

## 5.0 WILDLIFE HABITAT MONITORING

### 5.1 Overview

The wildlife habitat mapping monitoring program was developed to describe the overall area of different Ecological Land Classification (ELC) units lost due to Mine-related activities (i.e., during construction, operation, decommissioning, and post-closure phases) at three primary locations: Meadowbank Main and Vault sites (which together encompass the Mine site), the AWAR, and the Whale Tail Mine and WTHR.

The initial strategy in the impact assessments for Meadowbank and Whale Tail was to compare predicted habitat losses (i.e., from the environmental assessments) to actual losses Mine development to; however, subsequent regulatory approvals, regular infrastructure extensions and expansions, and changes to the Project, and subsequent regulatory approvals, made this approach difficult to implement. The current approach is to compare habitat losses from development to permitted areas, which encompass all proposed development. Habitat mapping monitoring is completed every three years post-construction, or if changes are greater than 25% of the overall Mine site footprint from the previous evaluation. The last comprehensive analysis was completed in 2021, therefore the 2024 report includes a comprehensive analysis. The next comprehensive analysis is scheduled for the 2027 reporting year unless changes are greater than 25% between consecutive years before 2027.

### 5.2 Objective

The primary initial objective of the habitat mapping monitoring program was to confirm that habitat losses identified in the TEMP (Agnico Eagle 2019) and the Whale Tail FEIS Addendum (Golder 2018) for the Mine sites, haul roads, and AWAR, plus any subsequent approved extensions, have not exceeded threshold limits. Beginning in 2018, habitat losses are compared to permitted areas, which encompass Mine development areas. A summary of each monitoring parameter, predicted losses, permitted areas, and thresholds for the Meadowbank Mine and Whale Tail Mine components is included in Table 5-1 and Table 5-2, respectively.

For Meadowbank and the AWAR, ELC unit losses were calculated using two different ELC layers, including the original spatial layer from the 2005 EIS (Cumberland 2005) and then a newer ELC spatial layer was applied (Dougan & Associates 2015), which is the Government of Nunavut Kivalliq Ecological Land Classification (KELC) Map Atlas (Campbell et al. 2012). In Table 5-1 data from the Terrestrial Environmental Management Plan (TEMP; Agnico Eagle 2019), 2021 Wildlife Summary Report (Golder 2022), and 2005 Environmental Impact Statement (EIS; Cumberland 2005) was occasionally used (see footnotes) when 2024 data using a new land classification system was not deemed adequate to capture land use changes. See Section 5.4 for more information on land classification.

**Table 5-1: Habitat Mapping Monitoring Parameters, Predicted Footprint Losses, Permitted Areas, and Thresholds for the Meadowbank Mine, All-Weather Access Road**

| Monitoring Parameter                      | Mine Site Predicted Loss  | Mine Site Permitted Area  | AWAR Predicted Loss  | Threshold      |
|---|---|---|--|----------------|
| Wildlife Habitat                          | 1,130 ha <sup>(a)</sup>   | 1,532 ha <sup>(a)</sup>   | 180 ha <sup>(ab)</sup>   | >5% Predicted  |
| Ungulate – High Suitability Habitat       | 372 ha (growing) <sup>(a)</sup><br>280 ha (winter) <sup>(a)</sup>   | 531 ha (growing) <sup>(a)</sup><br>407 ha (winter) <sup>(a)</sup> | 34 ha (growing) <sup>(c)</sup><br>107 ha (winter) <sup>(c)</sup> | >10% Predicted |
| Small Mammals – High Suitability Habitat  | Given the minimal effects associated with the Meadowbank Project, habitat loss effects on Small Mammals were screened out during the FEIS (Golder 2016) |   |  |                |
| Waterbirds – High Suitability Habitat     | 274 ha <sup>(a)</sup>   | 417 ha <sup>(d)</sup>   | 16 ha <sup>(c)</sup>   | >10% Predicted |
| Breeding Birds – High Suitability Habitat | 594 ha <sup>(a)</sup>   | 736 ha <sup>(d)</sup>   | 86 ha <sup>(c)</sup>   | >10% Predicted |

(a) Based on 2021 Wildlife Summary Report (Golder 2022)

(b) Permitted area along the AWAR is 455 ha

(c) Based on 2024 footprint and 2005 EIS (Cumberland 2005)

(d) Based on TEMP version 7 (Agnico Eagle 2019)

**Table 5-2: Habitat Mapping Monitoring Parameters, Predicted Footprint Losses, Permitted Areas, and Thresholds for the Whale Tail Mine and Haul Road**

| Monitoring Parameter                      | Whale Tail Predicted Loss  | Whale Tail Permitted Area  | Threshold      |
|---|--|--|----------------|
| Wildlife Habitat                          | 775 ha <sup>(a)</sup>  | 1,584 ha <sup>(c)</sup>  | >5% Predicted  |
| Ungulate – High Suitability Habitat       | 22 ha (growing) <sup>(b)</sup><br>614 ha (winter) <sup>(b)</sup>   | 58 ha (growing) <sup>(c)</sup><br>1,116 ha (winter) <sup>(c)</sup> | >10% Predicted |
| Small Mammals – High Suitability Habitat  | Given the minimal effects associated with the Meadowbank Project, habitat loss effects on small mammals were screened out during the FEIS (Golder 2016)  |  |                |
| Waterbirds – High Suitability Habitat     | Given the minimal effects associated with the Meadowbank Project, habitat loss effects on waterbirds were screened out during the FEIS (Golder 2016)     |  |                |
| Breeding Birds – High Suitability Habitat | Given the minimal effects associated with the Meadowbank Project, habitat loss effects on breeding birds were screened out during the FEIS (Golder 2016) |  |                |

(a) Based on 2021 Wildlife Summary Report (Golder 2022)

(b) Based on 2024 footprint and Kivalliq Ecosystem Land Classification

(c) Based on 2024 permitted area and Kivalliq Ecosystem Land Classification

Habitat suitability rankings are summarized in Table 5-3. Further description of these rankings is provided in Dougan & Associates (2015).

**Table 5-3: Habitat Suitability Rankings for VECs.**

| ELC Habitat               | Caribou Growing | Caribou Winter | Muskox Growing | Muskox Winter | Waterbirds | Breeding Birds |
|---------------------------|-----------------|----------------|----------------|---------------|------------|----------------|
| Water                     | -               | Low            | -              | Low           | High       | Low            |
| Sand                      | Medium          | Low            | Low            | Low           | Medium     | Medium         |
| Boulder/Gravel            | Medium          | Low            | Low            | Low           | Medium     | Medium         |
| Wet Graminoid             | High            | Medium         | High           | High          | High       | High           |
| Graminoid Tundra          | High            | Medium         | High           | High          | High       | High           |
| Graminoid/Shrub Tundra    | High            | Medium         | High           | High          | Medium     | High           |
| Shrub Tundra              | Medium          | Low            | Medium         | Medium        | Low        | High           |
| Shrub/Heath Tundra        | Medium          | Medium         | Medium         | Medium        | Low        | High           |
| Heath Tundra              | Medium          | High           | Medium         | Medium        | Low        | High           |
| Heath Upland              | Medium          | High           | Medium         | Medium        | Low        | High           |
| Heath Upland/Rock Complex | Medium          | High           | Low            | Low           | Low        | Medium         |
| Lichen Tundra             | Low             | Medium         | Low            | Low           | Low        | Medium         |
| Lichen/Rock Complex       | Medium          | High           | Medium         | Medium        | Low        | Medium         |

### 5.3 Duration

The total area of habitat disturbance associated with Mine site and ancillary facility construction was mapped following significant construction completion (2010) and was to be mapped annually during the operation phase as detailed in the TEMP (Agnico Eagle 2019). At the end of 2010, a detailed ELC habitat loss analysis found that habitat losses to date were substantially lower than predicted and that no habitat loss thresholds for VECs were exceeded. Given this outcome, another detailed ELC habitat loss analysis was not provided until the 2012 report, which had similar conclusions as those in 2010. The 2014 habitat analysis determined that habitat losses were still below predicted losses but that some of the thresholds were being reached. A partial analysis was conducted in 2017 while a full analysis using a revised approach was completed in 2018, 2021, and 2024.

The current habitat mapping monitoring program is intended to be completed every three years post-construction or if changes are greater than 25% of the overall Mine site footprint from the previous year evaluation. This frequency may be reduced during the operation phase if the amount of new disturbance and reclamation areas is relatively unchanged. Following decommissioning, vegetation mapping will be conducted in the first two years post-closure and every three years thereafter until Year 11 post-closure to verify that thresholds have been met.

### 5.4 Methods

Monitoring of habitat loss occurs at three primary locations: Meadowbank Mine (includes Vault Pit and Haul Road), AWAR (including quarry sites), and Whale Tail Mine and Haul Road (includes borrow/quarries sites and access roads). For Meadowbank and the AWAR, ELC unit losses were calculated using two different ELC layers, including the original spatial layer from the 2005 EIS (Cumberland 2005) and the newer KELC (Campbell et al. 2012). The KELC layer includes categories more appropriate for land classification in the region, however, the layer was created using imagery from after Meadowbank and AWAR construction and therefore classifies some Project areas as disturbed rather than as the pre-disturbance land classification categories. Therefore, both layers were used to estimate habitat losses for Meadowbank and the AWAR. The Whale Tail Mine and WTHR were constructed after the creation of the KELC layer and therefore was the only data source needed to summarize habitat loss units for the Whale Tail and WTHR.

Project footprints were updated based on 2024 survey data. Calculated losses were then subtracted from the permitted lease areas to quantify disturbance area within the lease area boundaries. For the Meadowbank Mine and AWAR locations, thresholds are disturbances of 5% above permitted areas of 1,531 and 455 ha, respectively. For the Whale Tail and Haul Road location, threshold is disturbance of 5% above a permitted area of 1,584 ha.

## 5.5 Historical Results

### 5.5.1 Meadowbank Mine Site

In 2014, construction of the Main site construction was almost complete, including most of the infrastructure for the Vault Pit area, although much of the pit and waste rock storage area had not yet been disturbed. ELC results for the Mine site footprint, based on as-built drawings from 2014, were compared to predicted ELC unit losses from the 2005 FEIS, plus approved extensions. Measured habitat loss for the Mine site in 2014 was calculated to be 775.7 ha, which was 91.1 ha (10.5%) less than the predicted total habitat loss of 866.8 ha for the Mine site. Differences between predicted and actual habitat losses were greatest in heath tundra, birch and riparian shrub, and lichen ELC units, all of which are high suitability habitat for ungulates during the winter season. Although no thresholds (>5% to 10% above predicted losses) for the loss of high suitability habitat were exceeded for any VECs, threshold levels for the Mine site were almost reached in 2014. Consequently, commitments were made to remove the material stored in the NPAG extension area (which was approved by Nunavut Water Board [NWB]) and use it for capping of the North Cell Tailings Storage Facility during the closure/reclamation phase of the Mine.

In 2017, the Mine development footprint had changed substantially since the 2014 analysis. The Vault Pit was fully operational and had expanded into the Phaser Lake area. Although the Phaser Lake extension was completed with approval from the NIRB and the NWB, the size of the extension area was not available for habitat calculations in the 2017 report. Measured habitat loss for the Mine site in 2017 was calculated to be 1,021 ha, which was 154 ha (17.8%) more than the predicted total habitat loss of 867 ha for the Mine site. The difference between predicted and actual habitat losses was primarily attributable to the final extent of the Vault waste dump, the Phaser Lake extension of the Vault Pit area (i.e., these were not included in the 867-ha calculation), and the as-built layout of the Non-potentially Acid Generating (NPAG) expansion of the Portage Waste Rock Facility. Differences between predicted and actual habitat losses were greatest for the sedge, and birch and riparian shrub ELC units, both of which are high suitability habitat for ungulates during the winter season. Greater than 10% differences between predicted and actual habitat losses were also observed in heath tundra, lichen, lichen-rock, and rock and boulder ELC units. Additionally, losses of high suitability habitat exceeded established thresholds for ungulates (growing and winter season), small mammals, and other breeding birds.

For the 2018 habitat analysis, the approach was revised to compare habitat losses to total area within Agnico Eagle's permitted areas, which also encompasses future approved work. The most recent comprehensive assessment was completed in 2021. Using the original ELC, overall measured habitat losses (i.e., 1,129 ha) were 26% less than the habitat available within permitted areas (i.e., 1,532 ha) of the Meadowlark Mine site; therefore, thresholds were not surpassed. High suitability habitat losses for ungulates, small mammals, waterbirds, and other breeding birds were all below available high suitability habitats within permitted areas, also not surpassing any thresholds.

A full assessment was not triggered in 2022 or 2023. This comprehensive assessment discusses the overall measured habitat loss for 2024 in section 5.7.



### 5.5.2 AWAR

The 2010 ELC results for the AWAR were compared to ELC unit losses predicted in the 2005 EIS report. Construction of the AWAR and associated quarry sites required 41.7% (117 ha) of the area that was predicted in the 2005 FEIS (281 ha) and for each ELC unit, actual habitat losses were less than predicted. ELC habitat loss values for the AWAR in 2010 were compared to predicted high suitability habitat losses for ungulates (growing and winter season), waterbirds, other breeding birds, and small mammals. In all cases, the measured high suitability habitat losses were less than predicted losses and thresholds were not exceeded (i.e., >5 to 10% above predicted losses). The footprints of the AWAR and associated quarry sites were last assessed in 2021, where it has since increased in size from 180 ha to 184 ha in 2024.

### 5.5.3 Whale Tail Mine and WTHR

The Whale Tail Mine was last assessed in 2021 (Golder 2022). The area of the proposed footprint from 2018 was assessed as 504 ha, and the area of the 2021 footprint of the Whale Tail Mine was assessed as 571 ha. The Whale Tail Lake, borrow areas, and WTHR present in the proposed 2018 footprint were excluded from comparison with the 2021 footprint. Change in footprint for the Whale Tail mine (13.3%) in 2021 was assessed as less than 25% since 2018. In 2021, the area of both the Whale Tail Mine and WTHR footprints was 775 ha. The Whale Tail permitted area increased by 2.1% from 1473 ha in 2018 to 1504 ha in 2021.

## 5.6 Results

New development between 2021 and 2024 occurred at the Whale Tail Mine, quarries along the WTHR, and quarries along the AWAR. A 9.0% change (69 ha) in footprint at the Whale Tail site and Whale Tail haul road occurred between the 2021 assessment and the 2024 assessment. There were no changes to the footprint or the permitted area for the Meadowbank Mine Site from 2021 to 2024. For the AWAR, an increase in size of 2% (4.5 ha) was observed for the lease boundaries between 2021 and 2024. The changes in footprint since the previous assessment were less than 25%. Therefore, a comprehensive habitat loss assessment was not required prior to the 2024 scheduled assessment.

### 5.6.1 AWAR

In 2010 the footprint of the AWAR and associated quarry sites was reported as 117 ha in size (Agnico Eagle 2011) but increased in size to 180 ha between 2010 and 2023. Between 2021 and 2024, the AWAR and associated quarry sites had increased by 4.5 ha to a total of 184 ha.

Due to updates to the ELC units that occurred in 2015 (Dougan & Associates 2015), some of the areas now classified as “Disturbance” include areas disturbed through the construction of the AWAR between its initial construction and its current footprint, meaning that pre-disturbance data are not available for of some areas when using the KELC dataset. Additionally, the KELC units include different categories for ecosystem classification. This change in ELC unit is evident between the different ELC units used in Table 5-4 and Table 5-5. The 145.6 ha of “Disturbance” in Calculated ELC Unit Losses column in Table 5-5 is composed of the total 117.3 ha of Calculated ELC Unit Losses from Table 5-4, with an additional 28.3 ha of ELC unit losses from an unknown ELC unit between 2010 and 2024. The unit discrepancy may be due to differences in land classification rules or minimum mapping unit (i.e., coarseness).

**Table 5-4: AWAR Unit Totals from 2010 Wildlife Monitoring Summary (Agnico Eagle 2011)**

| ELC Unit                    | Permitted Areas (EIS 2010)<br>(ha) | Calculated ELC Unit Losses (2010)<br>(ha) | Difference<br>(ha) |
|-----------------------------|------------------------------------|---|--------------------|
| Water                       | 0.61                               | 0.03                                      | 0.58               |
| Sedge                       | 21.57                              | 12.86                                     | 8.71               |
| Birch and Riparian Shrub    | 41.73                              | 17.25                                     | 24.48              |
| Heath Tundra                | 105.69                             | 38.18                                     | 67.51              |
| Lichen                      | 57.80                              | 24.35                                     | 33.45              |
| Lichen-Rock                 | 14.43                              | 6.12                                      | 8.31               |
| Ridge Crest / Esker / Avens | 8.82                               | 4.22                                      | 4.6                |
| Rock and Boulder            | 24.82                              | 12.65                                     | 12.17              |
| Disturbed                   | 2.88                               | 0.72                                      | 2.16               |
| Residual                    | 2.96                               | 0.93                                      | 2.03               |
| <b>Total</b>                | <b>281.31</b>                      | <b>117.29</b>                             | <b>164.02</b>      |

**Table 5-5: AWAR Footprint ELC Unit Loss 2024**

| ELC Unit                  | Permitted Areas<br>(ha) <sup>(a)</sup> | Calculated ELC Unit Losses<br>(ha) | Difference<br>(ha) |
|---------------------------|--|------------------------------------|--------------------|
| Boulder/Gravel            | 3.23                                   | 0.79                               | 2.44               |
| Cloud/Shadow              | 1.47                                   | 0.00                               | 1.47               |
| Disturbance               | 359.88                                 | 145.60                             | 214.27             |
| Graminoid Tundra          | 7.85                                   | 2.24                               | 5.61               |
| Graminoid/Shrub Tundra    | 2.74                                   | 1.07                               | 1.67               |
| Heath Tundra              | 25.03                                  | 12.51                              | 12.52              |
| Heath Upland              | 28.69                                  | 12.41                              | 16.28              |
| Heath Upland/Rock Complex | 11.61                                  | 4.32                               | 7.30               |
| Lichen Tundra             | 2.20                                   | 0.92                               | 1.28               |
| Lichen/Rock Complex       | 6.88                                   | 1.58                               | 5.30               |
| Sand                      | 0.41                                   | 0.09                               | 0.31               |
| Shrub Tundra              | 1.61                                   | 0.69                               | 0.92               |
| Shrub/Heath Tundra        | 2.51                                   | 0.86                               | 1.65               |
| Water                     | 0.29                                   | 0.36                               | -0.07              |
| Wet Graminoid             | 1.45                                   | 0.28                               | 1.17               |
| <b>Total</b>              | <b>455.85</b>                          | <b>183.72</b>                      | <b>272.12</b>      |

a) Predicted loss in 2024 is based on permitted area and approved extensions and not EIS predicted areas.

Change in high suitability habitats compared to predicted losses is summarized in Table 5-6. The Permitted Areas and 2024 Losses column in Table 5-6 were calculated by combining the high suitability habitat from the 2005 EIS (Cumberland 2005) using the original ELC and the 2024 data using the KELC, assuming that some of the previous ELC units make up habitat loss that is now classified as disturbance in the KELC as seen in Table 5-5.

**Table 5-6: AWAR Predicted and Actual High Suitability Habitat Losses**

| Habitat                 | Permitted Area (ha) <sup>(a)</sup> | 2024 Loss (ha) | % of Predicted Loss | Threshold (above predicted losses) |
|-------------------------|------------------------------------|----------------|---------------------|------------------------------------|
| Terrestrial Habitat     | 455.9                              | 183.7          | 40%                 | 5%                                 |
| Ungulate Growing Season | 75.3                               | 33.71          | 45%                 | 10%                                |
| Ungulate Winter Season  | 271.0                              | 107.28         | 40%                 | 10%                                |
| Waterbirds              | 31.8                               | 15.77          | 50%                 | 10%                                |
| Breeding Birds          | 217.3                              | 85.5           | 39%                 | 10%                                |

### 5.6.2 Meadowbank Mine Site

The lease area at the Meadowbank Mine Site including the Vault Site did not change between 2021 to 2024. Table 5-7 is taken from 2021 Wildlife Monitoring Summary, which uses the original ELC, and Table 5-8 shows the habitat summary of ELC unit losses from the permitted area using the KELC. While it appears that the footprint of the Meadowbank Mine Site decreased between 2021 (Table 5-7) and 2024 (Table 5-8), this is because of the different ELC classifications used.

**Table 5-7: Meadowbank Mine Site Unit Totals from the 2021 Wildlife Monitoring Summary (Golder 2022)**

| ELC Unit                    | Permitted Areas (ha) | Calculated ELC Unit Losses (ha) | Difference (ha) |
|-----------------------------|----------------------|---------------------------------|-----------------|
| Birch and Riparian Shrub    | 202.91               | 142.43                          | 60.49           |
| Heath Tundra                | 145.51               | 116.65                          | 28.86           |
| Lichen                      | 175.07               | 119.9                           | 56.07           |
| Lichen-Rock                 | 86.45                | 43.67                           | 42.78           |
| Ridge Crest / Esker / Avens | 0.19                 | 0.18                            | 0.01            |
| Rock and Boulder            | 185.13               | 113.15                          | 71.98           |
| Sedge                       | 328.03               | 229.05                          | 98.98           |
| Water                       | 408.33               | 365.13                          | 43.19           |
| <b>Total Area</b>           | <b>1,531.63</b>      | <b>1,130.16</b>                 | <b>402.37</b>   |

**Table 5-8: Meadowbank and Vault Footprint ELC Unit Losses for 2024 using KELC**

| ELC Unit                  | Permitted Areas (ha) <sup>(a)</sup> | Calculated ELC Unit Losses (ha) | Difference (ha) |
|---------------------------|-------------------------------------|---------------------------------|-----------------|
| Boulder/Gravel            | 48.73                               | 30.47                           | 18.27           |
| Disturbance               | 566.63                              | 545.59                          | 21.04           |
| Graminoid Tundra          | 11.60                               | 7.79                            | 3.81            |
| Graminoid/Shrub Tundra    | 17.03                               | 9.36                            | 7.67            |
| Heath Tundra              | 189.71                              | 121.25                          | 68.47           |
| Heath Upland              | 300.03                              | 168.73                          | 131.30          |
| Heath Upland/Rock Complex | 15.66                               | 5.26                            | 10.40           |
| Lichen Tundra             | 57.00                               | 25.74                           | 31.26           |
| Lichen/Rock Complex       | 124.86                              | 50.91                           | 73.95           |
| Sand                      | 2.27                                | 0.68                            | 1.59            |
| Shrub Tundra              | 0.48                                | 0.67                            | -0.19           |
| Shrub/Heath Tundra        | 8.72                                | 3.15                            | 5.57            |
| Water                     | 183.12                              | 140.23                          | 42.88           |
| Wet Graminoid             | 4.96                                | 2.90                            | 2.06            |
| <b>Total</b>              | <b>1,530.82</b>                     | <b>1,112.72</b>                 | <b>418.09</b>   |

a) Predicted loss in 2024 is based on permitted area and approved extensions and not EIS predicted areas.

The estimated change in high suitability habitats compared to predicted losses is summarized in Table 5-9 and Table 5-10. Due to the KELC not containing the original land cover data since the 2005 EIS, the Table presents data from 2021 using the original ELC classification.

**Table 5-9: Meadowbank Mine Site Predicted and Actual High Suitability Habitat Losses from the 2021 Summary (Golder 2022)**

| Habitat                 | Permitted Area (ha) <sup>(a)</sup> | 2024 Loss (ha) | % of Predicted Loss | Threshold (above predicted losses) |
|-------------------------|------------------------------------|----------------|---------------------|------------------------------------|
| Terrestrial Habitat     | 1,532                              | 1,130          | 74%                 | 5%                                 |
| Ungulate Growing Season | 531                                | 372            | 70%                 | 10%                                |
| Ungulate Winter Season  | 407                                | 280            | 69%                 | 10%                                |
| Waterbirds              | 417                                | 274            | 66%                 | 10%                                |
| Breeding Birds          | 736                                | 594            | 81%                 | 10%                                |

(a) Predicted loss in 2024 is based on permitted area and approved extensions and not EIS predicted areas.

