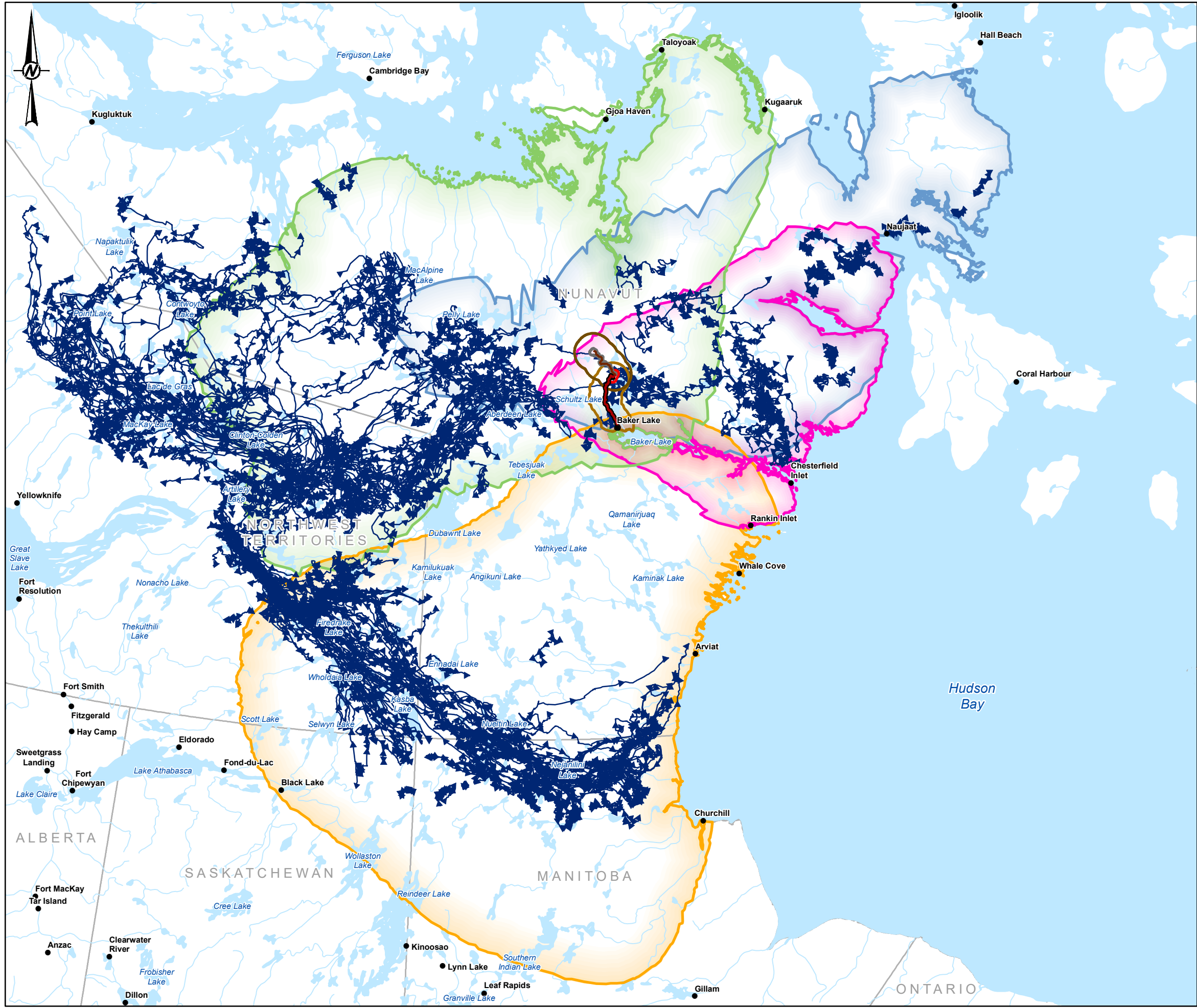


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**LEGEND**

- 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
- 2020-2023 SATELLITE-COLLARED CARIBOU BY SEASON
- WINTER
- 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**

**2023 WILDLIFE MONITORING SUMMARY REPORT**

**TITLE**

**COLLARED CARIBOU MOVEMENTS DURING WINTER (DECEMBER 16 TO MARCH 31), 2020-2023**

<b>CONSULTANT</b>	YYYY-MM-DD	2024-03-28
<b>DESIGNED</b>	JF	
<b>PREPARED</b>	CDB	
<b>REVIEWED</b>	JF	
<b>APPROVED</b>	DC	

**PROJECT NO.** CA0006990.5123

**PHASE** 4000/4040

**REV.** 0

**FIGURE** 6-5

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

28mm

## 6.6 Accuracy of Impact Predictions

There are no specific impact predictions for migration timing and the analysis was exploratory to determine if mitigation could be applied with consistent timing annually. There was larger variation in date ranges in the WSP (2023) analysis than seen in the previous analysis (Golder 2021). The increase in variation may be related to inclusion of individuals from all herds, whereas the previous analysis focused on the Lorillard herd because this is the herd that interacts with the Mine most frequently. A wider range of dates means that previously suggested mitigations, such as cap and pulse (e.g., convoys), may require a different trigger than date. It also means that pulse mitigation may be applied for a longer duration in some years. Other approaches, such as road closure during the approach of 'lead caribou' towards the Mine area should be investigated. The lead caribou approach would implement road closures to allow caribou leading herds to migrate through the Mine area, promoting movement of remaining caribou in the herd according to IQ.

## 6.7 Management Recommendations

Further exploratory analyses could aim to determine spring and fall migration timing differences between herds, where sample size allows. Influence of other variables on migration timing, such as snow conditions (Mallory et al. 2020) or weather (Gurarie et al. 2019) could be investigated. The results of these analyses were reviewed with the TAG to establish desired caribou protection outcomes (e.g., protection of lead caribou, protection of maximum number of caribou, or both) and how to best apply mitigation to reach the desired outcomes. Further exploratory analyses are in progress to assess the efficacy of a lead caribou mitigation approach. Results will be presented to the TAG.

## 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 serve as an early warning system for caribou approaching the WTHR to support mitigation measures during migration. The existing height-of-land (HOL) surveys were completed from 2017 through to February 2020 and then replaced by the viewshed surveys for the remainder of 2020. In 2019, Agnico Eagle advanced the idea of using viewshed survey points instead of HOL locations because of safety and logistical concerns. A viewshed survey analysis (a viewshed analysis) and report were prepared by Golder (2020b) to establish 12 viewshed survey locations along the WTHR that maximized the total habitat around the WTHR that could be surveyed. Agnico Eagle began using the viewshed survey locations in February 2020. 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 88 occasions in 2023.

### 7.2 Objectives

The viewshed surveys 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. In 2020, the HOL surveys were replaced by viewshed surveys and twelve 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 2023, 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 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 has been reached and if mitigation action is required.

### 7.4 Historical Results

A total of 12 species were observed during HOL surveys in 2019; six species were only observed during the summer caribou season (Table 7-1). The highest number of caribou was 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, 163 viewshed surveys were completed across 19 dates: five in spring, eight in summer, one in fall, and five in winter. Three mammal species were observed during viewshed surveys, including 252 caribou, one Arctic hare, and eight muskox (Table 7-2). Two bird species were observed including one common raven and one sandhill crane. Only ten out of 163 surveys (6%) had caribou sightings. Of the ten sightings, eight occurred during the spring and two during the summer. Caribou were typically sighted to the north or west, and the average sighting distance was 630 m from the road. In all cases where caribou were observed, the recorded visibility was up to 1 km, indicating these surveys are most effective in good visibility conditions.

In 2021, 310 viewshed surveys were completed across 27 dates: nine in summer, 14 in fall, and four in winter. Five mammal species were observed during the viewshed surveys, including caribou, muskox, Arctic hare, Arctic fox, and Arctic ground squirrel (Table 7-3). Five species of birds were observed including Canada goose, common raven, ptarmigan (willow ptarmigan or rock ptarmigan), sandhill crane, and snow goose. Only 37 surveys (12%) had caribou sightings with 27 positive surveys occurring in the summer and ten in the fall, and a total of 190 caribou reported. Only two survey locations, Viewshed 1 and Viewshed 11, had no surveys with caribou detections. Group sizes ranged from 1-24 individuals and, caribou were sighted more frequently to the east at an average sighting distance of 1,049 m from the road. In all cases where caribou were observed and visibility was recorded, the visibility was at least 1 km, indicating these surveys are most effective in good visibility conditions.

In 2022, 58 viewshed surveys were conducted across 58 dates: 14 in spring, 16 in summer, 12 in fall, and 16 in winter. A total of 739 surveys were conducted between 5 January and 28 December. Of the 739 viewshed surveys completed in 2022, only 41 surveys (6%) had caribou sightings, and a total of 461 caribou were reported (Table 7-4). All survey locations had surveys with caribou detections, except for Viewshed 5. Viewshed 12 had the most surveys with caribou sightings. The highest caribou counts were recorded for spring 2022 (Table 7-4). Group sizes ranged from 1-100 individuals, and caribou were sighted more frequently to the west and the average sighting distance was 685.5 m from the road. In all cases where caribou were observed and visibility was recorded, the visibility was at least 1 km, indicating these surveys are most effective in good visibility conditions.

**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 01 Apr to 25 May	Summer 26 May to 21 Sep	Fall 22 Sep to 15 Dec	Winter 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 in 2020**

Species	Caribou Seasons			
	Spring 01 Apr to 25 May	Summer 26 May to 21 Sep	Fall 22 Sep to 15 Dec	Winter 16 Dec to 31 Mar
<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

**Table 7-3: Total Number of Wildlife Observed during Viewshed Surveys along the Whale Tail Haul Road in 2021**

Species	Caribou Seasons			
	Spring (01 Apr to 25 May)	Summer (26 May to 21 Sep)	Fall (22 Sep to 15 Dec)	Winter (16 Dec to 31 Mar)
<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 7-4: Total Number of Wildlife Observed during Viewshed Surveys along the Whale Tail Haul Road in 2022**

Species	Caribou Seasons			
	Spring (01 Apr to 25 May)	Summer (26 May to 21 Sep)	Fall (22 Sep to 15 Dec)	Winter (16 Dec to 31 Mar)
<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
Rough-legged hawk	2	0	0	0
Snow goose	0	233	0	0

## 7.5 2023 Results

Viewshed surveys were conducted on 87 dates in 2023, though not all locations were surveyed each day (Figure 7-1). A total of 1,345 surveys were conducted between 5 January and 30 December, with the highest survey effort occurring in the spring (43%, Table 7-5).

**Table 7-5: Viewshed Survey Effort by Season, 2023**

Season	Survey Days	Surveys Completed (% of total effort)
Spring	15	574 (42.67%)
Summer	16	297 (22.08%)
Fall	40	261 (19.41%)
Winter	16	213 (15.84%)
<b>Total</b>	<b>87</b>	<b>1,345 (100%)</b>

Of the 1,345 viewshed surveys completed in 2023, 109 surveys (8%) had caribou sightings, and a total of 4,442 caribou were recorded (Table 7-6). All survey locations had surveys with caribou detections (Table 7-6). One survey location had 14 caribou sightings (Viewshed 12), one survey location has 11 caribou sightings (Viewshed 13), two survey locations had 10 caribou sightings (Viewsheds 6 and 9), and one survey location had nine caribou sightings (Viewshed 5). Four survey locations had eight caribou sightings (Viewsheds 4, 8, 10, and 11), one survey location had seven caribou sightings (Viewshed 7), two survey locations had six caribou sightings (Viewsheds 1 and 3), and one survey location had four caribou sightings (Viewshed 2).

Of the 109 surveys with caribou sightings, 75 occurred during the spring, 22 occurred during the summer, 11 occurred during the fall, and one occurred during winter (Table 7-6).

Group sizes ranged from 1-650 individuals (Table 7-7). Caribou were sighted more frequently to the west and the average sighting distance was 883 m from the road. In all cases where caribou were observed and visibility was recorded, the visibility was at least 1 km, indicating these surveys are most effective in good visibility conditions.

Other mammals recorded during viewshed surveys include Arctic fox, muskox, and wolf. Bird species recorded include American crow, Canada goose, common raven, gyrfalcon, rough-legged hawk, snow goose, an unidentified duck (Table 7-8).

**Table 7-6: Viewshed Surveys Completed and Number of Caribou Observed per Season in 2023**

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>													
2023-04-05	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-04-07	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-04-10	20	150	0	50	0	250	20	0	0	0	0	15	150
2023-04-12	0	0	0	56	55	210	0	0	80	80	0	60	15
2023-04-17	0	0	4	29	37	12	0	23	20	0	19	11	49
2023-04-19	0	0	0	0	0	0	0	7	0	0	0	0	0
2023-04-21	0	0	14	15	0	0	0	0	0	0	0	0	0
2023-04-23	42	0	10	0	8	40	0	12	650	125	25	91	0
2023-04-27	54	0	0	0	0	10	0	0	3	3	47	1	8
2023-04-29	160	2	111	28	32	135	29	309	27	23	200	142	46
2023-05-12	0	17	0	0	0	0	0	3	0	6	0	0	15
2023-05-15	5	0	0	0	0	8	0	0	1	0	7	0	0
2023-05-18	13	8	19	4	12	23	8	0	0	0	0	0	0
2023-05-22	0	0	0	17	0	0	7	0	2	0	0	3	0
2023-05-25	0	0	0	25	0	0	0	0	0	0	0	0	0
<b>Summer Caribou Season (26 May – 21 Sep)</b>													
2023-05-31	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-06-03	0	0	3	0	12	0	0	0	0	0	0	0	0
2023-06-22	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-06-27	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-07-04	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-07-11	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-07-21	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-07-25	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-08-03	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-08-10	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-08-19	0	0	0	0	0	2	10	3	5	0	4	2	3
2023-08-24	0	0	0	0	0	0	0	6	3	3	0	4	0
2023-08-31	0	0	0	0	0	8	1	1	0	5	0	2	5
2023-09-07	0	0	0	0	0	0	0	0	0	8	0	0	4
2023-09-14	0	0	0	0	0	0	0	0	0	0	0	1	0
2023-09-20	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Fall Caribou Season (22 Sep – 15 Dec)</b>													
2023-09-26	0	-	0	0	0	0	0	0	0	0	0	0	0
2023-09-30	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-10-02	0	0	0	0	0	0	0	0	0	0	0	7	0
2023-10-05	0	0	0	0	0	0	0	0	0	0	-	0	0
2023-10-07	0	0	0	0	0	0	0	0	0	0	0	0	0

**Table 7-6: Viewshed Surveys Completed and Number of Caribou Observed per Season in 2023**

Date	Viewshed Survey Location												
	1	2	3	4	5	6	7	8	9	10	11	12	13
2023-10-09	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-10-11	0	0	0	0	0	0	0	0	0	0	0	0	6
2023-10-13	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-10-14	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-10-16	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-10-18	-	-	-	-	-	0	7	0	0	0	0	0	0
2023-10-20	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-10-22	0	0	0	0	2	0	0	0	0	0	0	0	0
2023-10-24	0	0	0	0	0	0	0	0	0	0	1	0	0
2023-10-26	0	0	0	0	6	0	0	0	0	0	167	0	0
2023-10-28	0	0	0	0	0	0	0	0	5	0	0	26	0
2023-10-30	0	0	0	0	81	0	0	0	0	0	0	0	0
2023-11-01	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-11-03	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-11-04	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-11-05	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-11-06	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-11-07	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-11-08	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-11-09	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-11-10	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-11-11	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-11-13	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-11-16	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-11-18	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-11-20	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-11-20	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-11-25	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-11-27	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-12-01	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-12-02	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-12-04	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-12-06	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-12-08	0	0	0	0	0	0	0	0	0	0	0	5	0
2023-12-10	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-12-12	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Winter Caribou Season (16 Dec – 31 Mar)</b>													
2023-01-05	0	0	0	0	-	-	-	-	-	-	-	-	-
2023-01-22	0	0	0	0	-	-	-	-	-	-	-	-	-
2023-01-26	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-02-01	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-02-08	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-02-13	0	0	0	0	0	0	0	0	0	0	0	0	6
2023-02-22	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-03-01	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-03-08	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-03-15	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-03-21	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-12-17	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-12-19	0	0	0	0	0	0	0	0	0	0	0	0	0



**Table 7-6: Viewshed Surveys Completed and Number of Caribou Observed per Season in 2023**

Date	Viewshed Survey Location												
	1	2	3	4	5	6	7	8	9	10	11	12	13
2023-12-25	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-12-28	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-12-30	0	0	0	0	0	0	0	0	0	0	0	0	0

**Table 7-7: Survey Condition Details for Viewshed Surveys with Caribou Sightings, 2023**

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 1	2023-04-10	-11	30	> 1 km	West	20	Heath Tundra,Ice	Walking	3000
Viewshed 2	2023-04-10	-11	30	> 1 km	West	150	Ice	Walking	1500
Viewshed 4	2023-04-10	-11	30	> 1 km	East	50	Heath Tundra	Feeding	3000
Viewshed 6	2023-04-10	-11	30	> 1 km	West	150	Heath Tundra	Standing	1500
Viewshed 6	2023-04-10	-11	30	> 1 km	West	100	Heath Tundra	Walking	1500
Viewshed 7	2023-04-10	-11	30	> 1 km	West	20	Heath Tundra	Walking	1000
Viewshed 12	2023-04-10	-11	30	> 1 km	West	15	Heath Tundra	Standing	1500
Viewshed 13	2023-04-10	-11	30	> 1 km	West	150	Heath Tundra	Feeding	500
Viewshed 4	2023-04-12	-16	20	> 1 km	West	56	Heath Tundra	Walking	600
Viewshed 5	2023-04-12	-16	20	> 1 km	East	55	Heath Tundra	Foraging	2000
Viewshed 6	2023-04-12	-16	20	> 1 km	East	210	Hilltop,Ice	Walking	3000
Viewshed 9	2023-04-12	-16	20	> 1 km	East	80	Heath Tundra	Walking	500
Viewshed 10	2023-04-12	-16	20	> 1 km	West	80	Heath Tundra,Ice	Walking	500
Viewshed 12	2023-04-12	-16	20	> 1 km	East	40	Heath Tundra	Foraging	800
Viewshed 12	2023-04-12	-16	20	> 1 km	East	20	Heath Tundra	Foraging	1000
Viewshed 13	2023-04-12	-16	20	> 1 km	East	15	Heath Tundra	Foraging	1
Viewshed 3	2023-04-17	-10	0	> 1 km	West	4	Ice	Walking	2500
Viewshed 4	2023-04-17	-10	0	> 1 km	West	29	Heath Tundra	Walking	3000
Viewshed 5	2023-04-17	-10	0	> 1 km	West	37	Heath Tundra	Walking	2000
Viewshed 6	2023-04-17	-10	0	> 1 km	West	13	Ice	Walking	1500
Viewshed 8	2023-04-17	-10	0	> 1 km	West	20	Heath Tundra	Foraging	1500
Viewshed 8	2023-04-17	-10	0	> 1 km	West	3	Heath Tundra	Foraging	1000
Viewshed 9	2023-04-17	-10	0	> 1 km	West	20	Heath Tundra	Foraging	2500
Viewshed 11	2023-04-17	-10	0	> 1 km	West	19	Heath Tundra	Walking	150
Viewshed 12	2023-04-17	-10	0	> 1 km	West	11	Heath Tundra	Walking	1500
Viewshed 13	2023-04-17	-10	0	> 1 km	West	49	Heath Tundra	Foraging	1000
Viewshed 8	2023-04-19	-14	30	> 1 km	West	7	Heath Tundra,Hilltop	Walking	1900
Viewshed 3	2023-04-21	-7	15	> 1 km	West	14	Heath Tundra,Ice	Walking	3000
Viewshed 4	2023-04-21	-7	15	> 1 km	West	15	Heath Tundra,Hilltop,Ice	Walking	2000
Viewshed 1	2023-04-23	-16	30	> 1 km	West	42	Heath Tundra,Hilltop	Running	800
Viewshed 3	2023-04-23	-16	30	> 1 km	East	6	Heath Tundra,Hilltop	Walking	20
Viewshed 3	2023-04-23	-16	30	> 1 km	East	2	Heath Tundra,Hilltop	Walking	5
Viewshed 3	2023-04-23	-16	30	> 1 km	West	2	Heath Tundra,Hilltop	Walking	5
Viewshed 5	2023-04-23	-16	30	> 1 km	West	8	Heath Tundra,Hilltop	Standing	10
Viewshed 6	2023-04-23	-16	30	> 1 km	West	40	Heath Tundra,Ice	Standing	1400
Viewshed 8	2023-04-23	-16	30	> 1 km	West	12	Heath Tundra,Hilltop	Foraging	400
Viewshed 9	2023-04-23	-16	30	> 1 km	West	650	Heath Tundra,Hilltop	Lying Down	20
Viewshed 10	2023-04-23	-16	30	> 1 km	East	25	Heath Tundra,Hilltop	Foraging	10
Viewshed 10	2023-04-23	-16	30	> 1 km	West	100	Heath Tundra,Hilltop	Foraging	50
Viewshed 11	2023-04-23	-16	30	> 1 km	West	25	Heath Tundra,Hilltop,Ice	Standing	500

**Table 7-7: Survey Condition Details for Viewshed Surveys with Caribou Sightings, 2023**

Survey Location	Date	Temperature (°C)	Wind Speed (km/hr)	Visibility*	Cardinal Direction	Number	Habitat	Behaviour	Distance from road (m)
Viewshed 12	2023-04-23	-16	30	> 1 km	West	91	Heath Tundra,Hilltop	Standing	300
Viewshed 1	2023-04-27	-8	5	> 1 km	West	54	Heath Tundra	Walking	800
Viewshed 6	2023-04-27	-8	5	> 1 km	West	10	Heath Tundra	Standing	100
Viewshed 9	2023-04-27	-8	5	> 1 km	West	3	Ice	Walking	2500
Viewshed 10	2023-04-27	-8	5	> 1 km	West	3	Heath Tundra	Walking	2000
Viewshed 11	2023-04-27	-8	5	> 1 km	West	33	Heath Tundra	Walking	400
Viewshed 11	2023-04-27	-8	5	> 1 km	West	14	Hilltop	Resting	30
Viewshed 12	2023-04-27	-8	5	> 1 km	West	1	Heath Tundra	Running	900
Viewshed 13	2023-04-27	-8	5	> 1 km	West	8	Heath Tundra	Walking	1000
Viewshed 1	2023-04-29	-15	10	1 km	East	90	Heath Tundra,Hilltop,Ice,Lichen-Rock,Road,Rock & Boulder	Walking	0
Viewshed 1	2023-04-29	-15	10	1 km	West	70	Heath Tundra,Hilltop,Ice,Lichen,Lichen-Rock,Road,Rock & Boulder	Walking	0
Viewshed 2	2023-04-29	-15	10	1 km	East	2	Heath Tundra,Hilltop,Lichen-Rock,Rock & Boulder	Walking	250
Viewshed 3	2023-04-29	-15	10	1 km	West	111	Ice	Walking	800
Viewshed 4	2023-04-29	-15	10	1 km	West	28	Heath Tundra,Hilltop,Ice,Rock & Boulder	Walking	80
Viewshed 5	2023-04-29	-15	10	1 km	East	6	Heath Tundra,Hilltop,Lichen-Rock,Rock & Boulder	Foraging	133
Viewshed 5	2023-04-29	-15	10	1 km	West	26	Heath Tundra,Hilltop,Lichen-Rock,Rock & Boulder	Foraging	590
Viewshed 6	2023-04-29	-15	10	1 km	East	10	Heath Tundra,Hilltop,Lichen-Rock,Rock & Boulder	Foraging	100
Viewshed 6	2023-04-29	-15	10	1 km	West	125	Heath Tundra,Hilltop,Ice,Lichen-Rock,Ridge creat/Esker/Avens,Rock & Boulder	Foraging	100
Viewshed 7	2023-04-29	-15	10	1 km	East	9	Ice	Walking	990
Viewshed 7	2023-04-29	-15	10	1 km	West	20	Heath Tundra,Lichen-Rock, Rock & Boulder	Walking	890
Viewshed 8	2023-04-29	-15	10	1 km	East	13	Heath Tundra,Hilltop,Lichen-Rock,Rock & Boulder	Foraging	400
Viewshed 8	2023-04-29	-15	10	1 km	West	296	Heath Tundra,Hilltop,Ice,Lichen-Rock,Rock & Boulder	Foraging	790
Viewshed 9	2023-04-29	-15	10	1 km	East	12	Heath Tundra,Hilltop,Lichen-Rock,Rock & Boulder	Foraging	5
Viewshed 9	2023-04-29	-15	10	1 km	West	15	Heath Tundra,Hilltop,Lichen-Rock,Rock & Boulder	Foraging	5
Viewshed 10	2023-04-29	-15	10	1 km	East	20	Heath Tundra,Hilltop,Lichen-Rock,Rock & Boulder	Foraging	110

**Table 7-7: Survey Condition Details for Viewshed Surveys with Caribou Sightings, 2023**

Survey Location	Date	Temperature (°C)	Wind Speed (km/hr)	Visibility*	Cardinal Direction	Number	Habitat	Behaviour	Distance from road (m)
Viewshed 10	2023-04-29	-15	10	1 km	West	3	Heath Tundra, Hilltop, Lichen-Rock, Rock & Boulder	Resting	161
Viewshed 11	2023-04-29	-15	10	1 km	West	200	Heath Tundra, Hilltop, Ice, Lichen-Rock, Rock & Boulder	Walking	400
Viewshed 12	2023-04-29	-15	10	1 km	West	142	Heath Tundra, Hilltop, Ice, Lichen-Rock, Rock & Boulder	Walking	300
Viewshed 13	2023-04-29	-15	10	1 km	East	6	Heath Tundra, Hilltop, Lichen-Rock, Rock & Boulder	Foraging	500
Viewshed 13	2023-04-29	-15	10	1 km	West	40	Heath Tundra, Hilltop, Ice, Lichen-Rock, Rock & Boulder	Foraging	900
Viewshed 2	2023-05-12	2	20	> 1 km	West	17	Heath Tundra	Walking	750
Viewshed 8	2023-05-12	2	20	> 1 km	West	3	Ice	Walking	850
Viewshed 10	2023-05-12	2	20	> 1 km	West	6	Heath Tundra, Lichen	Foraging	650
Viewshed 13	2023-05-12	2	20	> 1 km	West	12	Heath Tundra, Lichen	Foraging	1500
Viewshed 13	2023-05-12	2	20	> 1 km	West	3	Heath Tundra, Lichen	Foraging	2000
Viewshed 1	2023-05-15	-1	10	> 1 km	West	5	Heath Tundra	Walking	1500
Viewshed 6	2023-05-15	-1	10	> 1 km	East	8	Heath Tundra	Foraging	500
Viewshed 9	2023-05-15	-1	10	> 1 km	West	1	Heath Tundra	Foraging	1500
Viewshed 11	2023-05-15	-1	10	> 1 km	West	7	Heath Tundra	Walking	2000
Viewshed 1	2023-05-18	-2	13	> 1 km	West	13	Heath Tundra	Foraging	1000
Viewshed 2	2023-05-18	-2	13	> 1 km	West	8	Heath Tundra	Foraging	500
Viewshed 3	2023-05-18	-2	13	> 1 km	West	19	Ice	Walking	1500
Viewshed 4	2023-05-18	-2	13	> 1 km	West	4	Heath Tundra	Alert	400
Viewshed 5	2023-05-18	-2	13	> 1 km	West	12	Ice	Walking	1000
Viewshed 6	2023-05-18	-2	13	> 1 km	West	9	Ice	Walking	1000
Viewshed 6	2023-05-18	-2	13	> 1 km	West	14	Heath Tundra	Feeding	800
Viewshed 7	2023-05-18	-2	13	> 1 km	West	8	Ice	Walking	500
Viewshed 4	2023-05-22	0	30	1 km	West	17	Heath Tundra	Walking	400
Viewshed 7	2023-05-22	0	30	1 km	West	5	Ice	Walking	1500
Viewshed 7	2023-05-22	0	30	1 km	West	2	Heath Tundra	Foraging	500
Viewshed 9	2023-05-22	0	30	1 km	West	2	Heath Tundra	Walking	700
Viewshed 12	2023-05-22	0	30	1 km	West	3	Heath Tundra	Walking	700
Viewshed 4	2023-05-25	5	60	> 1 km	West	25	Heath Tundra	Resting	1000
<b>Summer Caribou Season (26 May - 21 Sep)</b>									
Viewshed 3	2023-06-03	12	25	> 1 km	West	3	Heath Tundra	Feeding	20
Viewshed 5	2023-06-03	12	25	> 1 km	East	6	Heath Tundra	Feeding	1000
Viewshed 5	2023-06-03	12	25	> 1 km	West	6	Heath Tundra	Feeding	1200
Viewshed 6	2023-08-19	14	20	> 1 km	East	2	Heath Tundra	Foraging	300
Viewshed 7	2023-08-19	14	20	> 1 km	East	10	Birch & Riparian Shrub, Heath Tundra, Hilltop, Lichen, Lichen-Rock, Rock & Boulder, Sedge, Water	Foraging	30
Viewshed 8	2023-08-19	14	20	> 1 km	West	3	Heath Tundra, Hilltop	Foraging	1500
Viewshed 9	2023-08-19	14	20	> 1 km	West	5	Heath Tundra	Foraging	300
Viewshed 11	2023-08-19	14	20	> 1 km	East	4	Heath Tundra	Foraging	90
Viewshed 12	2023-08-19	14	20	> 1 km	West	2	Heath Tundra	Foraging	50

