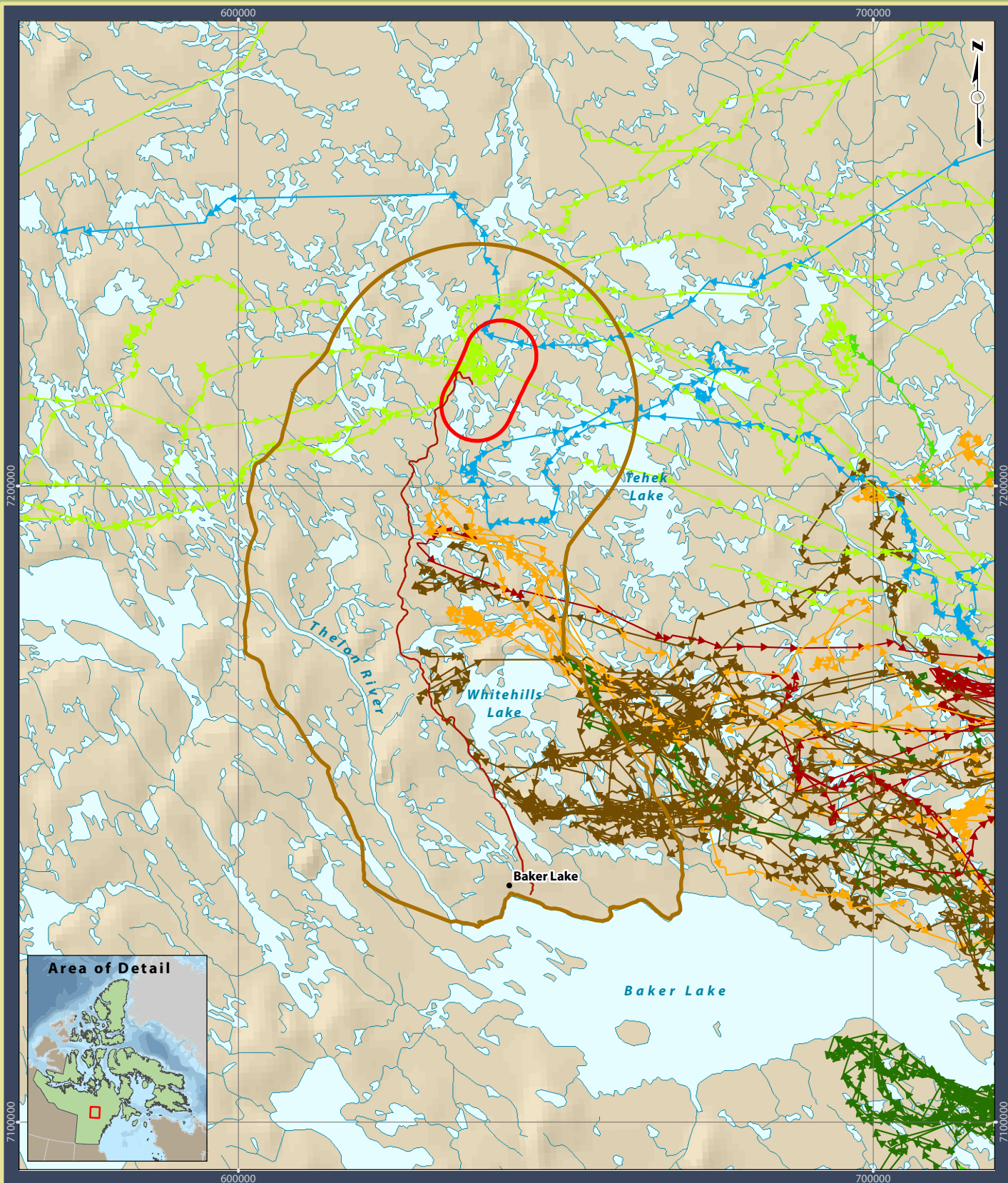


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— All-Weather Access Road Local Study Area Regional Study Area

2016 Satellite-collared Caribou by Season

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

0 10 20 30
Kilometres

Projection: UTM Zone 14 NAD83

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



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

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