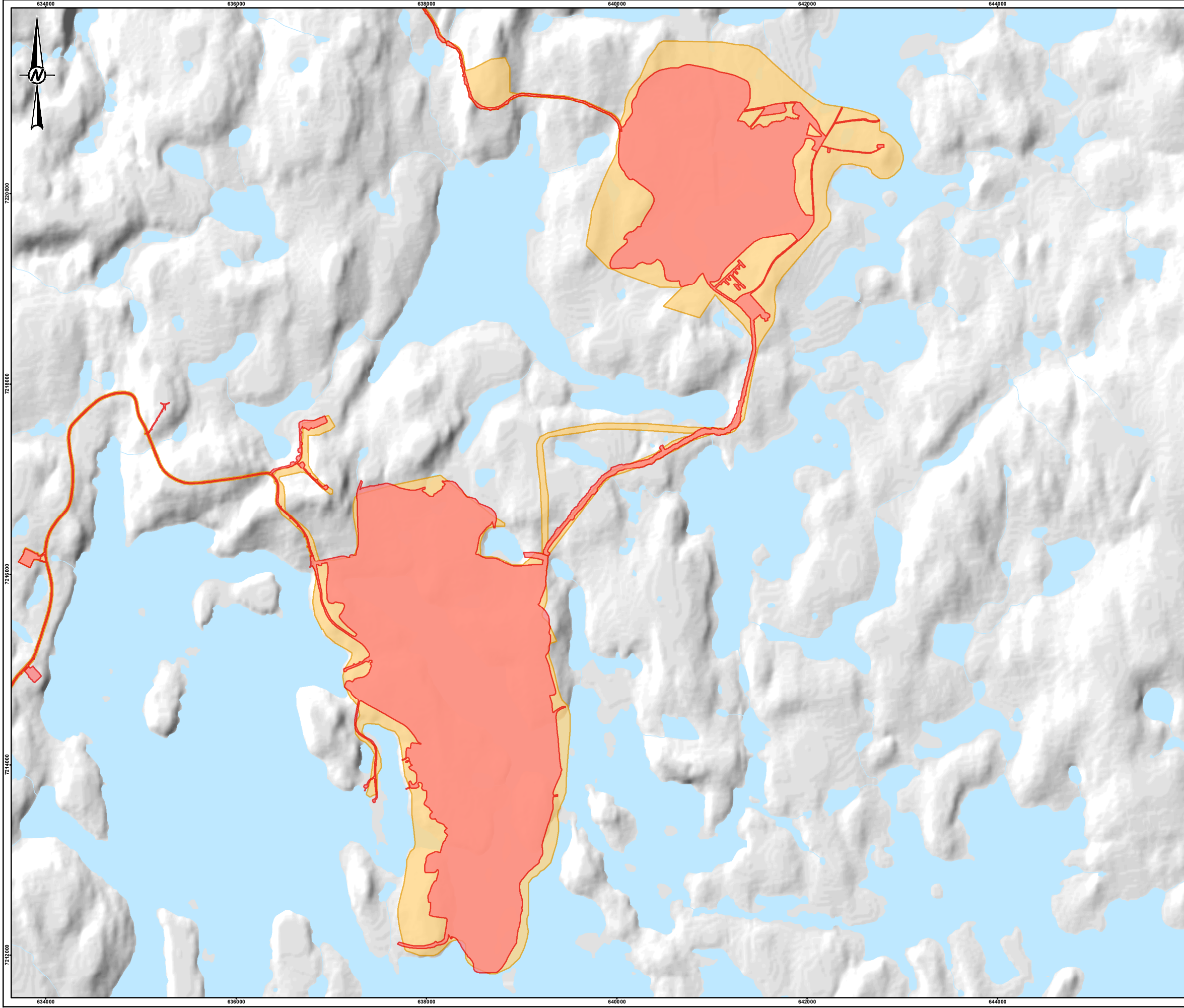
The below table was summarized using the KELC in 2024. The differences in the Ungulate Growing Season, Ungulate Winter Season, Waterbirds, and Breeding birds, between Table 5-9 and Table 5-10 are due to differences in land classification between the original ELC classification used in the 2005 EIS and the KELC, with the KELC using more recent imagery that does not capture the original landcover used in the 2005 EIS.

**Table 5-10: Meadowbank Mine Site Predicted and Actual High Suitability Habitat Losses for 2024 using KELC**

| Habitat                 | Permitted Area (ha) <sup>(a)</sup> | 2024 Loss (ha) | % of Predicted Loss | Threshold (above predicted losses) |
|-------------------------|------------------------------------|----------------|---------------------|------------------------------------|
| Terrestrial Habitat     | 1,530.82                           | 1,112.72       | 73%                 | 5%                                 |
| Ungulate Growing Season | 33.59                              | 20.05          | 60%                 | 10%                                |
| Ungulate Winter Season  | 663.86                             | 366.20         | 55%                 | 10%                                |
| Waterbirds              | 199.68                             | 150.92         | 76%                 | 10%                                |
| Breeding Birds          | 532.54                             | 313.17         | 59%                 | 10%                                |

(a) Predicted loss in 2024 is based on permitted area and approved extensions and not EIS predicted areas.

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**LEGEND**

- AREA DISTURBED (2024)
- PERMITTED LEASE AREA
- WATERCOURSE
- WATERBODY

**KEY MAP**A key map of Canada showing the location of the study area in the central-northern part of the country. A red star marks the study area. The map includes labels for 'CANADA' and 'U.S.A.' and a scale bar indicating 1,000 KM.

A scale bar with markings for 0, 800, and 1,600 metres. Below the bar, it reads '1:40,000' and 'METRES'.

**REFERENCE(S)**

1. INFRASTRUCTURE OBTAINED FROM AGNICO EAGLE MINES LIMITED.  
2. WATERCOURSE AND WATERBODY DATA OBTAINED FROM NATURAL RESOURCES CANADA.  
COORDINATE SYSTEM: NAD 1983 CSRS UTM ZONE 14N

**CLIENT**

**AGNICO EAGLE MINES LIMITED:  
MEADOWBANK DIVISION**

**PROJECT**

MEADOWBANK COMPLEX  
2024 WILDLIFE MONITORING SUMMARY REPORT

**TITLE**

MEADOWBANK MINE FOOTPRINT (2024)

|  |            |            |            |
|--|------------|------------|------------|
|  | CONSULTANT | YYYY-MM-DD | 2025-03-19 |
|  | DESIGNED   | JF         |            |
|  | PREPARED   | CDB        |            |
|  | REVIEWED   | JF         |            |
|  | APPROVED   | CDLM       |            |

|                |           |      |        |
|----------------|-----------|------|--------|
| PROJECT NO.    | CONTROL   | REV. | FIGURE |
| CA0039984.7604 | 4000/4004 | 0    | 5-1    |

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B 25mm



### 5.6.3 Whale Tail Mine and WTHR

Change in ELC units for the Whale Tail Mine and Whale Tail Haul Road is summarized in Table 5-11 and Figure 5-2. Since the last comprehensive report in 2021, the size of the Whale Tail Mine and Haul Road footprint has increased from 775 to 844 ha, marking an increase of 69 ha or 9.0% (Golder 2022). The highest area of ELC losses are within the lichen/rock complex ELC units followed by the heath upland and heath tundra ELC units representing 271 ha, 169 ha and 145 ha of habitat losses, respectively.

**Table 5-11: Whale Tail Mine and Whale Tail Haul Road Footprint ELC Unit Loss**

| ELC Unit                  | Predicted Losses from Whale Tail Expansion 2018 FEIS (ha) | Permitted Areas (ha) | Calculated ELC Unit Losses (ha) | Difference (ha) |
|---------------------------|---|----------------------|---------------------------------|-----------------|
| Boulder/Gravel            | 94  | 123.89               | 57.15                           | 66.73           |
| Graminoid Tundra          | 21  | 32.75                | 13.83                           | 20.92           |
| Graminoid/Shrub Tundra    | 6   | 15.44                | 4.33                            | 11.11           |
| Heath Tundra              | 146   | 219.12               | 144.53                          | 74.59           |
| Heath Upland              | 175   | 322.00               | 169.47                          | 152.53          |
| Heath Upland/Rock Complex | 7   | 14.22                | 6.78                            | 7.43            |
| Lichen Tundra             | 49  | 101.48               | 51.44                           | 50.04           |
| Lichen/Rock Complex       | 285   | 502.96               | 271.01                          | 231.95          |
| Sand                      | 11  | 17.43                | 6.29                            | 11.14           |
| Shrub Tundra              | 9   | 11.38                | 7.68                            | 3.70            |
| Shrub/Heath Tundra        | 13  | 23.17                | 11.46                           | 11.71           |
| Water                     | 360   | 191.11               | 96.09                           | 95.02           |
| Wet Graminoid             | 10  | 7.38                 | 4.29                            | 3.10            |
| <b>Total Area</b>         | <b>1,186</b>  | <b>1,584.33</b>      | <b>844.35</b>                   | <b>739.98</b>   |

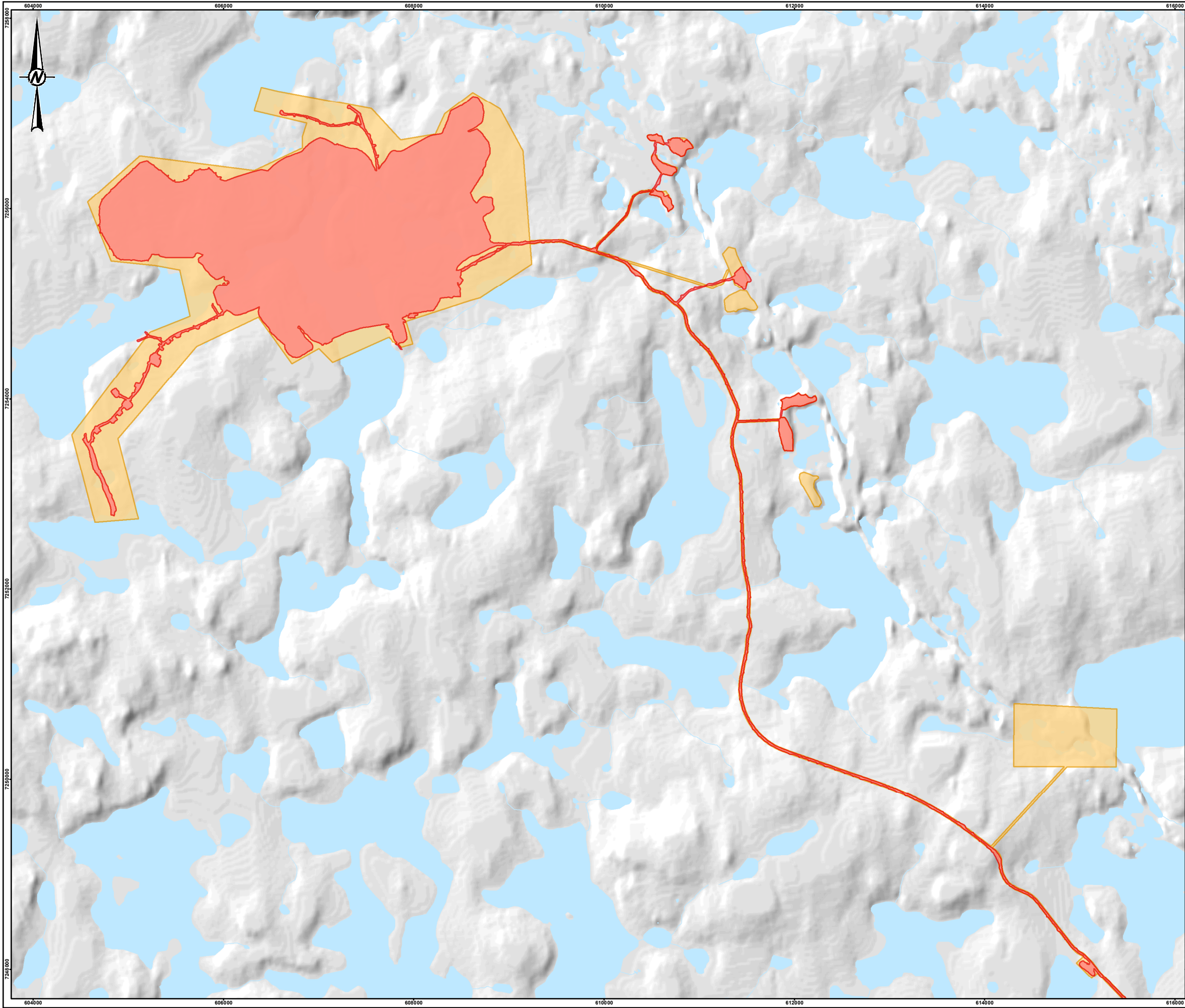
Change in high suitability habitats compared to predicted losses is summarized in Table 5-12.

**Table 5-12: Whale Tail Mine and Haul Road Predicted and Actual High Suitability Habitat Losses**

| Habitat                 | Permitted Area (ha) <sup>(a)</sup> | 2024 Loss (ha) | % of Predicted Loss | Threshold (above predicted losses) |
|-------------------------|------------------------------------|----------------|---------------------|------------------------------------|
| Terrestrial Habitat     | 1,584.33                           | 844.35         | 53%                 | 5%                                 |
| Ungulate Growing Season | 57.58                              | 22.45          | 39%                 | 10%                                |
| Ungulate Winter Season  | 1,115.87                           | 614.24         | 55%                 | 10%                                |
| Waterbirds              | 233.25                             | 114.21         | 49%                 | 10%                                |
| Breeding Birds          | 633.25                             | 355.59         | 56%                 | 10%                                |



R:\TH\W\Client\Agnico\_Eagle\_Mines\_Ltd\Whale\_Tail\99\_PROJECTS\CA0039984\_7604\_4000\_4004\_05\_02\_WHALE\_TAIL\_PIT\_FOOTPRINT\_2024.mxd PRINTED ON 2025-03-19 AT 11:50:56 AM



**LEGEND**


- AREA DISTURBED (2024)
- PERMITTED LEASE AREA
- WATERCOURSE
- WATERBODY

**KEY MAP**

0 800 1,600  
1:40,000 METRES

**REFERENCE(S)**

1. INFRASTRUCTURE OBTAINED FROM AGNICO EAGLE MINES LIMITED.  
2. WATERCOURSE AND WATERBODY DATA OBTAINED FROM NATURAL RESOURCES CANADA.  
COORDINATE SYSTEM: NAD 1983 CSRS UTM ZONE 14N

**CLIENT****AGNICO EAGLE**


AGNICO EAGLE MINES LIMITED:  
MEADOWBANK DIVISION

**PROJECT**

MEADOWBANK COMPLEX  
2024 WILDLIFE MONITORING SUMMARY REPORT

**TITLE**

**WHALE TAIL PIT AND HAUL ROAD FOOTPRINT (2024)**

|   |            |            |            |
|---|------------|------------|------------|
|  | CONSULTANT | YYYY-MM-DD | 2025-03-19 |
|   |            | DESIGNED   | JF         |
|   |            | PREPARED   | CDB        |
|   |            | REVIEWED   | JF         |
|   |            | APPROVED   | CDLM       |

|                |           |      |        |
|----------------|-----------|------|--------|
| PROJECT NO.    | CONTROL   | REV. | FIGURE |
| CA0039984.7604 | 4000/4004 | 0    | 5-2    |

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B 28mm

## 5.7 Accuracy of Impact Predictions

The 2024 habitat loss data were compared to permitted areas (i.e., rather than EIA predicted areas and extensions) to evaluate adherence to the impact predictions and the provision of adaptive management, as either a necessary or proactive measure. Actual habitat loss as result of mine site, AWAR, and WTHR construction to date is less than habitat available within permitted areas (Table 5-13).

**Table 5-13: Accuracy of Impact Predictions – Habitat Loss**

| Measurable Parameter | Threshold<br>(Compared to Permitted Areas)   | Threshold Exceeded<br>(2024)   | Adaptive Management Implemented | Status   |
|----------------------|--|--|---------------------------------|--|
| Habitat Loss         | Terrestrial Habitat<br>Meadowbank = 1,531 ha<br>AWAR = 455 ha<br>Whale Tail = 1,584 ha<br>Threshold is >5% habitat loss of permitted area  | No   | None required                   | Ground Surveys<br>Mapping and GIS analyses – ELC habitat mapping |
|                      | Ungulates<br>Meadowbank Mine Site<br>Growing = 531 ha<br>Winter = 407 ha<br>AWAR<br>Growing = 34 ha<br>Winter = 107 ha<br>Whale Tail<br>Growing = 58 ha<br>Winter = 1,116 ha   | No   | None Required                   |  |
|                      | Small Mammals<br>Waterbirds<br>Breeding Birds  | Given the minimal effects associated with the Meadowbank project, habitat loss effects were screened out during the EA (Golder 2016) |                                 |  |
|                      | Following mine closure and reclamation activities (except for tailings, waste rock facilities and exposed pit slopes) will see revegetation rates of >20% (year 2 post-closure), >40% (year 5), >60% (year 8) and >80% (year 11) | Not yet applicable   |                                 |  |

AWAR = All-Weather Access Road, EA = Environmental Assessment, ELC = Ecological Land Classification, GIS = Geographic Information System.

## 5.8 Management Recommendations

Measured change in footprint for the Meadowbank Mine and Vault sites, the AWAR, the Whale Tail Mine and WTHR was assessed as less than 25% of predicted values in 2021, the last comprehensive assessment, and 2023, the last annual assessment. Therefore, the next comprehensive habitat analysis will be completed in 2027 as it will be 3 years following this report.

## **6.0 CARIBOU SATELLITE-COLLARING PROGRAM**

### **6.1 Overview**

The caribou satellite-collaring program continued in 2024 and includes data collected within the Project. Collar deployment for this program is completed by the Government of Nunavut in collaboration with hunters and Elders. The program allows Agnico Eagle to assess the spatial relationship between collared caribou and the Project RSA.

### **6.2 Objectives**

The satellite-collaring program was developed to provide information on the distribution of caribou occurring within the Project RSA and contribute data to ongoing satellite-collaring programs for the Ahiak, Beverly, Lorillard, Qamanirjuaq, and Wager Bay herds, as well as individuals not yet assigned to a herd and marked as Northeast Mainland (NEM) in the data. The satellite-collaring program, along with regional data, are important monitoring and management tools that provide a regional perspective on caribou activity near Mine operations. Another key objective of the program is to provide timely information for the caribou management and monitoring strategy at the Meadowbank and Whale Tail sites (i.e., Decision Tree approach; see 2019 TEMP [Agnico Eagle 2019]).

To better understand caribou movement trajectories across the WTHR and AWAR, a descriptive analysis using the most recent telemetry data was performed using data current to 31 December 2024. Seasonal movement maps were produced to visualize the spatial relationships between collared caribou and the Project RSA in 2024.

### **6.3 Duration and Methods**

The satellite-collaring program was initially designed to continue for five consecutive years in accordance with the original TEMP (Cumberland 2006). Caribou in the Baker Lake area were first collared in May 2008, and the program continued for more than a decade.

Caribou collaring methods and deployment are administered by the GN DoE. 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.

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

## 6.4 Historical Results

Collar deployment around Baker Lake with the assistance of Agnico Eagle began in 2008. The number of collared caribou continues to grow yearly. The number of collared caribou that interact with the Project fluctuates yearly but remains relatively low (Table 6-1).

**Table 6-1: Total Number of Collared Caribou and GPS Fixes across Years.**

| Year | Total Collars | Total Fixes | Collars in RSA | Fixes in RSA | Collars in RSA (%) | Fixes in RSA (%) |
|------|---------------|-------------|----------------|--------------|--------------------|------------------|
| 2008 | 82            | 9,304       | 0              | 0            | 0                  | 0                |
| 2009 | 57            | 7,659       | 0              | 0            | 0                  | 0                |
| 2010 | 32            | 9,066       | 6              | 72           | 18.75              | 0.79             |
| 2011 | 59            | 13,000      | 6              | 31           | 10.17              | 0.24             |
| 2012 | 50            | 14,611      | 5              | 66           | 10.00              | 0.45             |
| 2013 | 74            | 23,124      | 4              | 30           | 5.41               | 0.13             |
| 2014 | 47            | 33,787      | 3              | 125          | 6.38               | 0.37             |
| 2015 | 87            | 63,675      | 6              | 236          | 6.90               | 0.37             |
| 2016 | 102           | 134,484     | 12             | 930          | 11.76              | 0.69             |
| 2017 | 132           | 176,480     | 12             | 449          | 9.09               | 0.25             |
| 2018 | 136           | 197,294     | 29             | 2,570        | 21.32              | 1.30             |
| 2019 | 145           | 216,577     | 14             | 729          | 9.66               | 0.34             |
| 2020 | 101           | 154,714     | 11             | 612          | 10.89              | 0.40             |
| 2021 | 86            | 119,282     | 5              | 283          | 5.81               | 0.24             |
| 2022 | 137           | 165,651     | 20             | 746          | 14.60              | 0.45             |
| 2023 | 233           | 333,276     | 20             | 1,354        | 8.58               | 0.41             |
| 2024 | 196           | 247,684     | 13             | 1019         | 6.63               | 0.41             |

### 6.4.1 2024 Caribou Movement Patterns

In 2024, thirteen individuals from 3 different herds (Ahiak, Lorillard, and Wager Bay) had collar fixes within the Project RSA. Only 2 collared caribou interacted with the RSA during spring and summer. The earliest and latest dates of GPS fixes in the RSA for each season can be found in Table 6-2.

**Table 6-2: Number of Collared Caribou by Season that Interacted with the Project RSA with Arrival and Exit Dates.**

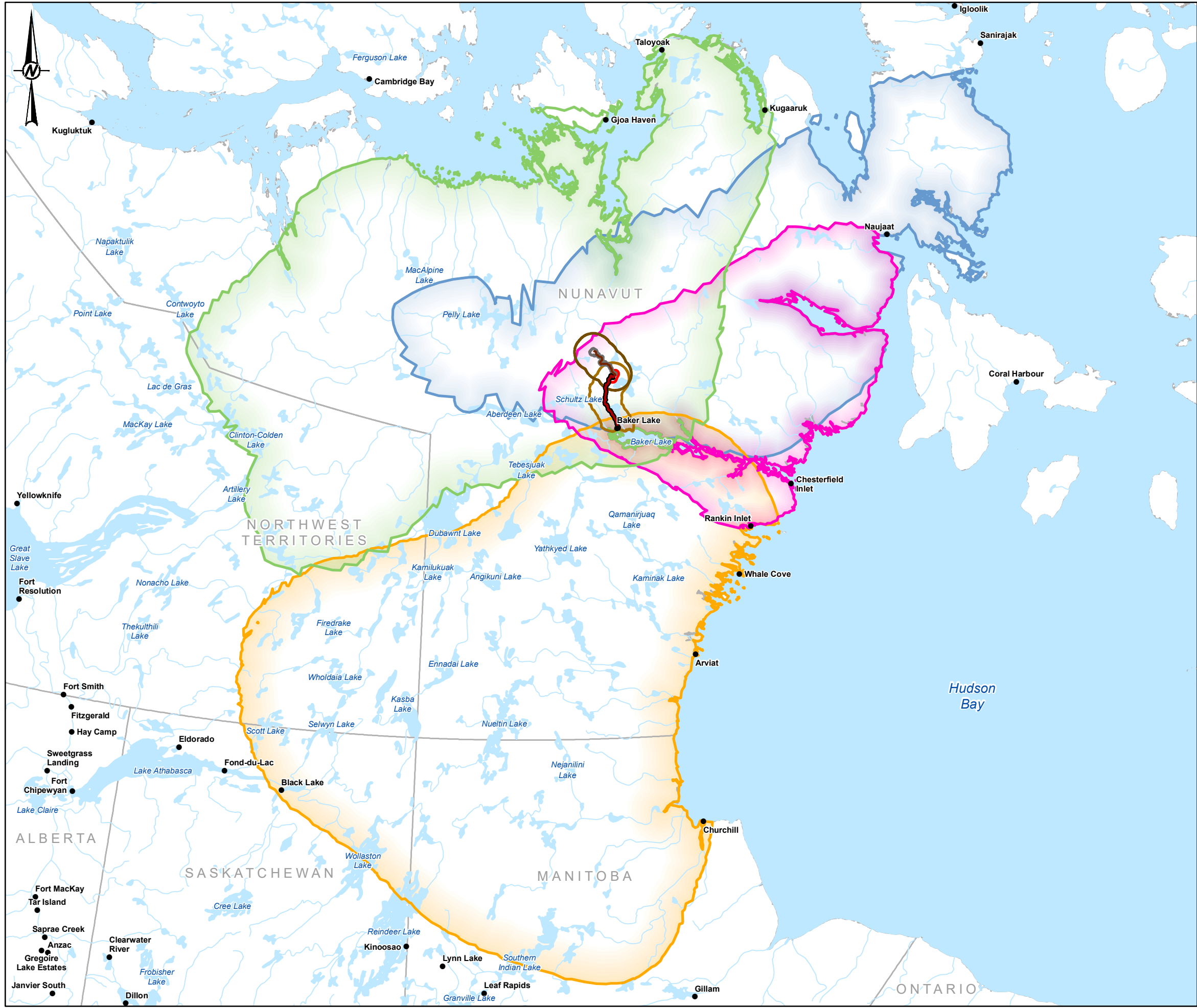
| Season                    | Number of Collars | Earliest Arrival | Latest Exit |
|---------------------------|-------------------|------------------|-------------|
| Spring (01 Apr to 25 May) | 2                 | 2024-04-01       | 2024-04-26  |
| Summer (26 May to 21 Sep) | 2                 | 2024-08-28       | 2024-09-21  |
| Fall (22 Sep to 15 Dec)   | 9                 | 2024-09-28       | 2024-12-15  |
| Winter (16 Dec to 31 Mar) | 7                 | 2024-12-16       | 2024-03-31  |

Migration pattern maps were produced for the Ahiak, Lorillard, Qamanirjuaq, and Wager Bay caribou ranges (Figure 6-1). Caribou ranges provided on maps were included for reference, but the Ahiak range in this case is used to represent areas used by both Ahiak and Beverly herds. Collared caribou paths depicted on figures could be from caribou from any one of these herds and may also include caribou marked as Northeast Mailed (NEM) or individuals not yet classified to herd.