**Table 7-7: Survey Condition Details for Viewshed Surveys with Caribou Sightings, 2023**

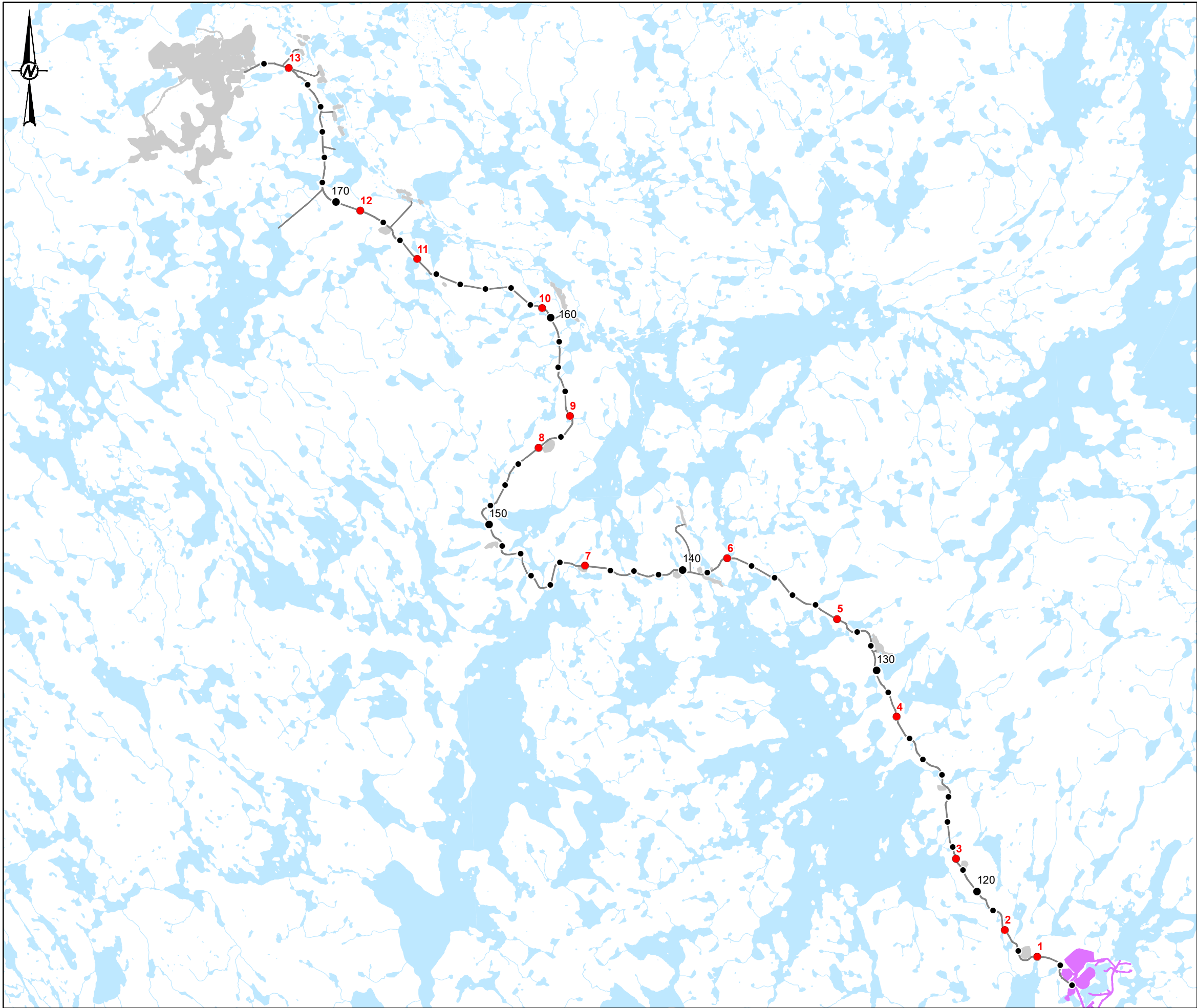
Survey Location	Date	Temperature (°C)	Wind Speed (km/hr)	Visibility*	Cardinal Direction	Number	Habitat	Behaviour	Distance from road (m)
Viewshed 13	2023-08-19	14	20	> 1 km	West	3	Heath Tundra	Foraging	500
Viewshed 8	2023-08-24	4	30	> 1 km	East	6	Heath Tundra	Feeding	400
Viewshed 9	2023-08-24	4	30	> 1 km	East	3	Heath Tundra	Feeding	300
Viewshed 10	2023-08-24	4	30	> 1 km	West	3	Heath Tundra	Feeding	200
Viewshed 12	2023-08-24	4	30	> 1 km	West	4	Heath Tundra	Feeding	900
Viewshed 6	2023-08-31	11	20	> 1 km	East	8	Heath Tundra	Foraging	300
Viewshed 7	2023-08-31	11	20	> 1 km	East	1	Heath Tundra	Foraging	200
Viewshed 8	2023-08-31	11	20	> 1 km	West	1	Heath Tundra	Foraging	1000
Viewshed 10	2023-08-31	11	20	> 1 km	East	1	Heath Tundra	Walking	150
Viewshed 10	2023-08-31	11	20	> 1 km	West	4	Heath Tundra	Foraging	100
Viewshed 12	2023-08-31	11	20	> 1 km	West	2	Heath Tundra	Foraging	400
Viewshed 13	2023-08-31	11	20	> 1 km	East	4	Heath Tundra	Foraging	50
Viewshed 13	2023-08-31	11	20	> 1 km	West	1	Heath Tundra	Foraging	1000
Viewshed 10	2023-09-07	5	20	> 1 km	East	3	Heath Tundra	Walking	0
Viewshed 10	2023-09-07	5	20	> 1 km	West	5	Heath Tundra	Foraging	0
Viewshed 13	2023-09-07	5	20	> 1 km	West	4	Heath Tundra	Foraging	50
Viewshed 12	2023-09-14	0	20	> 1 km	East	1	Heath Tundra	Foraging	1750
<b>Fall Caribou Season (22 Sept – 15 Dec)</b>									
Viewshed 12	2023-10-02	3	15	>1 km	East	7	Heath Tundra	Feeding	250
Viewshed 13	2023-10-11	2	20	>1 km	West	6	Heath Tundra	Feeding	800
Viewshed 7	2023-10-18	0	20	>1 km	East	7	Heath Tundra	Foraging	75
Viewshed 5	2023-10-22	-5	40	>1 km	East	2	Heath Tundra	Lying Down	2000
Viewshed 11	2023-10-24	-6	30	>1 km	East	1	Heath Tundra	Walking	1500
Viewshed 5	2023-10-26	-7	30	>1 km	East	6	Heath Tundra	Foraging	2000
Viewshed 11	2023-10-26	-7	30	>1 km	East	17	Heath Tundra	Foraging	3000
Viewshed 11	2023-10-26	-7	30	>1 km	East	150	Heath Tundra	Foraging	500
Viewshed 9	2023-10-28	-8	5	>1 km	West	5	Heath Tundra	Foraging	2000
Viewshed 12	2023-10-28	-8	5	>1 km	West	1	Road	Walking	0
Viewshed 12	2023-10-28	-8	5	>1 km	West	25	Heath Tundra	Walking	1500
Viewshed 5	2023-10-30	-8	14	>1 km	East	81	Heath Tundra	Walking	3000
Viewshed 12	2023-12-08	-22	15	>1 km	East	5	Heath Tundra	Foraging	1000
<b>Winter Caribou Season (16 Dec - 31 Mar)</b>									
Viewshed 13	2023-02-13	-31	20	>1 km	West	6	Heath Tundra	Feeding	1000



**Table 7-8: Total Number of Wildlife Observed during Viewshed Surveys along the Whale Tail Haul Road in 2023**

Species	Caribou Seasons			
	Spring (01 Apr to 25 May)	Summer (26 May to 21 Sep)	Fall (22 Sep to 15 Dec)	Winter (16 Dec to 31 Mar)
<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

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**LEGEND**

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

036  
1:150,000KILOMETRES

**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 MINES LIMITED:  
MEADOWBANK DIVISION

**PROJECT**

MEADOWBANK COMPLEX  
2023 WILDLIFE MONITORING SUMMARY REPORT

**TITLE**

LOCATION OF VIEWSHED SURVEYS ALONG WHALE TAIL HAUL ROAD, 2023



CONSULTANT	YYYY-MM-DD	2024-03-22
DESIGNED	JF	
PREPARED	CDB	
REVIEWED	JF	
APPROVED	CDLM	

PROJECT NO.	CONTROL	REV.	FIGURE
CA0006990.5123	4000/4040	0	7-1

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

## 7.6 Management Recommendations

The viewshed surveys were implemented to improve logistics and health and safety conditions for observers, as well as long-distance monitoring of caribou. Eighty-seven days of viewshed surveys were conducted in 2023, while the majority of monitoring along the WTHR was conducted using the standard road surveys (Section 3.0). Comparison of the effectiveness of viewshed surveys and road surveys at detecting caribou approaching the WTHR is presented in Section 17.0.

## 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. The 2019 to 2021 remote camera data were previously analyzed for the 2020, 2021, and 2022 Wildlife Monitoring Summary Reports (Golder 2021, 2022, WSP 2023). Results from the 2023 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 2023). The same locations were used in 2023 as in 2021 and 2022. 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, 2023**

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 2023 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. 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 3,337,967 photos collected in 2023. MegaDetector was used for general processing. It is a model trained with a large amount of data and is able to detect wildlife regardless of the position of the object in the scene (near or far). Images were divided into two groups: images with a detection threshold greater than or equal to 0.7, and images with a detection threshold between 0.3 and 0.7. 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 was determined at each camera pair based on unique days with photographs. An overall caribou detection rate was calculated, based on the number of individuals observed, divided by the camera station sampling effort in days by season. A caribou crossing rate was also calculated, based on the number of individuals observed crossing the road, divided by the camera station sampling effort in days by 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 short distance of the motion sensor (~30 m limit).

Following discussion at the November/December 2022 TAG meeting, assessment of caribou crossing rates in relation to previous vehicle may be better assessed using caribou satellite collar data, and vehicle traffic collected using remote camera data. Therefore, time between caribou crossing events, and previous vehicle time is not presented.

## 8.5 Results

A total of 2,636 photographs were selected by the automated approach and reviewed by a human observer. There were 402 total observations, 329 observations were “near wildlife” detections and 73 “far wildlife” detections. Fifteen species were detected in 2023: Arctic fox, Arctic hare, Canada goose, caribou, common raven, gray wolf, greater white-fronted goose, Lapland’s longspur, muskox, red fox, rock ptarmigan, sandhill crane, snow goose, wolverine, and unidentified bird species. All were detected on “near wildlife” detections. “Far wildlife” detections included grey wolf, caribou, common raven, muskox, and additional unidentified bird species.

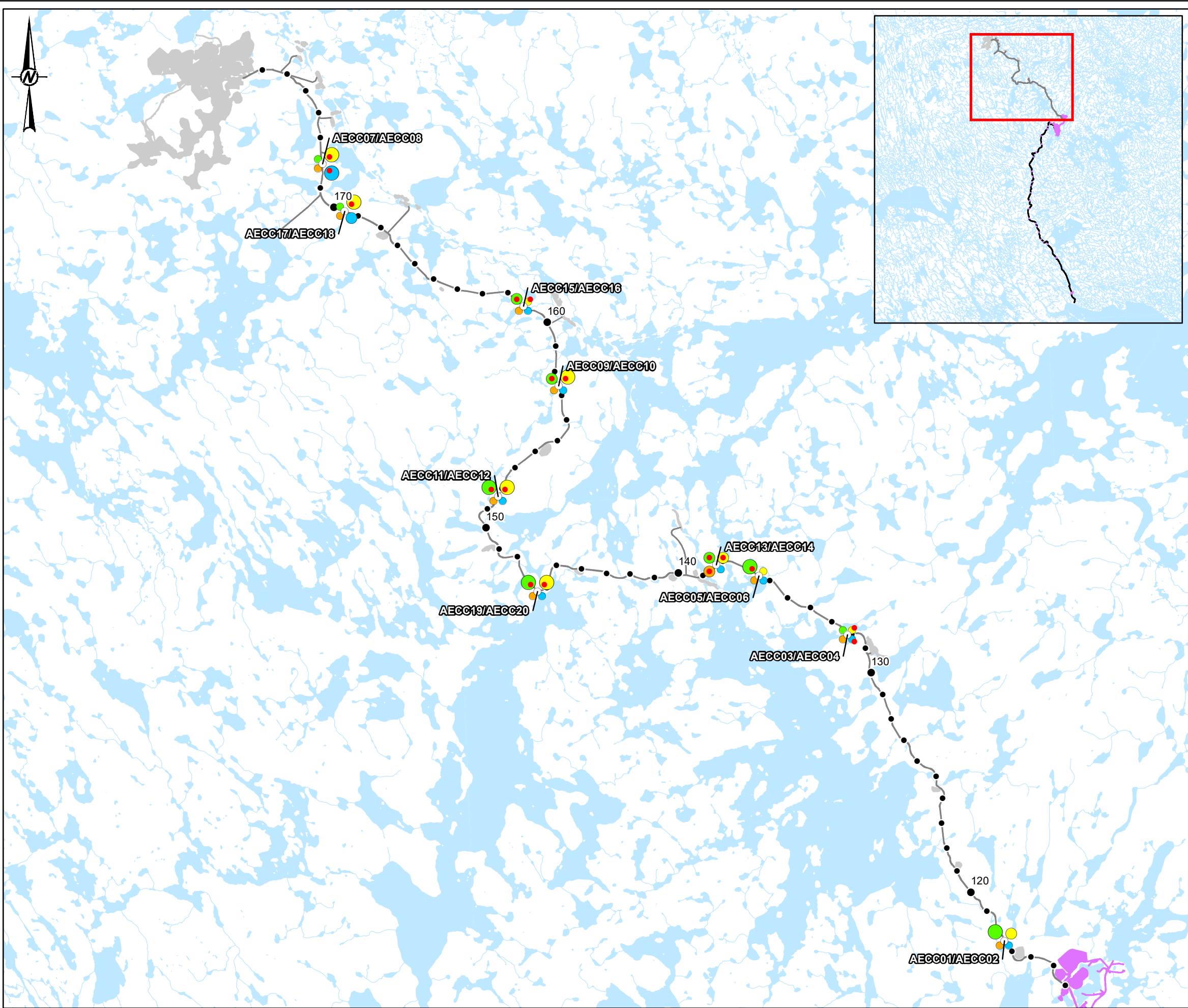
Caribou were detected between 15 February 2023 and 28 October 2023. Caribou were detected on all ten camera monitoring locations, and caribou crossing events were recorded on nine of ten camera monitoring locations (Table 8-2). Caribou crossing events were detected in all seasons.

The highest detection rate occurred at camera pair 1 (KM 118) in the spring, and 4 (KM 172) in the summer, and the highest crossing rate was observed at camera pair 6 (KM 152) in the spring (Figure 8-1; Table 8-2). Detection rates between years 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. Camera pair 1 has one camera directed at a foraging area where caribou were present in large numbers closer to the camera, allowing for a high number of caribou to be counted at one time compared to other camera pairs. This contributed to the high detection rate for camera pair 1. There were 66 crossing events in 2023 (Table 8-3). More crossing events were observed on days with an open road status (n=38) compared to days with a road closure (n=28; Table 8-3). This is likely due to the fact that the majority of recorded crossing events occurred during summer. All caribou crossing events recorded during spring migration in April and May occurred during road closures (Table 8-3).

**Table 8-2: Caribou Detection Rates from Remote Cameras, 2023**

Camera Pair	Spring		Summer		Fall		Winter	
	(Caribou/Active Days)		(Caribou/Active Days)		(Caribou/Active Days)		(Caribou/Active Days)	
	Caribou Rate	Crossing Rate	Caribou Rate	Crossing Rate	Caribou Rate	Crossing Rate	Caribou Rate	Crossing Rate
1	0.87	0.00	0.06	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.02	0.02	0.00	0.00	0.01	0.01
3	0.37	0.22	0.00	0.00	0.00	0.00	0.00	0.00
4	0.02	0.00	0.51	0.20	0.01	0.00	0.12	0.02
5	0.07	0.04	0.23	0.20	0.00	0.00	0.01	0.00
6	0.37	0.28	0.17	0.12	0.00	0.00	0.00	0.00
7	0.04	0.04	0.07	0.06	0.04	0.03	0.00	0.00
8	0.07	0.04	0.01	0.01	0.00	0.00	0.01	0.00
9	0.02	0.00	0.18	0.09	0.00	0.00	0.02	0.00
10	0.31	0.30	0.12	0.10	0.00	0.00	0.00	0.00

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**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

**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 MINES LIMITED:  
MEADOWBANK DIVISION**

**PROJECT**

MEADOWBANK COMPLEX  
2023 WILDLIFE MONITORING SUMMARY REPORT

**TITLE**

CARIBOU DETECTION AND CROSSING RATES FROM REMOTE CAMERA DATA (2023)

**CONSULTANT**

YYYY-MM-DD	2024-03-28
DESIGNED	JF
PREPARED	CDB
REVIEWED	JF
APPROVED	DC

PROJECT NO. CA0006990.5123

CONTROL 4000/4040

REV. 0

FIGURE 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, 2023**

Camera Pair	Crossing Time	Number of Individuals	Road Closure Status
CP04	2023-02-08 10:17:15	1	Open
CP04	2023-02-08 17:17:20	1	Open
CP02	2023-03-18 07:05:01	1	Open
CP06	2023-04-26 22:00:00	2	Closed
CP10	2023-04-29 04:39:01	11	Closed
CP05	2023-04-29 19:08:04	2	Closed
CP06	2023-04-29 21:24:34	11	Closed
CP08	2023-04-29 23:07:48	2	Closed
CP07	2023-05-01 06:47:36	2	Closed
CP03	2023-05-01 09:00:00	12	Closed
CP05	2023-06-03 12:33:11	1	Closed (< 24 hour), Weather
CP04	2023-06-14 13:58:34	4	Open
CP09	2023-06-16 19:43:50	1	Open
CP04	2023-07-09 21:47:03	2	Open
CP06	2023-07-15 03:15:37	1	Open
CP10	2023-07-20 01:47:41	1	Open
CP05	2023-07-20 17:22:32	1	Open
CP06	2023-07-22 12:02:24	1	Open
CP10	2023-07-25 11:43:23	1	Open
CP05	2023-07-26 13:56:29	1	Open
CP10	2023-07-29 15:50:14	1	Open
CP05	2023-07-29 18:47:18	1	Open
CP10	2023-07-30 02:58:46	1	Open
CP10	2023-07-30 13:11:39	1	Open
CP10	2023-07-30 14:44:23	1	Open
CP06	2023-07-31 22:56:46	1	Open
CP10	2023-08-03 16:31:23	1	Open
CP10	2023-08-03 20:09:12	1	Open
CP10	2023-08-07 15:30:12	1	Open
CP06	2023-08-07 20:41:21	1	Open
CP06	2023-08-12 22:50:58	1	Open
CP09	2023-08-14 19:44:10	1	Closed, Caribou
CP05	2023-08-15 15:05:23	1	Closed, Caribou
CP04	2023-08-16 06:27:11	1	Closed, Caribou
CP06	2023-08-17 01:04:05	2	Closed (< 24 hour), Caribou
CP06	2023-08-17 04:28:06	1	Closed (< 24 hour), Caribou

**Table 8-3: Caribou Crossing Events on Remote Cameras, 2023**

Camera Pair	Crossing Time	Number of Individuals	Road Closure Status
CP05	2023-08-17 12:05:30	1	Closed (< 24 hour), Caribou
CP10	2023-08-18 06:12:13	1	Closed (< 24 hour), Caribou
CP09	2023-08-18 09:19:24	1	Closed (< 24 hour), Caribou
CP06	2023-08-18 11:23:17	1	Closed (< 24 hour), Caribou
CP10	2023-08-18 11:37:59	1	Closed (< 24 hour), Caribou
CP02	2023-08-18 21:04:02	1	Closed (< 24 hour), Caribou
CP04	2023-08-19 01:47:39	1	Closed (< 24 hour), Caribou
CP05	2023-08-19 17:42:13	2	Closed (< 24 hour), Caribou
CP07	2023-08-19 20:00:00	2	Closed (< 24 hour), Caribou
CP07	2023-08-21 08:00:11	1	Closed (< 24 hour), Caribou
CP08	2023-08-21 08:57:31	1	Closed (< 24 hour), Caribou
CP05	2023-08-21 16:34:38	1	Closed (< 24 hour), Caribou
CP04	2023-08-21 22:34:11	2	Closed (< 24 hour), Caribou
CP02	2023-08-22 12:01:40	1	Closed (< 24 hour), Caribou
CP05	2023-08-25 20:35:28	2	Closed (< 24 hour), Weather
CP04	2023-08-30 07:00:00	1	Speed Restriction, Muskox
CP04	2023-08-31 08:26:08	2	Speed Restriction, Muskox
CP09	2023-09-03 01:44:54	5	Open
CP05	2023-09-03 06:02:07	1	Open
CP05	2023-09-05 10:32:31	2	Open
CP04	2023-09-06 13:30:00	3	Speed Restriction, Muskox
CP05	2023-09-06 16:44:05	2	Speed Restriction, Muskox
CP05	2023-09-07 13:49:46	1	Speed Restriction, Muskox
CP05	2023-09-07 16:43:57	7	Speed Restriction, Muskox
CP04	2023-09-12 17:59:30	3	Open
CP07	2023-09-13 12:54:16	1	Speed Restriction, Muskox
CP07	2023-09-13 20:30:00	2	Speed Restriction, Muskox
CP04	2023-09-14 08:00:42	1	Open
CP07	2023-09-30 09:32:28	1	Open
CP07	2023-10-04 10:11:51	1	Open

## 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 (3,337,967), 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 2023 are comparable to 2022 data, but not comparable to previous program years due to differences in the analysis approach used. Overall, relatively few crossing events were detected on remote cameras, and conclusions on how road characteristics influence caribou crossing behaviour cannot be drawn at this time. As discussed at the November/December 2022 TAG meeting, assessment of caribou crossing rates in relation to previous vehicle may be better assessed using caribou satellite collar data and vehicle traffic collected using remote camera data. Ground observations of caribou, including crossing events, could also be used. The automated approach may be useful for determining traffic rates from remote cameras, especially if cameras are repositioned to focus on capture of vehicle traffic.

The path forward for the remote camera program should be discussed with the TAG. 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. Deploying more cameras across the WTHR, and potentially the AWAR could increase the number of caribou crossing event detections. However, this would require significantly more effort to deploy and maintain cameras and to review camera photos. Any changes to program objectives and key questions, as well as any changes in sampling effort, would require a change in study design.

## 9.0 BLAST MONITORING

### 9.1 Overview

The purpose of the blast monitoring program is to measure vibration and overpressure from explosive blasts at the Whale Tail Mine and to understand how blasting vibration relates to caribou behaviour. The program aims to establish site-specific relationships between vibration and overpressure levels and blasting parameters (e.g., charge mass, charge depth), environmental conditions (e.g., seasonal variation), and propagation distances. The program includes monitoring of caribou sensory disturbance related to blasting.

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 exceed vibration annoyance or damage thresholds, understand blasting vibration and overpressure attenuation and to characterize the behavioural response of caribou to blasting.

### 9.3 Duration

Blast measurement data collected in 2020 and 2021 were used to determine site-specific relationships between overpressure and vibration and blasting parameters. Caribou behaviour monitoring will continue until a sufficient sample size of caribou behaviour at different distances from blasting is collected and assessed in relation to blasting parameters.

### 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. 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 and 2022 were input into the models to estimate PPV and PPL experienced by caribou groups which have behaviour monitoring data.

#### 9.4.2 Caribou Behaviour Monitoring

The same general approach to caribou behaviour monitoring for blast monitoring was used as for other caribou behaviour monitoring for Meadowbank (Section 17.2). Surveys were opportunistic in nature and required groups of caribou to be present during blast events. The overall method for blasting monitoring was to identify caribou groups in proximity to blasting locations prior to blast events and recording 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 sample size of comparisons and standardize comparisons across days.

For days where blasting events could be tied to caribou behaviour monitoring surveys, the average proportion of caribou performing 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 Historical Results

#### 9.5.1.1 Blast Monitoring

Blasting measurements were collected using four Instantel Minimate units in August, September, and December 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). All measured PPV values were below the 12.5 mm/s damage threshold (Environment Canada 2009) and well-below the 5 mm/s annoyance threshold (ANZEC 1990). All but one of the measured PPL values were below the 128 dBL damage threshold (Environment Canada 2009). Seven of the 12 blasts measured during the first year of the program resulted in PPL values above the 115 dBL annoyance threshold (ANZEC 1990) at the measurement location approximately 500 m from the edge of the Whale Tail Mine. This suggests that airblast overpressure may result in annoyance impacts at receptors in close proximity to the blast site. 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.

The 2020 blast monitoring program was limited due to COVID-19 (Golder 2021). Eleven blast events were monitored at two locations by Agnico Eagle in December 2020. Caribou were observed sporadically during pre-blast monitoring in spring and fall 2020. There was one instance where blasting was canceled (4 April 2020) due to observation of 25 caribou approximately 2 km from the Whale Tail Mine.

Two blasts in 2020 exceeded the PPV annoyance threshold of 5 mm/s (ANZEC 1990), and one blast exceeded the 12.5 mm/s damage threshold (Environment Canada 2009) 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. Results from 2020 contrast results from 2019, where no blasts exceeded annoyance or damage thresholds.

All blasts measured resulted in PPL values below the 128 dBL damage threshold (Environment Canada 2009). However, the 115 dBL annoyance threshold (ANZEC 1990) was exceeded for five of the 11 blasts at the measurement location 193 m from the Whale Tail Mine, and two of the 11 blasts for the measurement location 569 m from the Whale Tail Mine. This suggests that airblast overpressure from blasting may result in annoyance impacts at receptors in close proximity to the blast site as the monitoring locations (193 m and 569 m from pit edge) are closer to the blast site than the 4 km caribou distance threshold. Results from 2020 are similar to 2019 results, with the exception of a single blast exceeding damage thresholds in 2019 (Golder 2020c).

Vibration measurements were collected for 139 blasts between 20 December 2020 and 6 August 2021 within the scope of the blast monitoring program, resulting in a total of 247 individual PPV measurements and 174 individual PPL measurements suitable for analysis. Note the number of individual measurements is less than the 556 data points that might be expected given four monitoring units measuring vibration from 139 blasts (i.e.,  $4 \times 139 = 556$ ). This primarily is because the monitoring units were configured to collect measurements when PPV or PPL exceeded a trigger level, and the trigger level had to be set high enough to avoid a large number of “false positives” (i.e., measurements collected in response non-blasting events/activities). Consequently, the more-distant monitors (i.e., BM3 and BM4) did not log measurements in response to some blasts because the PPV or PPL at these locations was too low to trigger the monitoring unit.



### 9.5.1.2 *Caribou Behaviour Monitoring 2021-2022*

Pre-blast surveys for caribou were performed on 165 days between 3 January to 16 December 2021. Of the 165 surveys, 132 surveys yielded no species. Caribou were observed on 36 surveys, and Muskox were observed during one survey. No blasts had to be cancelled due to caribou GST exceedance in proximity to the Meadowbank Complex. One blast was cancelled, on 11 September 2021, due to six caribou present within 600 m of the blast.