During spring migration 2024, caribou migration movements were generally in a northeastern direction over time (Figure 6-2). Caribou interacting with the Project RSA generally started their migrations within the Ahiak and Lorillard herd ranges and ended spring migration within the Ahiak, Lorillard, or Wager Bay ranges. During summer 2024, caribou directional movements followed less of a consistent pattern (Figure 6-3). Caribou were more dispersed and used large areas during summer, including coastal areas, which is consistent with expected patterns during the insect avoidance seasons. Caribou within the Ahiak and Lorillard range were most likely to interact with Project during summer at the north and south ends (Figure 6-2). During fall migration 2024, caribou directional movements were less clear compared to spring, but generally followed a pattern of dispersed southwest movements (Figure 6-4). Caribou winter movements in 2024 were more condensed compared to other seasons (Figure 6-5). Caribou near or within the Project RSA during winter occurred mainly within the Lorillard range. This pattern has also been observed during baseline (Golder 2020a).



PATH: W:\Client\Agnico\_Eagle\_Mines\_Ltd\White\_Tail\99\_PROJECTS\CA0039984\_7604\_4000\_4004\_06\_01\_CARIBOU\_ANNUAL\_RANGES.mxd PRINTED ON: 2025-03-19 AT: 11:50:05 AM



**LEGEND**

- POPULATED PLACE
- ALL-WEATHER ACCESS ROAD (AWAR)
- WHALE TAIL HAUL ROAD (WTHR)
- AWAR LOCAL STUDY AREA (LSA)
- WTHR LOCAL STUDY AREA (LSA)
- WTHR REGIONAL STUDY AREA (RSA)
- MEADOWBANK LOCAL STUDY AREA (LSA)
- MEADOWBANK REGIONAL STUDY AREA (RSA)
- WATERCOURSE
- WATERBODY
- PROVINCIAL/TERRITORIAL BOUNDARY

**ANNUAL RANGE**

- AHIAK
- LORILLARD
- QAMANIRJUAQ
- WAGER BAY

**REFERENCE(S)**

- INFRASTRUCTURE OBTAINED FROM AGNICO EAGLE MINES LIMITED.
- BASE DATA OBTAINED FROM GEOGRATIS, © DEPARTMENT OF NATURAL RESOURCES. CANADA. ALL RIGHTS RESERVED.
- CARIBOU DATA OBTAINED FROM DEPARTMENT OF ENVIRONMENT (GOVERNMENT OF NUNAVUT), GOVERNMENT OF NORTHWEST TERRITORIES. COORDINATE SYSTEM: NAD 1983 CSRS UTM ZONE 14N

**CLIENT**

**AGNICO EAGLE MINES LIMITED: MEADOWBANK DIVISION**

**PROJECT**

MEADOWBANK COMPLEX  
2024 WILDLIFE MONITORING SUMMARY REPORT

**TITLE**

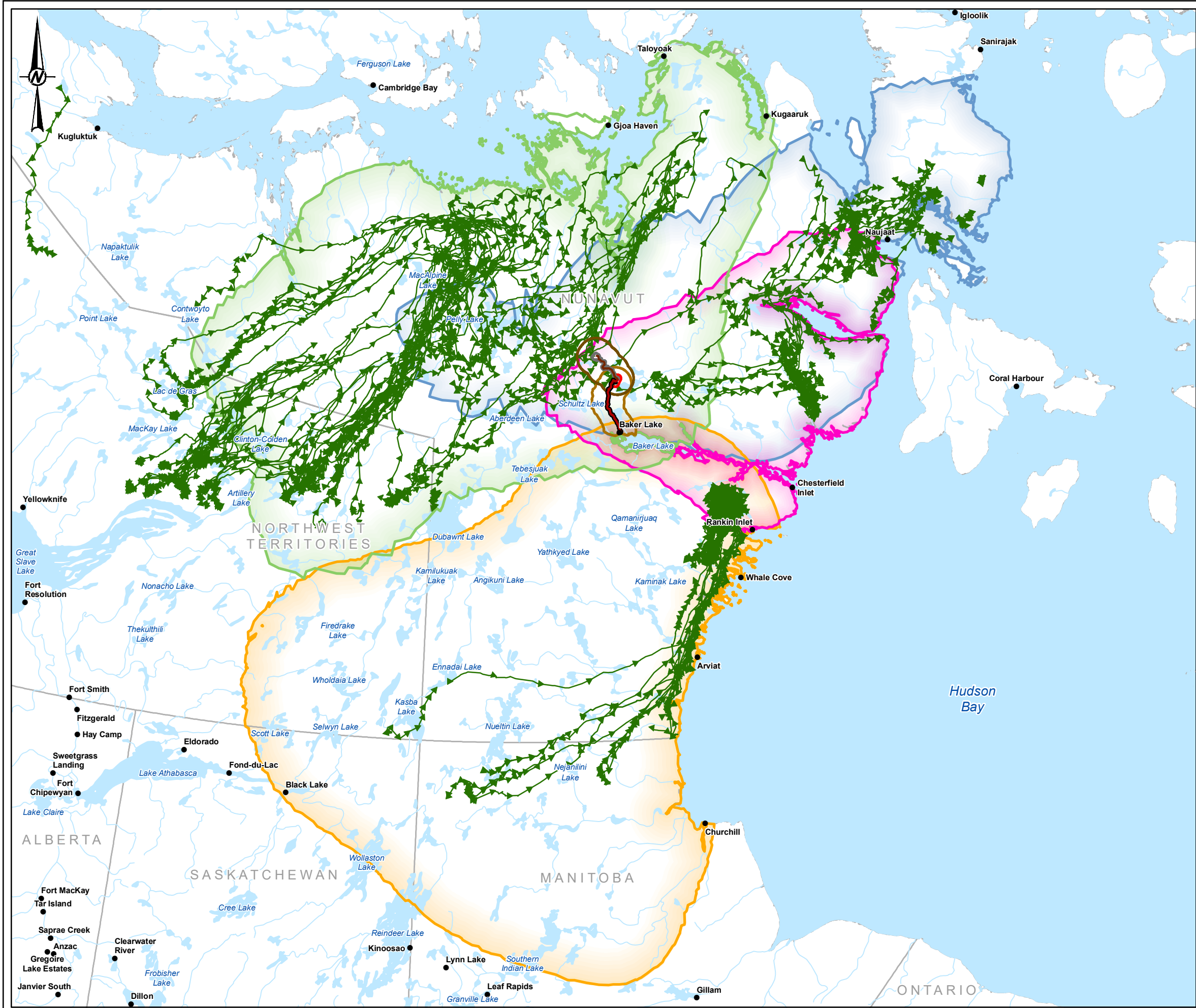
CARIBOU ANNUAL RANGES

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|  | CONSULTANT | YYYY-MM-DD | 2025-03-19 |
|  | DESIGNED   | MS         |            |
|  | PREPARED   | CDB        |            |
|  | REVIEWED   | JF         |            |
|  | APPROVED   | CDLM       |            |

|                |           |      |        |
|----------------|-----------|------|--------|
| PROJECT NO.    | PHASE     | REV. | FIGURE |
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IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B 28mm

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**LEGEND**


- POPULATED PLACE
- ALL-WEATHER ACCESS ROAD (AWAR)
- WHALE TAIL HAUL ROAD (WTHR)
- AWAR LOCAL STUDY AREA (LSA) Awar Local Study Area (LSA)
- WTHR LOCAL STUDY AREA (LSA)
- WTHR REGIONAL STUDY AREA (RSA)
- MEADOWBANK LOCAL STUDY AREA (LSA)
- MEADOWBANK REGIONAL STUDY AREA (RSA)
- WATERCOURSE
- WATERBODY
- PROVINCIAL/TERRITORIAL BOUNDARY
- 2024 SATELLITE-COLLARED CARIBOU BY SEASON**
- SPRING
- ANNUAL RANGE**
- AHIAK
- LORILLARD
- QAMANIRJUAQ
- WAGER BAY

**REFERENCE(S)**

- INFRASTRUCTURE OBTAINED FROM AGNICO EAGLE MINES LIMITED.
- BASE DATA OBTAINED FROM GEOGRATIS, © DEPARTMENT OF NATURAL RESOURCES, CANADA. ALL RIGHTS RESERVED.
- CARIBOU DATA OBTAINED FROM DEPARTMENT OF ENVIRONMENT (GOVERNMENT OF NUNAVUT), GOVERNMENT OF NORTHWEST TERRITORIES.

COORDINATE SYSTEM: NAD 1983 CSRS UTM ZONE 14N

**CLIENT**

 **AGNICO EAGLE**


**AGNICO EAGLE MINES LIMITED:  
MEADOWBANK DIVISION**

**PROJECT**

**MEADOWBANK COMPLEX  
2024 WILDLIFE MONITORING SUMMARY REPORT**

**TITLE**

**COLLARED CARIBOU MOVEMENTS DURING SPRING (APRIL 1  
TO MAY 25), 2024**

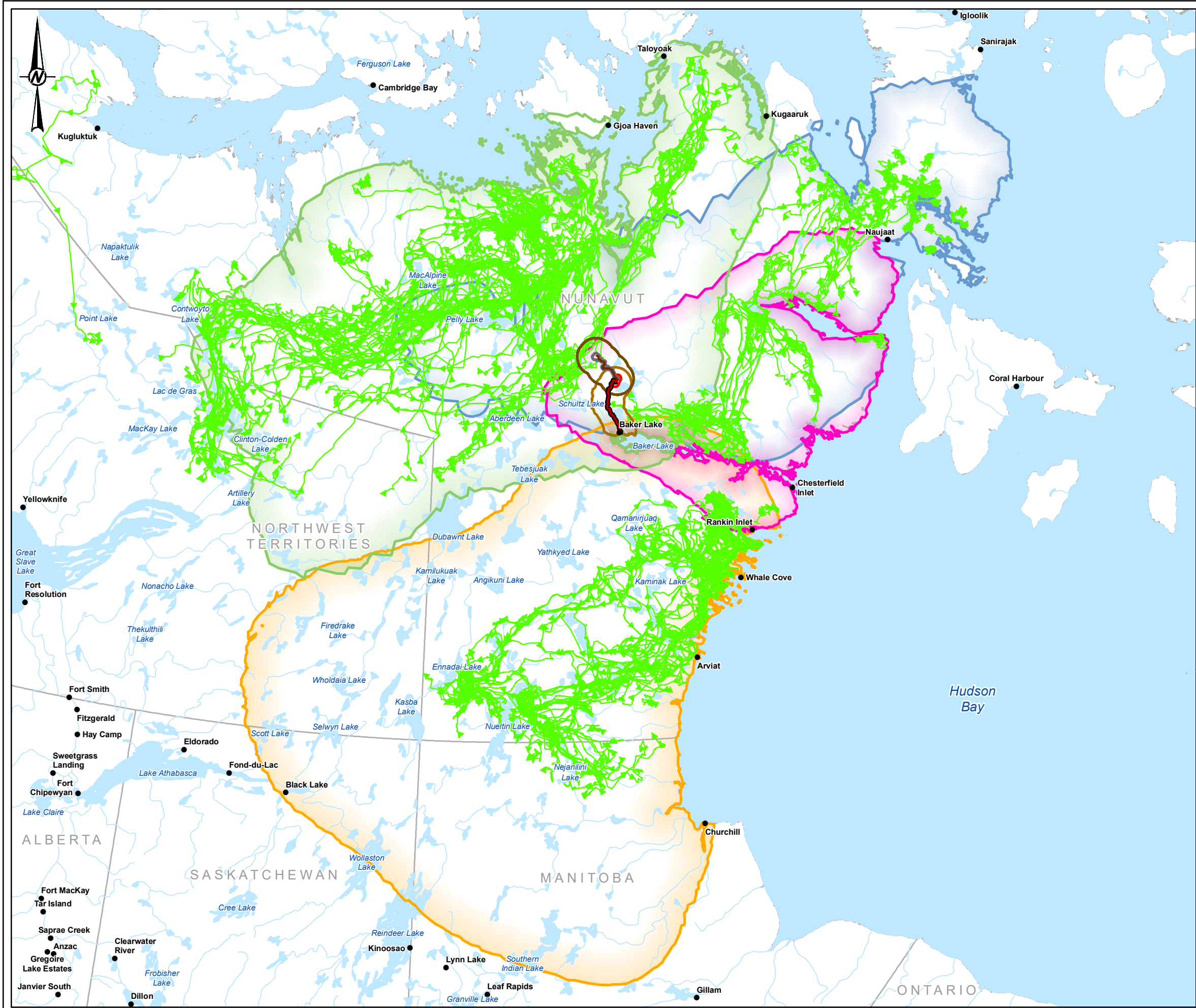
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|---|------------|------------|------------|
|  | CONSULTANT | YYYY-MM-DD | 2025-03-19 |
|   | DESIGNED   | MS         |            |
|   | PREPARED   | CDB        |            |
|   | REVIEWED   | JF         |            |
|   | APPROVED   | CDLM       |            |

|                |           |      |        |
|----------------|-----------|------|--------|
| PROJECT NO.    | PHASE     | REV. | FIGURE |
| CA0039984.7604 | 4000/4004 | 0    | 6-2    |

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B 25mm



PATH: W:\Client\Agnico\_Eagle\_Mines\_Ltd\WHALE\_Tailings\_PROJECT\SCADA039984\_7604\_4000\_4004\_06\_03\_COLLARED\_CARIBOU\_MOVEMENTS\_SUMMER\_2024.mxd PRINTED ON: 2025-03-19 AT: 1:37:23 PM



**LEGEND**

- POPULATED PLACE
- ALL-WEATHER ACCESS ROAD (AWAR)
- WHALE TAIL HAUL ROAD (WTHR)
- AWAR LOCAL STUDY AREA (LSA)
- WTHR LOCAL STUDY AREA (LSA)
- WTHR REGIONAL STUDY AREA (RSA)
- MEADOWBANK LOCAL STUDY AREA (LSA)
- MEADOWBANK REGIONAL STUDY AREA (RSA)
- WATERCOURSE
- WATERBODY
- PROVINCIAL/TERRITORIAL BOUNDARY
- 2024 SATELLITE-COLLARED CARIBOU BY SEASON
  - SUMMER
- ANNUAL RANGE
  - AHIAK
  - LORILLARD
  - QAMANIRJUAQ
  - WAGER BAY

**REFERENCE(S)**

- INFRASTRUCTURE OBTAINED FROM AGNICO EAGLE MINES LIMITED.
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- CARIBOU DATA OBTAINED FROM DEPARTMENT OF ENVIRONMENT (GOVERNMENT OF NUNAVUT), GOVERNMENT OF NORTHWEST TERRITORIES.

COORDINATE SYSTEM: NAD 1983 CSRS UTM ZONE 14N

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AGNICO EAGLE MINES LIMITED:  
MEADOWBANK DIVISION

PROJECT

MEADOWBANK COMPLEX  
2024 WILDLIFE MONITORING SUMMARY REPORT

TITLE

**COLLARED CARIBOU MOVEMENTS DURING SUMMER (MAY 26 TO SEPTEMBER 21), 2024**

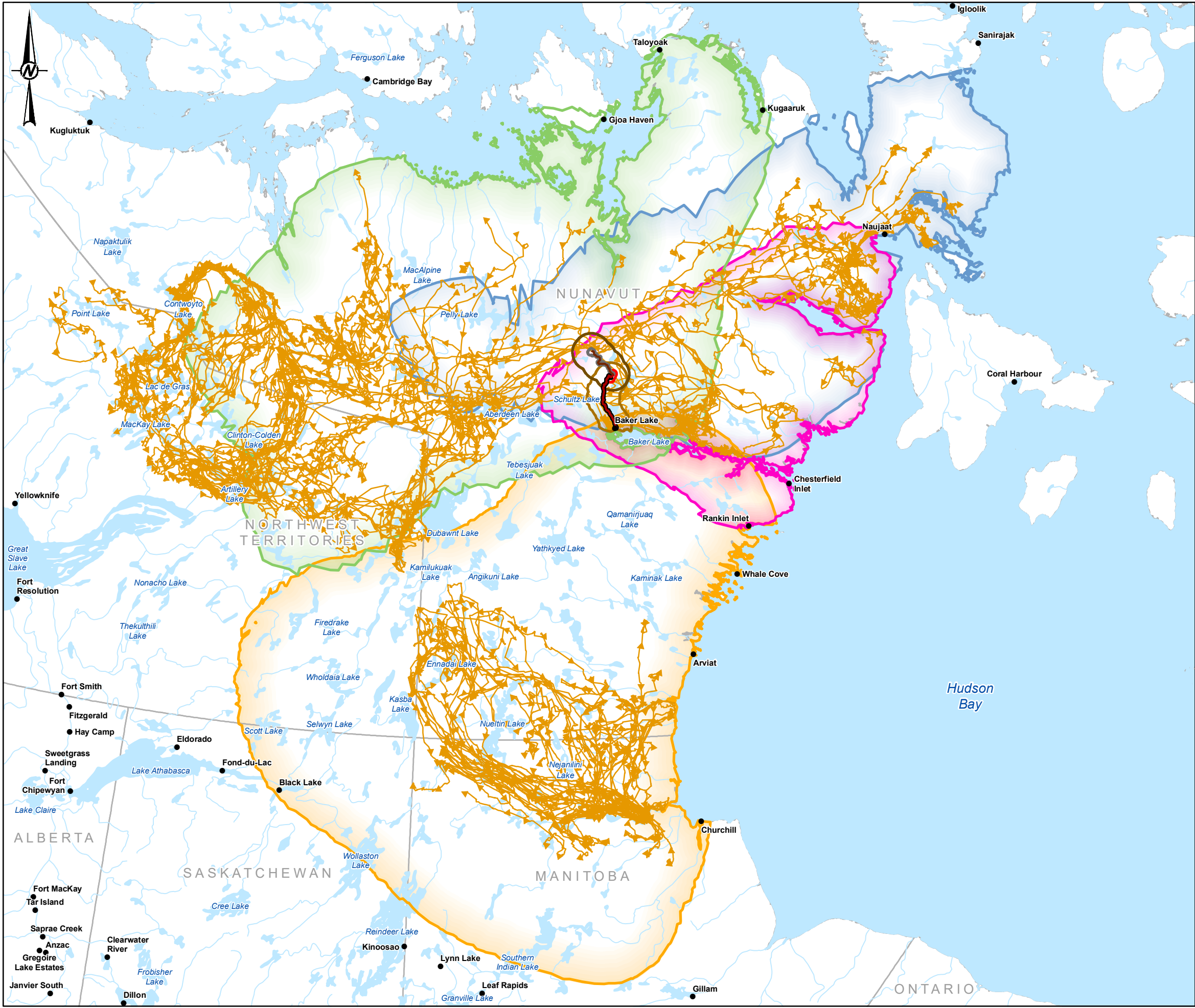
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|            | DESIGNED   | MS         |
|            | PREPARED   | CDB        |
|            | REVIEWED   | JF         |
|            | APPROVED   | CDLM       |

|                |           |      |        |
|----------------|-----------|------|--------|
| PROJECT NO.    | PHASE     | REV. | FIGURE |
| CA0039984.7604 | 4000/4004 | 0    | 6-3    |

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B 22mm



PATH: W:\Client\Agnico\_Eagle\_Mines\_Ltd\WHALE\_Tailings\_PROJECT\SCA\039984\_7604\_4000\_4004\_06\_04\_COLLARED\_CARIBOU\_MOVEMENTS\_FALL\_2024.mxd PRINTED ON: 2025-03-19 AT: 1:38:25 PM



**LEGEND**

- POPULATED PLACE
- ALL-WEATHER ACCESS ROAD (AWAR)
- WHALE TAIL HAUL ROAD (WTHR)
- AWAR LOCAL STUDY AREA (LSA)
- WTHR LOCAL STUDY AREA (LSA)
- WTHR REGIONAL STUDY AREA (RSA)
- MEADOWBANK LOCAL STUDY AREA (LSA)
- MEADOWBANK REGIONAL STUDY AREA (RSA)
- WATERCOURSE
- WATERBODY
- PROVINCIAL/TERRITORIAL BOUNDARY

**2024 SATELLITE-COLLARED CARIBOU BY SEASON**

- FALL

**ANNUAL RANGE**

- AHIK
- LORILLARD
- QAMANIRJUAQ
- WAGER BAY

**REFERENCE(S)**

- INFRASTRUCTURE OBTAINED FROM AGNICO EAGLE MINES LIMITED.
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- CARIBOU DATA OBTAINED FROM DEPARTMENT OF ENVIRONMENT (GOVERNMENT OF NUNAVUT), GOVERNMENT OF NORTHWEST TERRITORIES.

COORDINATE SYSTEM: NAD 1983 CSRS UTM ZONE 14N

**CLIENT**

**AGNICO EAGLE**

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MEADOWBANK DIVISION**

**PROJECT**

**MEADOWBANK COMPLEX  
2024 WILDLIFE MONITORING SUMMARY REPORT**

**TITLE**

**COLLARED CARIBOU MOVEMENTS DURING FALL (SEPTEMBER 22 TO DECEMBER 15), 2024**

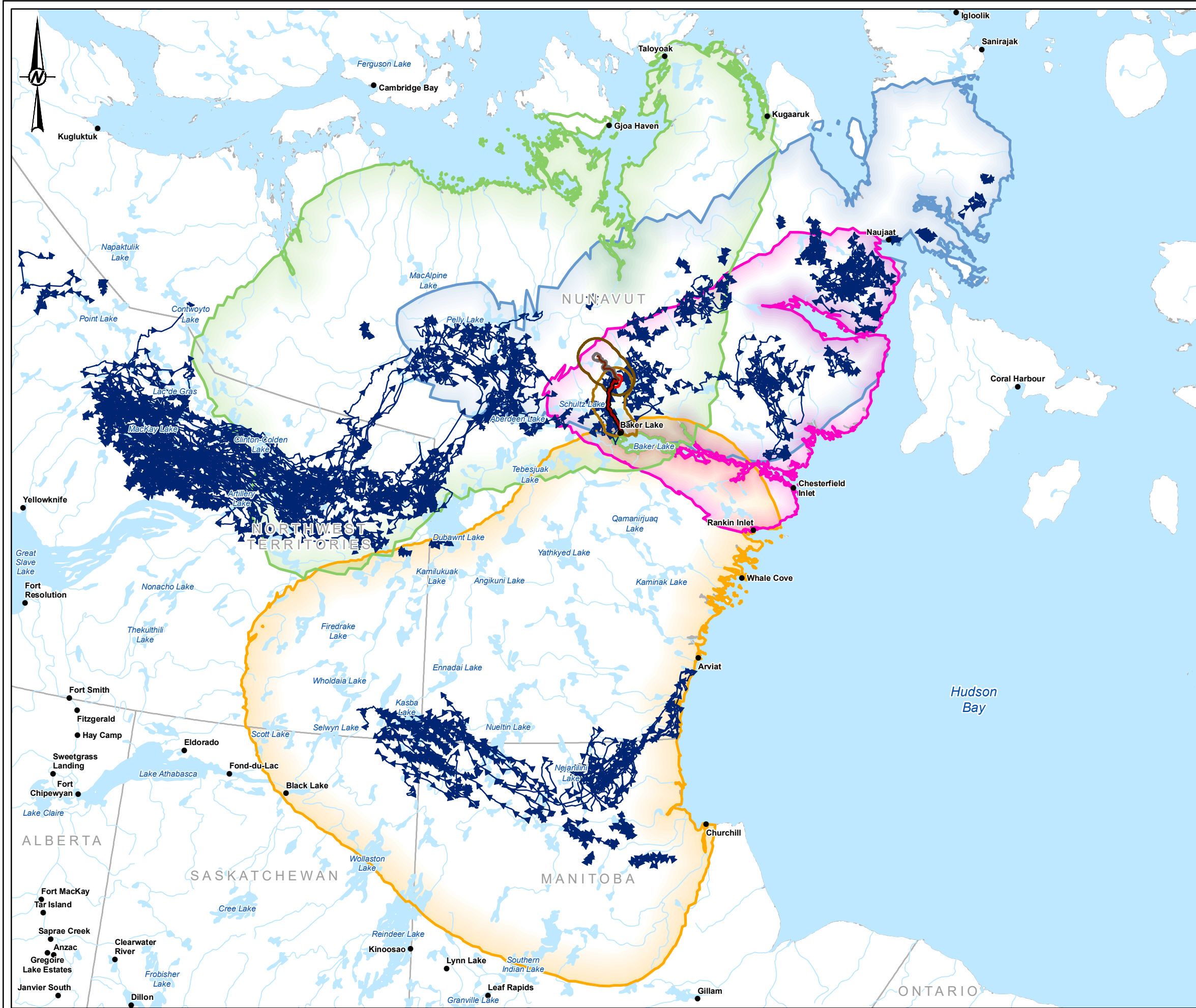
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| <b>CONSULTANT</b> | YYYY-MM-DD | 2025-03-19 |
| <b>DESIGNED</b>   | MS         |            |
| <b>PREPARED</b>   | CDB        |            |
| <b>REVIEWED</b>   | JF         |            |
| <b>APPROVED</b>   | CDLM       |            |

|                    |              |             |               |
|--------------------|--------------|-------------|---------------|
| <b>PROJECT NO.</b> | <b>PHASE</b> | <b>REV.</b> | <b>FIGURE</b> |
| CA0039984.7604     | 4000/4004    | 0           | 6-4           |

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B 28mm



PATH: W:\Client\Agnico\_Eagle\_Mines\_Ltd\WHALE\_Tailings\_PROJECT\SCA\039984\_7604\_4000\_4004\_05\_05\_COLLARED\_CARIBOU\_MOVEMENTS\_WINTER\_2024.mxd PRINTED ON: 2025-03-19 AT: 1:05:50 PM



**LEGEND**

- POPULATED PLACE
- ALL-WEATHER ACCESS ROAD (AWAR)
- WHALE TAIL HAUL ROAD (WTHR)
- AWAR LOCAL STUDY AREA (LSA)
- WTHR LOCAL STUDY AREA (LSA)
- WTHR REGIONAL STUDY AREA (RSA)
- MEADOWBANK LOCAL STUDY AREA (LSA)
- MEADOWBANK REGIONAL STUDY AREA (RSA)
- WATERCOURSE
- WATERBODY
- PROVINCIAL/TERRITORIAL BOUNDARY
- 2024 SATELLITE-COLLARED CARIBOU BY SEASON**
- WINTER
- ANNUAL RANGE**
- AHIK
- LORILLARD
- QAMANIRJUAQ
- WAGER BAY

**REFERENCE(S)**

- INFRASTRUCTURE OBTAINED FROM AGNICO EAGLE MINES LIMITED.
- BASE DATA OBTAINED FROM GEOGRATIS, © DEPARTMENT OF NATURAL RESOURCES, CANADA. ALL RIGHTS RESERVED.
- CARIBOU DATA OBTAINED FROM DEPARTMENT OF ENVIRONMENT (GOVERNMENT OF NUNAVUT), GOVERNMENT OF NORTHWEST TERRITORIES.

COORDINATE SYSTEM: NAD 1983 CSRS UTM ZONE 14N

**CLIENT**

**AGNICO EAGLE**

**AGNICO EAGLE MINES LIMITED: MEADOWBANK DIVISION**

**PROJECT**

**MEADOWBANK COMPLEX**

**2024 WILDLIFE MONITORING SUMMARY REPORT**

**TITLE**

**COLLARED CARIBOU MOVEMENTS DURING WINTER (DECEMBER 16 TO MARCH 31), 2024**

|                   |            |            |
|-------------------|------------|------------|
| <b>CONSULTANT</b> | YYYY-MM-DD | 2025-03-19 |
| <b>DESIGNED</b>   | MS         |            |
| <b>PREPARED</b>   | CDB        |            |
| <b>REVIEWED</b>   | JF         |            |
| <b>APPROVED</b>   | CDLM       |            |

**PROJECT NO.** CA0039984.7604

**PHASE** 4000/4004

**REV.** 0

**FIGURE** 6-5

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B 22mm

## 6.5 Accuracy of Impact Predictions

There are no specific impact predictions for caribou migration movements. Seasonal patterns of collared caribou movements vary across space and by season. Yearly and seasonal variability may be driven by ecological factors such as patterns of lichen growth, weather, and insect harassment (Gurarie et al. 2019; Joly et al. 2024).

## 6.6 Management Recommendations

Due to seasonal and yearly variability in movement patterns at the RSA scale, flexible and responsive mitigation measures, such as TEMP decision trees, are likely to continue to be the most effective. Ecologically relevant variables on caribou movements include snow conditions (Mallory et al. 2020), weather (Gurarie et al. 2019), and vegetation cover (Joly et al. 2024). By considering how ecological factors determine movement choices from one GPS fix to the next, it may be possible to understand what determines movement trajectories that result in interactions with the Project RSA. With the continued goal of protecting the maximum number of caribou in an effective and efficient manner, further studies that incorporate both collar data and IQ knowledge will be valuable for understanding caribou movement in relation to the Meadowbank Complex.

## 7.0 VIEWSHED SURVEYS

### 7.1 Overview

Viewshed surveys were implemented in 2020 to survey standardized and readily accessible locations along the WTHR that would maximize detection of approaching caribou because topography around the WTHR is variable. The viewshed surveys were intended to serve as an early warning system for caribou approaching the WTHR to support mitigation measures during migration. In February 2020, surveys began using the twelve viewshed locations along the WTHR. In 2021, viewshed survey locations were adjusted based on areas with high caribou use and points of high elevation within areas with high caribou use, and an additional survey location was added. Thirteen viewshed locations were surveyed on 99 occasions in 2024.

### 7.2 Objectives

The purpose of the viewshed surveys is to provide an ‘early warning’ system of the presence of caribou in proximity to the WTHR. The viewshed surveys provide a series of standardized locations to repeatedly and safely survey throughout the year to produce estimates of caribou moving through the Project.

### 7.3 Methods

From 2017 to 2019, five height-of-land (HOL) locations were surveyed along the WTHR. The locations were within 500 m of the WTHR and provided an unobstructed view of the surrounding terrain. The HOL surveys were replaced by viewshed surveys and 13 viewshed survey locations were established along the WTHR in a desktop review to maximize the area around the WTHR that could be surveyed (Golder 2020b). Survey locations were established to cover the length of the WTHR. In 2024, 13 viewshed locations were surveyed as shown in Figure 7-1. While conducting the viewshed surveys, observers spent 10 minutes surveying for wildlife using a combination of naked eye, binoculars, and/or spotting scopes to maximize sighting distance. If a caribou group is observed, the observer estimates the number of individuals, direction from observer, distance from road, behaviour, direction of travel, and habitat. These results are then used to determine if a Group Size Threshold (GST) has been reached and if mitigation action is required.

### 7.4 Historical Results

During HOL surveys in 2019, a total of 12 species were observed (Table 7-1). The highest number of caribou were observed during the spring caribou season, followed by the fall and then summer seasons (Table 7-1). No caribou were observed during the winter caribou season.

In 2020, HOL surveys transitioned to viewshed surveys. Between 2020 and 2023, 2,557 viewshed surveys were conducted on 191 dates: 49 summer dates, 34 spring, 67 fall, and 41 winter dates. Across years, only 197 of the 2,557 surveys (8%) had caribou sightings. Historically, caribou were more often sighted on the west side of the road (60% of observations from 2021 to 2023), at distances of less than 1 km (Mean distance = 869 meters from 2021 to 2023). The majority of caribou observations (69%) occurred when the average sighting distance was greater than 1 km, indicating these surveys are most effective in good visibility conditions. Along with caribou, more than 17 other species of mammal and bird have been observed from viewshed surveys (

). Historical results from the 2020 to 2023 viewshed surveys are presented in

**Table 7-1: Total Number of Wildlife Observed during Height of Land Surveys along the Whale Tail Haul Road in 2019**

| Species            | Caribou Seasons            |                            |                          |                            |
|--------------------|----------------------------|----------------------------|--------------------------|----------------------------|
|                    | Spring<br>01 Apr to 25 May | Summer<br>26 May to 21 Sep | Fall<br>22 Sep to 15 Dec | Winter<br>16 Dec to 31 Mar |
| <b>Mammals</b>     |                            |                            |                          |                            |
| Arctic hare        | 2                          | 3                          | 3                        | 0                          |
| Caribou            | 842                        | 177                        | 529                      | 0                          |
| Muskox             | 17                         | 16                         | 0                        | 32                         |
| Wolf               | 0                          | 0                          | 1                        | 0                          |
| Wolverine          | 0                          | 0                          | 1                        | 1                          |
| <b>Birds</b>       |                            |                            |                          |                            |
| Canada goose       | 0                          | 6                          | 0                        | 0                          |
| Unidentified Goose | 0                          | 167                        | 0                        | 0                          |
| Unidentified Gull  | 0                          | 2                          | 0                        | 0                          |
| Unidentified Owl   | 0                          | 2                          | 0                        | 0                          |
| Ptarmigan          | 0                          | 19                         | 15                       | 0                          |
| Snow bunting       | 0                          | 10                         | 0                        | 0                          |
| Snow goose         | 0                          | 346                        | 0                        | 0                          |

**Table 7-2: Total Number of Wildlife Observed during Viewshed Surveys along the Whale Tail Haul Road from 2020 to 2023**

| Year | Species                | Caribou Seasons            |                            |                          |                            |
|------|------------------------|----------------------------|----------------------------|--------------------------|----------------------------|
|      |                        | Spring<br>01 Apr to 25 May | Summer<br>26 May to 21 Sep | Fall<br>22 Sep to 15 Dec | Winter<br>16 Dec to 31 Mar |
| 2020 | <b>Mammals</b>         |                            |                            |                          |                            |
|      | Arctic hare            | 1                          | 0                          | 0                        | 0                          |
|      | Caribou                | 247                        | 5                          | 0                        | 0                          |
|      | Muskox                 | 1                          | 7                          | 0                        | 0                          |
|      | <b>Birds</b>           |                            |                            |                          |                            |
|      | Common raven           | 0                          | 1                          | 0                        | 0                          |
|      | Sandhill crane         | 0                          | 1                          | 0                        | 0                          |
| 2021 | <b>Mammals</b>         |                            |                            |                          |                            |
|      | Arctic fox             | -                          | 1                          | 2                        | 0                          |
|      | Arctic ground squirrel | -                          | 1                          | 0                        | 0                          |
|      | Arctic hare            | -                          | 2                          | 0                        | 0                          |
|      | Caribou                | -                          | 149                        | 41                       | 0                          |
|      | Muskox                 | -                          | 20                         | 35                       | 2                          |
|      | <b>Birds</b>           |                            |                            |                          |                            |
|      | Canada goose           | -                          | 13                         | 0                        | 0                          |
|      | Common raven           | -                          | 0                          | 1                        | 1                          |
|      | Ptarmigan              | -                          | 0                          | 5                        | 0                          |
|      | Sandhill crane         | -                          | 2                          | 0                        | 0                          |
|      | Snow goose             | -                          | 38                         | 0                        | 0                          |

**Table 7-2: Total Number of Wildlife Observed during Viewshed Surveys along the Whale Tail Haul Road from 2020 to 2023**

| Year | Species                     | Caribou Seasons            |                            |                          |                            |
|------|-----------------------------|----------------------------|----------------------------|--------------------------|----------------------------|
|      |                             | Spring<br>01 Apr to 25 May | Summer<br>26 May to 21 Sep | Fall<br>22 Sep to 15 Dec | Winter<br>16 Dec to 31 Mar |
| 2022 | <b>Mammals</b>              |                            |                            |                          |                            |
|      | Arctic fox                  | 0                          | 2                          | 0                        | 0                          |
|      | Arctic hare                 | 0                          | 1                          | 0                        | 0                          |
|      | Caribou                     | 345                        | 70                         | 29                       | 17                         |
|      | Muskox                      | 73                         | 62                         | 110                      | 12                         |
|      | Wolf                        | 0                          | 1                          | 0                        | 0                          |
|      | <b>Birds</b>                |                            |                            |                          |                            |
|      | American crow               | 0                          | 1                          | 3                        | 2                          |
|      | Canada goose                | 32                         | 7                          | 0                        | 0                          |
|      | Common raven                | 3                          | 0                          | 0                        | 0                          |
|      | Greater white-fronted goose | 36                         | 0                          | 0                        | 0                          |
|      | Ptarmigan                   | 1                          | 1                          | 0                        | 0                          |
| 2023 | Rough-legged hawk           | 2                          | 0                          | 0                        | 0                          |
|      | Snow goose                  | 0                          | 233                        | 0                        | 0                          |
|      | <b>Mammals</b>              |                            |                            |                          |                            |
|      | Arctic fox                  | 0                          | 1                          | 2                        | 2                          |
|      | Caribou                     | 4,028                      | 95                         | 313                      | 6                          |
|      | Muskox                      | 26                         | 62                         | 294                      | 80                         |
|      | Wolf                        | 1                          | 1                          | 0                        | 0                          |
|      | <b>Birds</b>                |                            |                            |                          |                            |
|      | American crow               | 0                          | 1                          | 0                        | 0                          |
|      | Canada goose                | 0                          | 19                         | 13                       | 0                          |
|      | Common raven                | 0                          | 0                          | 0                        | 1                          |
|      | Unidentified duck           | 0                          | 1                          | 0                        | 0                          |
|      | Gyrfalcon                   | 0                          | 0                          | 1                        | 0                          |
|      | Rough-legged hawk           | 0                          | 1                          | 0                        | 0                          |
|      | Snow goose                  | 0                          | 54                         | 0                        | 0                          |



7.5 2024 Results

Viewshed surveys were conducted on 99 dates in 2024, though not all locations were surveyed each day. A total of 1,467 surveys were conducted between 1 January and 31 December, with the highest survey effort occurring in the fall (34.5%, Table 7-3).

Table 7-3: Viewshed Survey Effort by Season, 2024

| Season | Survey Days | Surveys Completed<br>(% of total effort) |
|--------|-------------|--|
| Spring | 23          | 373 (25.4%)                              |
| Summer | 18          | 289 (19.7%)                              |
| Fall   | 36          | 506 (34.5%)                              |
| Winter | 22          | 299 (20.4%)                              |
| Total  | 99          | 1,467 (100%)                             |

Table 7-4 shows the dates in which caribou were observed, and the number observed, from each viewshed survey location in 2024. Of the viewshed surveys completed, 82 surveys (6%) had caribou sightings, and a total of 1,945 caribou were recorded (Table 7-4). All survey locations had surveys with caribou detections (Table 7-4). Caribou sightings from viewsheds ranged from 11 instances (Viewshed 13) to 2 instances (Viewsheds 8 and 10; Table 7-4).

Of the 82 surveys with caribou sightings, 48 occurred during the spring, 22 occurred during the summer, 8 occurred during the fall, and 4 occurred during winter (Table 7-4).

The number of caribou observed ranged from 1-200 individuals (Table 7-5). Caribou were sighted more frequently to the west and the average sighting distance was 1,080 m from the road. Most observations (97%) occurred when visibility was at least 1 km.

Other mammals recorded during viewshed surveys include Arctic fox, hare and ground squirrel, muskox and wolf. Bird species recorded include Canada goose, common raven, gyrfalcon, rough-legged hawk, snow goose, sandhill crane, and ptarmigan (Table 7-6).

**Table 7-4: Viewshed Surveys Completed and Number of Caribou Observed per Season in 2024**

| Date   | Viewshed Survey Location |    |    |     |     |    |     |     |     |     |     |     |     |
|--|--------------------------|----|----|-----|-----|----|-----|-----|-----|-----|-----|-----|-----|
|  | 1                        | 2  | 3  | 4   | 5   | 6  | 7   | 8   | 9   | 10  | 11  | 12  | 13  |
| <b>Spring Caribou Season (01 Apr – 25 May)</b> |                          |    |    |     |     |    |     |     |     |     |     |     |     |
| 2024-04-05                                     | 0                        | 0  | 0  | 0   | 0   | 0  | 0   | 0   | 0   | 0   | 0   | 20  | 0   |
| 2024-04-09                                     | 0                        | 77 | 0  | 0   | 11  | 16 | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| 2024-04-21                                     | 0                        | 0  | 0  | 0   | 0   | 0  | 0   | 0   | 0   | 0   | 150 | 14  | 3   |
| 2024-04-23                                     | 0                        | 0  | 0  | 98  | 103 | 19 | 0   | 75  | 125 | 75  | 35  | 36  | 9   |
| 2024-04-28                                     | 0                        | 0  | 0  | 0   | 0   | 0  | 90  | 0   | 0   | 0   | 25  | 0   | 20  |
| 2024-05-02                                     | 0                        | 0  | 0  | 0   | 17  | 0  | 0   | 30  | 0   | 0   | 0   | 0   | 0   |
| 2024-05-04                                     | 0                        | 0  | 0  | 0   | 9   | 17 | 0   | 0   | 23  | 0   | 29  | 0   | 0   |
| 2024-05-07                                     | 0                        | 0  | 0  | 7   | 0   | 0  | 0   | 0   | 0   | 0   | 0   | 0   | 12  |
| 2024-05-10                                     | 0                        | 0  | 0  | 0   | 4   | 0  | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| 2024-05-12                                     | 0                        | 0  | 2  | 2   | 9   | 0  | 0   | 0   | 0   | 0   | 0   | 6   | 0   |
| 2024-05-13                                     | 6                        | 0  | 0  | 0   | 0   | 0  | 0   | 0   | 0   | 0   | 0   | 0   | 6   |
| 2024-05-14                                     | 0                        | 0  | 14 | 0   | 15  | 0  | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| 2024-05-15                                     | 0                        | 0  | 0  | 0   | 0   | 0  | 0   | 0   | 0   | 0   | 0   | 6   | 0   |
| 2024-05-18                                     | 0                        | 0  | 0  | 0   | 3   | 0  | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| 2024-05-19                                     | 0                        | 0  | 2  | 19  | 12  | 0  | 0   | 0   | 0   | 0   | 17  | 22  | 0   |
| 2024-05-21                                     | 0                        | 0  | 0  | 10  | 0   | 0  | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| 2024-05-22                                     | 0                        | 0  | 0  | 3   | 0   | 0  | 0   | 0   | 0   | 0   | 0   | 0   | 3   |
| 2024-05-23                                     | 7                        | 0  | 0  | 0   | 0   | 0  | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| 2024-05-24                                     | 0                        | 0  | 0  | 0   | 0   | 5  | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| <b>Summer Caribou Season (26 May – 21 Sep)</b> |                          |    |    |     |     |    |     |     |     |     |     |     |     |
| 2024-05-29                                     | 0                        | 8  | 3  | 7   | 0   | 0  | 0   | 0   | 0   | 0   | 0   | 0   | 11  |
| 2024-05-31                                     | 0                        | 0  | 4  | 0   | 0   | 0  | 9   | 0   | 0   | 0   | 0   | 0   | 0   |
| 2024-06-04                                     | 1                        | 2  | 0  | 0   | 0   | 0  | 0   | 0   | 0   | 0   | 4   | 0   | 12  |
| 2024-06-06                                     | 0                        | 0  | 11 | 0   | 0   | 2  | 16  | 0   | 0   | 0   | 0   | 0   | 0   |
| 2024-06-15                                     | 0                        | 0  | 0  | 3   | 0   | 0  | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| 2024-06-24                                     | 0                        | 0  | 0  | 0   | 0   | 6  | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| 2024-08-06                                     | 0                        | 0  | 0  | 1   | 0   | 0  | 0   | 0   | 0   | 0   | 1   | 1   | 0   |
| 2024-08-17                                     | 0                        | 0  | 0  | 0   | 0   | 0  | 0   | 0   | 1   | 0   | 0   | 0   | 0   |
| 2024-08-31                                     | 0                        | 0  | 0  | 0   | 0   | 0  | 0   | 0   | 0   | 0   | 0   | 0   | 3   |
| 2024-09-14                                     | 0                        | 0  | 0  | 0   | 0   | 0  | 0   | 0   | 0   | 0   | 0   | 4   | 3   |
| <b>Fall Caribou Season (22 Sep – 15 Dec)</b>   |                          |    |    |     |     |    |     |     |     |     |     |     |     |
| 2024-10-07                                     | 0                        | 0  | 0  | 0   | 0   | 0  | 0   | 0   | 0   | 0   | 14  | 0   | 0   |
| 2024-10-11                                     | 0                        | 0  | 0  | 0   | 0   | 0  | 15  | 0   | 0   | 0   | 0   | 0   | 0   |
| 2024-11-27                                     | 0                        | 0  | 0  | 200 | 0   | 0  |     | 0   | 0   | 0   | 0   | 0   | 142 |
| 2024-12-01                                     | 0                        | 0  | 0  | 0   | 11  | 0  | 0   | 0   | 0   | 31  | 0   | 0   | 0   |
| 2024-12-06                                     | 19                       | 0  | 45 | 0   | 0   | 0  | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| <b>Winter Caribou Season (16 Dec – 31 Mar)</b> |                          |    |    |     |     |    |     |     |     |     |     |     |     |
| 2024-01-01                                     | 0                        | 0  | 0  | 0   | 0   | 0  | 23  | 0   | 0   | 0   | 0   | 0   | 0   |
| 2024-01-16                                     | 0                        | 0  | 0  | 0   | 0   | 0  | 8   | 0   | 0   | 0   | 0   | 0   | 0   |
| 2024-01-21                                     | 0                        | 0  | 0  | 0   | 0   | 0  | 0   | 0   | 0   | 0   | 2   | 0   | 0   |
| 2024-01-25                                     | 0                        | 0  | 4  | 0   | 0   | 0  | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| <b>Summary Values</b>                          |                          |    |    |     |     |    |     |     |     |     |     |     |     |
| Total Count                                    | 33                       | 87 | 85 | 350 | 194 | 65 | 161 | 105 | 149 | 106 | 277 | 109 | 224 |
| Total Sightings                                | 4                        | 3  | 8  | 10  | 10  | 6  | 6   | 2   | 3   | 2   | 9   | 8   | 11  |