Caribou behaviour monitoring occurred during 14 blast days between 6 May 2021 and 22 October 2021. Three monitoring sessions were performed in spring, nine in summer, and two in fall. Precise locations of caribou could be linked to blast locations on six days. Recorded locations of the remaining monitoring events were too imprecise for analysis. All modelled values were below the annoyance thresholds of PPV of 5 mm/s. All modelled values for PPL were below the annoyance threshold of 115 dBL, however the upper 95% confidence interval overlapped the annoyance threshold for all blasts.

Between 2021 and 2022 there were 13 behaviour monitoring sessions where behaviour before, during, and after the blast was monitored in three-minute intervals. There were 18 surveys where behaviour monitoring was conducted for at least six minutes following blasting, and location of caribou could be linked with blasting data to determine modelled PPL and PPV.

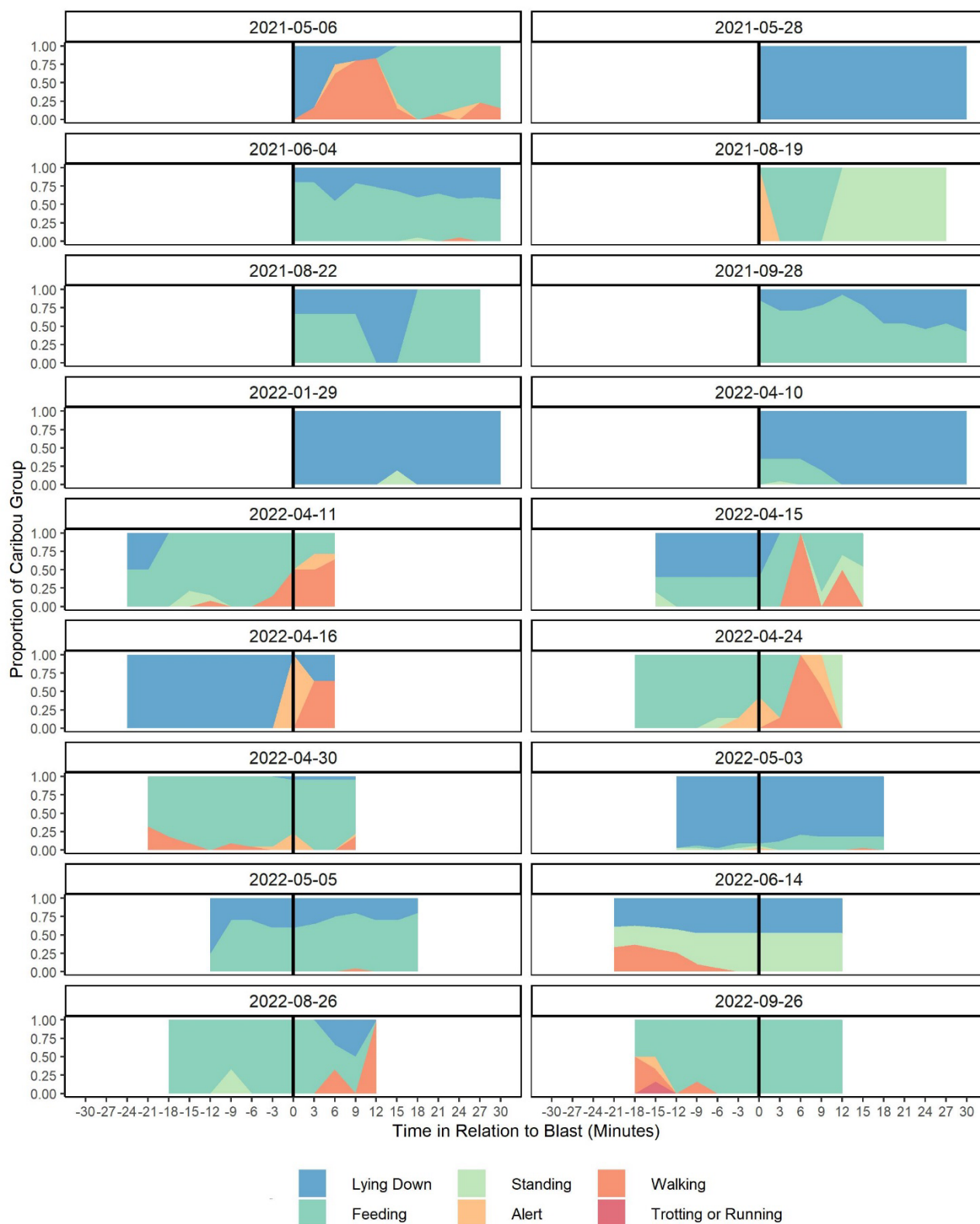
On 6 May 2021, when two blasts were performed at the same time, walking and alert behaviours increased following blasts. However, several vehicle disturbances were also recorded that appeared to elicit changes in caribou behaviour on this day. On 19 August 2021, alert behaviours were observed in the 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 to 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.

All modelled values were below the annoyance thresholds of PPV of 5 mm/s. All modelled values for PPL were below the annoyance threshold of 115 dBL except for 05 May 2022, however the upper 95% confidence interval overlapped the annoyance threshold for all blasts. Two blasts were conducted on five days used in the analysis (Figure 9-1). Response behaviours were observed on half of days following blasting. However, the average proportion of the caribou group performing response behaviours in six minutes following each blast based on 18 behaviour monitoring sessions, and modelled PPV (Spearman's  $\rho = -0.06$ ,  $p$ -value = 0.82) and PPL (Spearman's  $\rho = -0.15$ ,  $p$ -value = 0.56) did not appear to be correlated (Figure 9-1).

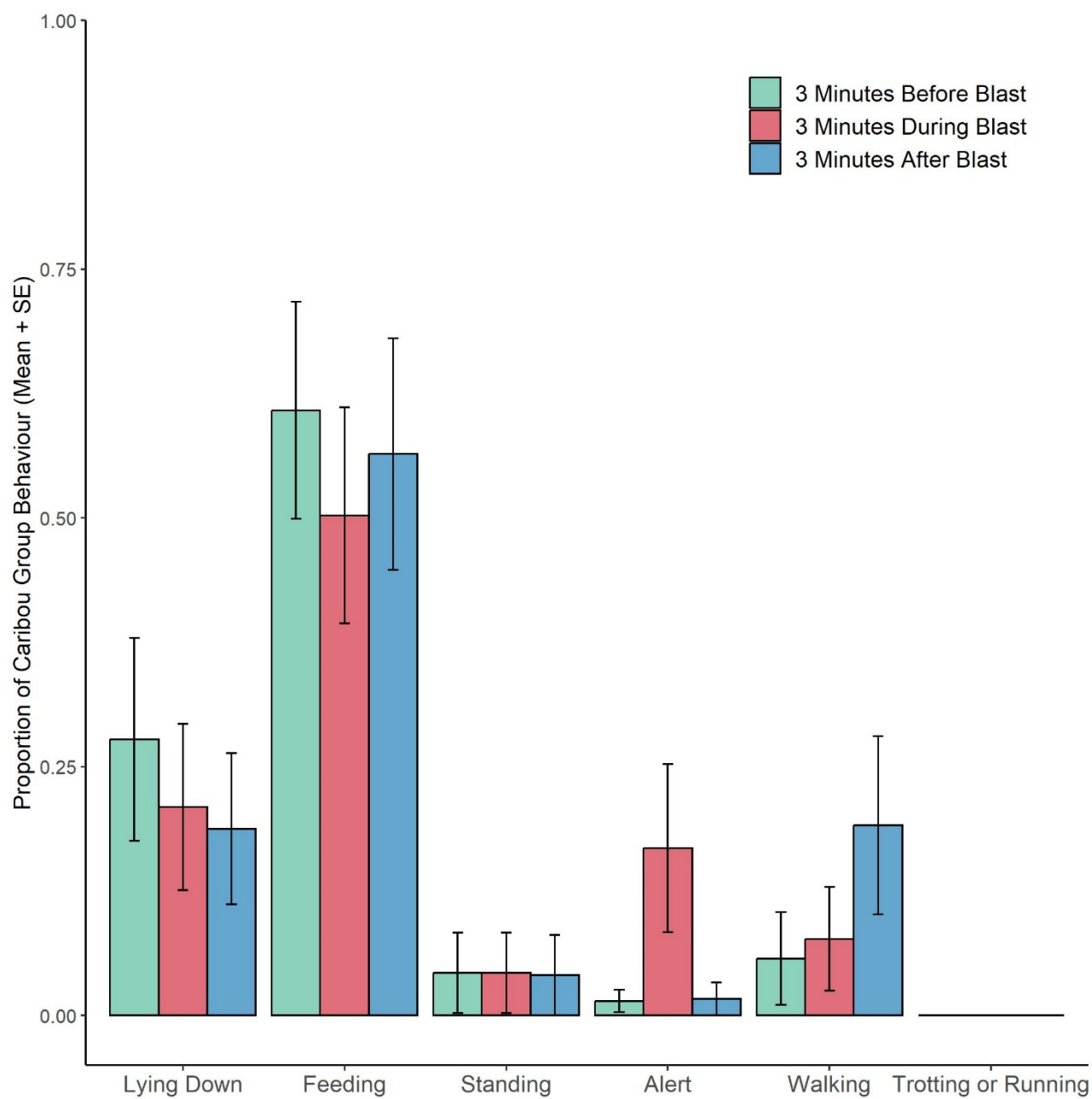
Caribou behaviour in the three minutes before, the three minutes during, and the three minutes following a blast is shown in Figure 9-2. On average, feeding and lying behaviours were the primary behaviours observed in each interval. An increase in alert behaviour was observed in the three-minute interval during a blast, which may correspond to the decrease in feeding behaviours during a blast. Walking behaviours showed an increasing trend following a blast, while lying and standing behaviours did not differ much between intervals.

**Table 9-1: Caribou Behaviour Monitoring and Blast Data, 2021 and 2022**

Blast Date	Blast Number	Quantity Explosive (kg)	Distance Between Caribou Group and Blast (m)	Proportion of Caribou Performing Response Behaviours	Predicted PPV (m/s) and 95% Confidence Interval	Predicted PPL (dBL) and 95% Confidence Interval
2021-05-06	5067SUK01, 5074MSK12	55887	2873	0.31	0.940 (0.51— 1.72)	111.3 (97.9— 124.7)
2021-05-28	5095MSL75	57553	1404	0.00	1.87 (1.12— 3.12)	114.6 (102.3— 126.8)
2021-06-04	5074MSK24	69245	1647	0.00	1.79 (1.07— 3.01)	114.3 (101.9— 126.6)
2021-08-19	5046PSK71	1164.6	1895	0.33	0.22 (0.10— 0.49)	107.3 (92.5— 122.2)
2021-08-22	5046PSK21, 5046PSK13	2336	832	0.00	0.68 (0.36— 1.30)	112.2 (99.1— 125.3)
2021-09-28	5046PSK31, 5060MSK22	4137	1579	0.00	0.21 (0.09— 0.47)	106.1 (90.7— 121.4)
2022-01-29	5144MSM92, 5130PSM40	41092	1769	0.00	1.31 (0.75— 2.30)	113.2 (100.4— 125.9)
2022-04-10	5130MSM16	90093	3750	0.00	0.91 (0.49— 1.67)	110.7 (97.1— 124.4)
2022-04-11	5137MSR07	37295	2500	0.64	0.86 (0.47— 1.60)	111.2 (97.7— 124.7)
2022-04-15	5081MSL67	74194	1466	0.33	2.11 (1.28— 3.47)	115 (102.9— 127.1)
2022-04-16	5130PSR27, 5151MSV15	11420	2014	0.76	0.60 (0.31— 1.17)	110.4 (96.6— 124.2)
2022-04-24	5144RAV02	19454	1745	0.52	0.92 (0.50— 1.68)	112.0 (98.8— 125.2)
2022-04-30	5130MSM11	178570	1503	0.08	3.02 (1.92— 4.74)	116.0 (104.3— 127.8)
2022-05-03	5151PPR99, 5144RAR04	12769	1993	0.01	0.67 (0.35— 1.28)	110.8 (97.2— 124.4)
2022-05-05	5046MSK05	42189	1107	0.00	2.03 (1.23— 3.35)	115.2 (103.2— 127.2)
2022-06-14	5039MSK25	17187	1762	0.00	0.86 (0.47— 1.60)	111.8 (98.5— 125)
2022-08-26	5130RAV02	28148	1688	0.11	1.16 (0.65— 2.07)	112.8 (100.0— 125.7)
2022-09-26	5053SUI01	4100	1559	0.00	0.49 (0.24— 0.97)	110.1 (96.3— 124)



**Figure 9-1: Caribou Behavioural Response Following Blasting Events**



**Figure 9-2: Caribou Behaviour Before, During, and After Blasting.**

### 9.5.1.3 Vibration and Overpressure Model

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.

### 9.5.2 Caribou Behaviour Monitoring 2023

Pre-blast surveys for caribou and other wildlife were performed on 244 occasions on 210 days between 2 January to 31 December 2023 (Table 9-2, Appendix A). Caribou were observed during 33 surveys, Muskox during 5 surveys, Arctic fox were observed during 4 surveys, and red fox were observed during 1 survey. In most cases, wildlife were observed 1.5-2 hours prior to blasts. Blasts were cancelled on nine occasions during seven days in 2023 due to the presence of caribou identified during pre-blast surveys. Eight of the nine cancelled blasts were during spring migration (April 18, 26, 27, 28, 29, and May 15), and in each case the blast was cancelled because caribou observations exceeded GST (Appendix A). One cancelled blast was during summer (11 August) due to the presence of 10 caribou within 600 m of the blast. On one occasion on 12 August, a single caribou was observed within 400 m of the blast location and was monitored by the environment crew. On this occasion, blasting was postponed until the animal moved out of the blast radius and further from the mine site.

Caribou behaviour monitoring sessions in relation to blasting activities were not conducted during 2023 due to lack of caribou groups available for behaviour monitoring during the appropriate timeframe. Caribou observed during pre-blast surveys were mostly detected 1.5-2 hours prior to blasting and were not in the area during the caribou behaviour monitoring timeframe, which is 30 min before and after a blast. In cases when caribou were in close proximity during the timeframe for a scheduled blast, blasts were cancelled (eight occasions) or postponed (one occasion).

**Table 9-2: Number of Pre-Blast Surveys per Month, 2023**

Month	Number of Pre-Blast Surveys
January	20
February	19
March	23
April	33
May	16
June	20
July	19
August	25
September	30
October	20
November	11
December	8
<b>Total</b>	<b>244</b>

## 9.6 Management Recommendations

Caribou behaviour responses to blasting were recorded in 2021 and 2022. For the previously completed analysis, the metric used to quantify caribou response to blasting (i.e., average response behaviours six minutes following blasting) was determined based on data availability. Preliminary analysis found that this metric was not correlated with modelled PPV and PPL values, however the sample size was relatively small. Behaviour monitoring could aim to monitor caribou for a longer period of time following blasting to determine the time taken for response behaviours to return to pre-blast levels. Future analyses using more behaviour monitoring sessions could account for other factors such as caribou group size and presence of other disturbances (e.g., vehicle traffic).

During 2023, pre-blast surveys were performed on 244 occasions on 210 days. Surveys for caribou behavioural responses to blasting were not conducted during 2023 due to lack of caribou groups available for behaviour monitoring during the appropriate timeframe, but monitoring will continue during 2024 based on caribou observation opportunities.



## 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 2022 and continues into 2023.

The full 2023 HHS report is provided in Appendix G (Agnico Eagle 2023a).

### 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 2023 calendar in Appendix A of the HHS (Appendix G). 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 2023, October 2023, and February 2024) by the harvest study coordinator. During the January 2024 interviews, remaining data from 2023 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 2023 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; and 3) increasing incentives for participating in the study (e.g., gas vouchers and prizes).

## 10.4 Results

Results of the 2023 HHS are summarized below. Additional information such as distribution maps and data comparisons across all years of the HHS are presented in Appendix G.

### Hunter Harvest Study Results

- The HHS included 75 participants by the end of 2023, which is higher than the participants in 2020, 2021, and 2022 (64, 55, 59 respectively).
- Given the historical and current number of hunters in Baker Lake, an estimate of 300 to 350 active hunters was used in the 2023 analysis.
- Of the 75 HHS participants in 2023, caribou harvest data was collected from 63 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 2023 HHS data indicated that 37% of reported harvest occurred within 5 km of the AWAR, and 71% 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 2023, one caribou was 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 74 harvests were reported in 2023. Given the low numbers of reported harvests close to the WTHR and the prohibition of the public from the WTHR, it is unlikely that the presence of the road has resulted in increased harvest.
- In 2023, a total of 646 caribou were reported as being harvested by 63 participants in the Baker Lake HHS, which includes harvests in the Meadowbank and Whale Tail study areas.
- Given that the 63 hunters represent an estimated 18% to 21% of the Baker Lake hunting community, the total estimated number of caribou harvested in 2023 in the Baker Lake community ranged from 3,076 to 3,589 animals.
- Based on the NWMB (2004) and inclusive Baker Lake HHS results (2007 to 2015; 2019 to 2023), 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 7 muskox, 18 wolverine, 47 wolves, and 3 red fox. One grizzly bear was reported as harvested in 2023, but outside of HHS boundaries. No Arctic fox were reported as harvested in 2023. Several bird species were harvested in 2023 with the most common species being Canada goose.
- For the second year in the HHS, beluga (*Huso huso*) and an unidentified species of seal were reported as being harvested by Baker Lake hunters, but all were harvested well beyond the RSA.

### Creel Survey Results

- The number of fishermen reporting successful fishing trips in 2023 was 30, which is higher than the average of 23 fisherman from 2007 to 2015 and 2019 to 2021 (12 years). The highest numbers of fisherman reporting success in 2023 were in May and June period, which was also the fishing period with the most active fisherman.
- 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 and Arctic char were the most common species caught by fisherman and were reported at lower numbers than in 2022.

## 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 (71% of harvest in RSA in 2023 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 (Only one harvest recorded within 5 km of the WTHR; harvests within the WTHR RSA were higher than most other years [except 2011 and 2019], including pre-construction)	None required. Access by hunters is restricted in the growing season and very limited hunting occurs in the winter.	Hunter Harvest Study  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 Mine Complex. Meetings with participants every four months (three times/year) in 2024 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 2023 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 2023, while Table 11-2 summarizes potential Mine-related effects on caribou in 2023.

**Table 11-1: Summary of Caribou Monitoring Activities and Management Responses in 2023**

Monitoring Program	Summary of 2023 Monitoring Results	Summary of 2023 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 1.0)	A total of 215 surveys completed on the AWAR, and 242 on the WTHR. High caribou numbers were observed along the AWAR in April, October, and November. High numbers of caribou were observed along the WTHR in April.	The AWAR was fully closed (24-hour closure) on 97 days, closed for less than 24 hours on 56 days, and had speed restrictions applied for 16 days. In total the AWAR was closed for 2,975 hours. The WTHR was fully closed (24-hour closure) on 37 days, partially closed (less than 24-hour closure) on 64 days and had speed restrictions applied for 60 days. The WTHR was closed for 1,503 hours during 2023 (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. Caribou sightings at Meadowbank were highest from May to July, and muskox sightings were highest in August. At the Whale Tail site, caribou observations were highest in April and muskox sightings were highest in August and September.	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 55 ha, or 9.5% change in footprint at the Whale Tail site occurred between the assessment in 2021 and 2023. The change in footprint since the previous assessment less than 25%. Therefore, the next comprehensive analysis is scheduled for 2024.	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 2023 included data from 2003 to 2023, and individuals from five 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 2023**

Monitoring Program	Summary of 2023 Monitoring Results	Summary of 2023 Management Responses
Viewshed Surveys (Section 7.0)	A total of 1,345 viewshed surveys were conducted over 87 days in 2023. Of the 1,345 viewshed surveys, 109 surveys (8%) had caribou sightings, and a total of 4,442 caribou were reported. Survey efforts were conducted between 5 January and 30 December, with the highest survey effort occurring in the spring.	Viewshed surveys informed road closure by acting as an early warning system for caribou approaching the WTHR. Viewshed surveys on days with road closures coincided with days road surveys occurred, meaning that additional mitigations did result from solely viewshed surveys.
Remote Camera (Section 8.0)	Remote cameras were deployed at ten locations along the WTHR. Caribou were detected at all ten locations, and road crossings were identified at nine out of ten locations.	No management response based on remote camera program in 2023.
Blast Monitoring (Section 9.0)	Caribou monitoring conducted prior to blasts throughout 2023. Caribou behavioural monitoring in response to blasting did not occur in 2023 due to lack of caribou groups available for behaviour monitoring during the appropriate timeframe.	Nine blasts were postponed due to presence of caribou in the vicinity of the Whale Tail Mine.
Hunter Harvest Study (Section 10.0)	A total of 646 caribou were reported as being harvested by 63 participants in the Baker Lake HHS. The data indicated that 37% of reported harvest occurred within 5 km of the AWAR, and 71% occurred within the Meadowbank RSA. In 2023, one caribou was 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 2023**

Monitoring Program	Potential Effect	Threshold	Threshold Exceeded (2023)	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 muskox mortality that took place on the WTHR on 06 November 2023.
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. Blasting postponed on nine occasions due to caribou presence. 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, and Viewshed surveys. 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 2023 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 2023.

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 2023.

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.

## 13.0 RAPTOR NEST MONITORING

### 13.1 Overview

The raptor nest monitoring program is designed to determine Project-related effects, and the success of mitigation strategies to prevent disturbance to nesting raptors. Within the Meadowbank LSA and AWAR LSA, peregrine falcons have previously nested in quarries along the AWAR, the Portage Pit, and Goose Pit. Monitoring of peregrine falcon nests in quarries along the AWAR has been conducted since 2009. The Portage, Goose, Vault, Whale Tail, and IVR Pits are inspected for peregrine falcon activity daily prior to and during the nesting season and managed under the Peregrine falcon Management and Protection Plan (Appendix E, Agnico Eagle 2019).

Monitoring in 2023 included surveys for nests associated with pits and quarries along the AWAR and WTHR. Raptor activity and potential nest locations were also noted on other surveys including road surveys, viewshed surveys, freshet monitoring, and on-site environmental monitoring. In addition, a research program was conducted by Arctic Raptors in 2023, to determine the relationship between nest success and Mine activity (Appendix H).

### 13.2 Objectives

The objectives of the raptor nest survey monitoring program are to monitor disturbance to nesting raptors, and Project-related mortality to raptors. Nest management plans are developed for nests in proximity to the Project. One mortality, and one nest failure are thresholds for the Project.

### 13.3 Duration

Raptor nest monitoring will continue throughout operation and closure stages of the Mine to evaluate if mitigation measures to prevent disturbance to nesting raptors are successful.

### 13.4 Methods

#### 13.4.1 Nest Monitoring

Raptor nests within 1.5 km of the active footprint and Project facilities require monitoring from 1 May to 15 September. Daily monitoring is required for nests within the active footprint, or within 500 m of Project facilities (i.e., the area of concern; Agnico Eagle 2019), and weekly monitoring is required for nests outside the area of concern. Nest management plans are developed as required, in consultation with subject matter experts and the GN, which include establishment of no-disturbance buffers in accordance with BC Guidelines for Raptor Conservation or TAG recommendations. If raptor nesting activity is detected in the Portage, Goose, Whale Tail, and IVR Pits, or other site infrastructure, the Environment Department is notified, and these pits are then inspected daily for nesting activity from 25 May to 1 July. Management and mitigation approaches for peregrine falcon nests in proximity to pits and facilities are outlined in the 'Peregrine falcon Management and Protection Plan on the Meadowbank Gold Project Site (Appendix E, Agnico Eagle 2019). Raptor activity is also noted on other surveys including pit and Mine site inspections, road surveys, and viewshed surveys.

Raptor nest monitoring in 2023 included monitoring of raptor nests in quarries along the AWAR and WTHR. Peregrine falcons have nested in quarries along the AWAR since 2009, and surveys of these quarries have been performed since 2010. Quarries along the WTHR were checked regularly for raptor nesting evidence between 5 May and 28 September in 2023 (Table 13-1). Quarries along the AWAR (Table 13-1) were visited on an approximately weekly basis between 16 May and 17 August in 2023. Raptor activity and potential nest locations were also noted on other surveys including road surveys, viewshed surveys, freshet monitoring, and on-site environmental monitoring. Surveys in pits or other areas were conducted when raptors were observed during

Mine site inspections or incidental observations. In addition to monitoring completed by Agnico Eagle technicians, Arctic Raptors completed ground-based surveys, and two helicopter surveys for nesting raptors from 23 to 28 May and 09 to 12 August 2023. Surveys were focused on nesting habitat along the AWAR and WTHR (Appendix H).

Nest sites are monitored using non-disruptive techniques, which include monitoring from vehicles within the quarry or from the road, to ensure that active nests are not approached by Mine personnel. Presence of aggressive adults, eggs, and chicks are used to identify active nests. To minimize direct disturbance to nesting birds and as per recommendations, intensive monitoring by approaching nests by foot, is not conducted. Deterrents were applied to two known sites to harbour raptors in 2023 to discourage raptor nesting.

### 13.4.2 Nest Occupancy Analysis

Arctic Raptors analyzed data from raptor nest surveys performed in years 2015 – 2017, 2019, and 2021 – 2023 at 144 locations considered to be raptor nesting habitat. Occupancy modelling was used to determine nest occupancy across years for peregrine falcons (77 nest sites), rough-legged hawks (33 nest sites), and gyrfalcon (*Falco rusticolus*; 13 nest sites). Annual occupancy probabilities were used to determine average rate of change in occupancy ( $\lambda$ ) for peregrine falcons and rough-legged hawks. A  $\lambda$  value greater than one indicates population increase, and a  $\lambda$  value less than one indicates population decrease. The number of young that hatched at each nest were used to estimate reproductive success. Full methods for the analysis are included in Appendix H (Arctic Raptors 2023).

## 13.5 Results

### 13.5.1 Nest Monitoring

Four peregrine falcon nests were documented in Quarries 3 and 8 in 2023 (Table 13-1; Figure 13-1). Nests have previously been identified in both these quarries (Table 13-1). A peregrine falcon was observed at Quarry 19 being protective of a nest, however no breeding activity was observed prior or during subsequent visits. No raptor nesting evidence was observed in quarries along the WTHR in 2023 (Quarries 10.5, 26, 30, 35, 50, and 52; Table 13-1). No other raptor nests were identified during pit checks or incidentally during other surveys in 2023.

A summary of observations made at the peregrine falcon nests along the AWAR in 2023 is detailed in Table 13-2. Raptor nest management plans were not developed at the active nest sites, as Mine-related activity was already restricted within the quarries, with the only disturbance being traffic on the nearby AWAR. Intensive monitoring, which would include approaching nests by foot, was not conducted. Nest locations are not publicized to prevent inadvertent disturbance by curious Mine employees.

**Table 13-1: Record of Peregrine falcon Nesting from 2009 and 2023**

Location	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Comments (2023)
Quarry 1	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No falcons observed
Quarry 2	No	Yes	Yes	Yes	Yes	Yes	No	No	No	Yes	No	Yes	Yes	Yes	No	Two falcons observed flying
Quarry 3	No	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	No	Yes	Two falcons observed with one egg in the nest.
Quarry 4	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No falcons observed
Quarry 5	No	No	No	No	No	No	No	No	No	No	No	No	Yes	No	No	One falcon observed sitting.
Quarry 6	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No falcons observed
Quarry 7	No	No	No	No	No	No	No	Yes	Yes	No	No	Yes	Yes	No	No	Two falcons observed alert and flying
Quarry 8	No	No	No	No	No	No	No	No	Yes	No	No	No	No	Yes	Yes	Three falcons observed with two fledglings.
Quarry 9	No	No	No	No	No	No	No	No	No	No	Yes	Yes	Yes	No	No	Two falcons observed alert and flying
Quarry 10	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No falcons observed
Quarry 11	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	Two falcons observed flying
Quarry 12	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No falcons observed
Quarry 13	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No falcons observed
Quarry 14	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No falcons observed
Quarry 15	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No falcons observed
Quarry 16	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Two falcons observed flying
Quarry 17	No	No	No	No	No	No	No	No	Yes	No	No	No	No	No	No	No falcons observed
Quarry 18	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No	Yes	Yes	No	One falcon observed alert or standing on a rock
Quarry 19	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	No	No	One falcon near a nest, no other breeding behaviour confirmed
Quarry 20	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No falcons observed
Quarry 21	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	Two falcons observed flying
Quarry 22	No	No	No	No	No	No	No	No	Yes	Yes	Yes	No	Yes	Yes	No	No falcons observed
Quarry 10.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No	No	No	No	No falcons observed
Quarry 26	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No	No	No	No	No falcons observed
Quarry 30	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No	No	No	No	No falcons observed
Quarry 35	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No	No	No	No	No falcons observed
Quarry 50	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No	No	No	No	No falcons observed
Quarry 52	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No	No	No	No	No falcons observed
Portage Pit	No	No	No	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No falcons observed
Vault Pit	N/A	N/A	N/A	N/A	No	No	No	No	No	No	No	No	No	No	No	No falcons observed
Goose Pit	N/A	N/A	No	No	No	No	No	Yes	No	No	No	No	No	No	No	No falcons observed
Whale Tail Pit	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No	No	No	No	No	No falcons observed
IVR Pit	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No	No	No	No falcons observed

N/A = Not Applicable.

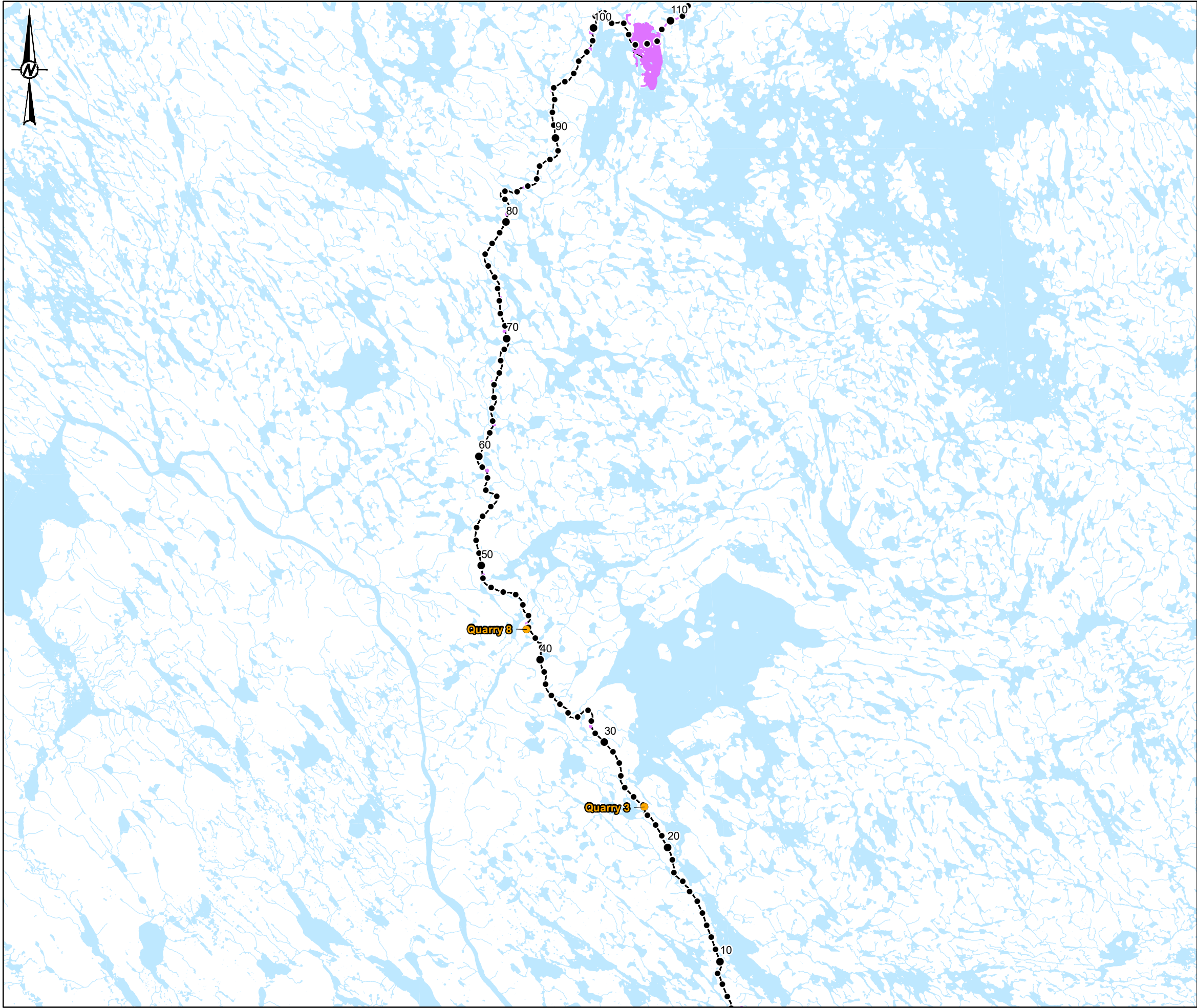
**Table 13-2: Peregrine Falcon Nest Monitoring Data, 2023**

Date	Quarry 3 (-96.125, 64.503)	Quarry 8 (-96.303, 464.63)
16-May-23	No activity observed	No activity observed
18-May-23	Two falcons observed standing on the rocks	No activity observed
24-May-23	Pair of Falcons with one egg in the nest displaying breeding behaviour	No activity observed
30-May-23	-	One falcon observed
05-Jun-23	Pair of Falcons with one egg in the nest	One falcon observed flying
11-Jun-23	No activity observed	Two adult falcons observed flying
20-Jun-23	One falcon flying	One adult observed on alert
14-Jul-23	-	Two adult falcons observed being vocal and flying
04-Aug-23	No activity observed	One adult observed displaying breeding behaviour
12-Aug-23	-	Two chicks and three adult falcons
17-Aug-23	One falcon observed	One adult and two fledglings observed

"-" indicates no monitoring event on given day.



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**LEGEND**


- OBSERVED PEREGRINE FALCON NEST
- KILOMETRE MARKER
- WHALE TAIL MINE SITE
- HAUL ROAD
- MEADOWBANK MINE SITE
- ALL WEATHER ACCESS ROAD
- WATERBODY
- WATERCOURSE

0 6 12  
1:300,000 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  
2023 WILDLIFE MONITORING SUMMARY REPORT

TITLE

**PEREGRINE FALCON NEST LOCATIONS (2023)**

CONSULTANT	YYYY-MM-DD	2024-03-22
	DESIGNED	JF
	PREPARED	CDB
	REVIEWED	JF
	APPROVED	CDLM

PROJECT NO.	CONTROL	REV.	FIGURE
CA0006990.5123	4000/4040	0	13-1

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13.5.2 Nest Occupancy Analysis

Results of the analysis did not indicate project-related effects on rough-legged hawk occupancy and the population may be increasing marginally ( $\lambda = 1.01 \pm 0.11$  [mean  $\pm$  standard error]). Similarly, there were no indicated project effects on gyrfalcon occupancy ( $\lambda = 1.13 \pm 0.22$ ) and the population may be increasing. Marginal decrease in peregrine falcon occupancy was observed ( $\lambda = 0.99 \pm 0.04$ ) and distance to disturbance was suggested to be an important variable. There was a negative relation between distance to disturbance and the probability that an unoccupied site would become occupied. However, these results may be biased by the quantity of nests observed in the quarry, and better representation of nesting sites parallel to the AWAR or further from the AWAR may provide more insight on project affects. Full results of the nest occupancy analysis are included in Appendix H (Arctic Raptors 2023).

13.6 Accuracy of Impact Predictions

A summary of the impact predictions identified in the TEMP Version 7 (Agnico Eagle 2019) is provided in Table 13-3. Results of the nest occupancy analysis indicate that there has been a marginal decrease in peregrine falcon nest occupancy, but this cannot be strongly correlated to effects from the Project. Results may be related to inconsistent monitoring and lack of statistical power to determine project-related effects (Appendix H).

Table 13-3: Accuracy of Impact Predictions to Nesting Raptors and Raptor Mortality

Potential Effect	Threshold	Threshold Exceeded (2023)	Adaptive Management Implemented	Monitoring Methods
Disturbance to Nesting Raptors	Raptor nest failures will not be caused by Mine-related activities. Threshold is one nest failure per year.	NO	NO	Active raptor nest monitoring  Daily and weekly systematic pit and Mine site ground surveys
Raptor Mortality	One individual	NO	NO	AWAR and WTHR surveys  Daily and weekly systematic pit and Mine site ground surveys Incident and vehicle encounter reports

AWAR = All Weather Access Road, WTHR = Whale Tail Haul Road.

13.7 Management Recommendations

Agnico Eagle will continue to monitor raptor nests in accordance with the TEMP Version 7 (Agnico Eagle 2019). This includes annual raptor nest surveys of quarries along the AWAR, WTHR, pits, and waste rock piles; development of nest management plans; and implementation of the Peregrine Falcon Management and Protection Plan, when required. Active nests will be monitored throughout the season to determine nest success or failure. Agnico Eagle will continue to document raptor observations during other programs (e.g., road surveys, viewshed surveys).

Starting in 2021, multiple surveys have been completed each year by a third-party expert (Arctic Raptors), to allow estimation of nest detection error. Mitigations for raptors that were implemented in 2023 include applying deterrents in the pre-season to two quarries known to harbour raptors and project-related activity was expected and regular monitoring of viewshed quarries (Appendix H; Arctic Raptors 2024).

## 14.0 WATERBIRD NEST MONITORING

### 14.1 Overview

The Whale Tail expansion required the construction of two dykes within Whale Tail Lake to divert water from the proposed pit to surrounding lakes and tributaries, resulting in flooding that with potential impacts to migratory birds and their nests. Through collaboration with Trent University and ECCC, research studies were initiated in 2018 to determine the effectiveness of planned mitigation measures for migratory birds during flooding of the Whale Tail South area. This study was conducted over three field seasons (2018, 2019, 2021) - before, during and after flooding to investigate mitigation options to minimize flooding-related impacts to birds in the Whale Tail South area. The objectives of the study were to:

- 1) Determine the effectiveness of audio and visual deterrents for prevention of flood-zone nesting.
- 2) Estimate the number of nests and species composition lost due to flooding.
- 3) Examine the behavioural response of birds to:
  - a) deterrents (e.g., impacts to duration on the nest) and
  - b) flooding (determine whether birds re-nested nearby after the flooding events).

Complete methods and results for Objectives 1, 2, and 3a are published and available online in the Trent University MSc Thesis “*Assessing and Mitigating the Impacts of Mining-Induced Flooding on Arctic-Nesting Birds*” (Holmes 2022) and are not revisited further here. Refer to previous Wildlife Monitoring Summary Report for more details. A manuscript focussing on the investigation into the effectiveness of deterrents (Objective 3a) was also initially submitted for publication in late 2021. Comments were received in 2022, and the manuscript was re-submitted in January 2024 to *Avian Conservation and Ecology*.

Visual and audio deterrents tested in the 2018 and 2019 programs were not recommended as effective mitigation measures for preventing bird nest loss. Nest densities observed from 2018 and 2019 were used to estimate nest displacement during 2018 to 2020. Nest displacement to date was estimated to be lower than FEIS Addendum predictions. The 2020 field program intended to determine behavioural response to flooding (i.e., nest density and recolonization time in the area post-flooding) but was not completed due to COVID-19.

Methods and results related to Objective 3b have been previously provided in Appendix A of the 2021 Migratory Bird Protection Report. Follow-up studies in 2021 indicated that while the average number of nests and bird density increased from 2019 to 2021 in upland control plots and nest density declined in flood zone plots, these differences were not statistically significant (Holmes 2022). Further analysis in 2022 of individual re-sightings support the hypothesis that birds will re-nest nearby post-flood, at least anecdotally. Six re-sighted Lapland longspur (*Calcarius lapponicus*) moved their nests an average of 180 m and uphill by 4 masl (metres above sea level), while six semipalmated sandpipers (*Calidris pusilla*) moved their nests an average of 151 m and downhill by 0.18 masl. The complete analysis and report on behavioural responses will be included in a second Trent University MSc Thesis manuscript, expected to be submitted prior to September 2024.

References for any publications produced in 2024 will be provided in the 2024 Annual Report, but otherwise reporting under the Migratory Bird Protection Plan is considered complete at this time.

## 15.0 BREEDING BIRD MONITORING

### 15.1 Overview

The breeding bird PRISM (Program for Regional and International Shorebird Monitoring) plot and breeding bird transect monitoring programs were designed to evaluate potential Project-related changes in breeding bird species abundance, richness, and diversity over time. The program is one component of the larger monitoring strategy to evaluate the success of mitigation measures implemented to minimize the amount of vegetation (i.e., bird habitat) removed or degraded (e.g., dustfall) by the Project, and whether certain Mine activities such as the Mine site or AWAR have resulted in reduced or compromised habitat function or effectiveness (i.e., zone of influence) for breeding birds.

For the breeding bird transects, data analysis in 2011 and 2015 indicated that no road-related effects had occurred to date, and thresholds had not been exceeded; therefore, annual transect surveys were permanently suspended after 2015. In 2022, Agnico Eagle reached an agreement with the ECCC to contribute to regional bird monitoring programs by conducting 48 PRISM plots from 2021 to 2031, and to complete Breeding Bird Surveys (BBS) along the AWAR and WTHR when possible and at a minimum of every three years.

#### 15.1.1 Breeding Bird Surveys

Two BBS routes, consisting of 50 stations set every 800 m each, were established by qualified personnel along AWAR and the WTHR in 2022 and were surveyed in 2023. A total of 24 bird species were recorded on AWAR and 19 bird species were recorded on WTHR in 2023. Lapland longspur, horned lark (*Eremophila alpestris*), Canada goose, and Savannah Sparrow (*Passerculus sandwichensis*) were the most common species observed in both AWAR and WTHR. Detailed descriptions of the routes and station locations are provided in the Meadowbank Complex 2023 Breeding Bird Surveys and PRISM Plots Summary Report (Appendix I).

#### 15.1.2 PRISM Plots

Seventeen PRISM plots were surveyed during six field days in June 2023. In total, 23 bird species were observed in the PRISM plots. There were four mammal species and nine bird species observed incidentally while travelling between plots. Horned lark and Lapland longspur were the most common species observed during the survey. Full results of the 2023 surveys, as well as sampling methods and locations are available in Appendix I.

### 15.2 Management Recommendations

Agnico Eagle will continue to survey 48 PRISM plots selected by ECCC over 10 years (2021 to 2031), and completion of AWAR and WTHR Breeding Bird Survey (BBS) routes opportunistically when qualified individuals are on site. At a minimum, these BBS routes will be conducted every three years during the operations, closure and post-closure phases of the project.

It is recommended that PRISM plots and BBS routes be surveyed in June 2024. The remaining 27 PRISM plots should be completed prior to the mine closure and BBS routes surveyed within the committed three-year cycle.

## 16.0 NON-NATIVE PLANT SURVEYS

### 16.1 Overview

This section includes the methods, results, and mitigation measures to minimize the spread of non-native invasive plant species resulting from mine activities. The Government of Nunavut (GN) and Environment and Climate Change Canada (ECCC) define a non-native species as ‘an organism that is not normally found in a region’ (CESCC 2010). Additionally, according to Section 91 of *The Wildlife Act*, S.NU. 2003, c 26, invasive species shall not be released into a habitat in which that species does not belong or never naturally occurred. Any introductions of non-native plant species must be promptly reported to the GN Department of Environment. In 2019, Agnico Eagle initiated a non-native plant monitoring study to assess and monitor the potential introduction of non-native plant species, including weeds or invasive species (Golder 2020d). Subsequent monitoring events occurred in the month of July in each of 2020-2023. Surveys will continue to be completed annually as per the TEMP Version 7 (Agnico Eagle 2019).

### 16.2 Methods

The Canadian Endangered Species Conservation Council (CESCC) lists 17 species not normally found in Nunavut with a potential for becoming established, 14 of which are vascular (non-native) plants to the region (CESCC 2010; Appendix J). These species were included as targets for the non-native plant surveys. Additionally, any species known to be non-native to Nunavut were also included as targets for non-native plant surveys, to meet requirements of Section 91 of *The Wildlife Act*, S.NU. 2003, c 26.

Surveys at the Meadowbank Complex were conducted by a WSP vegetation ecologist between 11 to 23 July 2023. The Meadowbank Complex area includes the AWAR, WTHR, Baker Lake tank farm, Whale Tail Mine site, and Meadowbank Mine site areas.

Species were documented as they were encountered. Non-native plant surveys consisted of targeted surveys focused within high-priority or high-potential areas within the Project footprint. The high-potential areas were identified as the Project area perimeter, highly trafficked areas (e.g., fuel station), areas surrounding buildings, shipping containers, along existing roads/trails or areas of disturbance within the Project area, as well as adjacent to the AWAR and WTHR road. High potential areas also included survey locations from where non-native plants were observed in previous monitoring years. In areas where non-native species were observed, meander surveys were conducted outside of the disturbance footprint to determine if these species had established in the native tundra. Given the length of the AWAR and WTHR, the roads were travelled via vehicle at slow speeds, while observers looked for obvious signs of weed infestations along road margins. Periodic stops were undertaken to complete meanders in areas with high potential for weed occurrences (e.g., pull-outs, work areas, road-side quarries, and other areas with disturbed substrates). A GPS was used to collect a track file of the meander route and point locations of surveys conducted.

When non-native or invasive plant species were encountered, the following information was recorded: site ID; surveyor name; GPS coordinates; photos of the occurrence / infestation; species name; estimated area of infestation; estimated number of plants (e.g., <10, 10 to 100, 100 to 1,000, >1,000) of each species; estimated cover of bare ground; growth stage (i.e., seedling, in bud, seed set, expired); recommended action for each species; and record of any hand pulling completed.

16.3 2023 Results

No non-native plants, as identified by the CESSC, were recorded along the AWAR, WTHR, Baker Lake tank farm, and Whale Tail sites. A total of 198 individual locations were surveyed for non-native plants in 2023 (Table 16-1). Eighteen surveys were completed in undisturbed tundra around the Meadowbank Mine site, WTHR, and AWAR to survey the presence/absence of non-native species. No non-native plants were found in the undisturbed areas surveyed.

One non-native plant species, common pea (*Pisum sativum*) was observed within the Meadowbank Mine site within a snow dump area. Approximately 150 common pea plants found within a 245 m<sup>2</sup> area were hand-pulled, bagged, and disposed of at the time of the survey. Common peas are an annual plant native to Ethiopia, the Mediterranean, and central Asia and have a growing season of 60 to 150 days (Pavek 2012). Given the climate at the Meadowbank Complex and short growing season, there is a low likelihood that this species could complete its life cycle and become an established population in this area; however, monitoring this location is recommended in 2024 to confirm there are no new common pea plants observations.

A summary of the locations where non-native plant surveys were completed is presented in Table 16-1 and Figure 16-1.

Table 16-1: Summary of 2023 Non-Native Plant Survey Effort

Location of survey	Total number of survey locations
AWAR	14
AWAR quarry	21
Baker Lake tank farm	2
Meadowbank Mine site	88
Undisturbed tundra	18
Whale Tail Mine site	31
WTHR	10
WTHR Esker/Quarry	14
Total	198

16.3.1 Historical Results

From 2019 to 2022, many observations of what was then identified as flaxweed (*Descurainia sophia*) were reported (Agnico Eagle 2019, 2022a) (Table 16-2); however these observations were confirmed in 2022 to be a native species, northern tansy mustard (*Descurainia sophioides*) (WSP 2023). This species is a biennial herb that colonizes gravel bars, roadsides, waste sites and disturbed soils which are abundant at the Meadowbank site. For more details on the identification of northern tansy mustard, see WSP 2023.

Similarly, previous annual TEMP reports have reported the non-native species, scentless chamomile (*Tripleurospermum inodorum*) (Table 16-2); however these observations were confirmed in 2022 to be a native species sea mayweed (*Tripleurospermum maritima*). For more details on the identification of sea mayweed, see Agnico Eagle (2023).

Two non-native species, lamb's quarters (*Chenopodium album*) and alsike clover (*Trifolium hybridum*) were observed in 2020; however there have been no observations of these species since 2020.

Table 16-2: Historical Non-Native Plant Survey Results

Year	Number of Survey Locations	Non-Native Plants Species Recorded <sup>(a)</sup>
2019	107	flixweed, scentless chamomile
2020	175	flixweed, scentless chamomile, lamb's quarters, alsike clover
2021	202	flixweed, scentless chamomile
2022	193	none

a) Both flixweed and scentless chamomile observed in previous years have been confirmed in 2022 to be native species, northern tansy mustard and sea mayweed respectively (Agnico Eagle 2023).

16.4 Management Recommendations

The 2023 survey was the fifth consecutive year of non-native species monitoring at the Meadowbank Complex. One element occurrence of a non-native plant, common pea, was documented in 2023. These plants were hand pulled and removed at the time of survey. Surveys in 2024 should return to this location to monitor for new common pea plants.

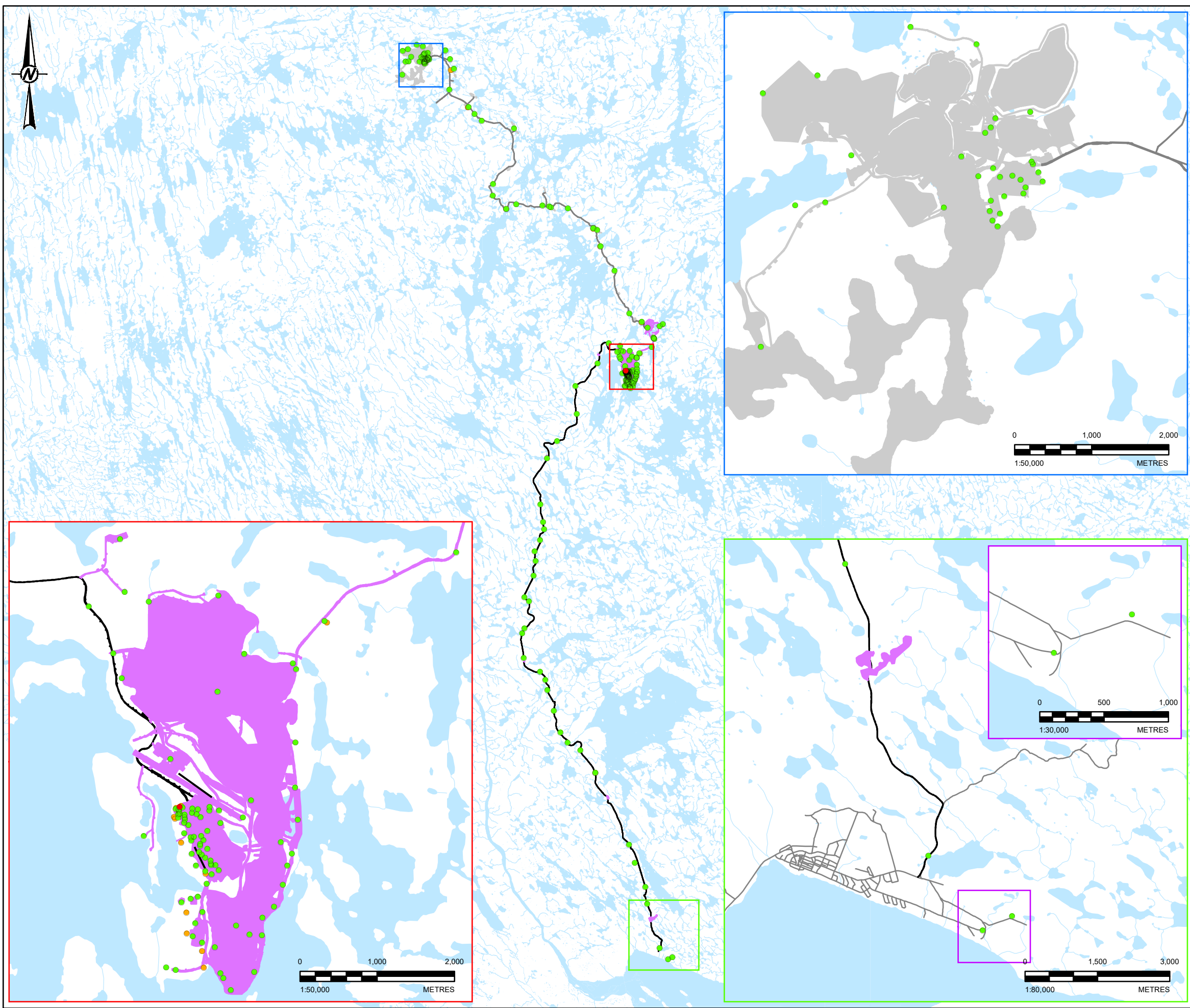
Efforts for non-native plant management, including identified non-endemic species, should continue and added diligence should be undertaken with regards to areas of high traffic from equipment. Continued and thorough cleaning of equipment and materials prior to entering the site, per the TEMP Version 7, will prevent seed of non-native species from being introduced. Surveys for the 14 non-native plant species identified by CESSC as well as other species not native to Nunavut should continue to be completed annually. Mechanical control such as mowing or hand pulling, as appropriate for the site setting, is recommended for any identified non-native plant species. Chemical herbicide treatments are not recommended to be used at this point as the tundra is a very sensitive ecosystem.

As a further measure of prevention, the CESSC (2010) has developed posters that show non-native species in Nunavut. We recommend that these be displayed at the Meadowbank Complex to raise staff awareness and be incorporated into staff on-boarding materials, which could be used to supplement non-native plant information and posters used on-site. These materials can also be displayed at the Agnico Eagle office/crew house in Baker Lake and potentially in other areas within the community.

A management plan for non-native plant species employing adaptive management may be implemented if non-native plant species are observed within the Meadowbank Complex area. A non-native plant management plan would describe the methods for the eradication, control and/or minimization of the encroachment of non-native plant species into new areas and outline additional measures such as on-boarding and training in the identification of non-native plant species for the area.



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**LEGEND**  
**PROJECT DATA**

- SURVEY LOCATION - NON-NATIVE SPECIES OBSERVATION
- SURVEY LOCATION - NO NON-NATIVE SPECIES OBSERVED
- SURVEY LOCATION - UNDISTURBED TUNDRA
- TRANSECT
- WHOLE TAIL MINE SITE
- HAUL ROAD
- MEADOWBANK MINE SITE
- ALL WEATHER ACCESS ROAD

**BASE DATA**

- WATERCOURSE
- WATERBODY

**REFERENCE(S)**

- INFRASTRUCTURE OBTAINED FROM AGNICO EAGLE MINES LIMITED.
- ROAD, WATERCOURSE AND WATERBODY DATA OBTAINED FROM NATURAL RESOURCES CANADA.

COORDINATE SYSTEM: CANADA ALBERS EQUAL AREA CONIC

**AGNICO EAGLE**

CLIENT

AGNICO EAGLE MINES LIMITED:  
MEADOWBANK DIVISION

PROJECT

MEADOWBANK COMPLEX  
2023 WILDLIFE MONITORING SUMMARY REPORT

TITLE

2023 NON-NATIVE PLANT SURVEY RESULTS

CONSULTANT

YYYY-MM-DD  
2024-03-22

DESIGNED

HH

PREPARED

CDB

REVIEWED

JF

APPROVED

CDLM

PROJECT NO.

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CONTROL

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FIGURE

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## 17.0 SPECIAL STUDIES

### 17.1 Snow Study

#### 17.1.1 Overview

Collared caribou from the Lorillard herd have historically interacted with the AWAR and WTHR during their spring and fall migrations. The following sections focus exclusively on characterizing snow conditions and caribou interaction along the WTHR during spring (see Section 3.6 for information on caribou interaction with the AWAR).

The direction of travel for these animals crossing the WTHR has always been from the west to the east in the spring. Snow is removed periodically from the WTHR (and AWAR) to promote safe driving conditions for the transport of Meadowbank Mine staff and supplies, and mined ore between Whale Tail and the Meadowbank Mine sites. Snow is removed or redistributed from the road surface to areas adjacent to the roads. The snow is redistributed in a way to minimize the size of any snow berms formed on the side of the roads (i.e., snow is pushed to the eastern, downwind side of the road). Doing so also reduces the amount of snow management activity required due to snow drifting back onto the WTHR.