**Table 7-5: Survey Condition Details for Viewshed Surveys with Caribou Sightings, 2024**

| Survey Location                                | Date       | Temperature (°C) | Wind Speed (km/hr) | Visibility* | Cardinal Direction | Number | Habitat  | Behaviour  | Distance from road (m) |
|--|------------|------------------|--------------------|-------------|--------------------|--------|--|------------|------------------------|
| <b>Spring Caribou Season (01 Apr - 25 May)</b> |            |                  |                    |             |                    |        |  |            |                        |
| Viewshed 12                                    | 2024-04-05 | -12              | 10                 | > 1 km      | West               | 20     | Heath Tundra                                       | Walking    | 500                    |
| Viewshed 02                                    | 2024-04-09 | -6               | 5                  | 100 m       | West               | 77     | Heath Tundra                                       | Walking    | 100                    |
| Viewshed 05                                    | 2024-04-09 | -6               | 5                  | 100 m       | West               | 11     | Heath Tundra, Ice                                  | Feeding    | 250                    |
| Viewshed 06                                    | 2024-04-09 | -6               | 5                  | 100 m       | West               | 16     | Heath Tundra, Ice                                  | Alert      | 300                    |
| Viewshed 11                                    | 2024-04-21 | -26              | 26                 | > 1 km      | West               | 150    | Heath Tundra                                       | Foraging   | 1000                   |
| Viewshed 12                                    | 2024-04-21 | -26              | 26                 | > 1 km      | West               | 14     | Heath Tundra                                       | Alert      | 500                    |
| Viewshed 13                                    | 2024-04-21 | -26              | 26                 | > 1 km      | West               | 3      | Heath Tundra                                       | Walking    | 200                    |
| Viewshed 04                                    | 2024-04-23 | -17              | 15                 | > 1 km      | West               | 98     | Birch & Riparian Shrub                             | Walking    | 350                    |
| Viewshed 05                                    | 2024-04-23 | -17              | 15                 | > 1 km      | West               | 103    | Heath Tundra, Ice                                  | Walking    | 500                    |
| Viewshed 06                                    | 2024-04-23 | -17              | 15                 | > 1 km      | West               | 19     | Heath Tundra                                       | Resting    | 250                    |
| Viewshed 08                                    | 2024-04-23 | -17              | 15                 | > 1 km      | West               | 75     | Heath Tundra                                       | Walking    | 1500                   |
| Viewshed 09                                    | 2024-04-23 | -17              | 15                 | > 1 km      | West               | 125    | Heath Tundra                                       | Foraging   | 350                    |
| Viewshed 10                                    | 2024-04-23 | -17              | 15                 | > 1 km      | West               | 75     | Heath Tundra                                       | Walking    | 500                    |
| Viewshed 11                                    | 2024-04-23 | -17              | 15                 | > 1 km      | West               | 35     | Heath Tundra                                       | Walking    | 1250                   |
| Viewshed 12                                    | 2024-04-23 | -17              | 15                 | > 1 km      | West               | 36     | Heath Tundra                                       | Walking    | 2000                   |
| Viewshed 13                                    | 2024-04-23 | -17              | 15                 | > 1 km      | West               | 9      | Heath Tundra                                       | Walking    | 1500                   |
| Viewshed 07                                    | 2024-04-28 | -17              | 20                 | > 1 km      | East               | 5      | Heath Tundra, Road                                 | Walking    | 0                      |
| Viewshed 07                                    | 2024-04-28 | -17              | 20                 | > 1 km      | West               | 85     | Heath Tundra, Hilltop, Lichen-Rock, Rock & Boulder | Lying Down | 120                    |
| Viewshed 11                                    | 2024-04-28 | -17              | 20                 | > 1 km      | West               | 25     | Heath Tundra, Hilltop                              | Foraging   | 3000                   |
| Viewshed 13                                    | 2024-04-28 | -17              | 20                 | > 1 km      | West               | 20     | Heath Tundra                                       | Foraging   | 2800                   |
| Viewshed 05                                    | 2024-05-02 | -5               | 18                 | > 1 km      | East               | 17     | Hilltop  | Walking    | 2500                   |
| Viewshed 08                                    | 2024-05-02 | -5               | 18                 | > 1 km      | West               | 30     | Heath Tundra                                       | Walking    | 1000                   |
| Viewshed 05                                    | 2024-05-04 | -6               | 3                  | > 1 km      | East               | 9      | Heath Tundra                                       | Foraging   | 30                     |
| Viewshed 06                                    | 2024-05-04 | -6               | 3                  | > 1 km      | West               | 17     | Heath Tundra                                       | Foraging   | 3000                   |
| Viewshed 09                                    | 2024-05-04 | -6               | 3                  | > 1 km      | West               | 23     | Heath Tundra                                       | Walking    | 2500                   |
| Viewshed 11                                    | 2024-05-04 | -6               | 3                  | > 1 km      | West               | 29     | Heath Tundra                                       | Foraging   | 2000                   |
| Viewshed 04                                    | 2024-05-07 | -1               | 6                  | > 1 km      | West               | 7      | Heath Tundra                                       | Lying Down | 3000                   |
| Viewshed 13                                    | 2024-05-07 | -1               | 6                  | > 1 km      | West               | 12     | Heath Tundra                                       | Walking    | 3000                   |
| Viewshed 05                                    | 2024-05-10 | 1                | 6                  | > 1 km      | West               | 4      | Heath Tundra                                       | Walking    | 2000                   |
| Viewshed 03                                    | 2024-05-12 | -3               | 5                  | > 1 km      | West               | 2      | Ice  | Walking    | 1500                   |
| Viewshed 04                                    | 2024-05-12 | -3               | 5                  | > 1 km      | West               | 2      | Ice  | Walking    | 1500                   |
| Viewshed 05                                    | 2024-05-12 | -3               | 5                  | > 1 km      | West               | 9      | Heath Tundra                                       | Foraging   | 1000                   |
| Viewshed 12                                    | 2024-05-12 | -3               | 5                  | > 1 km      | West               | 6      | Heath Tundra                                       | Foraging   | 1000                   |
| Viewshed 01                                    | 2024-05-13 | -2               | 8                  | > 1 km      | West               | 6      | Heath Tundra                                       | Walking    | 600                    |
| Viewshed 13                                    | 2024-05-13 | -2               | 8                  | > 1 km      | East               | 6      | Heath Tundra                                       | Foraging   | 1800                   |
| Viewshed 03                                    | 2024-05-14 | -2               | 30                 | 1 km        | West               | 14     | Heath Tundra                                       | Walking    | 2000                   |
| Viewshed 05                                    | 2024-05-14 | -2               | 30                 | 1 km        | West               | 15     | Heath Tundra                                       | Foraging   | 1200                   |
| Viewshed 12                                    | 2024-05-15 | -5               | 27                 | 1 km        | West               | 6      | Heath Tundra                                       | Foraging   | 150                    |
| Viewshed 05                                    | 2024-05-18 | 2                | 20                 | > 1 km      | East               | 3      | Heath Tundra                                       | Foraging   | 600                    |
| Viewshed 03                                    | 2024-05-19 | 2                | 13                 | > 1 km      | West               | 2      | Ice  | Walking    | 1200                   |

**Table 7-5: Survey Condition Details for Viewshed Surveys with Caribou Sightings, 2024**

| Survey Location | Date       | Temperature (°C) | Wind Speed (km/hr) | Visibility* | Cardinal Direction | Number | Habitat  | Behaviour  | Distance from road (m) |
|-----------------|------------|------------------|--------------------|-------------|--------------------|--------|--|------------|------------------------|
| Viewshed 04     | 2024-05-19 | 2                | 13                 | > 1 km      | West               | 7      | Hilltop  | Foraging   | 1500                   |
| Viewshed 04     | 2024-05-19 | 2                | 13                 | > 1 km      | West               | 12     | Heath Tundra                                       | Foraging   | 500                    |
| Viewshed 05     | 2024-05-19 | 2                | 13                 | > 1 km      | East               | 11     | Heath Tundra                                       | Resting    | 400                    |
| Viewshed 05     | 2024-05-19 | 2                | 13                 | > 1 km      | West               | 1      | Heath Tundra                                       | Foraging   | 200                    |
| Viewshed 11     | 2024-05-19 | 2                | 13                 | > 1 km      | West               | 17     | Heath Tundra                                       | Walking    | 2000                   |
| Viewshed 12     | 2024-05-19 | 2                | 13                 | > 1 km      | West               | 22     | Heath Tundra                                       | Foraging   | 1500                   |
| Viewshed 04     | 2024-05-21 | 2                | 11                 | > 1 km      | West               | 10     | Heath Tundra                                       | Walking    | 1800                   |
| Viewshed 04     | 2024-05-22 | 0                | 15                 | > 1 km      | East               | 3      | Heath Tundra                                       | Walking    | 200                    |
| Viewshed 13     | 2024-05-22 | 0                | 15                 | > 1 km      | West               | 3      | Heath Tundra                                       | Foraging   | 150                    |
| Viewshed 01     | 2024-05-23 | 5                | 15                 | > 1 km      | West               | 6      | Heath Tundra                                       | Resting    | 2000                   |
| Viewshed 01     | 2024-05-23 | 5                | 15                 | > 1 km      | West               | 1      | Heath Tundra                                       | Standing   | 1800                   |
| Viewshed 06     | 2024-05-24 | 5                | 5                  | > 1 km      | West               | 5      | Heath Tundra                                       | Resting    | 600                    |
| Viewshed 12     | 2024-04-05 | -12              | 10                 | > 1 km      | West               | 20     | Heath Tundra                                       | Walking    | 500                    |
| Viewshed 02     | 2024-04-09 | -6               | 5                  | 100 m       | West               | 77     | Heath Tundra                                       | Walking    | 100                    |
| Viewshed 05     | 2024-04-09 | -6               | 5                  | 100 m       | West               | 11     | Heath Tundra, Ice                                  | Feeding    | 250                    |
| Viewshed 06     | 2024-04-09 | -6               | 5                  | 100 m       | West               | 16     | Heath Tundra, Ice                                  | Alert      | 300                    |
| Viewshed 11     | 2024-04-21 | -26              | 26                 | > 1 km      | West               | 150    | Heath Tundra                                       | Foraging   | 1000                   |
| Viewshed 12     | 2024-04-21 | -26              | 26                 | > 1 km      | West               | 14     | Heath Tundra                                       | Alert      | 500                    |
| Viewshed 13     | 2024-04-21 | -26              | 26                 | > 1 km      | West               | 3      | Heath Tundra                                       | Walking    | 200                    |
| Viewshed 04     | 2024-04-23 | -17              | 15                 | > 1 km      | West               | 98     | Birch & Riparian Shrub                             | Walking    | 350                    |
| Viewshed 05     | 2024-04-23 | -17              | 15                 | > 1 km      | West               | 103    | Heath Tundra, Ice                                  | Walking    | 500                    |
| Viewshed 06     | 2024-04-23 | -17              | 15                 | > 1 km      | West               | 19     | Heath Tundra                                       | Resting    | 250                    |
| Viewshed 08     | 2024-04-23 | -17              | 15                 | > 1 km      | West               | 75     | Heath Tundra                                       | Walking    | 1500                   |
| Viewshed 09     | 2024-04-23 | -17              | 15                 | > 1 km      | West               | 125    | Heath Tundra                                       | Foraging   | 350                    |
| Viewshed 10     | 2024-04-23 | -17              | 15                 | > 1 km      | West               | 75     | Heath Tundra                                       | Walking    | 500                    |
| Viewshed 11     | 2024-04-23 | -17              | 15                 | > 1 km      | West               | 35     | Heath Tundra                                       | Walking    | 1250                   |
| Viewshed 12     | 2024-04-23 | -17              | 15                 | > 1 km      | West               | 36     | Heath Tundra                                       | Walking    | 2000                   |
| Viewshed 13     | 2024-04-23 | -17              | 15                 | > 1 km      | West               | 9      | Heath Tundra                                       | Walking    | 1500                   |
| Viewshed 07     | 2024-04-28 | -17              | 20                 | > 1 km      | East               | 5      | Heath Tundra, Road                                 | Walking    | 0                      |
| Viewshed 07     | 2024-04-28 | -17              | 20                 | > 1 km      | West               | 85     | Heath Tundra, Hilltop, Lichen-Rock, Rock & Boulder | Lying Down | 120                    |
| Viewshed 11     | 2024-04-28 | -17              | 20                 | > 1 km      | West               | 25     | Heath Tundra, Hilltop                              | Foraging   | 3000                   |
| Viewshed 13     | 2024-04-28 | -17              | 20                 | > 1 km      | West               | 20     | Heath Tundra                                       | Foraging   | 2800                   |
| Viewshed 05     | 2024-05-02 | -5               | 18                 | > 1 km      | East               | 17     | Hilltop  | Walking    | 2500                   |
| Viewshed 08     | 2024-05-02 | -5               | 18                 | > 1 km      | West               | 30     | Heath Tundra                                       | Walking    | 1000                   |
| Viewshed 05     | 2024-05-04 | -6               | 3                  | > 1 km      | East               | 9      | Heath Tundra                                       | Foraging   | 30                     |
| Viewshed 06     | 2024-05-04 | -6               | 3                  | > 1 km      | West               | 17     | Heath Tundra                                       | Foraging   | 3000                   |
| Viewshed 09     | 2024-05-04 | -6               | 3                  | > 1 km      | West               | 23     | Heath Tundra                                       | Walking    | 2500                   |
| Viewshed 11     | 2024-05-04 | -6               | 3                  | > 1 km      | West               | 29     | Heath Tundra                                       | Foraging   | 2000                   |
| Viewshed 04     | 2024-05-07 | -1               | 6                  | > 1 km      | West               | 7      | Heath Tundra                                       | Lying Down | 3000                   |
| Viewshed 13     | 2024-05-07 | -1               | 6                  | > 1 km      | West               | 12     | Heath Tundra                                       | Walking    | 3000                   |
| Viewshed 05     | 2024-05-10 | 1                | 6                  | > 1 km      | West               | 4      | Heath Tundra                                       | Walking    | 2000                   |

**Table 7-5: Survey Condition Details for Viewshed Surveys with Caribou Sightings, 2024**

| Survey Location                                | Date       | Temperature (°C) | Wind Speed (km/hr) | Visibility* | Cardinal Direction | Number | Habitat      | Behaviour  | Distance from road (m) |
|--|------------|------------------|--------------------|-------------|--------------------|--------|--------------|------------|------------------------|
| Viewshed 03                                    | 2024-05-12 | -3               | 5                  | > 1 km      | West               | 2      | Ice          | Walking    | 1500                   |
| Viewshed 04                                    | 2024-05-12 | -3               | 5                  | > 1 km      | West               | 2      | Ice          | Walking    | 1500                   |
| Viewshed 05                                    | 2024-05-12 | -3               | 5                  | > 1 km      | West               | 9      | Heath Tundra | Foraging   | 1000                   |
| Viewshed 12                                    | 2024-05-12 | -3               | 5                  | > 1 km      | West               | 6      | Heath Tundra | Foraging   | 1000                   |
| Viewshed 01                                    | 2024-05-13 | -2               | 8                  | > 1 km      | West               | 6      | Heath Tundra | Walking    | 600                    |
| Viewshed 13                                    | 2024-05-13 | -2               | 8                  | > 1 km      | East               | 6      | Heath Tundra | Foraging   | 1800                   |
| Viewshed 03                                    | 2024-05-14 | -2               | 30                 | 1 km        | West               | 14     | Heath Tundra | Walking    | 2000                   |
| Viewshed 05                                    | 2024-05-14 | -2               | 30                 | 1 km        | West               | 15     | Heath Tundra | Foraging   | 1200                   |
| Viewshed 12                                    | 2024-05-15 | -5               | 27                 | 1 km        | West               | 6      | Heath Tundra | Foraging   | 150                    |
| Viewshed 05                                    | 2024-05-18 | 2                | 20                 | > 1 km      | East               | 3      | Heath Tundra | Foraging   | 600                    |
| Viewshed 03                                    | 2024-05-19 | 2                | 13                 | > 1 km      | West               | 2      | Ice          | Walking    | 1200                   |
| Viewshed 04                                    | 2024-05-19 | 2                | 13                 | > 1 km      | West               | 7      | Hilltop      | Foraging   | 1500                   |
| Viewshed 04                                    | 2024-05-19 | 2                | 13                 | > 1 km      | West               | 12     | Heath Tundra | Foraging   | 500                    |
| Viewshed 05                                    | 2024-05-19 | 2                | 13                 | > 1 km      | East               | 11     | Heath Tundra | Resting    | 400                    |
| Viewshed 05                                    | 2024-05-19 | 2                | 13                 | > 1 km      | West               | 1      | Heath Tundra | Foraging   | 200                    |
| Viewshed 11                                    | 2024-05-19 | 2                | 13                 | > 1 km      | West               | 17     | Heath Tundra | Walking    | 2000                   |
| Viewshed 12                                    | 2024-05-19 | 2                | 13                 | > 1 km      | West               | 22     | Heath Tundra | Foraging   | 1500                   |
| Viewshed 04                                    | 2024-05-21 | 2                | 11                 | > 1 km      | West               | 10     | Heath Tundra | Walking    | 1800                   |
| Viewshed 04                                    | 2024-05-22 | 0                | 15                 | > 1 km      | East               | 3      | Heath Tundra | Walking    | 200                    |
| Viewshed 13                                    | 2024-05-22 | 0                | 15                 | > 1 km      | West               | 3      | Heath Tundra | Foraging   | 150                    |
| Viewshed 01                                    | 2024-05-23 | 5                | 15                 | > 1 km      | West               | 6      | Heath Tundra | Resting    | 2000                   |
| Viewshed 01                                    | 2024-05-23 | 5                | 15                 | > 1 km      | West               | 1      | Heath Tundra | Standing   | 1800                   |
| Viewshed 06                                    | 2024-05-24 | 5                | 5                  | > 1 km      | West               | 5      | Heath Tundra | Resting    | 600                    |
| <b>Summer Caribou Season (26 May - 21 Sep)</b> |            |                  |                    |             |                    |        |              |            |                        |
| Viewshed 02                                    | 2024-05-29 | 2                | 10                 | > 1 km      | West               | 8      | Ice          | Walking    | 120                    |
| Viewshed 03                                    | 2024-05-29 | 2                | 10                 | > 1 km      | West               | 3      | Heath Tundra | Walking    | 390                    |
| Viewshed 04                                    | 2024-05-29 | 2                | 10                 | > 1 km      | West               | 7      | Heath Tundra | Lying Down | 380                    |
| Viewshed 13                                    | 2024-05-29 | 2                | 10                 | > 1 km      | West               | 11     | Heath Tundra | Foraging   | 130                    |
| Viewshed 03                                    | 2024-05-31 | 2                | 50                 | > 1 km      | West               | 4      | Heath Tundra | Walking    | 250                    |
| Viewshed 07                                    | 2024-05-31 | 2                | 50                 | > 1 km      | West               | 9      | Heath Tundra | Lying Down | 1800                   |
| Viewshed 01                                    | 2024-06-04 | 2                | 20                 | > 1 km      | West               | 1      | Heath Tundra | Feeding    | 100                    |
| Viewshed 02                                    | 2024-06-04 | 2                | 20                 | > 1 km      | West               | 2      | Heath Tundra | Lying Down | 1500                   |
| Viewshed 11                                    | 2024-06-04 | 2                | 20                 | > 1 km      | West               | 4      | Heath Tundra | Alert      | 50                     |
| Viewshed 13                                    | 2024-06-04 | 2                | 20                 | > 1 km      | West               | 12     | Heath Tundra | Resting    | 1000                   |
| Viewshed 03                                    | 2024-06-06 | -10              | 28                 | > 1 km      | West               | 11     | Ice          | Walking    | 2000                   |
| Viewshed 06                                    | 2024-06-06 | -10              | 28                 | > 1 km      | West               | 2      | Heath Tundra | Walking    | 1500                   |
| Viewshed 07                                    | 2024-06-06 | -10              | 28                 | > 1 km      | West               | 16     | Ice          | Walking    | 800                    |
| Viewshed 04                                    | 2024-06-15 | 8                | 13                 | > 1 km      | West               | 3      | Heath Tundra | Foraging   | 400                    |
| Viewshed 06                                    | 2024-06-24 | 3                | 20                 | > 1 km      | West               | 6      | Water        | Walking    | 1000                   |
| Viewshed 04                                    | 2024-08-06 | 18               | 30                 | > 1 km      | East               | 1      | Heath Tundra | Foraging   | 20                     |
| Viewshed 11                                    | 2024-08-06 | 18               | 30                 | > 1 km      | West               | 1      | Heath Tundra | Walking    | 0                      |

**Table 7-5: Survey Condition Details for Viewshed Surveys with Caribou Sightings, 2024**

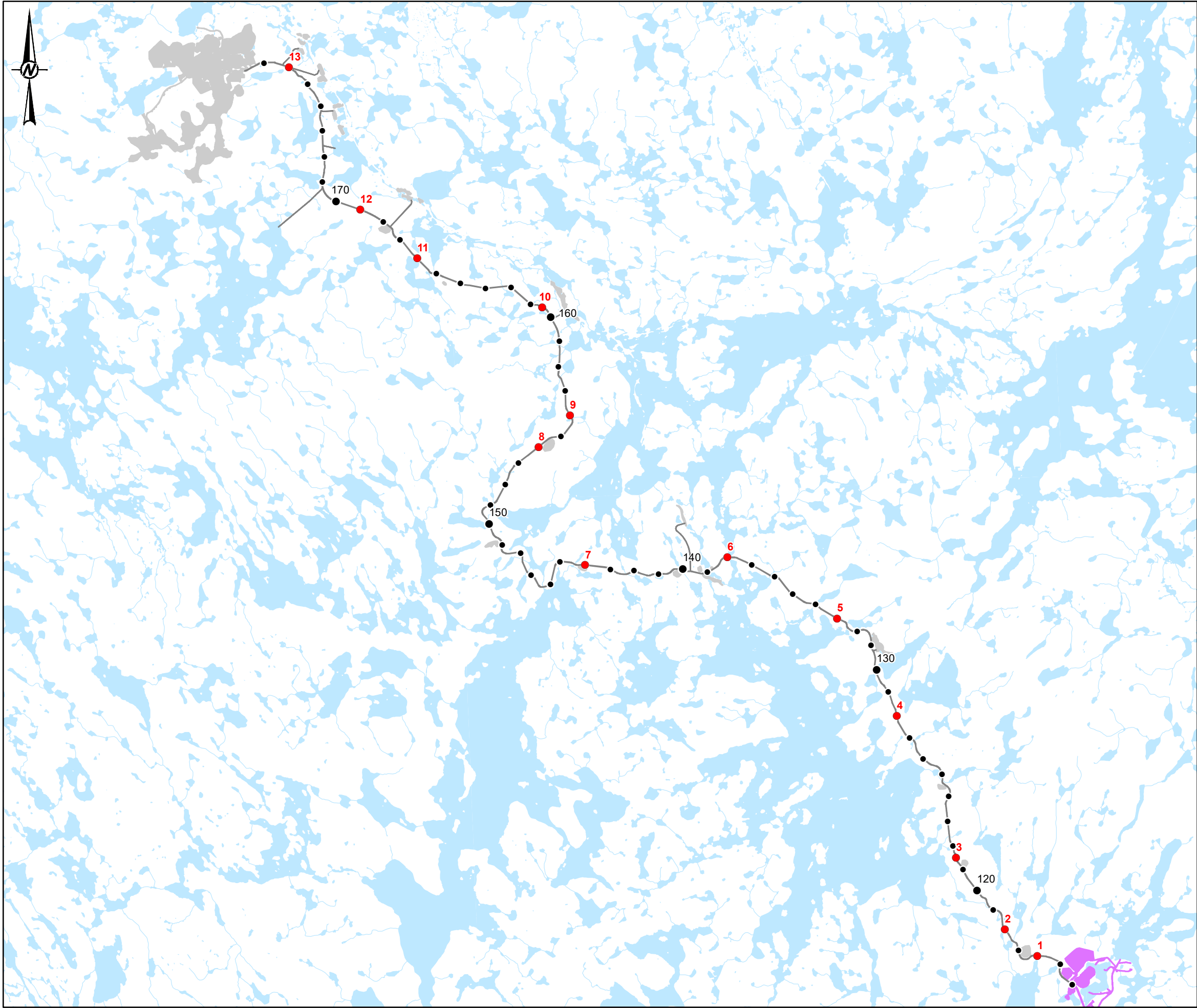
| Survey Location                                | Date       | Temperature (°C) | Wind Speed (km/hr) | Visibility* | Cardinal Direction | Number | Habitat                   | Behaviour | Distance from road (m) |
|--|------------|------------------|--------------------|-------------|--------------------|--------|---------------------------|-----------|------------------------|
| Viewshed 12                                    | 2024-08-06 | 18               | 30                 | > 1 km      | East               | 1      | Heath Tundra              | Walking   | 0                      |
| Viewshed 09                                    | 2024-08-17 | 15               | 15                 | 1 km        | West               | 1      | Heath Tundra              | Walking   | 1000                   |
| Viewshed 13                                    | 2024-08-31 | 3                | 12                 | > 1 km      | West               | 3      | Heath Tundra, Lichen-Rock | Foraging  | 300                    |
| Viewshed 12                                    | 2024-09-14 | 8                | 50                 | > 1 km      | West               | 4      | Heath Tundra              | Walking   | 400                    |
| Viewshed 13                                    | 2024-09-14 | 8                | 50                 | > 1 km      | West               | 3      | Heath Tundra              | Walking   | 750                    |
| <b>Fall Caribou Season (22 Sept – 15 Dec)</b>  |            |                  |                    |             |                    |        |                           |           |                        |
| Viewshed 11                                    | 2024-10-07 | 0                | 5                  | 1 km        | West               | 14     | Heath Tundra              | Walking   | 3000                   |
| Viewshed 07                                    | 2024-10-11 | 0                | 60                 | > 1 km      | East               | 7      | Heath Tundra, Hilltop     | Standing  | 100                    |
| Viewshed 07                                    | 2024-10-11 | 0                | 60                 | > 1 km      | East               | 8      | Heath Tundra, Hilltop     | Foraging  | 2000                   |
| Viewshed 04                                    | 2024-11-27 | -15              | 30                 | > 1 km      | West               | 200    | Heath Tundra              | Walking   | 2000                   |
| Viewshed 13                                    | 2024-11-27 | -15              | 30                 | > 1 km      | East               | 142    | Heath Tundra              | Walking   | 700                    |
| Viewshed 05                                    | 2024-12-01 | -22              | 30                 | > 1 km      | East               | 11     | Heath Tundra              | Walking   | 2000                   |
| Viewshed 10                                    | 2024-12-01 | -22              | 30                 | > 1 km      | East               | 31     | Heath Tundra              | Walking   | 150                    |
| Viewshed 01                                    | 2024-12-06 | -31              | 15                 | > 1 km      | West               | 19     | Heath Tundra              | Foraging  | 3500                   |
| Viewshed 03                                    | 2024-12-06 | -31              | 15                 | > 1 km      | West               | 45     | Heath Tundra              | Walking   | 2500                   |
| Viewshed 11                                    | 2024-10-07 | 0                | 5                  | 1 km        | West               | 14     | Heath Tundra              | Walking   | 3000                   |
| <b>Winter Caribou Season (16 Dec - 31 Mar)</b> |            |                  |                    |             |                    |        |                           |           |                        |
| Viewshed 07                                    | 2024-01-01 | -28              | 30                 | > 1 km      | East               | 23     | Ice                       | Walking   | 1200                   |
| Viewshed 07                                    | 2024-01-16 | -10              | 50                 | 1 km        | East               | 8      | Heath Tundra              | Foraging  | 700                    |
| Viewshed 11                                    | 2024-01-21 | -33              | 12                 | > 1 km      | East               | 2      | Heath Tundra              | Feeding   | 1000                   |
| Viewshed 03                                    | 2024-01-25 | -31              | 30                 | > 1 km      | East               | 4      | Heath Tundra              | Feeding   | 75                     |