Per Whale Tail Expansion Project commitment 9 from the TAG Meeting held in Baker Lake, 11-13 June 2019, Agnico Eagle committed to complete a three-year snow monitoring program as part of the TEMP that measures snow conditions adjacent to the WTHR. Snow hardness and sinking depth are important for caribou energy expenditure of locomotion, where the combination of softer and deeper snow may inhibit caribou movements (Fancy and White 1987). The goal of the snow monitoring is to determine whether changes to snow resulting from snow removal along the WTHR result in conditions that potentially inhibit caribou movements. The primary questions to be answered by the snow study monitoring were:

- How do snow conditions within the managed snow area where caribou are crossing the WTHR differ from the snow conditions in adjacent portions of the berm where crossing did not occur?
- How do snow conditions and caribou track characteristics differ between areas within the snow berm and areas beyond the berm where snow conditions have not been altered by snow removal activity?

An annual sample goal of 36 survey locations was originally proposed over three years. Since 2020, a number of challenges have limited the program from achieving this goal including locating fresh caribou tracks. In 2022 a power analysis was conducted using data from 2020-2022 to determine the total number of sampling locations required to detect very small, small and moderate effect sizes for snow hardness. A recommendation was made to collect the full suite of snow data for a minimum of 65 sampling locations in order to detect a moderate effect size (e.g., 25%). Snow condition monitoring data collected from 2020-2023 are presented below. These data represent preliminary results of snow condition monitoring since the total number of sampling locations to date with the full suite of snow data is less than 65.

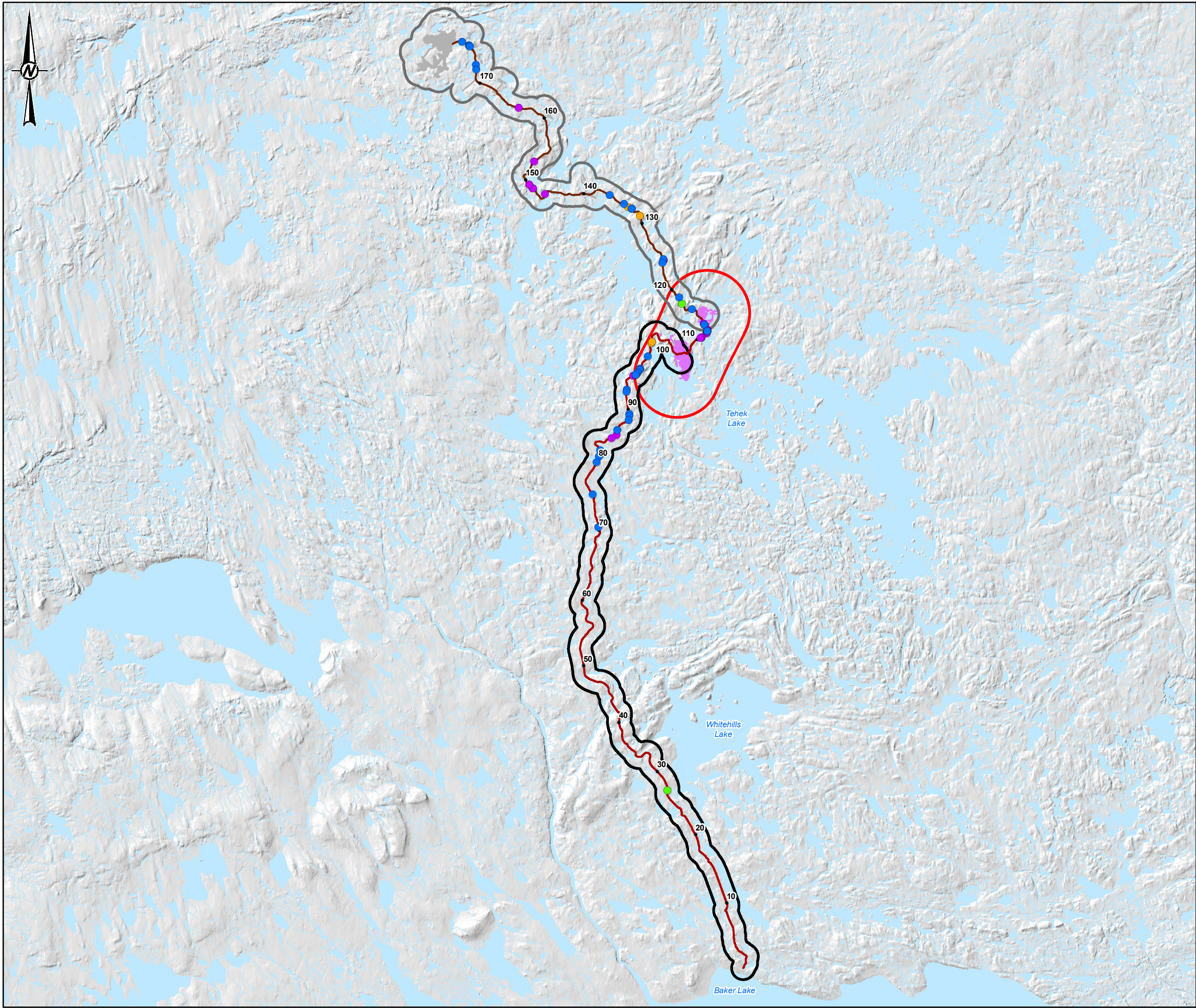
### 17.1.2 Methods

Sixty-four survey locations have been sampled along the AWAR and WTHR between 2020 and 2023, including five survey locations in May 2020, three locations in April 2021, twenty locations in April and May of 2022, and thirty-six locations in April of 2023 (Figure 17-1). Of these 64 locations, 36 include the full suite of snow data. Survey locations were chosen opportunistically based on the availability of fresh caribou tracks crossing the road, and while the majority of plots sampled were located along the WTHR, sampling locations along the AWAR were included opportunistically as well. Snow management practices are consistent between the WTHR and AWAR, and any patterns identified for potential effects of snow characteristics on caribou crossing are not expected to differ between the two roads. Surveyors established six plots at each survey location and collected data on the snow depth, snow hardness, caribou track depth, as well as the height, width, and slope of the snow-managed berm that occurred adjacent to the WTHR (Golder 2020e). Snow and caribou track depth were measured using a metre stick while snow hardness was measured using a mechanical dynamometer (i.e., push-pull gauge; Lundmark and Ball 2008). Three plots were established on the upwind side of the WTHR (i.e., the side of the road that the prevailing wind blows from - the west) and three plots were established on the downwind side of the WTHR (i.e., the east side of the road).

The three survey plots on each side of the road included a “use” plot, a “snow-management control” plot and a “non-managed control” plot (Figure 17-2). The use plot occurred within the snow-managed berm in an area where caribou had left tracks while crossing the WTHR. The snow-managed control plot occurred approximately 5 m from the use plot, within the snow-managed berm but in a portion of it that did not contain caribou tracks. Monitoring at caribou use areas and the finer spatial scale of the snow-managed control and use plots was a recommendation by the TAG (KivIA 2019). The non-managed control plot occurred beyond the snow-managed berm and in an area where caribou tracks were present (Figure 17-2).



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**LEGEND**  
**SNOW SURVEY LOCATION (SURVEY YEAR)**

- 2020
- 2021
- 2022
- 2023
- KILOMETRE MARKER

- ALL-WEATHER ACCESS ROAD (AWAR)
- WHALE TAIL HAUL ROAD (WTHR)
- AWAR LOCAL STUDY AREA (LSA)
- WTHR LOCAL STUDY AREA (LSA)
- MEADOWBANK LOCAL STUDY AREA (LSA)
- WHALE TAIL MINE SITE
- MEADOWBANK MINE SITE
- WATERCOURSE
- WATERBODY

**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

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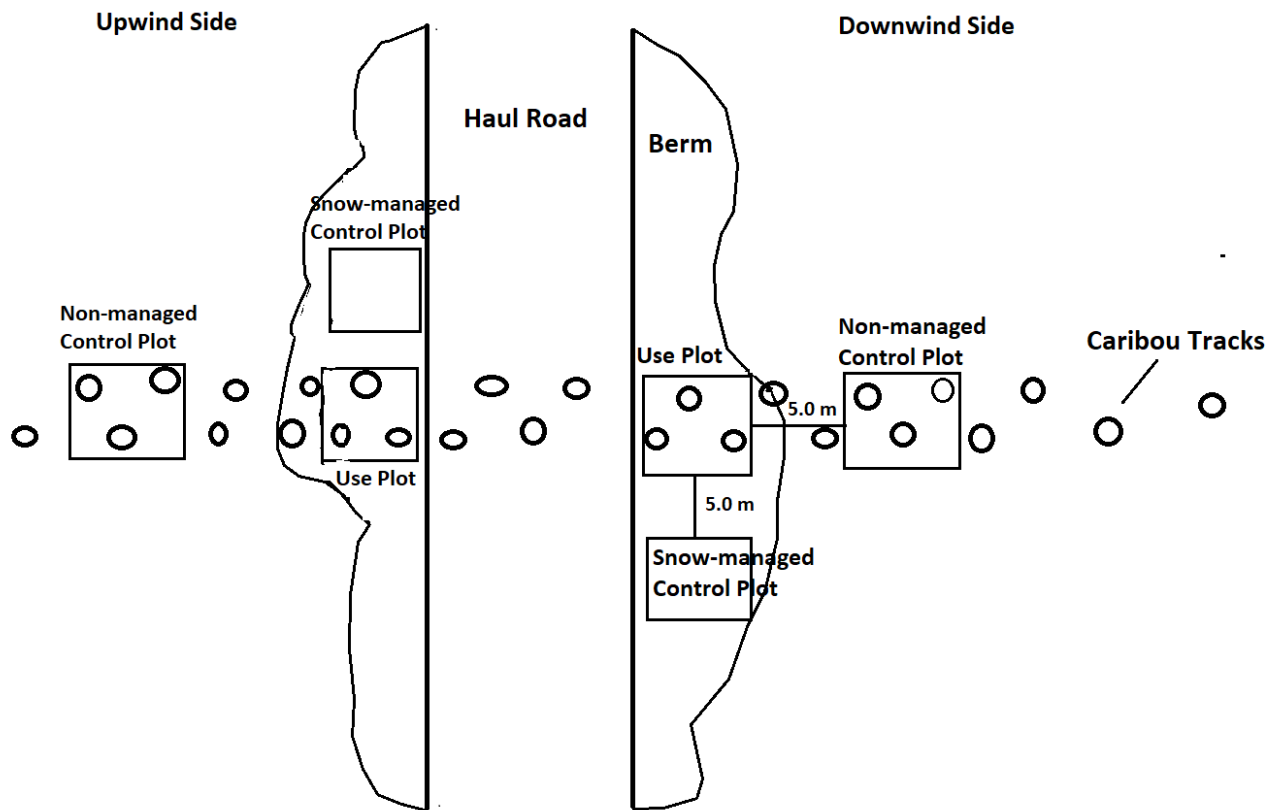
**TITLE**  
SNOW SURVEY LOCATIONS ALONG THE ALL-WEATHER  
ACCESS ROAD AND WHALE TAIL HAUL ROAD (2020-2023)

	CONSULTANT	YYYY-MM-DD	2024-03-22
	DESIGNED	JF	
	PREPARED	CDB	
	REVIEWED	JF	
	APPROVED	CDLM	

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**Figure 17-2: Survey Plot Configuration Used During Snow Survey Monitoring Along the Whale Tail Haul Road**

Using data from all years, averages and 95% confidence intervals were calculated for each snow metric and plot type. Intervals shown in brackets are 95% confidence intervals unless stated otherwise. T-tests were used to evaluate significant differences in snow metrics on the upwind vs downwind side of the haul road. Analysis of variance tests (ANOVA) were used to evaluate significant differences in snow depth and snow hardness among plot type (Use plot, snow-managed control plot, and non-managed control plot). When significant differences were detected based on the ANOVA ( $p < 0.05$ ), a post-hoc Tukey's test was applied to determine, which plot types were significantly from each other.

### 17.1.3 Results

A total of 36 surveys were completed during the spring migration of 2023, which was the targeted number of plots. Of the 36 survey locations, 17 were along the WTHR and 19 were along the AWAR. Workers were patrolling on a daily basis along the AWAR and the WTHR during the migration season (between 1 April and late May) for signs of caribou crossing tracks adequate for snow sampling measurements. Surveys during 2023 took place over 14 days. Prior to 2023, a full suite of snow data were collected at use plots and snow-managed control plots but not at non-managed control plots, and caribou track data were collected at use plots but not non-managed control plots. Data sheet improvements implemented in 2023 allowed for additional data fields to be collected in 2023.

Locations surveyed in 2023 included the full suite of snow data for each applicable plot type and caribou track data were collected at both use plots and non-managed control plots. Some snow measurements collected prior to 2023 were excluded from 2023 snow summaries due to inconsistencies with reporting units or missing data fields.

Table 17-1 provides a summary of snow metrics recorded at upwind and downwind use plots, snow-managed control plots, and non-managed control plots during 2020, 2021, 2022, and 2023 survey periods. Considering all plot types sampled, average berm width were significantly greater (t-test,  $p < 0.001$ ) on the downwind (east) than the upwind (west) sides of the haul road with average berm height nearly significantly different (t-test,  $p = 0.05$ ) and similar values of slope between sides (t-test,  $p = 0.13$ ) (Table 17-1; Figure 17-3). Specifically, berm height was on average 2.6-times greater on the downwind (0.34 m [95% CI: 0.15-0.53]) than the upwind side (0.13 m [0.07-0.19]), and berm width was 3.8-times greater on the downwind (1.63 m [1.06-2.20]) than the upwind side (6.25 m [4.52-7.98]).

Mean snow depth across all plot types was not significantly different (t-test,  $p = 0.61$ ) on the upwind side of the haul road (0.42 m [0.38-0.46]) compared to the downwind side of the road (0.43 m [0.38-0.48]) (Table 17-1; Figure 17-3). Average snow depth on both sides of the haul road were significantly different by plot type (ANOVA,  $p < 0.001$ ) (Table 17-2). Specifically, average snow depth in use plots and snow-managed control plots (i.e., plots within the berm but not used by caribou) were similar (Tukey,  $p = 0.95$ ), but snow depth was greater in non-managed control plots compared to both plot types in the berm area (Tukey,  $p < 0.001$ ; Figure 17-4). This could potentially be due to the difference in elevation on and off the berm so that when berm snow is spread out the snow may be shallower on the raised road shoulder. Note, the comparison between berm plots (used plots and snow managed control plots) could only be compared with non-managed control plots using 2023 data because snow depth was not collected in non-managed control plots prior to 2023.

Snow hardness, as measured using the push-pull gauge, was similar between plots on the upwind side (14 Newtons (N) [12-15]) and the downwind side (14 N [13-16]) of the haul road (t-test,  $p = 0.64$ ) (Table 17-1; Figure 17-3). Considering plots on both the upwind and downwind sides of the haul road, average snow hardness was similar between use plots, snow-managed control plots, and non-managed control plots (ANOVA,  $p = 0.25$ ) (Table 17-2; Figure 17-5).

Caribou track depth measurements were only collected in use plots during 2020, 2021, and 2022, and in use and non-managed control plots in 2023. Mean track depth across plot types was not significantly different (t-test,  $p = 0.65$ ) on the upwind side (4.1 cm [3.4-4.8]) compared to the downwind side of the haul road (4.3 m [3.5-5.1]) (Table 17-1; Figure 17-3). Mean track depth was similar between use plots compared to non-managed control plots, and track depth was marginally not significant (t-test,  $p = 0.07$ ; Table 17-2; Figure 17-6).

**Table 17-1: Summary of Snow Metrics Collected at Survey Plots on the Upwind and Downwind Side of the Whale Tail Haul Road across 2020-2023**

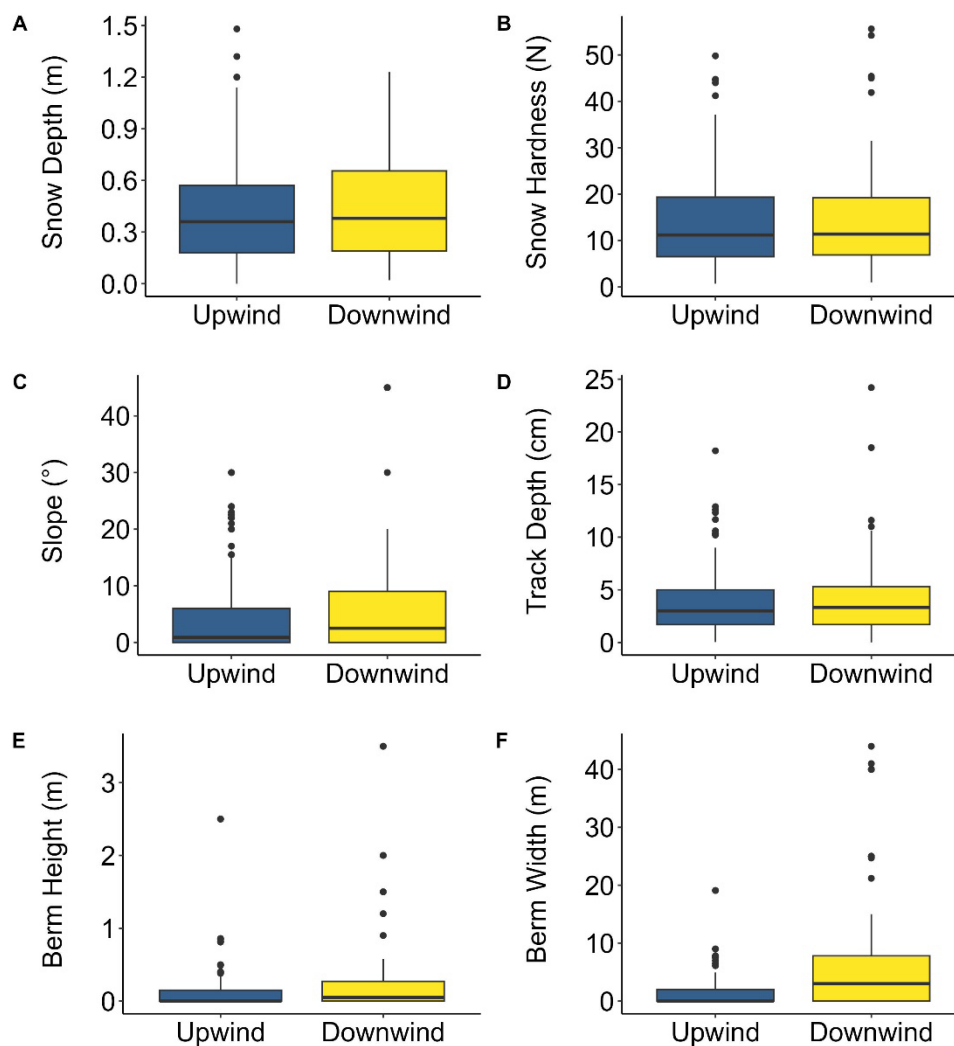
Snow Metric	Plot Type	Upwind	Downwind
Snow Berm Height (m) (Average [95% CI])	Use Plot	0.13 [0.04-0.22]	0.26 [0.11-0.41]
	Snow-management Control	0.13 [0.04-0.22]	0.42 [0.06-0.78]
	Non-managed Control	NA	NA
<b>Average Snow Berm Height - All Plots</b>		<b>0.13 [0.07-0.19]</b>	<b>0.34 [0.15-0.53]</b>
Snow Berm Width (m) (Average [95% CI])	Use Plot	1.64 [0.84-2.44]	6.51 [3.94-9.08]
	Snow-management Control	1.63 [0.82-2.44]	6.00 [3.65-8.35]
	Non-managed Control	NA	NA
<b>Average Snow Berm Width – All Plots</b>		<b>1.63 [1.06-2.20]</b>	<b>6.25 [4.52-7.98]</b>
Slope (°) (Average [95% CI])	Use Plot	5.40 [3.37-7.43]	5.53 [2.23-8.23]
	Snow-management Control	5.12 [3.19-7.05]	6.02 [3.20-8.84]
	Non-managed Control	3.60 [1.50-5.70]	4.97 [1.44-8.50]
<b>Average Slope - All Plots</b>		<b>4.86 [3.68-6.04]</b>	<b>5.58 [3.88-7.28]</b>
Snow Depth (m) (Average [95%CI])	Use Plot	0.37 [0.31-0.43]	0.35 [0.28-0.42]
	Snow-management Control	0.38 [0.31-0.45]	0.37 [0.30-0.44]
	Non-managed Control	0.56 [0.46-0.66]	0.66 [0.57-0.75]
<b>Average Snow Depth - All Plots</b>		<b>0.42 [0.38-0.46]</b>	<b>0.43 [0.38-0.48]</b>
Snow Hardness (N) (Average [95%CI])	Use Plot	12 [10-14]	14 [11-17]
	Snow-management Control	15 [12-18]	15 [12-17]
	Non-managed Control	14 [12-16]	13 [11-16]
<b>Average Snow Hardness - All Plots</b>		<b>14 [12-15]</b>	<b>14 [13-16]</b>
Track Depth (cm) (Average [95%CI])	Use Plot	4.6 [3.6-5.5]	4.5 [3.6-5.4]
	Snow-management Control	NA	NA
	Non-managed Control	3.2 [2.4-4.1]	4.0 [2.5-5.4]
<b>Average Track Depth - All Plots</b>		<b>4.1 [3.4-4.8]</b>	<b>4.3 [3.5-5.1]</b>

Note: 95%CI = 95% confidence interval; m = metre; cm = centromere; N = Newtons of force; NA = not applicable; “-” = data were not collected for this plot type.

**Table 17-2: Summary of Statistical Tests on Snow Depth, Snow Hardness, and Track Depth Data Collected at Survey Plots along the Whale Tail Haul Road across 2020-2023**

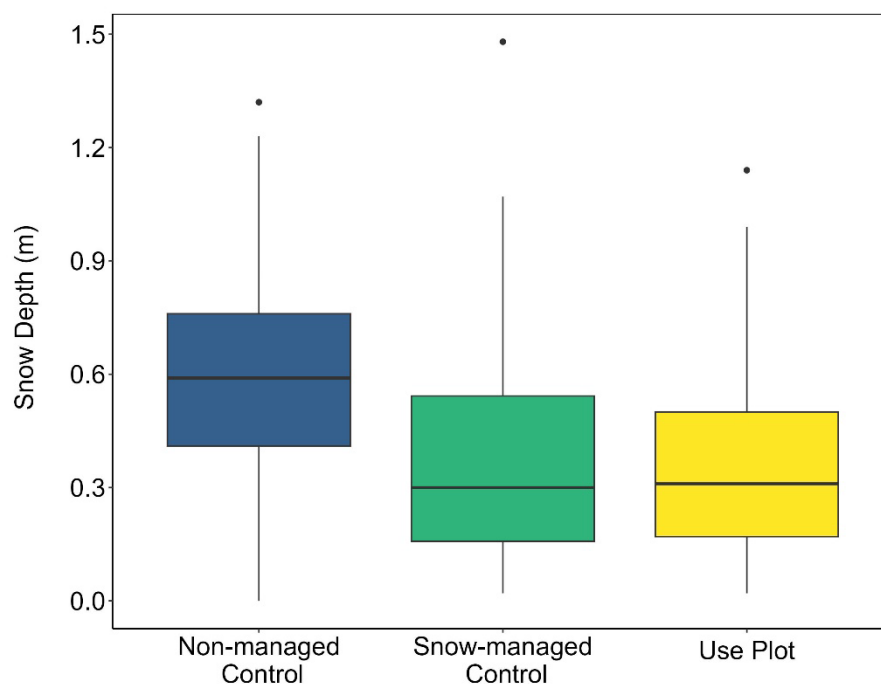
Snow Metric	Plot Type	Sample size	Test-stat	p-value
Snow Depth (m)	Use Plot	129	24.43	<0.001
	Snow-management Control	128		
	Non-managed Control	72		
Snow Hardness (N)	Use Plot	129	1.39	0.25
	Snow-management Control	128		
	Non-managed Control	128		
Track Depth (cm)	Use Plot	129	1.85	0.07
	Non-managed Control	72		

Note: m = metre; cm = centromere; N = Newtons of force; a = ANOVA test statistic; b = t-test test statistic.

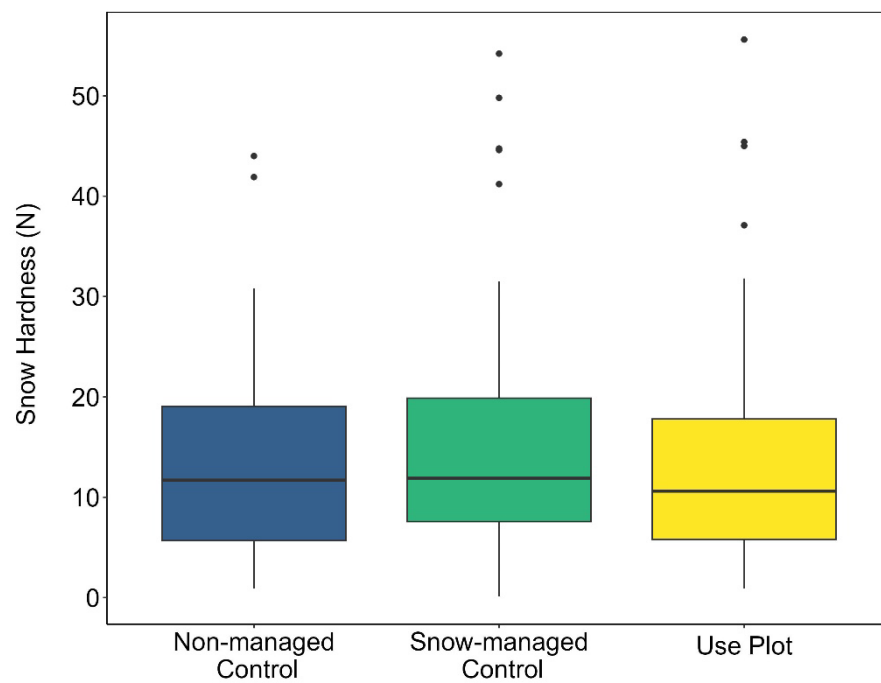


**Figure 17-3: A) Snow Depth (m), B) Snow Hardness (N), C) Slope (°), D) Track Depth (cm), E) Berm Height (m), and F) Berm Width (m) at Survey Plots on the Upwind and Downwind Side of the Whale Tail Haul Road.**

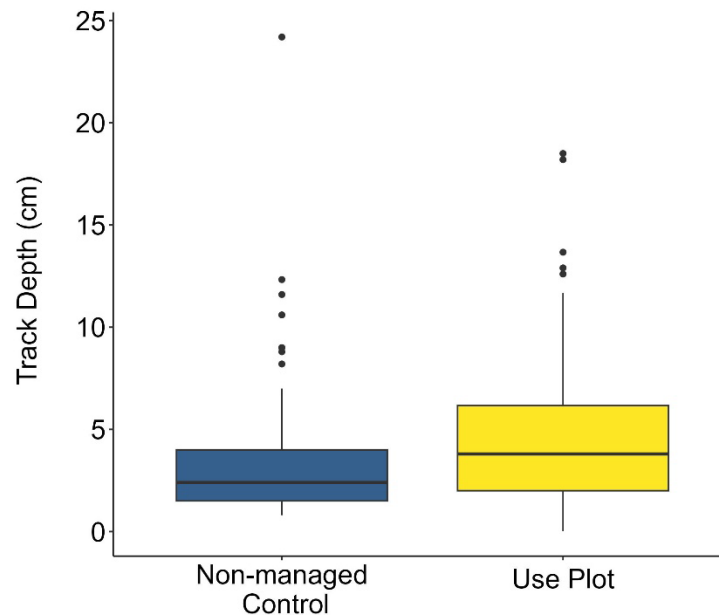




**Figure 17-4: Snow Depth (m) at Survey Plots on the Upwind and Downwind Side of the Whale Tail Haul Road.**



**Figure 17-5: Snow Hardness (N) at Survey Plots on the Upwind and Downwind Side of the Whale Tail Haul Road.**



**Figure 17-6: Track depth (cm) of caribou at Survey Plots on the Upwind and Downwind Side of the Whale Tail Haul Road.**

#### 17.1.4 Management Recommendations

Between 2020 to 2023, 64 locations were surveyed for the snow study, 36 of which were completed in 2023. Improvements for data collection implemented in 2023 allowed for a full suite of snow data (snow depth, snow hardness, slope) and caribou track data (in used plots and non-managed control plots) to be collected for 36 survey locations. Considering snow survey locations across all years, snow berms were wider on the downwind (east) than the upwind (west) sides of the road. Average snow berm height was nearly significantly different (t-test,  $p = 0.05$ ), and was higher on the downwind side of the road. On both sides of the road, average snow berm height was less than 0.5 m. Slope was similar on upwind and downwind sides of the road. Snow depth was not different between upwind and downwind sides of the road, but snow depth differed between plot types (Table 17-2). Snow depth was similar between use plots and snow-managed control plots, but snow was deeper in non-managed control plots compared to both plot types in the berm area (Figure 17-4). Snow hardness was similar between plots on the upwind and downwind sides of the road (Table 17-1; Figure 17-3), and was also similar across plot types (Table 17-2; Figure 17-5). Caribou track depth measurements between use plots and non-managed control plots could only be compared for data collected in 2023. Mean track depth was not significantly different upwind vs downwind (Table 17-1). Average track depths were deeper in use plots compared non-managed control plots (Figure 17-6), however this difference was not significant (t-test,  $p = 0.07$ ; Table 17-2; Figure 17-6). Results from the 2022 the power analysis (WSP 2023) indicated that sample sizes are already sufficient to evaluate at moderate differences in snow hardness between plots (i.e., effect sizes of 50% or greater), however, collecting the full suite of snow data for 65 plots was recommended in order to be able to assess differences in snow hardness for smaller effect sizes (e.g., 25%) for both study questions. A minimum of 29 survey locations should be surveyed in 2024 to collect the remaining data required for the snow study. Final analysis of snow study data is anticipated to occur in 2024 if target sample sizes are achieved, and final results will be presented in the 2024 TEMP report.

## 17.2 Caribou Behaviour

The following is a summary of the Meadowbank Gold Mine Caribou Behaviour Study, 2023, completed by ERM Consultants Canada Ltd. (ERM 2024; Appendix K).

### 17.2.1 Overview

As part of the Nunavut Impact Review Board (NIRB) Project Certificates #004 and #008, Agnico Eagle is required to study and report on the effects of the Project on caribou. The TEMP (Agnico Eagle 2019) includes behaviour monitoring for caribou in response to various disturbances.

During 2020, Agnico Eagle retained ERM to update the field protocols used for behaviour monitoring. ERM adapted standard methods for caribou behaviour monitoring developed by the Government of Northwest Territories Department of Environment and Natural Resources (GNWT ENR). Following the first two years of data collection (2020 and 2021) and comments from the TAG, GN, and KivIA, the protocols were updated for the 2022 season to improve the quality of the data collected. Surveys were continued in 2023 following the updated protocols.

Based on guidance from the TEMP (Agnico Eagle 2019), the overall objective of the caribou behaviour monitoring program is to determine if caribou activity budgets change with distance from the mine, and to document caribou response to stressors.

The detailed objectives of the 2023 study were:

- 1) To conduct a study using the Government of Northwest Territories Department of Environment and Natural Resources (GNWT ENR 2017) behaviour survey methodology at the Project site to estimate how the roads and other site infrastructure contribute to the effects of the Project on caribou.
- 2) To use information from the surveys to determine what factors predict caribou behaviour, specifically comparing:
  - near vs. far
  - large groups of caribou vs. small groups
  - surveys with and without disturbances
  - road open vs. closed and
  - upstream vs. downstream side of the road (east or west side, as determined by dominant direction of travel in each season)

## **17.2.2 Methods**

### **17.2.2.1 Field Surveys**

Field surveys were conducted during spring and fall migration, as well as in the summer in all years (2020-2023) by the Agnico Eagle environmental technicians. These technicians were trained and were dedicated to conducting behaviour surveys. Each survey lasted 30 minutes, with scan samples conducted every three minutes. In the case that a disturbance event occurred during the survey the time and type of disturbance was recorded. A disturbance is defined as any human-caused loud noise, low-flying aircraft, or vehicle travelling on the road. Blast disturbances were monitored under the Blast Monitoring Program. In the analysis all disturbances are treated equally.

Alert behaviour and trotting or running were considered disturbance “response behaviours” and were grouped together in the subsequent data analysis. In this report, alert and running behaviours are referred to collectively as response behaviours, but it is important to note that this is irrespective of whether or not there were disturbances recorded. Caribou may exhibit these behaviours without a disturbance occurring. Walking was also assessed as a response behaviour in some analyses, which are specifically noted in the results.

Following recommendations from the TAG in 2021, an additional set of longer surveys was completed to specifically look at the behavioural response to convoys of vehicles. These surveys were 90 minutes each, consisting of a “before convoy”, “during convoy” and “after convoy” survey. Observers sought out caribou that were likely to remain within view for 90 minutes, such as caribou that were feeding or laying down. Nine surveys were completed in both 2021 and 2022 using this extended methodology. Multiple 90-minute surveys were conducted in 2023, though caribou frequently walked out of sight prior to completion of the 90-minute survey period.

### **17.2.2.2 Data Analysis**

The objective of the data analysis was to quantify trends in the survey data and determine whether factors such as distance to Project infrastructure (road), group size, or the disturbances could be used to explain caribou behavior. The primary hypothesis was that caribou closer to the road would demonstrate a stronger response to disturbances.

A regression analysis was conducted to test whether data from the surveys could be analyzed statistically. To increase the power to detect changes in caribou behaviour, the behaviour categories were grouped into response behaviour and non-response behaviour.

Following the 2020 analysis, there was a suggestion from the TAG to explore whether the proportion of walking caribou changed as a response to disturbance. This was done to see if walking would be better categorized as a response behaviour or a non-response behaviour. To test this, a model that included walking, running, and alert behaviours was run in addition to the original model with just running and alert behaviours.

Generalized linear mixed-effects models (GLMM) were used to assess the differences in the proportion of response behaviours in surveyed animals as a function of various controlling variables, including the occurrence of disturbances. This regression framework provides a means to control for habitat, environmental variables, repeated measurements, and spatial correlation.

Statistical analyses were conducted using the data from each three-minute time interval in each survey. Two dependent variables were tested:

- 1) Proportion of response behaviours in each time interval.
- 2) Proportion of walking and response behaviour in each time interval.

The two dependent variables were modelled against a suite of potentially important variables to determine if there was any statistical relationship with response behaviour. The variables included in this analysis were group size, distance to road, temperature, wind speed, season and side of the road (upstream/downstream), the roads status (closed or open), and whether or not a disturbance occurred in the survey. Season and side of the road were included as an interaction term because direction of travel is seasonally dependent.

Full methods used for the caribou behaviour monitoring program are presented in Appendix K.

### 17.2.3 Results

The behaviour monitoring data from 2023 were combined with data from 2020, 2021, and 2022, and all results outlined in this report use all years, unless otherwise stated. The program and combined data resulted in several key findings:

- The standard monitoring protocols adapted from the GNWT ENR worked well at the Project site.
- 70 surveys were conducted in 2023, compared to 104 surveys in 2022, 134 surveys in 2021, and 116 in 2020; 38 surveys occurred during spring migration from March to May, 1 occurred during calving and summer from June to August, and 31 occurred during fall migration from September to December.
- Observations were well distributed across a range of caribou group sizes from 1 to 2 individuals to >100.
- In total, 59% of disturbances were from heavy vehicles, 30% were from light vehicles, 1% were from blasts, and less than 1% were from ATVs or helicopters. Note, surveys that detected a response to blasting were not specifically the survey format to monitor caribou behavioural responses to blasting (i.e., surveying caribou behaviour for 30 min prior to and after a blast; Section 9.0).
- In 2023, 26 (37%) of the surveys were within 300 m of the road.
- Most caribou behaviour was foraging and moving slowly (non-response). The exception is smaller groups moved more than larger groups. Usually smaller groups (less than 25 individuals) crossed the road. However, plotting data did not show a clear relationship between caribou size and road crossings.
- Caribou mostly exhibited the non-response behaviours of standing, laying, feeding, and walking.
- Larger groups of caribou tended to be recorded further from the road. Seven groups larger than 100 individuals were recorded within 100 m of the road at the start of the survey, including two in 2021, three in 2022, and two in 2023.
- Approximately 50% of the surveys included a disturbance event; typically, haul traffic and light trucks from the mine, and occasionally all-terrain vehicles (ATVs) from Baker Lake on the AWAR for travel and harvesting.
- Following a disturbance event, the proportion of response behaviours in a group of caribou was significantly higher, but generally returned to baseline behaviours within two sampling intervals (i.e., six minutes).

- Cox's proportional hazards modelling suggests that following a single disturbance, 94% of groups will return to normal behaviour after approximately six minutes, and 100% of groups will return to baseline behaviour after approximately 15 minutes.
- In response to comments from the KivIA, the behaviour of "walking" was investigated for whether it may be an "alert" behaviour instead of a non-response behaviour. Disturbances did statistically affect the proportion of caribou walking.
- During periods when large groups of caribou are present, the AWAR and WTHR are closed following a decision tree in the Meadowbank Mine TEMP, reducing the potential to record interactions between vehicles and caribou. Road closure status did not affect behaviour in the statistical analysis, though the road being open was significantly positively correlated with walking behaviour.
- Groups of caribou were observed on both the east and west sides of the road in all seasons but were more commonly observed on the west side during spring migration (a.k.a. upstream of the dominant direction of travel). Statistical analysis found that side of road and season did not affect response behaviour (alert/running), but that caribou were significantly more likely to be walking on the upstream side of the road. The dominant behaviour on the downstream side was feeding or laying down.

Full results of the caribou behaviour monitoring program are presented in Appendix K.

## 17.2.4 Management Recommendations

The updates applied to the survey protocol from the previous years of data and analysis and were helpful in improving the overall quality and accuracy of the data. Even with the changes to the protocol, the trends in the results were highly consistent between the four years of data. This increases the confidence that trends are repeatable year to year. Overall, the results of the statistical analysis provided support for the key hypothesis that caribou tend to respond to disturbances, particularly when they are close to the road.

## 17.3 Road and Viewshed Survey Comparison

### 17.3.1 Overview

Following submission of the 2021 Wildlife Monitoring Summary Report, KivIA requested comparison of the distance and direction of caribou observations from road and viewshed surveys (comment 4.7, Agnico Eagle 2022b). A comparison is presented in this section, focusing on the maximum distance caribou were detected from the road and associated direction (i.e., side of road), and group size from road and viewshed surveys. It is assumed that viewshed surveys allow observers to detect caribou at further distances than road surveys.

### 17.3.2 Methods

The number of surveys by month, where road and viewshed surveys completed on the WTHR are shown in Table 17-3. The intention of the comparison was to determine if viewshed surveys were acting as an early warning system for caribou approaching site, or if road surveys were adequately capturing caribou far away from roads and implementing adequate mitigation measures. The mean and 95th percentile of the distance caribou were observed from the road and the group size of the observation were calculated for each survey type by season. Figures were produced to allow qualitative comparison of caribou observations from road and viewshed surveys.

**Table 17-3: Number of Road and Viewshed Surveys Completed by Month.**

Year	Month	Number of Road Surveys	Number of Road Surveys with Caribou Detections	Percent of Road Surveys with Caribou Detections (%)	Number of Viewshed Surveys	Number of Viewshed Surveys with Caribou Detections	Percent of Viewshed Surveys with Caribou Detections (%)
2021	January	3	1	33.33	0	0	N/A
	February	3	0	0	1	0	0
	March	7	0	0	0	0	N/A
	April	21	17	80.95	0	0	N/A
	May	17	17	100.00	0	0	N/A
	June	6	6	100.00	0	0	N/A
	July	6	2	33.33	1	1	100.00
	August	6	6	100.00	5	5	100.00
	September	13	11	84.62	4	4	100.00
	October	13	6	46.15	6	2	33.33
	November	21	5	23.81	4	2	50.00
	December	16	4	25.00	6	0	0
2022	January	7	4	57.14	4	0	0
	February	7	4	57.14	4	3	75.00
	March	7	3	42.86	5	1	20.00
	April	30	24	80.00	7	4	57.14
	May	25	22	88.00	7	3	42.86
	June	12	5	41.67	3	1	33.33
	July	9	2	22.22	5	1	20.00
	August	31	28	90.32	5	5	100.00
	September	11	7	63.64	6	4	66.67
	October	17	5	29.41	5	1	20.00
	November	19	10	52.63	3	0	0
	December	7	2	28.57	4	0	0
2023	January	6	1	16.67	3	0	0
	February	8	1	12.50	4	1	25.00
	March	14	7	50.00	4	0	0
	April	30	26	86.67	11	8	72.73
	May	30	30	100.00	6	5	83.33
	June	9	9	100.00	3	1	33.33
	July	5	0	0	4	0	0
	August	21	19	90.48	5	3	60.00
	September	22	19	86.36	5	2	40.00
	October	21	15	71.43	15	8	53.33
	November	24	2	8.33	16	0	0
	December	20	6	30.00	13	1	7.69
<b>Total</b>		524	326	53.70 <sup>a</sup>	174	66	38.50 <sup>a</sup>

a) Average percentage of surveys with caribou detections.

### 17.3.3 Results

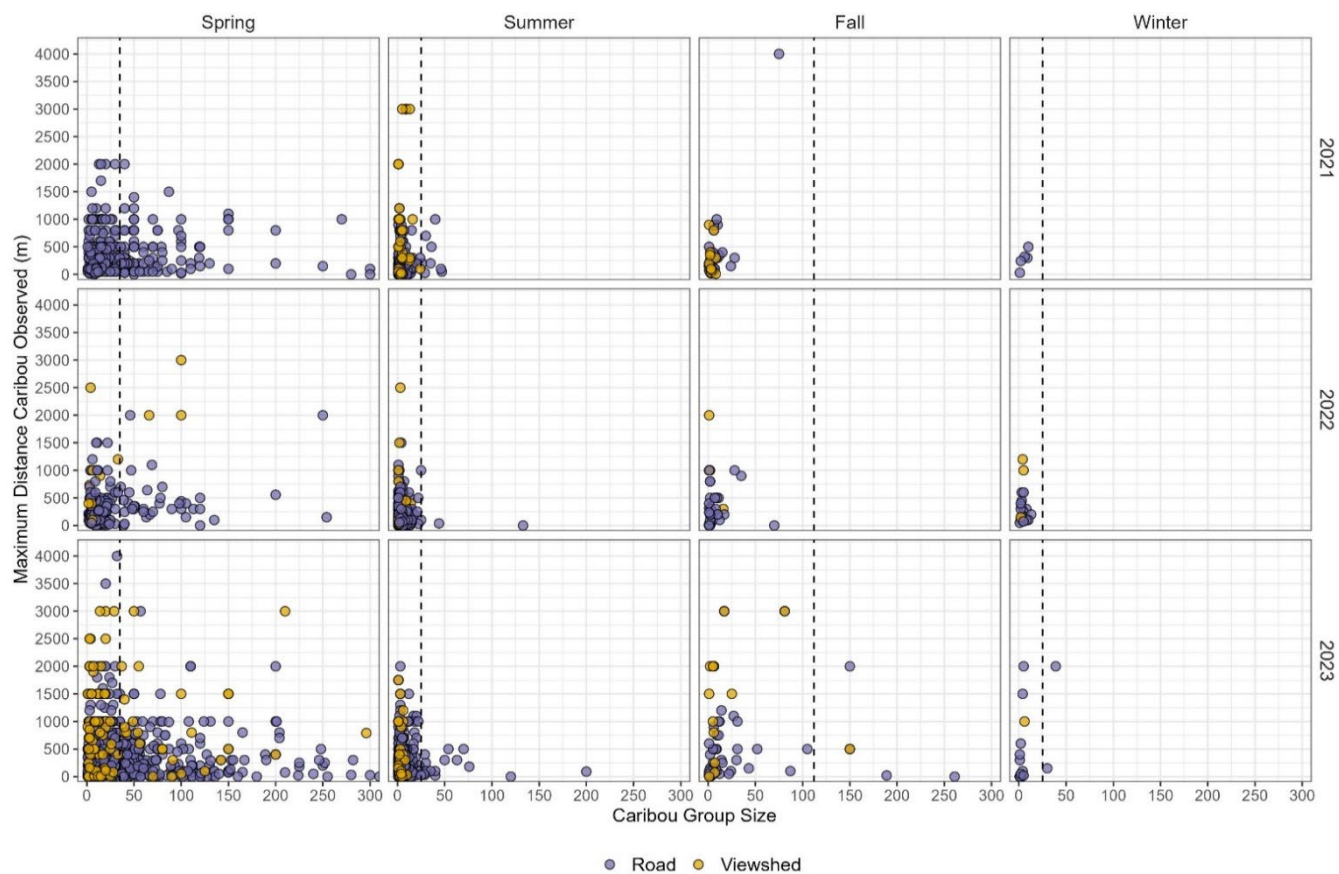
Increased survey effort in 2023 improved sample sizes for comparison between survey types. There were 148 days where both survey types were completed on the same day across all seasons in 2021, 2022, and 2023, and on 29 of these 148 days, caribou were detected during road and viewshed surveys. On the 29 days with both survey types conducted on the same day, the observation distance was farther for viewshed surveys in 15 out of 29 occasions (52%) and the observation distance was farther for road surveys in 9 out of 29 occasions (31%). In five of 29 occasions, the recorded distances were the same between survey types.



The percentage of road surveys with caribou detections was higher than the percentage of viewshed surveys with caribou detections in each season, except summer 2021 (Table 17-4). The 95th percentile of distance of caribou groups from the road was higher from viewshed surveys than road surveys, except in fall 2021 (Table 17-4). There was large variation in the distance that caribou were observed from the road, and the group size observed from both survey types, indicated by large standard deviation (Table 17-4). If viewshed surveys were detecting caribou approaching the road, more observations would be expected on the east side of the road in the fall, and on the west side of the road in the spring. This was true in fall and spring of 2022 and 2023, however more observations on the west side of the road were observed in fall 2021.

There were relatively few observations from both survey types in winter (Table 17-4), none of which exceeded the GST in 2021 or 2022, but two observations from road surveys exceeded GST in 2023 (Figure 17-7). The percentage of viewshed surveys that detected caribou was higher in the summer and spring than in other seasons (Table 17-4). No viewshed observations exceeded GST in summer, but some observations exceeded GST during spring and one observation exceeded GST in fall (Figure 17-7). Smaller average caribou group sizes from maximum distance observations were observed from viewshed surveys in the summer, fall, and winter, and larger group sizes were observed in the spring (Table 17-4). Some of the observations far from the road (i.e., greater than 1.5 km) were larger caribou group sizes (Figure 17-7). The majority of GST exceedances were from road surveys.

It was expected that viewshed surveys would detect caribou farther from the road on average, as these surveys are intended to identify caribou approaching the road as an 'early warning system'. For all seasons with both road surveys and viewshed surveys conducted, viewshed surveys had a farther average detection distance, except for fall 2021 (Table 17-4). Both survey types were capable of detecting caribou at long distances, with a maximum recorded distance of 4 km for road surveys and maximum recorded distance of 3 km for viewshed surveys.



**Figure 17-7: Group Size and Distance of all Caribou Observation from the Road by Survey Type and Season. Dashed Line Indicates Group Size Threshold for each Season.**

**Table 17-4: Summary Statistics for Caribou Observations from Road and Viewshed Surveys along the Whale Tail Haul Road.**

Year	Season	Survey Type	Number of Surveys	Number of Surveys with Caribou Observations	Number of Caribou Observations	Percentage of Surveys Caribou Observed (%)	Number of Observations East Side of Road <sup>(a)</sup>	Number of Observations West Side of Road <sup>(a)</sup>	Average Distance of Caribou Observations from Road (Mean $\pm$ Standard Deviation)	95th Percentile of Distance of Caribou Observations from Road	Average Caribou Group Size (Mean $\pm$ Standard Deviation)	95th Percentile of Caribou Group Size
2021	Spring	Road	37	33	297	89.19	38	242	399.18 $\pm$ 390.21	1020	35.52 $\pm$ 47.32	120
		Viewshed	0	N/A <sup>(b)</sup>	N/A <sup>(b)</sup>	N/A <sup>(b)</sup>	N/A <sup>(b)</sup>	N/A <sup>(b)</sup>	N/A <sup>(b)</sup>	N/A <sup>(b)</sup>	N/A <sup>(b)</sup>	N/A <sup>(b)</sup>
	Summer	Road	26	20	171	76.92	82	75	218.05 $\pm$ 310.99	800	6.12 $\pm$ 8.03	22
		Viewshed	9	9	29	100.00	25	4	820.00 $\pm$ 922.87	3000	5.14 $\pm$ 5.57	15
	Fall	Road	48	18	38	37.50	15	22	388.16 $\pm$ 660.20	915	8.00 $\pm$ 12.61	25
		Viewshed	14	4	10	28.57	6	4	316.50 $\pm$ 312.23	855	3.80 $\pm$ 2.66	8
	Winter	Road	21	4	5	19.05	3	2	278.80 $\pm$ 169.07	464	5.60 $\pm$ 4.04	10
		Viewshed	4	0	0	N/A <sup>(b)</sup>	N/A <sup>(b)</sup>	N/A <sup>(b)</sup>	N/A <sup>(b)</sup>	N/A <sup>(b)</sup>	N/A <sup>(b)</sup>	N/A <sup>(b)</sup>
2022	Spring	Road	53	44	149	83.02	36	107	378.97 $\pm$ 366.79	1000	30.34 $\pm$ 41.89	110
		Viewshed	14	7	12	50.00	3	9	1194.42 $\pm$ 965.67	2725	28.75 $\pm$ 38.00	100
	Summer	Road	61	43	337	70.49	126	157	194.05 $\pm$ 214.53	600	4.41 $\pm$ 8.38	13
		Viewshed	16	9	25	56.25	10	15	422.60 $\pm$ 546.01	1400	2.80 $\pm$ 3.03	8
	Fall	Road	44	18	31	40.91	22	8	325.29 $\pm$ 299.51	950	8.35 $\pm$ 13.92	32
		Viewshed	12	3	6	25.00	1	5	803.33 $\pm$ 702.61	1750	4.83 $\pm$ 5.91	14
	Winter	Road	24	11	18	45.83	14	4	245.33 $\pm$ 174.87	600	4.89 $\pm$ 3.14	10
		Viewshed	16	4	4	25.00	1	3	625.00 $\pm$ 554.53	1170	17.25 $\pm$ 1.71	6
2023	Spring	Road	55	51	633	92.73	52	513	407.97 $\pm$ 466.36	1380	48.02 $\pm$ 76.10	184
		Viewshed	16	13	94	81.25	21	73	930.37 $\pm$ 819.05	2675	43.70 $\pm$ 82.03	150
	Summer	Road	57	49	407	85.96	185	172	263.79 $\pm$ 300.74	1000	7.28 $\pm$ 14.20	21
		Viewshed	16	6	26	37.5	12	14	453.46 $\pm$ 501.02	1425	3.65 $\pm$ 2.24	8
	Fall	Road	62	24	54	38.71	45	7	481.39 $\pm$ 674.74	2000	35.61 $\pm$ 72.28	164
		Viewshed	40	9	13	22.5	9	4	1355.77 $\pm$ 1023.18	3000	24.08 $\pm$ 43.46	109
	Winter	Road	36	11	15	30.56	3	9	474.80 $\pm$ 732.60	2000	6.73 $\pm$ 11.49	33
		Viewshed	17	1	1	5.88	0	1	1000.00	1000	6.00	6

a) Does not include observations where caribou groups were observed on both sides of road.

b) N/A = not applicable. No caribou detections in a given season, therefore summary statistics cannot be calculated.

### 17.3.4 Management Recommendations

Following discussion with the TAG in November 2022, more viewshed surveys were completed in 2023 to improve sample sizes and allow for comparison between survey types. For all seasons with both road surveys and viewshed surveys conducted, viewshed surveys had farther average detection distances compared to road surveys (except for fall 2021) and the percentage of surveys with caribou detections was higher for road surveys than for viewshed surveys (except summer 2021). Viewshed observations exceeded GST values only during spring 2022, spring 2023, and fall 2023.

Overall, road surveys were conducted more frequently, were more likely to detect caribou, and were more likely to result in road closure mitigation, despite the lower average detection distance compared to viewshed surveys. It's possible that even if viewshed surveys have a further average detection distance that this does not necessarily mean that viewshed surveys have a higher probability of detection compared to road surveys. Road surveys have greater spatial coverage and had a higher percentage of surveys with caribou detections compared to viewshed surveys.

Continuation of viewshed surveys should be discussed with the TAG to revisit survey objectives and determine whether effort should be spent on road surveys solely versus viewshed surveys followed by road surveys in succession. Management decision trees are currently under review for the lead caribou mitigation approach, and monitoring approaches to trigger caribou mitigation will need to be adjusted accordingly to align.

## 18.0 SUMMARY

The 2023 Annual Report describes the data collected to date from the various monitoring programs associated with the TEMP Version 7 (Agnico Eagle 2019). The 2023 Annual Report describes natural and Project-related effects on wildlife populations and plant communities occurring near the Project.

In 2023, monitoring efforts focused on areas immediately around the Meadowbank Mine and Whale Tail Mine sites, along the AWAR and the WTHR. Surveying and monitoring efforts focused on evaluating current habitat losses, monitoring nesting success of raptors, and monitoring and managing wildlife presence, particularly caribou, near the Project facilities and infrastructure. A summary of potential Project effects, threshold levels, and the 2023 monitoring results is provided in **Table 18-1**.

### 18.1 Accuracy of Impact Predictions

**Table 18-1: Potential Project Effects, Thresholds, and Results of Monitoring in 2023**

Potential Effect	Thresholds	Monitoring Methods	Frequency	Completed in 2023	Threshold Exceeded (2023)
<b>Vegetation (Wildlife Habitat)</b>					
Habitat Loss (Compared to Permitted Areas)	Meadowbank = 1,532 ha AWAR = 455 ha Whale Tail = 1,505 ha Threshold is >5% habitat loss of permitted area	Ground Surveys; Mapping and GIS analyses – ELC habitat mapping	Every three years	NO	N/A
Habitat Reclamation following Mine Closure	N/A	Ground Surveys; Mapping and GIS analyses – ELC habitat mapping	Every three years to 11 years post-closure	NO	N/A
<b>Ungulates</b>					
Habitat Loss and Degradation (Compared to Permitted Areas)	Meadowbank: Growing = 33 ha Winter = 650 ha  Whale Tail: Growing = 56 ha Winter = 1,057 ha	Ground Surveys; Mapping and GIS analyses – ELC habitat mapping	Every three years	NO	N/A
Sensory Disturbance	No threshold but Decisions Trees followed when caribou are seen near mine facilities	AWAR, Vault Haul Road, and WTHR surveys; Satellite-collaring data; Viewshed surveys; Daily and weekly pit and Mine-site ground surveys; Incidental wildlife reporting	Daily / weekly	YES; Multiple road closures and notices, good engagement of Wildlife Log by site staff. Use of Decision Tree for Management and Monitoring.	N/A
Project-related Mortality - Vehicle Collisions	Two individuals (cumulative across Project)	AWAR and WTHR surveys; daily and weekly pit and Mine-site ground surveys; collision reporting system	Mine site – daily AWAR and WTHR – up to every two days at peak migration	YES	NO; There was one muskox mortality that took place on the WTHR on 06 November 2023.
Hunting by Baker Lake Residents	20% Change in Harvest Patterns in RSA from Historic	Hunter Harvest Study	Yearly	YES	NO

**Table 18-1: Potential Project Effects, Thresholds, and Results of Monitoring in 2023**

Potential Effect	Thresholds	Monitoring Methods	Frequency	Completed in 2023	Threshold Exceeded (2023)
Other Project-related Mortality	Two individuals (cumulative across Project).	Daily and weekly pit and Mine-site ground surveys; collision reporting system	Daily	YES	NO
<b>Predatory Mammals</b>					
Disturbance to denning predators	One den failure.	Den site surveys	As required	NO	N/A
Project-related Mortality	Two individuals (cumulative across Project).	AWAR and WTHR surveys; daily and weekly pit and Mine-site ground surveys; collision reporting system	Mine site – daily AWAR and WTHR – up to every two days at peak migration	YES	YES; three wolverines and three wolf mortalities
<b>Raptors</b>					
Disturbance of Nesting Raptors	One nest failure.	Daily and weekly pit and Mine-site ground surveys; Incidental wildlife reporting; Dedicated raptor nest surveys; AWAR, Vault Haul Road, and WTHR surveys	Nests within 200 m - daily Nests from 200 to 1000 m - weekly	YES	NO
Project-related Mortality	One individual (cumulative across Project).	AWAR, Vault Haul Road, and WTHR surveys; Daily and weekly pit and Mine-site ground surveys; Collision reporting system	Mine site – daily AWAR and haul roads – up to every two days at peak migration	YES	NO
<b>Waterbirds</b>					
Disturbance of Nesting Waterfowl	One nest failure.	Daily and weekly pit and Mine-site ground surveys; Waterbird nest surveys	Yearly - for active nests within 200 m	YES	NO
Project-related Mortality	One individual (cumulative across Project),	AWAR, Vault Haul Road, and WTHR surveys; Collision reporting system	Mine site – daily AWAR and WTHR – up to every two days at peak migration	YES	NO
<b>Other Breeding Birds</b>					
Changes in Breeding Bird Populations	20% Change from Natural,	PRISM Plots and Breeding Bird Surveys	PRISM – 48 PRISM sites over ten years (2021 to 2031) Breeding Bird Surveys – at minimum every three years	YES.	N/A. Population trend not assessed in 2023.