**Table 7-6: Total Number of Wildlife Observed during Viewshed Surveys along the Whale Tail Haul Road in 2024**

| Species                | Caribou Seasons              |                              |                            |                              |
|------------------------|------------------------------|------------------------------|----------------------------|------------------------------|
|                        | Spring<br>(01 Apr to 25 May) | Summer<br>(26 May to 21 Sep) | Fall<br>(22 Sep to 15 Dec) | Winter<br>(16 Dec to 31 Mar) |
| <b>Mammals</b>         |                              |                              |                            |                              |
| Arctic fox             | 0                            | 1                            | 0                          | 1                            |
| Arctic hare            | 3                            | 0                            | 0                          | 0                            |
| Arctic ground squirrel | 2                            | 2                            | 1                          | 0                            |
| Caribou                | 1318                         | 113                          | 477                        | 37                           |
| Muskox                 | 50                           | 187                          | 245                        | 260                          |
| Wolf                   | 1                            | 1                            | 0                          | 0                            |
| Wolverine              | 1                            | 0                            | 0                          | 0                            |
| <b>Birds</b>           |                              |                              |                            |                              |
| Canada goose           | 30                           | 4                            | 0                          | 0                            |
| Common raven           | 1                            | 0                            | 5                          | 0                            |
| Gyr Falcon             | 0                            | 0                            | 1                          | 0                            |
| Ptarmigan              | 16                           | 0                            | 2                          | 0                            |
| Rough-legged-Hawk      | 3                            | 1                            | 0                          | 0                            |
| Sandhill crane         | 13                           | 0                            | 0                          | 0                            |
| Snow goose             | 576                          | 368                          | 70                         | 0                            |



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**LEGEND**

- VIEWSHED SURVEY LOCATION
- KILOMETRE MARKER
- WHALE TAIL MINE SITE
- HAUL ROAD
- MEADOWBANK MINE SITE
- WATERBODY
- WATERCOURSE

**REFERENCE(S)**

1. INFRASTRUCTURE OBTAINED FROM AGNICO EAGLE MINES LIMITED.  
2. ROAD, WATERCOURSE AND WATERBODY DATA OBTAINED FROM NATURAL RESOURCES CANADA.  
COORDINATE SYSTEM: NAD 1983 CSRS UTM ZONE 14N

**AGNICO EAGLE**

CLIENT

AGNICO EAGLE MINES LIMITED:  
MEADOWBANK DIVISION

PROJECT

MEADOWBANK COMPLEX  
2024 WILDLIFE MONITORING SUMMARY REPORT

TITLE

LOCATION OF VIEWSHED SURVEYS ALONG WHALE TAIL HAUL ROAD

|            |            |            |
|------------|------------|------------|
| CONSULTANT | YYYY-MM-DD | 2025-03-19 |
|            | DESIGNED   | JF         |
|            | PREPARED   | CDB        |
|            | REVIEWED   | JF         |
|            | APPROVED   | CDLM       |

|                |           |      |        |
|----------------|-----------|------|--------|
| PROJECT NO.    | CONTROL   | REV. | FIGURE |
| CA0039984.7604 | 4000/4004 | 0    | 7-1    |

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

## 7.6 Management Recommendations

Although more viewshed surveys were conducted in 2024 than in 2023, fewer caribou were observed using this approach. The majority of monitoring along the WTHR was conducted using the standard road surveys (Section 3.0). A comparison of the effectiveness of viewshed surveys and road surveys at detecting caribou approaching the WTHR is presented in Section 17.3, along with relevant management recommendations. Based on discussion from the fall 2024 TAG meeting (meeting #21, Agnico Eagle 2024d), viewshed surveys will be discontinued going forward and will not be conducted in 2025.

## **8.0 REMOTE CAMERA PROGRAM**

### **8.1 Overview**

The initial remote camera study design (October 2018 to November 2019) was intended to collect general trends on caribou crossing events and traffic or road activities on the WTHR, to inform fine scale traffic mitigation. An updated study design was implemented in November 2019, to examine the permeability of the WTHR to caribou movement as those interactions relate to the physical parameters of the road (i.e., backfill height, slope, and material grain size). The 2019 to 2022 remote camera data were previously analyzed for the 2020, 2021, 2022, and 2023 Wildlife Monitoring Summary Reports (Golder 2021, 2022, WSP 2023a, WSP 2024). Results from the 2024 remote camera program are summarized below.

### **8.2 Objectives**

The primary objective of the remote camera program is to monitor caribou behavioural interactions with the WTHR, and adapt management practices (i.e., traffic mitigation) as required. The current remote camera program allows for comparisons to determine if caribou crossing locations along the WTHR are related to the physical parameters of the road (i.e., backfill height, slope, and material grain size) and traffic rates.

### **8.3 Duration**

The use of remote cameras will continue throughout the year, but camera results will be analyzed and discussed at TAG meetings to ensure that the monitoring objectives are being achieved.

### **8.4 Methods**

#### **8.4.1 Camera Deployment and Settings**

Locations of remote cameras have varied across program years (Golder 2021, 2022, WSP 2023a). The same locations were used in 2024 as in 2021, 2022, and 2023. The locations of the paired remote cameras along the WTHR were selected based on high-frequency caribou crossing locations, and stratified across road height categories (i.e., <1.5 m, 1.5 to 3 m, and >3 m; Table 8-1). Road heights were determined in the field. Backfill material and slope at camera locations were determined from construction surveys (WSP 2019). Backfill slope along the WTHR is typically 2:1. In areas where backfill height exceeds 3 m, slope was recontoured to 4:1 for safety (WSP 2019).

The program uses Reconyx HyperFire 2 Professional Covert IR Camera OD Green cameras. In the pilot program, at each location, the first camera in the pair was typically placed facing the WTHR, and the second camera was placed facing away from the WTHR. In November 2019, camera locations were updated so that at each location, the first camera in the pair was placed facing parallel to the WTHR (i.e., recording observations of caribou crossing the road) in one direction (e.g., north). The second camera in the pair was placed facing parallel to the road in the opposite direction of the first camera (e.g., south). Cameras were placed in close proximity to the road (within 5 m, approximately 1 m above ground level), to provide a field of view that would capture road traffic and caribou interactions with the road. The majority of camera positions were adjusted for 2021 to encompass both sides of the road to better document caribou crossing events and vehicle traffic. Camera timing was set to the continuous motion-triggered setting, with additional timed interval photographs occurring in thirty minute or one-hour intervals. Maintenance checks were performed weekly throughout the year to remove dust, snow, or ice accumulated on cameras, and back up photographs as required.

**Table 8-1: Remote Camera Locations along the Whale Tail Haul Road, 2024**

| Camera Pair | Camera Label  | KM Location Reference | Road Height (m) | Backfill Material | Backfill Slope (Horizontal:Vertical) |
|-------------|---------------|-----------------------|-----------------|-------------------|--------------------------------------|
| 1           | AECC01/AECC02 | 118                   | >3              | Rock              | 4:1                                  |
| 2           | AECC03/AECC04 | 132                   | >3              | Esker             | 4:1                                  |
| 3           | AECC05/AECC06 | 136                   | 1.5 to 3        | Rock              | 2:1                                  |
| 4           | AECC07/AECC08 | 172                   | 1.5 to 3        | Rock              | 2:1                                  |
| 5           | AECC09/AECC10 | 157                   | 1.5 to 3        | Esker             | 2:1                                  |
| 6           | AECC11/AECC12 | 152                   | <1.5            | Mix               | 2:1                                  |
| 7           | AECC13/AECC14 | 138                   | >3              | Rock              | 2:1                                  |
| 8           | AECC15/AECC16 | 161                   | <1.5            | Esker             | 2:1                                  |
| 9           | AECC17/AECC18 | 170                   | <1.5            | Rock              | 2:1                                  |
| 10          | AECC19/AECC20 | 146                   | >3              | Rock              | 4:1                                  |

> = greater than; < = less than; km = kilometre; m = metre; UTM = Universal Transverse Mercator.

### 8.4.2 Photograph Review

Previous years of the remote camera program focused on manual review of time lapse photographs, rather than motion-triggered photographs (Golder 2022). Due to the open nature of the habitat along the WTHR, caribou infrequently walk directly in front of cameras, and so, infrequently activate motion-triggered photographs. Photographs in 2024 were pre-sorted using artificial intelligence (Section 8.4.3). The artificial intelligence was run over both motion and time-lapse photographs from the entire year.

Photographs identified as wildlife by the artificial intelligence were manually reviewed by a human observer and identified to species. Individuals of wildlife species were not considered separate detections during manual review, until either an hour had passed or until there was a distinguishable difference between separate individuals triggering the camera. All animals present within the field of view within each photo were counted. Wildlife were counted within the field-of view only and not in the background to avoid including animals that did not pass within the camera field-of view during the survey (e.g., animals over a kilometer away observed in the background). During analysis, for each independent event, the highest animal count of all photos within the independent event was used as the animal count. Instances of caribou crossing the road were recorded where applicable.

### 8.4.3 Artificial Intelligence Classification

An automated approach was used to classify the 2,500,329 photos collected in 2024. MegaDetector was used for general processing. It is a model trained with a large amount of data and is able to detect wildlife at various distances within the camera field-of-view. Bounding boxes with probability, coordinates, and class (animal, truck, or human) were applied to images. False detections of static objects (i.e., stones) were removed by comparing coordinates of objects between sequential images and allowed 5% deviation in the coordinates. False detections from bad weather or flags in front of camera were removed by checking for large (60-80% of FOV) bounding box size on images. Additional false detections from trucks, flags, far away, or the sun were removed through use of a custom Yolo model and comparison of bounding boxes. Any remaining images in the object list also classed as an animal are placed in the results folder for human review and labelling.

#### 8.4.4 Data Analysis

Sampling effort or number of days each camera was considered active is required to calculate an overall caribou detection rate. For this analysis, the cameras were considered active for the entire year. Some cameras only captured one wildlife photograph within a given season, so using the first and last dates with wildlife photos for a given season or using the number of dates with wildlife observations to calculate sampling effort would not be accurate. Given that the cameras were maintained every week throughout the year (so field of view obstruction issues would be addressed promptly), assuming a complete sampling effort for the year provided the most accurate sampling efforts.

An overall caribou detection rate was calculated, based on the number of individuals observed at each camera pair within the camera field of view, divided by the camera station sampling effort in days for each season. A caribou crossing rate was also calculated, based on the number of crossing events observed, divided by the camera station sampling effort in days for each season. To prevent double counting caribou at camera pairs, the maximum caribou and caribou crossing rate at each camera pair is presented by season.

Only events where caribou were photographed on the road, or individuals of a group were observed on either side of the road were considered crossing events. Caribou counts may be subject to error due to distance of caribou groups from cameras. Caribou groups had to be detected on both sides of the road to count as crossing events, and some crossing events beyond the range of the camera are likely missed due to the interval between time-lapse photographs or the relatively short distance of the motion sensor (~30 m limit).

### 8.5 Results

In 2024, a total of 2,099 photographs were selected by the automated approach and reviewed by a human observer. There were 323 total wildlife observations across 224 observation events. Fourteen species were detected in 2024: Arctic fox, Arctic ground squirrel, Arctic hare, Canada goose, caribou, common raven, grey wolf, muskox, rock ptarmigan, snow goose, wolverine, and unidentified bird species including a duck species, gull species, and passerine species.

Caribou were detected between 18 February 2024 and 26 September 2024. Caribou were detected on all ten camera monitoring locations except for camera pair 1, and caribou crossing events were recorded on six of ten camera monitoring locations (Table 8-2). Caribou crossing events were detected in all seasons except for winter. Caribou detections were highest in summer (58%), second highest is spring (34%), and were lower during fall and winter (3% and 4%, respectively).

The highest caribou detection rate occurred at camera pair 9 (KM 170) in the summer, followed by the camera pair 9 spring rates. The highest crossing rate was observed at camera pair 9 in the summer (Figure 8-1; Table 8-2). Detection rates are variable as only individuals within the field of view at the same time are counted, with the highest count out of all photos of an event being used. There were 14 crossing events in 2024 (Table 8-3). Four crossing events were observed on days with an open road status, seven on days with a 24 hour closure or a partial closure (<24 hours) status, and three on days with speed restrictions in effect (Table 8-3). The largest caribou crossing observed included hundreds of caribou in the background of images, which occurred at 2:00 AM on 31 July 2024, during which time the WTHR was closed (status: < 24-hour closure; Table 8-3). Because the hundreds of caribou in the background were not near the camera field of view, they were not reflected in the detection rate for camera pair 9.

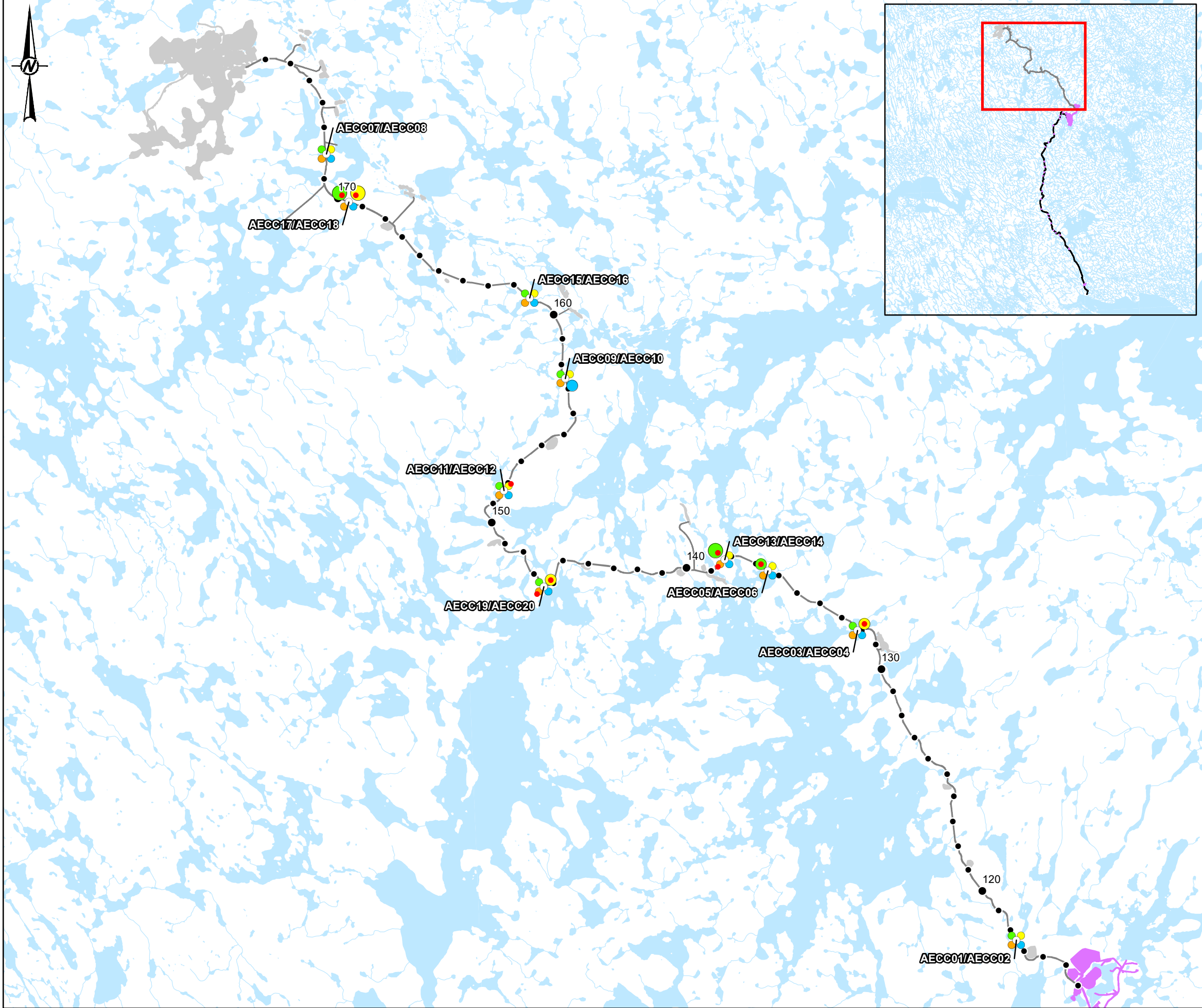
**Table 8-2: Caribou Detection Rates (Caribou Observations/Active Day) from Remote Cameras in 2024**

| Camera Pair | Spring       |               | Summer       |               | Fall         |               | Winter       |               |
|-------------|--------------|---------------|--------------|---------------|--------------|---------------|--------------|---------------|
|             | Caribou Rate | Crossing Rate | Caribou Rate | Crossing Rate | Caribou Rate | Crossing Rate | Caribou Rate | Crossing Rate |
| 1           | -            | -             | -            | -             | -            | -             | -            | -             |
| 2           | -            | -             | 0.03         | 0.01          | -            | -             | -            | -             |
| 3           | 0.09         | 0.02          | -            | -             | -            | -             | -            | -             |
| 4           | -            | -             | 0.01         | -             | -            | -             | -            | -             |
| 5           | 0.02         | -             | -            | -             | -            | -             | 0.04         | -             |
| 6           | 0.02         | -             | 0.01         | 0.01          | -            | -             | -            | -             |
| 7           | 0.18         | 0.02          | -            | -             | 0.01         | 0.01          | -            | -             |
| 8           | 0.02         | -             | -            | -             | -            | -             | -            | -             |
| 9           | 0.25         | 0.02          | 0.38         | 0.05          | -            | -             | -            | -             |
| 10          | -            | -             | 0.03         | 0.01          | 0.02         | 0.01          | -            | -             |

Note: “-” denotes a detection rate of 0.00.



R:\TH\W\Client\Agnico\_Eagle\_Mines\_Ltd\Whale\_Tail\99\_PROJECTS\CA0039984\_7604\_4000\_4004\_08\_01\_CARIBOU\_DETECTION\_CROSSING\_RATES\_2024.mxd PRINTED ON: 2025-03-19 AT: 1:45:00 PM



**LEGEND**

- REMOTE CAMERA LOCATION
- CARIBOU CROSSING
- CARIBOU RATE SPRING (CARIBOU/ACTIVE CAMERA DAYS)**
  - 0.00 - 0.02
  - 0.02 - 0.10
  - 0.10 - 1.00
- CARIBOU RATE SUMMER (CARIBOU/ACTIVE CAMERA DAYS)**
  - 0.00 - 0.02
  - 0.02 - 0.10
  - 0.10 - 1.00
- CARIBOU RATE FALL (CARIBOU/ACTIVE CAMERA DAYS)**
  - 0.00 - 0.02
  - 0.02 - 0.10
  - 0.10 - 1.00
- CARIBOU RATE WINTER (CARIBOU/ACTIVE CAMERA DAYS)**
  - 0.00 - 0.02
  - 0.02 - 0.10
  - 0.10 - 1.00
- KILOMETRE MARKER
- WHALE TAIL MINE SITE
- HAUL ROAD
- MEADOWBANK MINE SITE
- WATERBODY
- WATERCOURSE

0 3 6

1:150,000 KILOMETRES

**REFERENCE(S)**

1. INFRASTRUCTURE OBTAINED FROM AGNICO EAGLE MINES LIMITED.  
2. ROAD, WATERCOURSE AND WATERBODY DATA OBTAINED FROM NATURAL RESOURCES CANADA.  
COORDINATE SYSTEM: NAD 1983 CSRS UTM ZONE 14N

CLIENT

**AGNICO EAGLE**

AGNICO EAGLE MINES LIMITED:  
MEADOWBANK DIVISION

PROJECT

MEADOWBANK COMPLEX  
2024 WILDLIFE MONITORING SUMMARY REPORT

TITLE

**CARIBOU DETECTION AND CROSSING RATES FROM REMOTE CAMERA DATA (2024)**

|            |            |            |
|------------|------------|------------|
| CONSULTANT | YYYY-MM-DD | 2025-03-19 |
|            | DESIGNED   | JP         |
|            | PREPARED   | CDB        |
|            | REVIEWED   | JF         |
|            | APPROVED   | CDLM       |

|                |           |      |        |
|----------------|-----------|------|--------|
| PROJECT NO.    | CONTROL   | REV. | FIGURE |
| CA0039984.7604 | 4000/4004 | 0    | 8-1    |

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B 28mm

**Table 8-3: Caribou Crossing Events on Remote Cameras, 2024**

| Camera Pair | Crossing Time    | Number of Individuals | Road Closure Status               |
|-------------|------------------|-----------------------|-----------------------------------|
| CP07        | 2024-04-23 21:35 | 2                     | Closed                            |
| CP03        | 2024-04-25 22:02 | 3                     | Closed                            |
| CP09        | 2024-04-26 4:48  | 3                     | Closed                            |
| CP09        | 2024-07-31 2:00  | 1                     | Closed (< 24 hour) <sup>(a)</sup> |
| CP09        | 2024-07-31 3:19  | 1                     | Closed (< 24 hour) <sup>(a)</sup> |
| CP09        | 2024-07-31 4:07  | 1                     | Closed (< 24 hour) <sup>(a)</sup> |
| CP09        | 2024-07-31 6:04  | 1                     | Closed (< 24 hour) <sup>(a)</sup> |
| CP09        | 2024-08-06 13:00 | 1                     | Speed Restriction                 |
| CP10        | 2024-08-08 0:55  | 1                     | Speed Restriction                 |
| CP09        | 2024-08-16 5:30  | 1                     | Open                              |
| CP02        | 2024-08-19 11:24 | 1                     | Speed Restriction                 |
| CP06        | 2024-08-26 20:08 | 1                     | Open                              |
| CP10        | 2024-09-25 16:03 | 2                     | Open                              |
| CP07        | 2024-09-26 19:38 | 1                     | Open                              |

(a) WHTR was closed at the time of the crossing event.

## 8.6 Management Recommendations

The use of artificial intelligence expedited processing of remote camera photographs and was able to process a large number of photographs (2,500,329), which would not be feasible by manual processing. Although some wildlife detections are expected to be missed through this approach, more wildlife may be detected overall through analysis of a greater number of photographs. It is assumed that some photographs with far-away wildlife were not detected by the automated approach.

Results from 2024 indicate lower rates of caribou and caribou crossings compared to 2023 and 2022 data (Golder 2022, WSP 2023a). This aligns with variation in the overall amount of caribou interactions with the Project across years (WSP 2023c). Overall, few crossing events were detected on remote cameras, and conclusions on how road characteristics influence caribou crossing behaviour cannot be drawn at this time.

The path forward for the remote camera program was discussed with the TAG at the fall 2024 TAG meeting (Agnico Eagle 2024d). The remote camera program is unlikely to contribute to adaptive management but could potentially provide insight into time between vehicle traffic and caribou crossing events. A new study design will be developed for the remote camera program including several objectives brought forward by the TAG (Agnico Eagle 2024d). The primary objective will be to quantify daily traffic rates on the AWAR and WTHR, the secondary objective will be to estimate duration of convoys, and the tertiary objective will be to examine caribou crossings in relation to vehicle traffic.



## 9.0 BLAST MONITORING

### 9.1 Overview

The purpose of the blast monitoring program at the Whale Tail Mine is to understand how blasting vibration relates to caribou behaviour. The program involves monitoring caribou behavior before, during, and after a blast, as well as establishing relationships between vibration and overpressure levels and blasting parameters (e.g., charge mass, charge depth), environmental conditions (e.g., seasonal variation), and propagation distances.

Blasting is delayed when caribou or other wildlife are observed within the blast danger zone (typically 600 m from the blast centre). According to the TEMP, blasting is also delayed when caribou GST is observed within 4 km during the sensitive season, or within 5 km during the calving period, or when muskox GST is observed within 1 km (Agnico Eagle 2019). Following discussion with the TAG, the distance was relaxed to 3 km for caribou during the sensitive season, and 5 km during the calving period, to better understand effects to caribou from blasting. The Environment Department performs monitoring prior to each blast to ensure no caribou groups exceeding GST are present within these setback distances.

### 9.2 Objectives

The purpose of the blast monitoring program is to determine if blasts conducted at the Whale Tail Mine influence caribou behavior. This is done by using behavior as a proxy of blast disturbance, determining if blasts exceed vibration annoyance or damage thresholds, and testing any potential relationship between blasting (i.e., vibration and overpressure) and behaviour.

### 9.3 Duration

Caribou behavioural responses to blasting events was assessed in in 2021, 2022, and 2024. These data were used to determine site-specific relationships between blasting and behaviour. Caribou behaviour monitoring will continue opportunistically until a sufficient sample size of caribou behaviour at different distances from blasting is collected and assessed.

### 9.4 Methods

#### 9.4.1 Vibration and Overpressure Model

The blast monitoring program focuses on the following parameters to estimate impacts of blasting on caribou:

- Peak Particle Velocity (PPV), which characterizes ground vibration (i.e., physical shaking of the ground as a result of an explosive blast). PPV values were measured in millimetres per second (mm/s).
- Peak Pressure Level (PPL), which characterizes airblast overpressure (i.e., movement of air as a result of an explosive blast). PPL values were measured in linear decibels (dBL).

There are few if any guidelines intended to address sensory disturbance to wildlife from explosive blasting. In the absence of wildlife-specific threshold or limits, guidelines for damage and human annoyance due to blasting were used as a starting point for assessment of potential impacts to caribou. The caribou hearing threshold for low frequency noise is higher than humans, meaning that humans may be able to detect blasting related PPL at greater distances than caribou (Agnico Eagle 2019). According to IQ, caribou may be able to detect blasting vibrations at greater distances than humans.

Most guideline limits on PPV and PPL from blasting are intended to protect against minor cosmetic damage to buildings and other structures. For example, the Environment and Climate Change Canada (ECCC) *Environmental Code of Practice for Metal Mines* (Environment Canada 2009) recommends that PPV be limited to 12.5 mm/s and PPL be limited to 128 dBL at nearby receptors. Another document commonly referenced in blasting assessments is the Australian and New Zealand Environment Council (ANZEC) *Technical Basis for Guidelines to Minimise Annoyance Due to Blasting Overpressure and Ground Vibration* (ANZEC 1990). To protect against human annoyance, the ANZEC document recommends that PPV be limited to 5 mm/s and PPL be limited to 115 dBL at nearby receptors.

Models to describe the site-specific relationship between vibration and overpressure from explosive blasting were developed using blast monitoring data collected in 2020 and 2021. Explanation on calculation of the site-specific relationships between overpressure and vibration and blasting parameters are presented in Golder (2022) and WSP (2023b). These models can be used to estimate propagation distance of PPL and PPV based on blast charge and depth (i.e., shallow vs. deep) by season. Blast charge mass and depth from blasts in 2021, 2022, and 2024 were input into the models to estimate PPV and PPL experienced by caribou groups in which behaviour monitoring data were available. The PPV values for 2024 were derived from WSP (2023b) with a maximum estimated blast charge mass (i.e., charge mass per delay) of 1090 kg.

#### 9.4.2 Caribou Behaviour Monitoring

Caribou behaviour monitoring in conjunction with blast events was conducted in 2021, 2022, and 2024 followed the general approach outlined in Section 17.2. Surveys were opportunistic in nature and required groups of caribou to be present during blast events. The overall method was to identify caribou groups in proximity to blasting locations prior to blast events and record behaviours of individuals every three minutes for 30 minutes before blasting and a 30-minute period beginning at the blast. The behaviour categories were feeding, lying down, standing, alert, walking, and trotting or running. In the case that a different form of disturbance event occurred during the survey, such as a vehicle driving on the road, the time and type of disturbance was recorded. Videos were recorded during blast events to document changes in caribou behaviour.

Due to challenges locating caribou groups that could be monitored near blasts for long enough periods, not all surveys had data collected before, during, and after blasts. Behaviour surveys were time corrected to align before, during and after blasts with blast timing. For example, if a blast was performed three minutes into a 30-minute survey, the three-minute interval would be corrected to zero minutes (i.e., during blast), and subsequent minutes would be reclassified as after the blast. Therefore, full thirty-minute monitoring periods were not available on all survey days where behaviour monitoring was performed. Proportions of the caribou groups performing different behaviours were summarized by the three-minute periods before, during and after blasts. Three-minute intervals alone may not represent the entire caribou response to blasting; however, this interval was chosen to increase the available data and standardize comparisons across days.

#### 9.4.3 Caribou Behaviour and Blasting Parameters

In 2021, 2022, and 2024, the days where blasting events could be tied to caribou behaviour monitoring surveys, the average proportion of caribou response behaviours (defined as alert, walking and trotting or running) following blasts were correlated with modelled PPL and PPV levels. Due to challenges with aligning behaviour surveys with blasts, average proportion of response behaviours in an interval of six minutes following blasts were used in Spearman correlations with PPL and PPV. If two blasts were performed on the same day, the combined blast charge of both blasts and minimum distance from caribou group monitored was used in calculation of modelled PPL and PPV.

## 9.5 Results

### 9.5.1 Blast Monitoring

Blasting measurements were collected using four Instantel Minimate units in 2019 (Golder 2020c). Only two of the four Minimate units were outfitted with linear microphones per available equipment, therefore PPL could only be measured at two locations (R1 and R2). Recommendations from the 2019 program included procurement of linear microphones to allow collection of PPL at all four locations, use of external power sources that would allow for deployments to log data from multiple blasts, and enclosing units in rugged outdoor cases that would protect them from the elements. Future PPL measurements at more distant locations were recommended to characterize the maximum distance to which PPL-related annoyance impacts may extend.

Since 2019, blast monitoring has continued following these recommendations, although monitoring during 2020 was limited due to COVID-19 (Golder 2021). Consistent monitoring has demonstrated that few blasts have exceeded Environment Canada's (2009) 12.5 mm/s PPV damage threshold. When two blasts exceeded this threshold in 2020, it occurred at the measurement location closest to the Whale Tail Mine. This suggests that ground vibration from blasting may result in annoyance impacts at receptors close to the blast site. Historically, blasts have often resulted in PPL values below the 128 dBL damage threshold (Environment Canada 2009). However, the 115 dBL annoyance threshold (ANZEC 1990) has occasionally been exceeded at distances close to the Whale Tail Mine (e.g., 193 m and 569 m in 2020). This suggests that airblast overpressure from blasting may result in annoyance impacts at receptors in close proximity to the blast site. These monitoring locations (193 m and 569 m from pit edge) are closer to the blast site than the 4 km caribou distance threshold.

In 2024, two blast measures exceeded the PPV annoyance threshold of 5 mm/s (ANZEC 1990); no blast measures exceeded 12.5 mm/s threshold (Environment Canada 2009). No blasts resulted in PPL values above the 128 dBL damage threshold. Eleven blasts resulted in PPL values below the 115 dBL annoyance threshold at 569 m from the blast site location.

### 9.5.2 Caribou Behaviour Monitoring

#### 9.5.2.1 Historical Results

Caribou behaviour blast monitoring occurred in 2021, 2022. During 2023, no caribou groups were observed during blast events due to blast cancellations or postponements, so behaviour data were not collected during blast events in 2023. Data from caribou behaviour monitoring was sufficient to link behavior to blasting events on 25 occurrences during 2021 (11 occurrences) and 2022 (14 occurrences). Across these two years, 1 event occurred in winter, 10 in summer, 12 in spring, and 2 in fall.

During these years, caribou responses to blasting events were varied, and changes in alert behaviours often coincided with additional vehicle disturbances. On 6 May 2021, when two blasts were performed at the same time, walking and alert behaviours increased following blasts. However, several vehicle disturbances were also recorded that appeared to elicit changes in caribou behaviour on this day. On 19 August 2021, alert behaviours were observed in the three-minute period immediately following the blast. An increase in alert and walking behaviours were observed following the blasts on 11 April, 15 April, 16 April, 24 April, and 30 April 2022 (Figure 9-1). On 15 April 2022, caribou walked towards the Mine following blasting. Walking behaviours also increased following the blast on 26 August 2022, however the increase was more delayed and mixed with an increase in lying behaviour. Caribou behaviour following the other blasts remained similar to their behaviour in the time prior to the blast, consisting primarily of lying, feeding and standing behaviours (Figure 9-1). Other forms of disturbance (e.g., vehicle traffic) occurred on five days where behaviour monitoring occurred (Figure 9-1). Vehicle traffic was recorded during behaviour monitoring on 11 April, 15 April, 7 May, and 26 August 2022. Helicopter flights were recorded on 14 June and 26 June 2022.

### 9.5.2.2 2024 Results

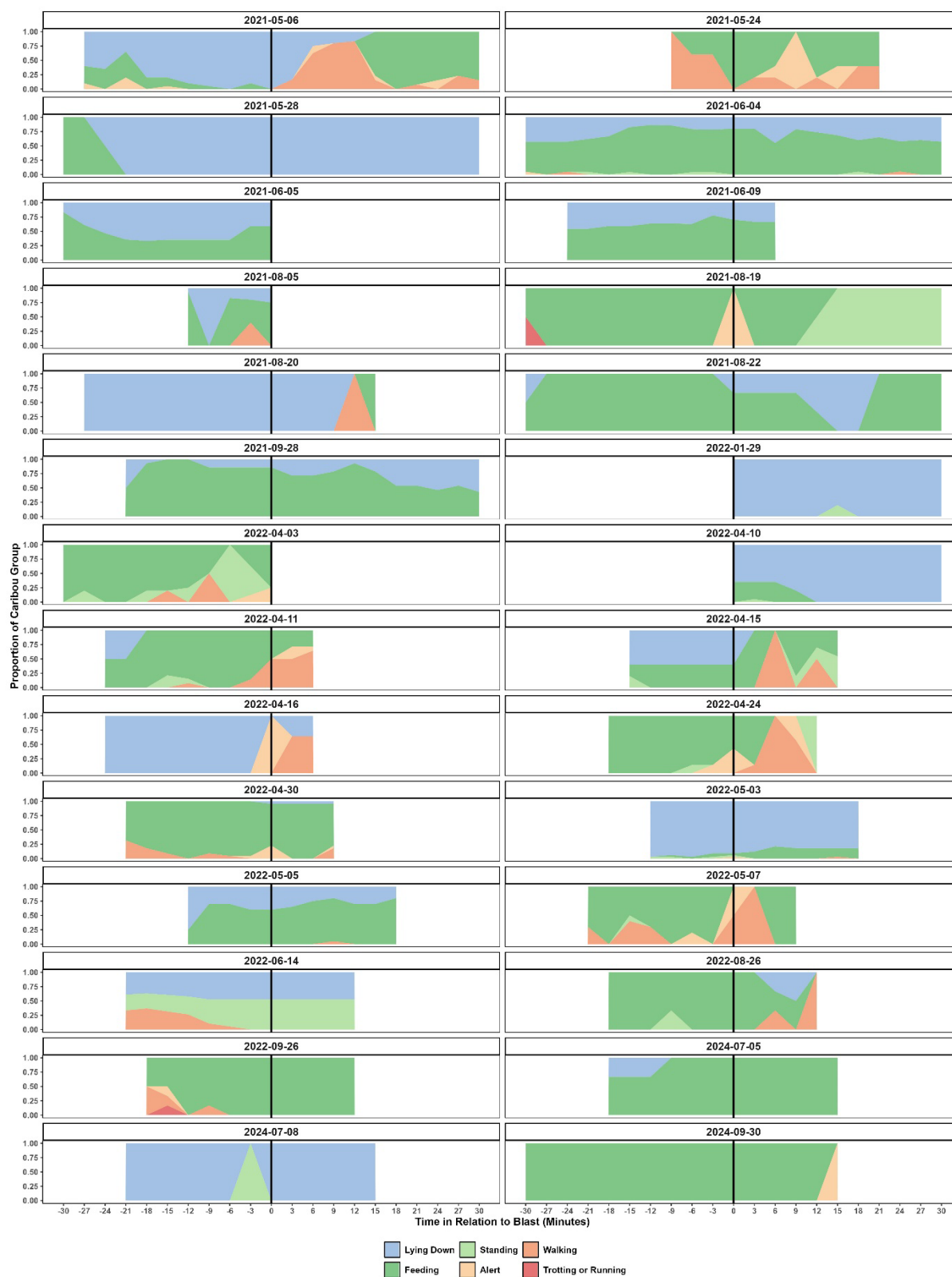
In 2024, pre-blast surveys for caribou and other wildlife were conducted on 203 occasions over 176 days between January 1<sup>st</sup> and December 31<sup>st</sup> (Table 9-1). Caribou were observed on 41 occasions and muskox were observed on three occasions during pre-blast surveys. No caribou or muskox groups exceeded GST within the setback distances; therefore, no blasting events were cancelled or postponed.

Between April 19<sup>th</sup> and September 30<sup>th</sup>, there were seven blast monitoring events. One monitoring session was performed in both spring and fall. The remaining events occurred during summer. All but one of the observed caribou groups were small with between one and three individuals observed. These groups were located an average distance of 646 meters (SE = 59.7) from the blasts. The remaining group, monitored on April 19<sup>th</sup>, consisted of 300 individuals at ~5 km from the blasting site. During three blast monitoring events, the caribou moved out of sight and their behavior during and after the blast could not be monitored. During one event, the caribou were not observed before the blast, so no baseline data could be collected. After removal of trials with incomplete data, three trials could be assessed for behaviour.

Of the three analyzed blast monitoring events in 2024, there were additional vehicle disturbances (i.e., multiple stressors) during two of these events. On July 5<sup>th</sup>, six vehicle disturbances occurred between 5- and 10-minutes post blast. On July 8<sup>th</sup>, there was a heavy equipment disturbance approximately 15 minutes pre-blast. Despite the co-occurrence of blasting and vehicle disturbances, no notable changes in behaviour occurred during behaviour monitoring in 2024 (Figure 9-1). Instead, post-blast behavior consisted primarily of feeding and lying down (Figure 9-1).

**Table 9-1: Number of Pre-Blast Surveys per Month, 2024**

| Month        | Number of Pre-Blast Surveys |
|--------------|-----------------------------|
| January      | 15                          |
| February     | 15                          |
| March        | 18                          |
| April        | 16                          |
| May          | 24                          |
| June         | 11                          |
| July         | 13                          |
| August       | 29                          |
| September    | 17                          |
| October      | 16                          |
| November     | 14                          |
| December     | 15                          |
| <b>Total</b> | <b>203</b>                  |



**Figure 9-1: Caribou Behavioural Response Following Blasting Events Across all Three Monitoring Years**

9.5.2.3 Behaviour Across Years

Across all years, there were 28 occurrences in which caribou behavior could be linked to blasting events. Caribou behaviour in the three minutes before, the three minutes during and the three minutes following a blast is shown in Figure 9-2. Across all years, on average, feeding and lying behaviours were the primary behaviours observed in each interval. An increase in alert behaviour was observed in the three-minute interval during a blast, which may correspond to the decrease in feeding behaviours during. Walking behaviours showed an increasing trend following a blast, while lying and standing behaviours did not differ much between intervals.

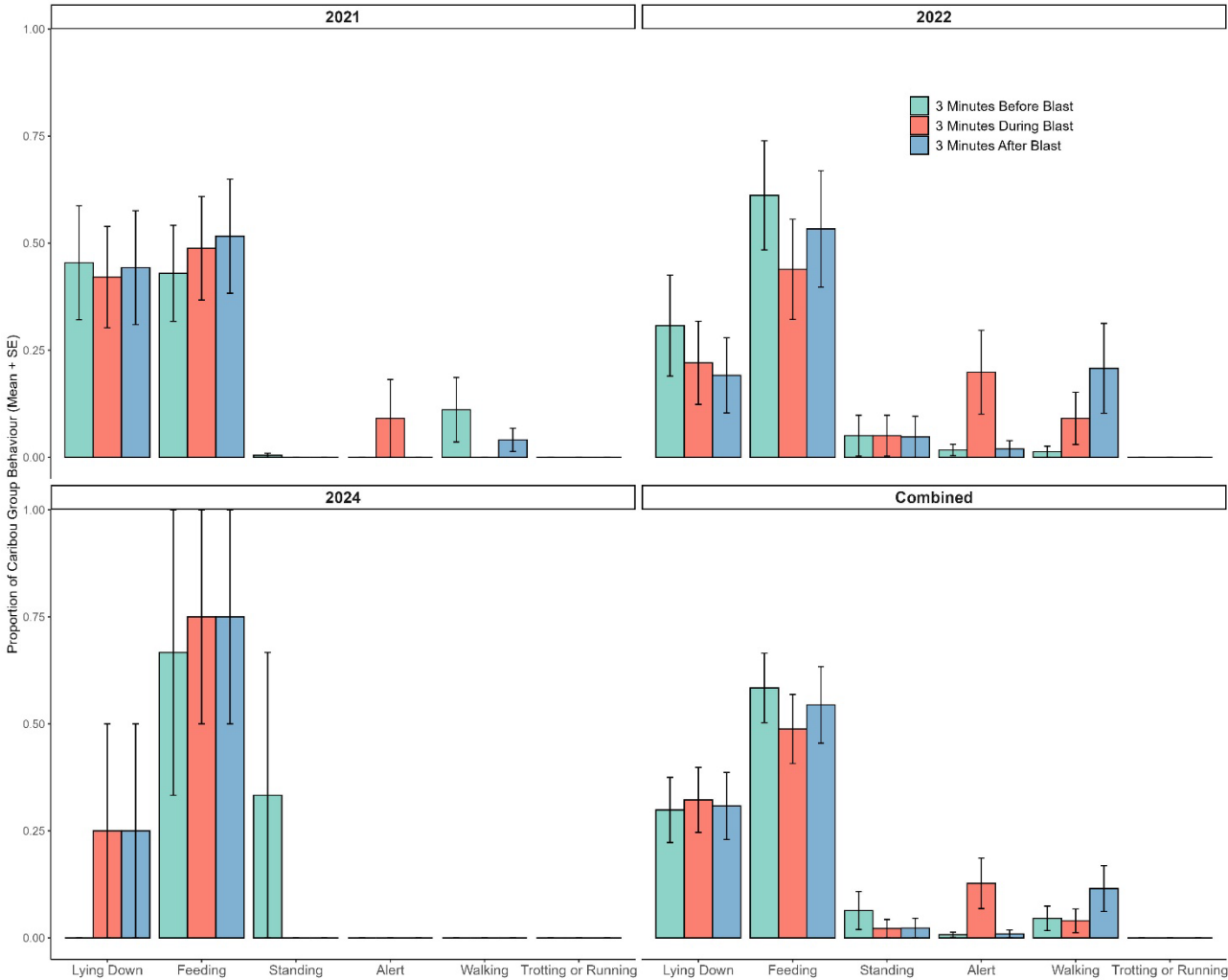


Figure 9-2: Caribou Behaviour Before, During, and After Blasting for Each Year and for all Years Combined.

### 9.5.3 Vibration and Overpressure Model and Behaviour

The model for PPV using the largest blast charge measured in 2021 found that PPV curve fell below the ECCC threshold approximately 350 m from the blast site and fell below the ANZECC threshold approximately 900 m from the blast site. This suggests that human receptors located more than 900 m from the Whale Tail Mine are unlikely to be annoyed by ground vibration from even the largest blasts. The model for PPL using the largest blast charge measured in 2021 found that the PPL curve fell below the ECCC threshold approximately 125 m from the blast site and fell below the ANZECC threshold approximately 1,900 m from the blast site. This suggests that human receptors located more than 1,900 m from the Whale Tail Mine are unlikely to be annoyed by airblast overpressure from even the largest blasts.

There were 21 surveys where behaviour monitoring was conducted for at least six minutes following blasting, and the locations of caribou could be linked with blasting data and modelled PPL and PPV values (Table 9-1).

All modelled values were below the PPV annoyance threshold of 5 mm/s. All modelled values for PPL were below the annoyance threshold of 115 dBL except for 05 May 2022, 30 April 2022 and three dates in 2024. Two blasts were conducted on five days used in the analysis, and three blasts were conducted on one day (Figure 9-1). Response behaviours were observed on half of the days following blasting. No response behaviours were observed in 2024. The average proportion of the caribou group performing response behaviours in six minutes following each blast based on 21 behaviour monitoring sessions, and modelled PPV (Spearman's  $\rho = -0.25$ ,  $p$ -value = 0.28) and PPL (Spearman's  $\rho = -0.29$ ,  $p$ -value = 0.19) did not appear to be correlated (Figure 9-1). A logistic regression was also used to test for a relationship between PPV and PPL and the tendency to perform any response behaviors (i.e., values greater than zero coded as 1). This model found no significant effect of either PPV (Odds Ratio = 0.47 95% CI[0.05, 1.58],  $p = 0.324$ ) or PPL (Odds Ratio = 1.14, 95% CI[0.62, 2.27],  $p = 0.677$ ) on response behaviours occurring.