AWAR = All Weather Access Road, ELC = Ecological Land Classification, GIS = geographic information systems, ha = hectares, N/A = not applicable, RSA = Regional Study Area, WTHR = Whale Tail Haul Road.

## 19.0 CLOSURE

We trust the above meets your present requirements. If you have any questions or require additional information, please do not hesitate to contact the undersigned.

**WSP Canada Inc.**

### ORIGINAL SIGNED BY

Jennifer Foca  
*Wildlife Biologist*

JF/DC/jm/jr

### ORIGINAL SIGNED BY

Dan Coulton, R.P.Bio.  
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## Acts/Regulations

Consolidation of *Wildlife Act*. 2003. S.Nu. 2003,c.26. Current to: February 13, 2020. Government of Nunavut.  
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**APPENDIX A**

# Wildlife Database

Table A-1: Wildlife Observations along the All Weather Access Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2023-01-07 11:56 AM	Yes	Muskox	11	Foraging	N/A	990	96	East	No	-96.1809	65.0181			No	Not Exceeded	
Road	2023-01-13 9:09 AM	Yes	Wolverine	1	Walking	NW	0	79	Both	Yes	-96.3149	64.9095			No	Not Exceeded	
Road	2023-01-17 11:00 AM	Yes	Muskox	9	Resting	N/A	990	96	East	No	-96.1809	65.0181			No	Not Exceeded	
Road	2023-01-23 11:55 AM	Yes	Muskox	2	Feeding	Not Recorded	100	98	East	No	-96.1576	65.0325			No	Not Exceeded	
Road	2023-01-27 9:11 AM	No		N/A			N/A	N/A			N/A	N/A					
Road	2023-02-05 2:34 PM	Yes	Muskox	8	Walking	W	300	95	West	No	-96.1952	65.0129			Yes - They were all together	Not Exceeded	
Road	2023-02-07 10:13 AM	Yes	Muskox	8	Resting	N/A	1200	94	East	No	-96.2127	65.0075				Not Exceeded	
Road	2023-02-10 1:23 PM	No		N/A			N/A	N/A			N/A	N/A					
Road	2023-02-17 9:35 AM	No		N/A			N/A	N/A			N/A	N/A					
Road	2023-02-21 7:36 AM	No		N/A			N/A	N/A			N/A	N/A					
Road	2023-02-24 7:37 AM	No		N/A			N/A	N/A			N/A	N/A					
Road	2023-02-25 11:07 AM	No		N/A			N/A	N/A			N/A	N/A					
Road	2023-02-28 9:55 AM	No		N/A			N/A	N/A			N/A	N/A					
Road	2023-03-03 9:57 AM	No		N/A			N/A	N/A			N/A	N/A					
Road	2023-03-05 12:56 PM	No		N/A			N/A	N/A			N/A	N/A					
Road	2023-03-06 6:57 AM	Yes	Muskox	35	Resting	N/A	2000	52	West	No	-96.3774	64.7009			No	Exceeded	Group is more than 1.5 KM away
Road	2023-03-10 12:55 PM	No		N/A			N/A	N/A			N/A	N/A					
Road	2023-03-17 9:30 AM	No		N/A			N/A	N/A			N/A	N/A					
Road	2023-03-18 8:34 AM	No		N/A			N/A	N/A			N/A	N/A					
Road	2023-03-20 9:50 AM	No		N/A			N/A	N/A			N/A	N/A					
Road	2023-03-20 1:00 PM	Yes	Caribou	9	Feeding	N	500	58	West	No	-96.3579	64.7416			No	Not Exceeded	
Road	2023-03-20 1:00 PM	Yes	Caribou	2	Walking	S	400	67	West	No	-96.3262	64.8123			No	Not Exceeded	
Road	2023-03-21 10:04 AM	No		N/A			N/A	N/A			N/A	N/A					
Incidental	2023-03-21 4:05 PM	Yes	Caribou	5	Feeding	Not Recorded	80	101	East	No	-96.1403	65.0567			No	Not Exceeded	
Road	2023-03-22 10:00 AM	No		N/A			N/A	N/A			N/A	N/A					
Road	2023-03-23 8:28 AM	Yes	Caribou	5	Standing	E	1500	102	East	No	-96.1278	65.0517			No	Not Exceeded	
Incidental	2023-03-23 4:44 PM	Yes	Caribou	45	Lying Down	N/A	250	92	West	No	-96.2219	64.9943			No	Exceeded	Speed restrictions put in place
Road	2023-03-24 8:00 AM	No		N/A			N/A	N/A			N/A	N/A					
Road	2023-03-25 8:08 AM	Yes	Caribou	2	Walking	N	500	98	West	No	-96.1576	65.0325			No	Not Exceeded	
Road	2023-03-25 8:08 AM	Yes	Caribou	45	Standing	N/A	700	69	West	No	-96.3143	64.8277			No	Exceeded	Speed restriction put in place km 68 to 71
Road	2023-03-26 8:04 AM	Yes	Caribou	1	Walking	E	150	58	West	No	-96.3579	64.7416			No	Not Exceeded	
Road	2023-03-26 8:04 AM	Yes	Caribou	26	Walking	S	200	57	West	No	-96.3601	64.7314			No	Exceeded	Speed restriction in place
Road	2023-03-26 8:04 AM	Yes	Caribou	1	Walking	S	150	33	East	No	-96.2163	64.5715			No	Not Exceeded	
Incidental	2023-03-26 1:04 PM	Yes	Caribou	12	Walking	S	50	31	West	No	-96.1957	64.5543			No	Not Exceeded	
Road	2023-03-27 6:43 AM	No		N/A			N/A	N/A			N/A	N/A					
Incidental	2023-03-27 11:42 AM	Yes	Caribou	24	Walking	SW	300	76	West	No	-96.3457	64.8879			No	Not Exceeded	
Incidental	2023-03-27 11:42 AM	Yes	Muskox	8	Feeding	N/A	400	98	East	No	-96.1576	65.0325			No	Not Exceeded	
Incidental	2023-03-28 6:33 PM	Yes	Caribou	50	Not recorded	N/A	500	80	West	N/A	-96.3062	64.9171			No	Exceeded	Road closed
Road	2023-03-30 7:00 AM	Yes	Caribou	146	Walking	NW	2	91	Both	Yes	-96.2249	64.9847			No	Exceeded	Road closed
Incidental	2023-03-30 9:53 AM	Yes	Caribou	10	Walking	SE	1000	89	West	No	-96.2196	64.9674			No	Not Exceeded	
Incidental	2023-03-30 9:53 AM	Yes	Caribou	2	Walking	E	150	97	West	No	-96.1711	65.0259			No	Not Exceeded	
Incidental	2023-03-30 12:06 PM	Yes	Caribou	120	Walking	SE	1000	76	West	No	-96.3457	64.8879			No	Exceeded	Road closed
Incidental	2023-03-30 12:06 PM	Yes	Caribou	17	Walking	SE	1000	76	West	No	-96.3457	64.8879			No	Not Exceeded	
Incidental	2023-03-30 12:06 PM	Yes	Caribou	13	Walking	E	2000	83	West	No	-96.3011	64.9350			No	Not Exceeded	
Road	2023-03-31 7:03 AM	Yes	Muskox	9	Lying Down	N/A	800	96	West	No	-96.1809	65.0181			No	Not Exceeded	
Road	2023-03-31 7:03 AM	Yes	Caribou	1	Walking	SE	2000	87	East	No	-96.2410	64.9542			No	Not Exceeded	
Road	2023-03-31 7:03 AM	Yes	Caribou	65	Lying Down	N/A	1000	57	West	No	-96.3601	64.7314			No	Exceeded	Road was closed yesterday





Table A-1: Wildlife Observations along the All Weather Access Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Incidental	2023-03-31 12:01 PM	Yes	Caribou	56	Lying Down	N/A	8000	57	West	No	-96.3601	64.7314			No	Exceeded	Road was closed yesterday
Incidental	2023-03-31 12:01 PM	Yes	Caribou	5	Walking	S	2000	61	West	No	-96.3547	64.7633			No	Not Exceeded	
Road	2023-04-01 7:13 AM	Yes	Muskox	2	Feeding	W	400	94	West	No	-96.2127	65.0075			No	Not Exceeded	
Incidental	2023-04-01 11:53 AM	Yes	Caribou	170	Walking	SE	1000	91	West	No	-96.2249	64.9847			No	Exceeded	Road closed
Road	2023-04-02 8:10 AM	Yes	Caribou	290	Foraging	NW	80	77	West	No	-96.3391	64.8951			No	Exceeded	Road is closed since the 1st
Road	2023-04-02 8:10 AM	Yes	Caribou	19	Foraging	N	1000	94	West	No	-96.2127	65.0075			No	Not Exceeded	
Road	2023-04-03 10:40 AM	Yes	Caribou	300	Foraging	N/A	600	80	West	No	-96.3062	64.9171			No	Exceeded	Road closed
Road	2023-04-03 10:40 AM	Yes	Caribou	22	Walking	W	900	17	West	No	-96.0771	64.4533			No	Not Exceeded	
Road	2023-04-03 10:40 AM	Yes	Caribou	9	Walking	S	700	57	West	No	-96.3601	64.7314			No	Not Exceeded	
Road	2023-04-03 10:40 AM	Yes	Caribou	12	Lying Down	N/A	890	87	West	No	-96.2410	64.9542			No	Not Exceeded	
Incidental	2023-04-03 5:10 PM	Yes	Caribou	100	Lying Down	N/A	800	97	West	No	-96.1711	65.0259			No	Exceeded	Road closed
Road	2023-04-04 8:11 AM	Yes	Caribou	650	Foraging	N	450	88	West	No	-96.2206	64.9581			No	Exceeded	Road closed
Road	2023-04-04 11:10 AM	Yes	Caribou	19	Running	S	900	92	West	No	-96.2219	64.9943			No	Not Exceeded	
Road	2023-04-04 11:10 AM	Yes	Caribou	75	Walking	S	800	89	West	No	-96.2196	64.9674			No	Exceeded	Road closed
Road	2023-04-04 11:10 AM	Yes	Caribou	400	Walking	SE	700	87	West	No	-96.2410	64.9542			No	Exceeded	Road closed
Road	2023-04-04 8:04 PM	Yes	Arctic fox	1	Trotting/runnin g	N	25	31	East	No	-96.1957	64.5543			No	Not Exceeded	
Road	2023-04-04 8:04 PM	Yes	Caribou	600	Foraging	N/A	150	86	West	No	-96.2528	64.9468			No	Exceeded	Road closed
Road	2023-04-04 8:04 PM	Yes	Caribou	40	Foraging	N/A	200	88	West	No	-96.2206	64.9581			No	Exceeded	Road closed
Road	2023-04-05 7:41 AM	Yes	Caribou	5	Walking	N	1000	96	West	No	-96.1809	65.0181			No	Not Exceeded	
Road	2023-04-05 7:41 AM	Yes	Caribou	132	Foraging	N/A	9	92	West	No	-96.2219	64.9943			No	Exceeded	Road closed
Road	2023-04-05 7:41 AM	Yes	Caribou	700	Foraging	W	500	81	West	No	-96.3021	64.9252			No	Exceeded	Road closed
Road	2023-04-05 7:41 AM	Yes	Caribou	189	Walking	NE	1500	78	West	No	-96.3244	64.9032			No	Exceeded	Road closed
Road	2023-04-05 7:41 AM	Yes	Caribou	133	Resting	N/A	150	96	West	No	-96.1809	65.0181			No	Exceeded	Road closed
Road	2023-04-05 7:41 AM	Yes	Caribou	96	Lying Down	N/A	990	98	West	No	-96.1576	65.0325			No	Exceeded	Road closed
Road	2023-04-06 8:20 AM	Yes	Caribou	19	Walking	NE	500	76	West	No	-96.3457	64.8879			No	Not Exceeded	
Road	2023-04-06 8:20 AM	Yes	Caribou	370	Foraging	NW	800	82	West	No	-96.3120	64.9306			No	Exceeded	Road closed
Road	2023-04-06 8:20 AM	Yes	Caribou	800	Walking	SE	0	84	West	Yes	-96.2828	64.9366			No	Exceeded	Road closed
Road	2023-04-06 8:20 AM	Yes	Caribou	300	Walking	NE	200	83	West	No	-96.3011	64.9350			No	Exceeded	Road closed
Road	2023-04-07 5:11 AM	Yes	Caribou	390	Foraging	N/A	200	96	West	No	-96.1809	65.0181			No	Exceeded	Road closed
Road	2023-04-07 5:11 AM	Yes	Caribou	900	Foraging	S	0	87	Both	Yes	-96.2410	64.9542			No	Exceeded	Road closed
Road	2023-04-07 5:11 AM	Yes	Caribou	8	Walking	N	200	69	Both	Yes	-96.3143	64.8277			No	Not Exceeded	
Road	2023-04-08 6:15 AM	Yes	Caribou	1100	Walking	N	1	92	Both	No	-96.2219	64.9943			No	Exceeded	Road closed
Road	2023-04-08 6:15 AM	Yes	Caribou	80	Walking	S	900	79	West	No	-96.3149	64.9095			No	Exceeded	Road closed
Road	2023-04-08 6:15 AM	Yes	Caribou	180	Foraging	NE	800	75	West	No	-96.3361	64.8795			No	Exceeded	Road closed
Road	2023-04-08 6:15 AM	Yes	Caribou	400	Walking	SW	800	69	West	No	-96.3143	64.8277			No	Exceeded	Road closed
Road	2023-04-08 6:15 AM	Yes	Caribou	290	Foraging	SE	90	66	West	No	-96.3350	64.8045			No	Exceeded	Road closed
Road	2023-04-08 6:15 AM	Yes	Caribou	380	Foraging	N/A	30	64	West	No	-96.3400	64.7867			No	Exceeded	Road closed
Road	2023-04-08 6:15 AM	Yes	Caribou	400	Resting	S	120	60	West	No	-96.3636	64.7555			No	Exceeded	Road closed
Road	2023-04-08 6:15 AM	Yes	Caribou	250	Foraging	S	900	49	West	No	-96.3707	64.6688			No	Exceeded	Road closed
Road	2023-04-09 4:40 PM	Yes	Caribou	390	Walking	NE	900	93	West	No	-96.2220	65.0008			No	Exceeded	Road closed
Road	2023-04-09 4:40 PM	Yes	Caribou	400	Walking	NE	700	90	West	No	-96.2221	64.9750			No	Exceeded	Road closed
Road	2023-04-09 4:40 PM	Yes	Caribou	50	Walking	NE	300	86	West	No	-96.2528	64.9468			No	Exceeded	Road closed
Road	2023-04-09 4:40 PM	Yes	Caribou	200	Walking	E	300	79	East	No	-96.3149	64.9095			No	Exceeded	Road closed
Road	2023-04-09 4:40 PM	Yes	Caribou	90	Walking	NE	1000	75	West	No	-96.3361	64.8795			No	Exceeded	Road closed
Road	2023-04-09 4:40 PM	Yes	Caribou	400	Feeding	N/A	100	65	Both	No	-96.3406	64.7948			No	Exceeded	Road closed
Road	2023-04-09 4:40 PM	Yes	Caribou	350	Foraging	NE	10	57	West	No	-96.3601	64.7314			No	Exceeded	Road closed
Road	2023-04-09 4:40 PM	Yes	Caribou	125	Walking	NE	800	44	West	No	-96.3035	64.6417			No	Exceeded	Road closed
Road	2023-04-09 4:40 PM	Yes	Caribou	300	Walking	NE	1000	29	West	No	-96.1813	64.5473			No	Exceeded	Road closed
Road	2023-04-10 8:48 AM	Yes	Caribou	22	Foraging	N/A	200	69	West	No	-96.3143	64.8277			No	Not Exceeded	
Road	2023-04-10 8:48 AM	Yes	Caribou	200	Foraging	S	560	67	West	No	-96.3262	64.8123			No	Exceeded	Closed just graders cleaning road for daily ride for the 11th
Road	2023-04-10 8:48 AM	Yes	Caribou	16	Walking	S	890	60	West	No	-96.3636	64.7555			No	Not Exceeded	
Road	2023-04-10 8:48 AM	Yes	Caribou	300	Foraging	N/A	350	58	West	No	-96.3579	64.7416			No	Exceeded	Road closed



Table A-1: Wildlife Observations along the All Weather Access Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2023-04-10 8:48 AM	Yes	Caribou	80	Walking	S	1000	36	West	No	-96.2619	64.5804			No	Exceeded	Road closed
Road	2023-04-10 8:48 AM	Yes	Caribou	380	Foraging	SE	390	15	West	No	-96.0525	64.4398			No	Exceeded	Road closed
Road	2023-04-11 5:01 AM	Yes	Caribou	157	Resting	N/A	200	74	West	No	-96.3303	64.8752			No	Exceeded	Road closed
Road	2023-04-11 5:01 AM	Yes	Caribou	18	Walking	N	120	66	West	No	-96.3350	64.8045			No	Not Exceeded	
Road	2023-04-11 5:01 AM	Yes	Caribou	280	Feeding	Not Recorded	250	57	West	No	-96.3601	64.7314			No	Exceeded	Road closed
Road	2023-04-11 5:01 AM	Yes	Caribou	83	Walking	S	180	28	West	No	-96.1701	64.5413			No	Exceeded	Roads closed
Road	2023-04-11 5:01 AM	Yes	Wolverine	1	Trotting/running	Not Recorded	100	52	West	No	-96.3774	64.7009			No	Not Exceeded	
Road	2023-04-12 7:02 AM	Yes	Muskox	11	Feeding	Not Recorded	160	95	West	No	-96.1952	65.0129			No	Not Exceeded	
Road	2023-04-12 7:02 AM	Yes	Caribou	3	Standing	Not Recorded	560	94	West	No	-96.2127	65.0075			No	Not Exceeded	
Road	2023-04-12 7:02 AM	Yes	Caribou	28	Walking	N	180	92	West	No	-96.2219	64.9943			No	Not Exceeded	
Road	2023-04-12 7:02 AM	Yes	Caribou	178	Feeding	Not Recorded	300	87	West	No	-96.2410	64.9542			No	Exceeded	Road still closed
Road	2023-04-12 7:02 AM	Yes	Caribou	9	Walking	E	0	74	East	Yes	-96.3303	64.8752			No	Not Exceeded	
Road	2023-04-12 7:02 AM	Yes	Caribou	3	Walking	S	200	60	West	No	-96.3636	64.7555			No	Not Exceeded	
Road	2023-04-12 7:02 AM	Yes	Caribou	144	Walking	E	80	56	West	Yes	-96.3514	64.7259			No	Exceeded	Road closed
Road	2023-04-12 7:02 AM	Yes	Wolverine	1	Running	Not Recorded	200	56	Both	No	-96.3514	64.7259			No	Not Exceeded	
Road	2023-04-12 7:02 AM	Yes	Caribou	433	Feeding	Not Recorded	80	51	West	No	-96.3791	64.6932			No	Exceeded	Road closed
Road	2023-04-12 7:02 AM	Yes	Caribou	97	Walking	S	2000	34	West	No	-96.2405	64.5687			No	Exceeded	Roads closed
Road	2023-04-14 5:28 AM	Yes	Caribou	10	Lying Down	N/A	500	97	East	N/A	-96.1711	65.0259			No	Not Exceeded	
Road	2023-04-14 5:28 AM	Yes	Caribou	93	Walking	E	500	93	West	No	-96.2220	65.0008			No	Exceeded	Road closed
Road	2023-04-14 8:01 AM	Yes	Caribou	66	Foraging	Not Recorded	240	96	West	No	-96.1809	65.0181			No	Exceeded	Roads still closed
Road	2023-04-14 8:01 AM	Yes	Caribou	19	Feeding	Not Recorded	400	94	West	No	-96.2127	65.0075			No	Not Exceeded	
Road	2023-04-14 8:01 AM	Yes	Caribou	125	Feeding	Not Recorded	280	92	West	No	-96.2219	64.9943			No	Exceeded	Roads still closed
Road	2023-04-14 8:01 AM	Yes	Caribou	11	Feeding	Not Recorded	300	85	West	No	-96.2614	64.9389			No	Not Exceeded	
Road	2023-04-14 8:01 AM	Yes	Caribou	15	Walking	N	500	83	West	No	-96.3011	64.9350			No	Not Exceeded	
Road	2023-04-14 8:01 AM	Yes	Caribou	11	Walking	NW	350	69	West	No	-96.3143	64.8277			No	Not Exceeded	
Road	2023-04-14 8:01 AM	Yes	Caribou	62	Walking	SE	270	42	West	Yes	-96.2949	64.6276			No	Exceeded	Roads still closed
Incidental	2023-04-14 1:21 PM	Yes	Caribou	27	Walking	S	500	27	East	No	-96.1612	64.5322			No	Not Exceeded	
Incidental	2023-04-14 1:21 PM	Yes	Caribou	10	Standing	N/A	800	94	West	No	-96.2127	65.0075			No	Not Exceeded	
Incidental	2023-04-14 1:21 PM	Yes	Caribou	10	Walking	E	1500	93	East	No	-96.2220	65.0008			No	Not Exceeded	
Incidental	2023-04-14 1:21 PM	Yes	Caribou	18	Feeding	N/A	500	71	East	No	-96.3197	64.8447			No	Not Exceeded	
Incidental	2023-04-14 1:21 PM	Yes	Caribou	19	Walking	S	500	82	East	No	-96.3120	64.9306			No	Not Exceeded	
Incidental	2023-04-14 1:26 PM	Yes	Caribou	11	Walking	S	270	53	West	No	-96.3731	64.7061			No	Not Exceeded	
Incidental	2023-04-14 1:26 PM	Yes	Caribou	8	Walking	S	440	61	West	No	-96.3547	64.7633			No	Not Exceeded	
Incidental	2023-04-14 1:26 PM	Yes	Caribou	30	Walking	S	220	69	West	No	-96.3143	64.8277			No	Not Exceeded	
Incidental	2023-04-14 1:26 PM	Yes	Caribou	47	Walking	E	1000	96	West	No	-96.1809	65.0181			No	Exceeded	Roads closed
Incidental	2023-04-14 1:26 PM	Yes	Caribou	9	Walking	E	400	101	West	No	-96.1403	65.0567			No	Not Exceeded	
Incidental	2023-04-14 1:26 PM	Yes	Caribou	302	Walking	SE	120	103	East	N/A	-96.1108	65.0489			No	Exceeded	Road closed
Road	2023-04-15 6:09 AM	Yes	Caribou	57	Standing	N/A	80	96	West	No	-96.1809	65.0181			No	Exceeded	Road closed
Road	2023-04-15 6:09 AM	Yes	Caribou	3	Standing	N/A	1000	82	West	No	-96.3120	64.9306			No	Not Exceeded	
Road	2023-04-15 6:09 AM	Yes	Caribou	10	Walking	S	1000	21	West	No	-96.1045	64.4869			No	Not Exceeded	
Incidental	2023-04-15 3:15 PM	Yes	Caribou	120	Standing	N/A	200	91	West	No	-192.2270	N/A			No	Exceeded	Road closed
Road	2023-04-16 5:05 AM	Yes	Caribou	12	Standing	Not Recorded	400	95	West	No	-96.1952	65.0129			No	Not Exceeded	
Road	2023-04-16 5:05 AM	Yes	Caribou	26	Standing	Not Recorded	600	93	West	No	-96.2220	65.0008			No	Not Exceeded	
Road	2023-04-16 5:05 AM	Yes	Caribou	102	Walking	S	300	88	West	N/A	-96.2206	64.9581			No	Exceeded	Roads still closed
Road	2023-04-16 5:05 AM	Yes	Caribou	26	Walking	N	700	80	West	N/A	-96.3062	64.9171			No	Not Exceeded	
Road	2023-04-16 5:05 AM	Yes	Caribou	69	Walking	S	800	77	West	No	-96.3391	64.8951			No	Exceeded	Roads still closed
Road	2023-04-16 5:05 AM	Yes	Caribou	36	Walking	S	500	75	West	No	-96.3361	64.8795			No	Exceeded	Roads still closed
Road	2023-04-16 5:05 AM	Yes	Caribou	55	Walking	SE	200	55	West	N/A	-96.3460	64.7185			No	Exceeded	Roads still closed
Road	2023-04-16 5:05 AM	Yes	Caribou	5	Standing	Not Recorded	150	51	West	No	-96.3791	64.6932			No	Not Exceeded	
Incidental	2023-04-16 9:16 AM	Yes	Caribou	34	Walking	SW	600	31	West	No	-96.1957	64.5543			No	Exceeded	Roads still closed