**Table 9-22: Caribou Behaviour Monitoring and Blast Data, 2021, 2022 and 2024**

| Blast Date | Blast Number                    | Quantity Explosive (kg) | Distance Between Caribou Group and Blast (m) | Proportion of Caribou Performing Response Behaviours | Predicted PPV (m/s) | Predicted PPL (dBL) |
|------------|---------------------------------|-------------------------|--|--|---------------------|---------------------|
| 2021-05-06 | 5067SUK01, 5074MSK12            | 55,887                  | 2,873  | 0.31   | 0.940               | 111.3               |
| 2021-05-28 | 5095MSL75                       | 57,553                  | 1,404  | 0.00   | 1.87                | 114.6               |
| 2021-06-04 | 5074MSK24                       | 69,245                  | 1,647  | 0.00   | 1.79                | 114.3               |
| 2021-08-19 | 5046PSK71                       | 1,164.6                 | 1,895  | 0.33   | 0.22                | 107.3               |
| 2021-08-22 | 5046PSK21, 5046PSK13            | 2,336                   | 832  | 0.00   | 0.68                | 112.2               |
| 2021-09-28 | 5046PSK31, 5060MSK22            | 4,137                   | 1,579  | 0.00   | 0.21                | 106.1               |
| 2022-01-29 | 5144MSM92, 5130PSM40            | 41,092                  | 1,769  | 0.00   | 1.31                | 113.2               |
| 2022-04-10 | 5130MSM16                       | 90,093                  | 3,750  | 0.00   | 0.91                | 110.7               |
| 2022-04-11 | 5137MSR07                       | 37,295                  | 2,500  | 0.64   | 0.86                | 111.2               |
| 2022-04-15 | 5081MSL67                       | 74,194                  | 1,466  | 0.33   | 2.11                | 115                 |
| 2022-04-16 | 5130PSR27, 5151MSV15            | 11,420                  | 2,014  | 0.76   | 0.60                | 110.4               |
| 2022-04-24 | 5144RAV02                       | 19,454                  | 1,745  | 0.52   | 0.92                | 112.0               |
| 2022-04-30 | 5130MSM11                       | 178,570                 | 1,503  | 0.08   | 3.02                | 116.0               |
| 2022-05-03 | 5151PPR99, 5144RAR04            | 12,769                  | 1,993  | 0.01   | 0.67                | 110.8               |
| 2022-05-05 | 5046MSK05                       | 42,189                  | 1,107  | 0.00   | 2.03                | 115.2               |
| 2022-06-14 | 5039MSK25                       | 17,187                  | 1,762  | 0.00   | 0.86                | 111.8               |
| 2022-08-26 | 5130RAV02                       | 28,148                  | 1,688  | 0.11   | 1.16                | 112.8               |
| 2022-09-26 | 5053SUI01                       | 4,100                   | 1,559  | 0.00   | 0.49                | 110.1               |
| 2024-07-05 | 5032MSM22, 5032MSM56, 5032PPM99 | 118,286                 | 1,000  | 0.00   | 4.08                | 115.8               |
| 2024-07-08 | 5130MSA04                       | 56,367                  | 645  | 0.00   | 6.00                | 117                 |
| 2024-09-30 | 5130MSA18                       | 20,313                  | 800  | 0.00   | 4.97                | 116.4               |

Note: 2024 Charge mass per delay values for PPV calculations are from WSP 2023b.

## 9.6 Management Recommendations

Caribou behaviour responses in relation blasting metrics for were recorded in 2021, 2022, and 2024. Caribou behavior was quantified before, during and after blasting and average response behaviours six minutes following blasting was assessed in relation to PPV and PPL values. Analysis suggested little behavioural response to blasting in caribou and found that post-blasting behaviour was not correlated with modelled PPV and PPL values; however, the sample size was relatively small. In 2024, caribou made no notable responses to blasting despite being within 1 km of the highest PPV and PPL values recorded in any year of monitoring. This may indicate that caribou may be less sensitive to these types of anthropogenic disturbance than previously assumed, but these results should be treated with caution due to the small sample size.

In 2024, 203 blast surveys were performed over 176 days. Despite the large number of blast surveys, only 3 viable behavioral assessments could be obtained. No viable data could be collected in 2023. The collection of usable data remains difficult due to aligning blasting events, caribou availability, and visible behavioral responses. Given these challenges, it may be necessary to continue data collection over an extended period of time. Alternatively, considering the lack of caribou in the blast vicinities and the lack of behavioral responses to blasting, the data presented herein might be considered sufficient evidence of the low frequency of blasting events effecting caribou. The results to date support that distance thresholds for suspending blasting can be reduced to less than current 3 km threshold as no strong adverse responses have been observed at distances less than 3 km.

## 10.0 HUNTER HARVEST STUDY

### 10.1 Overview

As outlined in the original TEMP (Cumberland 2006) and the June 2019 version (Agnico Eagle 2019), and as a requirement of NIRB Project Certificate No. 004 Terms and Conditions 51 and 54, the Baker Lake Hunter Harvest Study (HHS) was initiated in March 2007 by Agnico Eagle. The HHS was conducted in association with the HTO to monitor and document the spatial distribution, seasonal patterns, and harvest rates of hunter kills and angler catches within the RSA.

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. The HHS, through regular visits, contributed to developing a strong relationship with local harvesters, the HTO, and the GN.

The HHS was suspended for three years (2016 to 2018) to develop new approaches and direction. Following consultation with the HTO, KivIA, GN, and other agencies in November 2016 (Winnipeg) and June 2017 (Ottawa), Agnico Eagle reinitiated the HHS in March 2019, which for the first time also encompassed the Whale Tail RSA as part of the Meadowbank Complex. The study approach was similar to previous years, but suggestions and guidance received during the consultation period were incorporated into the study. The study was conducted from 2020 to 2023 and continues into 2024.

The full 2024 HHS report is provided in Appendix F (Agnico Eagle 2024a).

### 10.2 Objectives

The primary objectives of the HHS are to monitor potential Project-related effects on harvesting of wildlife by residents of Baker Lake. This objective is achieved by estimating the following key metrics:

- 1) The distribution of caribou, muskox, and wolverine harvest by residents of Baker Lake.
- 2) The total level (or an index of) caribou, muskox, and wolverine harvest by residents of Baker Lake.

Other objectives of the HHS, established in consultation with the TAG, or other participants include:

- 1) Supporting creel surveys by gathering information on Arctic char (*Salvelinus alpinus*), lake trout (*Salvelinus namaycush*), lake whitefish (*Coregonus clupeaformis*), and Arctic grayling (*Thymallus arcticus*) catch rates and Inuit-use patterns in the Baker Lake area.
- 2) Understanding regional distribution of hunting and fishing activity.
- 3) Investigating seasonal timing of hunting and fishing activity.
- 4) Determining whether increased harvest and catch rates are associated with the AWAR and WTHR.

As discussed during consultation with stakeholders, the HHS will further seek to: a) increase and maintain the hunter participant rate in the future of the program; b) improve resource protection; c) improve hunter awareness and education; d) increase the integration of IQ and Traditional Knowledge; e) increase availability of data to support a collective approach to understanding wildlife harvest; and f) assist Agnico Eagle in mitigative actions and the GN in management decisions.

## 10.3 Methods

The wildlife species that are the focus of the HHS are caribou, muskox and wolverine; however, harvest data on other species, such as wolf, Arctic fox, geese, and other birds are also collected. 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 (i.e., Arctic char, lake trout, lake whitefish, and Arctic grayling) are also collected.

Inuit and non-Inuit residents, at least 16 years of age, are eligible to participate in the harvest survey. Harvest calendars are provided on a household basis, rather than an individual basis, to simplify data entry and collection, and reflect household hunting patterns. The harvest calendar is attractive and consists of local photographs of wildlife and Baker Lake residents. See 2025 calendar in Appendix A of the HHS (Appendix F). Space is provided for each calendar day where harvest details can be documented. A map is provided at the end of the calendar that delineates a 4 km<sup>2</sup> UTM grid within the Baker Lake and Meadowbank Complex areas. Each grid has a unique code to facilitate recording of information. When calendars are issued, participants or 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.

Participants were interviewed in person three times during the year (i.e., June 2024, November 2024, and January 2025) by the harvest study coordinator. During the January 2025 interviews, remaining data from 2024 were collected. The purpose of the interviews is to ensure all harvest data are recorded on the calendars and to collect incidental information to compliment calendar data, including notable caribou movements, aggregations, and unique observations. Between interview periods, participants were often contacted by phone or social media to encourage recording of harvest data.

Features of the 2024 HHS included: 1) building long-term relationships between participants and researchers; 2) increasing engagement with participants on social media platforms such as Facebook and Instagram; 3) continuing incentives for participating in the study (e.g., gas vouchers and prizes); and 4) special prizes for the 20 longest standing participants

## 10.4 Results

Results of the 2024 HHS are summarized below. Additional information such as distribution maps and data comparisons across all years of the HHS are presented in Appendix F.

### Hunter Harvest Study Results

- The HHS included 77 participants by the end of 2024, which is higher than the participants in 2023, 2022, and 2021 (i.e., 75, 59, and 55 respectively).
- Given the historical and current number of hunters in Baker Lake, an estimate of 300 to 350 active hunters was used in the 2024 analysis.
- Of the 77 HHS participants in 2024, caribou harvest data was collected from 64 participants, which represents approximately 18% to 21% of total hunters in the community.
- The distribution of hunting is highly concentrated in the vicinity of the Hamlet of Baker Lake and along the AWAR to approximately KM 85.
- The 2024 HHS data indicated that 48% of reported harvest occurred within 5 km of the AWAR, and 82% occurred within the Meadowbank RSA. Threshold levels of 20% set for monitoring the effects of the Meadowbank Mine development on the distribution of caribou harvest within the RSA were not exceeded.

- In 2024, no caribou were harvested within 5 km of the WTHR. Overall harvest numbers were too low to determine whether harvests have increased following construction of the WTHR.
- Within the Whale Tail RSA (note – overlaps with the Meadowbank RSA), a total of 33 harvests were reported in 2024. Given the low numbers of reported harvests close to the WTHR and the lack of public access to the WTHR, it is unlikely that the presence of the road has resulted in increased harvest.
- In 2024, a total of 820 caribou were reported as being harvested by 64 participants in the Baker Lake HHS, which includes harvests in the Meadowbank and Whale Tail study areas.
- Given that the 64 hunters represent an estimated 18% to 21% of the Baker Lake hunting community, the total estimated number of caribou harvested in 2024 in the Baker Lake community ranged from 3,905 to 4,556 animals.
- Based on the NWMB (2004) and inclusive Baker Lake HHS results (2007 to 2015; 2019 to 2024), highest caribou harvests have occurred August and December, followed by a smaller peak between March and May.
- The similar pattern between the studies indicates that seasonal hunting preferences have not changed markedly in the last decade.
- Other harvested mammals included 1 American marten (*Martes americana*), 8 Arctic fox, 5 Arctic ground squirrel, 10 Arctic hare, 143 Arctic wolves, 1 ermine, 2 grizzly bear, and 15 wolverines. There were no muskox, or red fox reported as harvested in 2024. Several bird species were harvested in 2024 with the most common species being ptarmigan sp. (*Lagopus* sp.).
- For the third year in the HHS, marine mammals (4 Ringed Seal (*Pusa hispida*)) were reported as being harvested by Baker Lake hunters, but all were harvested outside the HHS boundaries.

### Creel Survey Results

- The number of fishermen reporting successful fishing trips in 2024 was 34, which is higher than the average of 25 fisherman from 2007 to 2015 and 2019 to 2023 (14 years). The highest numbers of fisherman reporting success in 2024 were in May and June period, which is consistent with seasonal fishing patterns in other years.
- Fishing trips, regardless of success rate, did not generally occur beyond the immediate areas of Baker Lake, Whitehills Lake, and along the lower AWAR. The average number of fish harvested per fisherman in each month was highest in November with lower averages in the summer months.
- Lake trout, Lake Whitefish and Arctic char were the most common species caught by fisherman.

## 10.5 Accuracy of Impact Predictions

A summary of the impact predictions identified in the TEMP Version 7 (Agnico Eagle 2019) that are evaluated by the HHS is presented in Table 10-1.



**Table 10-1: Accuracy of Impact Predictions— Baker Lake Hunter Harvest Study**

| Potential Effect                | Threshold  | Threshold Exceeded (2023)   | Adaptive Management Implemented   | Status  |
|---------------------------------|--|---|---|---|
| <b>AWAR</b>                     |  |   |   |   |
| Hunting by Baker Lake Residents | The AWAR will not result in significant changes in the spatial distribution, seasonal pattern, or harvest levels of caribou by Baker Lake hunters. Changes will not exceed 20% of historical harvest activities within the RSA | NO<br>(82% of harvest in RSA in 2024 compared to 67% baseline; average of 75% of harvest within RSA since 2007) | Future discussion with HTO and GN representatives required to identify management options                           | Hunter Harvest Study (including the Creel Survey)       |
| <b>WTHR</b>                     |  |   |   |   |
| Hunting by Baker Lake Residents | No change in harvest   | NO<br>(no caribou harvest recorded within 5 km of the WTHR)   | None required. Access by hunters is restricted in the growing season and very limited hunting occurs in the winter. | Hunter Harvest Study<br><br>Satellite-Collaring Program |

AWAR = All-Weather Access Road, WTHR = Whale Tail Haul Road, RSA = Regional Study Area, HTO = Hunters and Trappers Organization, GN = Government of Nunavut.

## 10.6 Management Recommendations

The Baker Lake HHS and Creel Survey should be continued on an annual basis to monitor the hunting and fishing patterns of Baker Lake residents, and the potential effects of the Meadowbank Complex. Meetings with participants every four months (three times/year) in 2025 are particularly important in maintaining contact, building relationships, expanding the study, and collecting good harvest data. Participation rates can be maintained by continuing to use social media platforms such as Facebook and Instagram, expanding connections on these platforms, ensuring that all participants are visited during the three scheduled field visits, and continuing with distribution of the well-received year-end prizes while in the community. In addition, an effort should be made to continue recruiting new, and particularly young, hunters for the HHS.

## 11.0 INTEGRATED CARIBOU MONITORING RESULTS

Various caribou monitoring programs have been developed (Section 2.0 to Section 10.0) to understand and manage Mine-related effects on caribou. This section summarizes caribou monitoring data collected in 2024 and lists potential Mine-related effects.

### 11.1 Integrated Results

Table 11-1 summarizes results from each of the nine programs that monitored caribou activity and responses to Mine-related activity in 2024, while Table 11-2 summarizes potential Mine-related effects on caribou in 2024.

**Table 11-1: Summary of Caribou Monitoring Activities and Management Responses in 2024**

| Monitoring Program                                | Summary of 2024 Monitoring Results   | Summary of 2024 Management Responses  |
|---|--|---|
| Caribou Management Decision Tree (Section 2.0)    | Decision tree used when caribou were close to Project facilities as outlined in the TEMP version 7.  | Decision tree process uses data from the road, Mine site, viewshed surveys, and satellite collaring to determine the scale of caribou monitoring and management required.   |
| Road Surveys (Section 3.0)                        | A total of 277 surveys completed on the AWAR, and 194 on the WTHR. The highest caribou numbers were observed along the AWAR in September and November. The highest caribou numbers were observed along the WTHR in April.  | The AWAR was fully closed (24-hour closure) on 63 days, closed for less than 24 hours on 81 days, and had speed restrictions applied for 83 days. In total the AWAR was closed for 2,396 hours. The WTHR was fully closed (24-hour closure) on 24 days, partially closed (less than 24-hour closure) on 40 days and had speed restrictions applied for 77 days. The WTHR was closed for 888 hours during 2024 (Appendix B). |
| Pits and Mine Site Ground Surveys (Section 4.0)   | Mine site surveys conducted on a weekly basis at minimum, and incidental observations recorded. Mine and pit surveys occurred 86 times at Meadowbank and 87 times at Whale Tail during 2024. Caribou sightings at Meadowbank were highest in April and muskox sightings were highest in December. At the Whale Tail, caribou observations were highest in August and muskox sightings were highest in October. | Deterrent actions were implemented to keep wildlife, including caribou safe from site hazards. Road crossing data thoroughly collected throughout the year to support mitigation decisions. There were no observations from Mine and Pit surveys that resulted in mitigation (Appendix A).  |
| Wildlife Habitat Monitoring (Section 5.0)         | A 69 ha, or 9% change in footprint at the Whale Tail site and WTHR occurred between the assessment in 2021 and 2024. There was no change in the footprint at Meadowbank Mine between 2021 and 2024. A 4.5 ha, or 2% increase in footprint occurred along the AWAR between 2021 and 2024. The next comprehensive analysis is scheduled for 2027.  | Not Applicable.   |
| Caribou Satellite-Collaring Program (Section 6.0) | Agnico Eagle intends to continue collaboration with the GN DoE caribou satellite-collaring program. The collar data analysis completed in 2024 included 2024 data from four caribou herds.   | Daily satellite collar maps still received during sensitive seasons and used to assess need for increased monitoring. Further exploratory analysis could aim to determine spring and fall migration timing differences between herds, where sample size allows.   |

**Table 11-1: Summary of Caribou Monitoring Activities and Management Responses in 2024**

| Monitoring Program                     | Summary of 2024 Monitoring Results  | Summary of 2024 Management Responses   |
|--|---|--|
| Viewshed Surveys<br>(Section 7.0)      | A total of 1,467 viewshed surveys were conducted over 99 days in 2024. Of the 1,467 viewshed surveys, 82 surveys (6%) had caribou sightings, and a total of 1,945 caribou were reported. Survey efforts were conducted between 1 January and 31 December, with the highest survey effort occurring in the fall (34.5%). | Although more viewshed surveys were conducted in 2024 than in 2023, fewer caribou were observed. The majority of monitoring along the WTHR was conducted using the standard road surveys. Based on discussion from the fall 2024 TAG meeting (meeting #21, Agnico Eagle 2024e), viewshed surveys will be discontinued going forward. |
| Remote Camera<br>(Section 8.0)         | Remote cameras were deployed at ten locations along the WTHR. Caribou were detected at nine out of ten locations, and road crossings were identified at six out of ten locations.   | No management response based on remote camera program in 2024.   |
| Blast Monitoring<br>(Section 9.0)      | Caribou monitoring was conducted prior to blasts throughout 2024. Caribou behavioural monitoring occurred during seven blasts in 2024.  | No caribou or Muskox groups exceeded GST within the setback distances during blasting. No blasts were cancelled or postponed in the vicinity of the Whale Tail Mine.   |
| Hunter Harvest Study<br>(Section 10.0) | A total of 820 caribou were reported as being harvested by 64 participants in the Baker Lake HHS. The data indicated that 48% of reported harvest occurred within 5 km of the AWAR, and 82% occurred within the Meadowbank RSA. In 2024, no caribou were harvested within 5 km of the WTHR.                             | The Hunter Harvest Study results support that harvest was less than threshold. Management actions are not required.  |

AWAR = All-Weather Access Road, GN DoE = Government of Nunavut Department of Environment, GST = Group Size Threshold, HHS = Hunter Harvest Study, RSA = Regional Study Area, WTHR = Whale Tail Haul Road.

**Table 11-2: Summary of Mine-related Effects on Caribou in 2024**

| Monitoring Program                                | Potential Effect                | Threshold   | Threshold Exceeded (2024) | Adaptive Management Implemented  |
|---|---------------------------------|---|---------------------------|--|
| Caribou Management Decision Tree (Section 2.0)    | Sensory Disturbance             | No threshold but Decisions Trees followed when caribou are seen near Mine facilities  | Not Applicable            | YES. Multiple road closures and notices. Use of Decision Tree for Management and Monitoring.   |
| Road Surveys (Section 3.0)                        | Sensory Disturbance             | No threshold. Decisions Trees followed when caribou are seen near Mine facilities.  | Not Applicable            | YES. Multiple road closures and notices, good engagement of Wildlife Log by site staff. Use of Decision Trees for Management and Monitoring.     |
|   | Project-related Mortality       | Caribou or muskoxen will not be killed or injured by vehicle collisions. Threshold level of mortality is two individuals per year.  | NO                        | There was one caribou mortality that took place on the AWAR on 05 January 2024.  |
| Pits and Mine Site Ground Surveys (Section 4.0)   | Sensory Disturbance             | No threshold. Decisions Trees followed when caribou are seen near Mine facilities.  | Not Applicable            | YES. Deterrent actions were used to keep wildlife, including caribou safe from site hazards. Use of Decision Tree for Management and Monitoring. |
| Wildlife Habitat Monitoring (Section 5.0)         | Habitat Loss                    | 10% above total loss of high suitability habitat.   | Not Applicable            | Not Applicable.  |
| Caribou Satellite-Collaring Program (Section 6.0) | Sensory Disturbance             | No threshold. Decisions Trees followed when caribou are seen near Mine facilities.  | Not Applicable            | YES. Multiple road closures and notices. Use of Decision Tree for management and monitoring.   |
| Viewshed Surveys (Section 7.0)                    | Sensory Disturbance             | No threshold. Decisions Trees followed when caribou are seen near Mine facilities.  | Not Applicable            | YES. Multiple road closures and notices. Use of Decision Tree for Management and Monitoring.   |
| Remote Camera (Section 8.0)                       | Sensory Disturbance             | No threshold.   | Not Applicable            | Not Applicable.  |
| Blast Monitoring (Section 9.0)                    | Sensory Disturbance             | NPC-119 criteria. Monitoring is continuous, but with increasing intensity as caribou approach the blasting site.  | NO                        | YES. No caribou or muskox groups exceeded GST thresholds within setback distances. Use of Decision Tree for management and monitoring.           |
| Hunter Harvest Study (Section 10.0)               | Hunting by Baker Lake Residents | The AWAR will not result in significant changes in the spatial distribution, seasonal pattern, or harvest levels of caribou kills by Baker Lake hunters. Changes will not exceed 20% of historical harvest activities within the RSA. | NO                        | NO. Future discussion with HTO and GN representatives required to identify management options.   |
|   |                                 | No change in harvest along the WTHR.  | NO                        |  |

AWAR = All-Weather Access Road, GN = Government of Nunavut, NPC = Noise Pollution Control, RSA = Regional Study Area, WTHR = Whale Tail Haul Road.

12.0 PREDATORY MAMMAL DEN MONITORING

Predatory mammals, representing a valued ecosystem component (VEC), occur and are known to den in the vicinity of the Meadowbank and Whale Tail Mine facilities. Sensory disturbances near active dens such as blasting, vehicles and, most significantly, ground personnel, may negatively impact denning success by inducing stress responses in the adult mammals, which can result in den abandonment.

Predatory mammal den monitoring is applicable to four species: wolf (natal dens), grizzly bear (natal/overwintering dens), Arctic fox (natal dens), and wolverine (natal dens).

12.1 Objectives

The purpose of the predatory mammal den monitoring program is to identify and monitor active dens in close proximity to mining operations in order to protect any detected dens from disturbance.

12.2 Methods

Data will be collected on predatory mammal abundance and behaviour during ground surveys, vehicle surveys, viewshed surveys, and through incidental observations. Active den sites identified during baseline studies will also be monitored. If a wildlife technician suspects or confirms that an active den is present within the active footprint and vicinity of Project mines facilities or roads, a den management plan will be prepared. The plan will include consultation with the GN with respect to obligations under *The Wildlife Act*, SNU 2003, c. 26. Ground personnel and vehicle access will be restricted in the vicinity of the den as needed to minimize disturbances at the den. The den management plan outlines a monitoring schedule (dependent on seasonal timing) and will inform further mitigation strategies as required. See Figure 13 and Appendix G of the 2019 TEMP version 7 (Agnico Eagle 2019) for den management and protection plan components.

12.3 Results

Monitoring of predatory mammal dens was conducted informally in 2024 through observations recorded during other monitoring programs. Potential effects due to Project-related activities were not identified to trigger monitoring of predatory mammal dens. No predatory mammal dens were observed or monitored in 2024.

12.4 Accuracy of Impact Predictions

A summary of the impact predictions identified in the TEMP version 7 (Agnico Eagle 2019) is provided in Table 12-1; however, no impacts to denning predators were observed in 2024.

Table 12-1: Accuracy of Impact Predictions-- Disturbance to Denning Predatory Mammals for the Meadowbank and Whale Tail Sites

| Potential Effect                 | Threshold   | Threshold Exceeded | Adaptive Management Implemented | Monitoring Methods   |
|----------------------------------|---|--------------------|---------------------------------|--|
| Disturbance to Denning Predators | Predatory mammal den failures will not be caused by Mine-related activities. Threshold is one den failure per year. | NO                 | NO                              | Road Surveys, daily and weekly systematic pit and Mine site ground surveys, viewshed, incidentals and vehicle encounter. |

12.5 Management Recommendations

When an active den site is identified in close proximity to Project facilities, a den management plan should be developed that outlines a monitoring schedule and appropriate mitigation strategies.