Table A-1: Wildlife Observations along the All Weather Access Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Incidental	2023-04-16 9:16 AM	Yes	Caribou	37	Walking	SW	500	37	West	No	-96.2690	64.5842			No	Exceeded	Roads still closed
Incidental	2023-04-16 9:16 AM	Yes	Caribou	204	Walking	E	1100	79	East	No	-96.3149	64.9095			No	Exceeded	Roads still closed
Incidental	2023-04-16 9:16 AM	Yes	Caribou	29	Walking	E	200	86	West	No	-96.2528	64.9468			No	Not Exceeded	
Incidental	2023-04-16 9:16 AM	Yes	Caribou	46	Walking	SW	300	87	West	No	-96.2410	64.9542			No	Exceeded	Roads still closed
Incidental	2023-04-16 9:16 AM	Yes	Caribou	134	Standing	Not Recorded	100	96	West	No	-96.1809	65.0181			No	Exceeded	Roads still closed
Incidental	2023-04-16 1:56 PM	Yes	Caribou	24	Foraging	N/A	200	95	East	N/A	-96.1952	65.0129			No	Not Exceeded	
Incidental	2023-04-16 1:56 PM	Yes	Caribou	84	Walking	W	300	94	West	Yes	-96.2127	65.0075			No	Exceeded	Road closed
Incidental	2023-04-16 1:56 PM	Yes	Caribou	54	Walking	S	2000	93	West	No	-96.2220	65.0008			No	Exceeded	Road closed
Incidental	2023-04-16 1:56 PM	Yes	Caribou	46	Feeding	N/A	800	88	West	N/A	-96.2206	64.9581			No	Exceeded	Road closed
Incidental	2023-04-16 1:56 PM	Yes	Caribou	122	Foraging	N/A	400	85	West	N/A	-96.2614	64.9389			No	Exceeded	Road closed
Incidental	2023-04-16 1:56 PM	Yes	Caribou	148	Walking	S	800	101	West	No	-96.1403	65.0567			No	Exceeded	Road closed
Road	2023-04-17 5:34 AM	Yes	Caribou	12	Feeding	Not Recorded	900	96	West	No	-96.1809	65.0181			No	Not Exceeded	
Road	2023-04-17 5:34 AM	Yes	Caribou	126	Feeding	Not Recorded	200	95	West	No	-96.1952	65.0129			No	Exceeded	Roads still closed
Road	2023-04-17 5:34 AM	Yes	Caribou	38	Walking	SW	700	93	West	No	-96.2220	65.0008			No	Exceeded	Roads still closed
Road	2023-04-17 5:34 AM	Yes	Caribou	62	Standing	Not Recorded	300	91	West	No	-96.2249	64.9847			No	Exceeded	Road closed
Road	2023-04-17 5:34 AM	Yes	Caribou	116	Standing	Not Recorded	800	89	West	No	-96.2196	64.9674			No	Exceeded	Road closed
Road	2023-04-17 5:34 AM	Yes	Caribou	41	Walking	Not Recorded	1	87	Both	Yes	-96.2410	64.9542			No	Exceeded	Road closed
Road	2023-04-17 5:34 AM	Yes	Caribou	5	Walking	NE	400	86	West	No	-96.2528	64.9468			No	Not Exceeded	
Road	2023-04-17 5:34 AM	Yes	Caribou	161	Walking	E	0	81	Both	Yes	-96.3021	64.9252			No	Exceeded	Road closed
Road	2023-04-17 5:34 AM	Yes	Caribou	11	Walking	NE	200	80	West	No	-96.3062	64.9171			No	Not Exceeded	
Road	2023-04-17 5:34 AM	Yes	Muskox	27	Resting	Not Recorded	1600	53	West	No	-96.3731	64.7061			No	Exceeded	Road still closed
Road	2023-04-17 5:34 AM	Yes	Caribou	166	Feeding	Not Recorded	2	36	West	N/A	-96.2619	64.5804			No	Exceeded	Road closed
Incidental	2023-04-17 11:24 AM	Yes	Caribou	200	Walking	SW	300	66	West	No	-96.3350	64.8045			No	Exceeded	Road closed
Incidental	2023-04-17 11:24 AM	Yes	Caribou	178	Walking	SW	700	71	West	No	-96.3197	64.8447			No	Exceeded	Road closed
Road	2023-04-18 4:54 AM	Yes	Caribou	31	Lying Down	Not Recorded	500	94	West	No	-96.2127	65.0075			No	Not Exceeded	
Road	2023-04-18 4:54 AM	Yes	Caribou	36	Walking	S	700	91	West	No	-96.2249	64.9847			No	Exceeded	Road closed
Road	2023-04-18 4:54 AM	Yes	Caribou	22	Standing	Not Recorded	900	89	West	No	-96.2196	64.9674			No	Not Exceeded	
Road	2023-04-18 4:54 AM	Yes	Caribou	17	Feeding	Not Recorded	150	87	West	No	-96.2410	64.9542			No	Not Exceeded	
Road	2023-04-18 4:54 AM	Yes	Caribou	10	Feeding	S	300	84	East	No	-96.2828	64.9366			No	Not Exceeded	
Road	2023-04-18 4:54 AM	Yes	Caribou	56	Standing	Not Recorded	900	83	West	No	-96.3011	64.9350			No	Exceeded	Road still closed
Road	2023-04-18 4:54 AM	Yes	Caribou	84	Standing	S	800	80	West	No	-96.3062	64.9171			No	Exceeded	Road still closed
Road	2023-04-18 4:54 AM	Yes	Caribou	31	Walking	S	900	61	West	No	-96.3547	64.7633			No	Not Exceeded	
Road	2023-04-18 4:54 AM	Yes	Caribou	37	Running	S	1000	60	West	No	-96.3636	64.7555			No	Exceeded	Road still closed
Road	2023-04-18 4:54 AM	Yes	Caribou	108	Walking	SW	800	58	West	No	-96.3579	64.7416			No	Exceeded	Road still closed
Road	2023-04-18 4:54 AM	Yes	Caribou	92	Walking	S	600	53	West	No	-96.3731	64.7061			No	Exceeded	Road still closed
Road	2023-04-18 4:54 AM	Yes	Caribou	62	Walking	S	600	48	West	No	-96.3688	64.6642			No	Exceeded	Road still closed
Incidental	2023-04-18 9:33 AM	Yes	Caribou	202	Walking	E	0	61	West,East	Yes	-96.3547	64.7633			No	Exceeded	Road still closed
Road	2023-04-19 8:15 AM	Yes	Caribou	3	Foraging	W	500	89	West	No	-96.2196	64.9674			No	Not Exceeded	
Road	2023-04-19 8:15 AM	Yes	Caribou	13	Foraging	N	500	84	West	No	-96.2828	64.9366			No	Not Exceeded	
Road	2023-04-19 8:15 AM	Yes	Caribou	8	Walking	E	375	72	East	No	-96.3238	64.8539			No	Not Exceeded	
Road	2023-04-19 8:15 AM	Yes	Caribou	49	Foraging	N/A	400	70	West	No	-96.3165	64.8365			No	Exceeded	Road closed
Road	2023-04-19 8:15 AM	Yes	Caribou	5	Foraging	N/A	600	68	West	No	-96.3268	64.8203			No	Not Exceeded	
Road	2023-04-19 8:15 AM	Yes	Caribou	36	Foraging	N/A	750	64	West	No	-96.3400	64.7867			No	Exceeded	Road closed
Road	2023-04-19 8:15 AM	Yes	Caribou	12	Foraging	S	500	62	West	No	-96.3444	64.7737			No	Not Exceeded	
Road	2023-04-19 8:15 AM	Yes	Caribou	340	Foraging	N	650	59	West	No	-96.3706	64.7495			No	Exceeded	Road closed
Road	2023-04-20 7:10 AM	Yes	Caribou	4	Feeding	Not Recorded	900	96	West	No	-96.1809	65.0181			No	Not Exceeded	





Table A-1: Wildlife Observations along the All Weather Access Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2023-04-20 7:10 AM	Yes	Caribou	34	Feeding	Not Recorded	500	87	West	No	-96.2410	64.9542			No	Exceeded	Road still closed
Road	2023-04-20 7:10 AM	Yes	Caribou	5	Walking	SE	1300	73	East	No	-96.3242	64.8621			No	Not Exceeded	
Road	2023-04-20 7:10 AM	Yes	Caribou	3	Foraging	E	700	67	East	No	-96.3262	64.8123			No	Not Exceeded	
Road	2023-04-20 7:10 AM	Yes	Caribou	7	Feeding	Not Recorded	1500	65	West	No	-96.3406	64.7948			No	Not Exceeded	
Road	2023-04-20 7:10 AM	Yes	Caribou	39	Standing	Not Recorded	1000	50	West	No	-96.3731	64.6794			No	Exceeded	Road closed
Road	2023-04-20 7:10 AM	Yes	Caribou	82	Feeding	Not Recorded	800	49	West	No	-96.3707	64.6688			No	Exceeded	Road closed
Road	2023-04-20 7:10 AM	Yes	Caribou	27	Walking	SE	600	22	West	No	-96.1126	64.4935			No	Not Exceeded	
Incidental	2023-04-20 12:07 PM	Yes	Caribou	50	Walking	SW	400	63	West	No	-96.3444	64.7793			No	Exceeded	Road closed
Road	2023-04-21 5:12 AM	Yes	Muskox	12	Resting	Not Recorded	200	95	East	No	-96.1952	65.0129			No	Not Exceeded	
Road	2023-04-21 5:12 AM	Yes	Caribou	3	Standing	NE	400	91	West	No	-96.2249	64.9847			No	Not Exceeded	
Road	2023-04-21 5:12 AM	Yes	Caribou	11	Walking	SW	450	86	West	No	-96.2528	64.9468			No	Not Exceeded	
Road	2023-04-21 5:12 AM	Yes	Caribou	166	Standing	Not Recorded	300	57	West	No	-96.3601	64.7314			No	Exceeded	Road closed
Incidental	2023-04-21 10:12 AM	Yes	Caribou	43	Walking	SW	120	22	West	No	-96.1126	64.4935			No	Exceeded	Road closed
Incidental	2023-04-21 10:12 AM	Yes	Caribou	6	Walking	SE	180	44	West	No	-96.3035	64.6417			No	Not Exceeded	
Incidental	2023-04-21 10:12 AM	Yes	Caribou	6	Walking	E	10	71	East	Yes	-96.3197	64.8447			No	Not Exceeded	
Incidental	2023-04-21 10:12 AM	Yes	Caribou	41	Walking	S	200	72	West	No	-96.3238	64.8539			No	Exceeded	Road still closed
Incidental	2023-04-21 10:12 AM	Yes	Caribou	125	Walking	SW	200	74	West	No	-96.3303	64.8752			No	Exceeded	Road still closed
Incidental	2023-04-21 10:12 AM	Yes	Caribou	82	Standing	Not Recorded	540	79	West	No	-96.3149	64.9095			No	Exceeded	Road still closed
Incidental	2023-04-21 10:12 AM	Yes	Caribou	56	Standing	Not Recorded	500	87	West	No	-96.2410	64.9542			No	Exceeded	Road closed
Incidental	2023-04-21 10:12 AM	Yes	Caribou	32	Walking	NW	600	93	West	No	-96.2220	65.0008			No	Not Exceeded	
Incidental	2023-04-21 5:39 PM	Yes	Caribou	70	Feeding	N/A	20	85	West	No	-96.2614	64.9389			No	Exceeded	Road closed
Road	2023-04-22 6:44 AM	Yes	Caribou	107	Standing	Not Recorded	300	98	West	No	-96.1576	65.0325			No	Exceeded	Road closed
Road	2023-04-22 6:44 AM	Yes	Caribou	14	Standing	Not Recorded	400	93	West	No	-96.2220	65.0008			No	Not Exceeded	
Road	2023-04-22 6:44 AM	Yes	Caribou	71	Walking	NW	400	92	West	No	-96.2219	64.9943			No	Exceeded	Road closed
Road	2023-04-22 6:44 AM	Yes	Caribou	7	Walking	SE	400	88	East	No	-96.2206	64.9581			No	Not Exceeded	
Road	2023-04-22 6:44 AM	Yes	Caribou	47	Standing	Not Recorded	350	87	West	No	-96.2410	64.9542			No	Exceeded	Road closed
Road	2023-04-22 6:44 AM	Yes	Caribou	41	Feeding	N/A	500	80	West	No	-96.3062	64.9171			No	Exceeded	Road closed
Road	2023-04-22 6:44 AM	Yes	Caribou	64	Walking	SW	700	78	West	No	-96.3244	64.9032			No	Exceeded	Road closed
Road	2023-04-22 6:44 AM	Yes	Caribou	20	Walking	SW	500	36	West	No	-96.2619	64.5804			No	Not Exceeded	
Road	2023-04-22 6:44 AM	Yes	Caribou	11	Walking	W	500	26	West	No	-96.1615	64.5235			No	Not Exceeded	
Road	2023-04-22 6:44 AM	Yes	Caribou	67	Resting	Not Recorded	600	54	West	No	-96.3584	64.7132			No	Exceeded	Road closed
Incidental	2023-04-22 8:44 AM	Yes	Muskox	19	Foraging	N/A	200	98	East	No	-96.1576	65.0325			No	Exceeded	Road was already closed
Incidental	2023-04-22 8:44 AM	Yes	Caribou	89	Alert	NW	200	104	West	No	-96.0972	65.0446			No	Exceeded	Road closed
Incidental	2023-04-22 12:10 PM	Yes	Caribou	57	Walking	S	600	65	West	No	-96.3406	64.7948			No	Exceeded	Road closed
Incidental	2023-04-22 12:10 PM	Yes	Caribou	50	Standing	NE	740	82	West	No	-96.3120	64.9306			No	Exceeded	Road closed
Road	2023-04-23 6:58 AM	Yes	Caribou	6	Standing	NE	200	101	West	No	-96.1403	65.0567			No	Not Exceeded	
Road	2023-04-23 6:58 AM	Yes	Caribou	33	Feeding	Not Recorded	350	95	West	No	-96.1952	65.0129			No	Not Exceeded	
Road	2023-04-23 6:58 AM	Yes	Caribou	4	Foraging	Not Recorded	500	94	West	No	-96.2127	65.0075			No	Not Exceeded	
Road	2023-04-23 6:58 AM	Yes	Caribou	117	Feeding	Not Recorded	150	93	Both	No	-96.2220	65.0008			No	Exceeded	Road closed
Road	2023-04-23 6:58 AM	Yes	Caribou	97	Walking	Not Recorded	100	89	Both	No	-96.2196	64.9674			No	Exceeded	Road closed
Road	2023-04-23 6:58 AM	Yes	Caribou	284	Feeding	Not Recorded	50	85	Both	No	-96.2614	64.9389			No	Exceeded	Road closed
Road	2023-04-23 6:58 AM	Yes	Caribou	3	Walking	NW	300	83	West	No	-96.3011	64.9350			No	Not Exceeded	
Road	2023-04-23 6:58 AM	Yes	Caribou	41	Walking	E	200	81	West	No	-96.3021	64.9252			No	Exceeded	Road closed
Road	2023-04-23 6:58 AM	Yes	Caribou	157	Walking	E	0	79	Both	Yes	-96.3149	64.9095			No	Exceeded	Road closed
Road	2023-04-23 6:58 AM	Yes	Caribou	29	Walking	Not Recorded	500	64	West	No	-96.3400	64.7867			No	Not Exceeded	
Road	2023-04-23 6:58 AM	Yes	Caribou	6	Walking	E	200	60	East	No	-96.3636	64.7555			No	Not Exceeded	
Road	2023-04-23 6:58 AM	Yes	Caribou	38	Walking	SE	200	42	West	No	-96.2949	64.6276			No	Exceeded	Road closed
Road	2023-04-24 7:29 AM	Yes	Caribou	11	Feeding	Not Recorded	50	106	East	No	-96.0829	65.0271			No	Not Exceeded	
Road	2023-04-24 7:29 AM	Yes	Caribou	60	Walking	NE	1100	98	West	No	-96.1576	65.0325			No	Exceeded	Road closed
Road	2023-04-24 7:29 AM	Yes	Caribou	110	Walking	NE	1400	94	West	No	-96.2127	65.0075			No	Exceeded	Road closed
Road	2023-04-24 7:29 AM	Yes	Caribou	57	Walking	NE	700	93	West	No	-96.2220	65.0008			No	Exceeded	Road closed
Road	2023-04-24 7:29 AM	Yes	Caribou	75	Resting	Not Recorded	400	92	West	No	-96.2219	64.9943			No	Exceeded	Road closed
Road	2023-04-24 7:29 AM	Yes	Caribou	69	Walking	Not Recorded	200	91	Both	No	-96.2249	64.9847			No	Exceeded	Road closed
Road	2023-04-24 7:29 AM	Yes	Caribou	195	Walking	NE	800	89	West	No	-96.2196	64.9674			No	Exceeded	Road closed
Road	2023-04-24 7:29 AM	Yes	Caribou	33	Walking	SW	700	82	West	No	-96.3120	64.9306			No	Not Exceeded	

Table A-1: Wildlife Observations along the All Weather Access Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2023-04-24 7:29 AM	Yes	Caribou	136	Feeding	Not Recorded	500	80	West	No	-96.3062	64.9171			No	Exceeded	Road closed
Road	2023-04-24 7:29 AM	Yes	Caribou	158	Walking	S	540	71	West	No	-96.3197	64.8447			No	Exceeded	Road closed
Road	2023-04-24 7:29 AM	Yes	Caribou	493	Standing	Not Recorded	100	69	West	N/A	-96.3143	64.8277			No	Exceeded	Road closed
Road	2023-04-24 7:29 AM	Yes	Caribou	17	Standing	Not Recorded	634	66	West	No	-96.3350	64.8045			No	Not Exceeded	
Road	2023-04-24 7:29 AM	Yes	Caribou	56	Walking	S	700	61	West	No	-96.3547	64.7633			No	Exceeded	Road closed
Road	2023-04-24 7:29 AM	Yes	Caribou	43	Standing	Not Recorded	840	57	West	No	-96.3601	64.7314			No	Exceeded	Road closed
Incidental	2023-04-24 5:14 PM	Yes	Caribou	70	Walking	SW	740	57	West	No	-96.3601	64.7314			No	Exceeded	Road closed
Incidental	2023-04-24 5:14 PM	Yes	Caribou	162	Walking	E	0	60	West,East	Yes	-96.3636	64.7555			No	Exceeded	Road closed
Incidental	2023-04-24 5:14 PM	Yes	Caribou	24	Walking	S	600	82	West	No	-96.3120	64.9306			No	Not Exceeded	
Incidental	2023-04-24 5:14 PM	Yes	Caribou	9	Feeding	Not Recorded	100	86	East	No	-96.2528	64.9468			No	Not Exceeded	
Incidental	2023-04-24 5:14 PM	Yes	Caribou	67	Walking	NW	500	89	West	No	-96.2196	64.9674			No	Exceeded	Road closed
Incidental	2023-04-24 5:14 PM	Yes	Caribou	112	Walking	NE	600	93	West	No	-96.2220	65.0008			No	Exceeded	Road closed
Incidental	2023-04-24 5:14 PM	Yes	Caribou	43	Walking	NE	700	94	West	No	-96.2127	65.0075			No	Exceeded	Road closed
Road	2023-04-25 6:53 AM	Yes	Caribou	102	Walking	NE	300	97	West	No	-96.1711	65.0259			No	Exceeded	Road closed
Road	2023-04-25 6:53 AM	Yes	Caribou	111	Lying Down	Not Recorded	200	95	West	No	-96.1952	65.0129			No	Exceeded	Road closed
Road	2023-04-25 6:53 AM	Yes	Caribou	78	Standing	Not Recorded	400	93	West	No	-96.2220	65.0008			No	Exceeded	Road closed
Road	2023-04-25 6:53 AM	Yes	Caribou	85	Walking	SE	340	91	Both	No	-96.2249	64.9847			No	Exceeded	Road closed
Road	2023-04-25 6:53 AM	Yes	Caribou	44	Feeding	Not Recorded	800	89	West	No	-96.2196	64.9674			No	Exceeded	Road closed
Road	2023-04-25 6:53 AM	Yes	Caribou	5	Feeding	Not Recorded	300	86	East	No	-96.2528	64.9468			No	Not Exceeded	
Road	2023-04-25 6:53 AM	Yes	Caribou	23	Walking	S	600	81	West	No	-96.3021	64.9252			No	Not Exceeded	
Road	2023-04-25 6:53 AM	Yes	Caribou	143	Walking	E	900	78	West	No	-96.3244	64.9032			No	Exceeded	Road closed
Road	2023-04-25 6:53 AM	Yes	Caribou	41	Walking	S	700	74	West	No	-96.3303	64.8752			No	Exceeded	Road closed
Road	2023-04-25 6:53 AM	Yes	Caribou	16	Walking	E	500	68	East	No	-96.3268	64.8203			No	Not Exceeded	
Road	2023-04-25 6:53 AM	Yes	Caribou	65	Walking	S	600	61	West	No	-96.3547	64.7633			No	Exceeded	Road closed
Road	2023-04-25 6:53 AM	Yes	Caribou	43	Walking	SW	500	56	West	No	-96.3514	64.7259			No	Exceeded	Road closed
Road	2023-04-25 6:53 AM	Yes	Caribou	38	Walking	SW	840	47	West	No	-96.3466	64.6580			No	Exceeded	Road closed
Road	2023-04-26 6:59 AM	Yes	Caribou	31	Walking	S	200	22	West	No	-96.1126	64.4935			No	Not Exceeded	
Road	2023-04-26 6:59 AM	Yes	Caribou	47	Standing	S	200	56	West	No	-96.3514	64.7259			No	Exceeded	Road closed
Road	2023-04-26 6:59 AM	Yes	Caribou	171	Walking	S	150	60	West	No	-96.3636	64.7555			No	Exceeded	Road closed
Road	2023-04-26 6:59 AM	Yes	Caribou	42	Walking	S	200	63	West	No	-96.3444	64.7793			No	Exceeded	Road closed
Road	2023-04-26 6:59 AM	Yes	Caribou	71	Walking	S	200	64	West	No	-96.3400	64.7867			No	Exceeded	Road closed
Road	2023-04-26 6:59 AM	Yes	Caribou	15	Walking	S	200	65	West	No	-96.3406	64.7948			No	Not Exceeded	
Road	2023-04-26 6:59 AM	Yes	Caribou	83	Walking	SW	200	69	West	No	-96.3143	64.8277			No	Exceeded	Road closed
Road	2023-04-26 6:59 AM	Yes	Caribou	14	Walking	S	200	70	West	No	-96.3165	64.8365			No	Not Exceeded	
Road	2023-04-26 6:59 AM	Yes	Caribou	36	Walking	S	600	72	West	No	-96.3238	64.8539			No	Exceeded	Road closed
Road	2023-04-26 6:59 AM	Yes	Caribou	101	Lying Down	Not Recorded	800	73	West	No	-96.3242	64.8621			No	Exceeded	Road closed
Road	2023-04-26 6:59 AM	Yes	Caribou	41	Walking	E	700	83	West	No	-96.3011	64.9350			No	Exceeded	Road closed
Road	2023-04-26 6:59 AM	Yes	Caribou	151	Feeding	Not Recorded	50	86	Both	N/A	-96.2528	64.9468			No	Exceeded	Road closed
Road	2023-04-26 6:59 AM	Yes	Caribou	91	Feeding	Not Recorded	300	87	Both	No	-96.2410	64.9542			No	Exceeded	Road closed
Road	2023-04-26 6:59 AM	Yes	Caribou	132	Standing	Not Recorded	200	96	West	No	-96.1809	65.0181			No	Exceeded	Road closed
Road	2023-04-27 6:25 AM	Yes	Caribou	3	Standing	N/A	150	100	East	No	-96.1465	65.0488			No	Not Exceeded	
Road	2023-04-27 6:25 AM	Yes	Caribou	96	Standing	N/A	200	96	West	No	-96.1809	65.0181			No	Exceeded	Road closed
Road	2023-04-27 6:25 AM	Yes	Caribou	5	Standing	N/A	300	95	West	No	-96.1952	65.0129			No	Not Exceeded	
Road	2023-04-27 6:25 AM	Yes	Caribou	12	Standing	N/A	150	94	West	No	-96.2127	65.0075			No	Not Exceeded	
Road	2023-04-27 6:25 AM	Yes	Muskox	12	Running	N	20	95	East	No	-96.1952	65.0129			No	Not Exceeded	
Road	2023-04-27 6:25 AM	Yes	Caribou	12	Standing	N/A	300	93	West	No	-96.2220	65.0008			No	Not Exceeded	
Road	2023-04-27 6:25 AM	Yes	Caribou	25	Standing	N/A	200	92	Both	No	-96.2219	64.9943			No	Not Exceeded	
Road	2023-04-27 6:25 AM	Yes	Caribou	13	Walking	N	100	90	West	No	-96.2221	64.9750			No	Not Exceeded	
Road	2023-04-27 6:25 AM	Yes	Caribou	120	Foraging	N/A	500	89	West	No	-96.2196	64.9674			No	Exceeded	Road closed
Road	2023-04-27 6:25 AM	Yes	Caribou	334	Lying Down	N/A	500	88	West	No	-96.2206	64.9581			No	Exceeded	Road closed
Road	2023-04-27 6:25 AM	Yes	Caribou	34	Standing	N/A	200	87	Both	No	-96.2410	64.9542			No	Exceeded	Road closed
Road	2023-04-27 6:25 AM	Yes	Caribou	29	Standing	N/A	400	86	West	No	-96.2528	64.9468			No	Not Exceeded	
Road	2023-04-27 6:25 AM	Yes	Caribou	63	Foraging	N/A	600	95	West	No	-96.1952	65.0129			No	Exceeded	Road closed
Road	2023-04-27 6:25 AM	Yes	Caribou	4	Standing	N/A	600	79	West	No	-96.3149	64.9095			No	Not Exceeded	
Road	2023-04-27 6:25 AM	Yes	Caribou	26	Running	S	400	76	West	No	-96.3457	64.8879			No	Not Exceeded	
Road	2023-04-27 6:25 AM	Yes	Caribou	32	Walking	S	700	72	West	No	-96.3238	64.8539			No	Not Exceeded	
Road	2023-04-27 6:25 AM	Yes	Caribou	132	Foraging	N/A	100	69	West	No	-96.3143	64.8277			No	Exceeded	Road closed
Road	2023-04-27 6:25 AM	Yes	Caribou	149	Walking	S	200	66	West	No	-96.3350	64.8045			No	Exceeded	Road closed
Road	2023-04-27 6:25 AM	Yes	Caribou	161	Foraging	N/A	800	65	East	No	-96.3406	64.7948			No	Exceeded	Road closed
Road	2023-04-27 6:25 AM	Yes	Caribou	148	Walking	S	150	64	West	No	-96.3400	64.7867			No	Exceeded	Road closed





Table A-1: Wildlife Observations along the All Weather Access Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2023-04-27 6:25 AM	Yes	Caribou	21	Walking	S	150	63	West	No	-96.3444	64.7793			No	Not Exceeded	
Road	2023-04-27 6:25 AM	Yes	Caribou	7	Foraging	N/A	900	58	West	No	-96.3579	64.7416			No	Not Exceeded	
Road	2023-04-27 6:25 AM	Yes	Caribou	282	Standing	N/A	150	57	West	No	-96.3601	64.7314			No	Exceeded	Road closed
Road	2023-04-27 6:25 AM	Yes	Caribou	154	Walking	S	400	53	West	No	-96.3731	64.7061			No	Exceeded	Road closed
Road	2023-04-27 6:25 AM	Yes	Caribou	50	Running	S	300	42	West	No	-96.2949	64.6276			No	Exceeded	Road closed
Road	2023-04-27 6:25 AM	Yes	Caribou	256	Walking	S	250	41	West	No	-96.2811	64.6203			No	Exceeded	Road closed
Road	2023-04-27 6:25 AM	Yes	Caribou	105	Walking	S	300	22	West	No	-96.1126	64.4935			No	Exceeded	Road closed
Incidental	2023-04-27 12:02 PM	Yes	Caribou	48	Foraging	N/A	600	114	West	No	-96.0042	65.0668			No	Exceeded	Road closed
Incidental	2023-04-27 12:02 PM	Yes	Caribou	184	Walking	S	400	28	West	No	-96.1701	64.5413			No	Exceeded	Road closed
Incidental	2023-04-27 12:02 PM	Yes	Caribou	25	Walking	SW	300	34	West	No	-96.2405	64.5687			No	Not Exceeded	
Incidental	2023-04-27 12:02 PM	Yes	Caribou	64	Standing	N/A	400	36	West	No	-96.2619	64.5804			No	Exceeded	Road closed
Incidental	2023-04-27 12:02 PM	Yes	Caribou	83	Walking	S	300	38	West	No	-96.2758	64.5907			No	Exceeded	Road closed
Incidental	2023-04-27 12:02 PM	Yes	Caribou	37	Foraging	N/A	500	48	West	No	-96.3688	64.6642			No	Exceeded	Road closed
Incidental	2023-04-27 12:02 PM	Yes	Caribou	246	Foraging	N/A	100	54	West	No	-96.3584	64.7132			No	Exceeded	Road closed
Incidental	2023-04-27 12:02 PM	Yes	Caribou	57	Walking	W	1000	57	West	No	-96.3601	64.7314			No	Exceeded	Road closed
Incidental	2023-04-27 12:02 PM	Yes	Caribou	379	Walking	S	300	58	West	No	-96.3579	64.7416			No	Exceeded	Road closed
Incidental	2023-04-27 12:02 PM	Yes	Caribou	42	Foraging	N/A	300	62	West	No	-96.3444	64.7737			No	Exceeded	Road closed
Incidental	2023-04-27 12:02 PM	Yes	Caribou	35	Foraging	N/A	300	63	West	No	-96.3444	64.7793			No	Exceeded	Road closed
Incidental	2023-04-27 12:02 PM	Yes	Caribou	28	Standing	N/A	1000	65	West	No	-96.3406	64.7948			No	Not Exceeded	
Incidental	2023-04-27 12:02 PM	Yes	Caribou	12	Foraging	N/A	600	66	West	No	-96.3350	64.8045			No	Not Exceeded	
Incidental	2023-04-27 12:02 PM	Yes	Caribou	4	Standing	N/A	500	70	West	No	-96.3165	64.8365			No	Not Exceeded	
Incidental	2023-04-27 12:02 PM	Yes	Caribou	26	Foraging	N/A	1000	72	West	No	-96.3238	64.8539			No	Not Exceeded	
Incidental	2023-04-27 12:02 PM	Yes	Caribou	25	Foraging	N/A	1000	82	West	No	-96.3120	64.9306			No	Not Exceeded	
Incidental	2023-04-27 12:02 PM	Yes	Caribou	9	Foraging	N/A	700	86	West	No	-96.2528	64.9468			No	Not Exceeded	
Incidental	2023-04-27 12:02 PM	Yes	Caribou	84	Foraging	N/A	500	87	West	No	-96.2410	64.9542			No	Exceeded	Road closed
Incidental	2023-04-27 12:02 PM	Yes	Caribou	20	Foraging	N/A	700	93	West	No	-96.2220	65.0008			No	Not Exceeded	
Incidental	2023-04-27 12:02 PM	Yes	Caribou	11	Standing	N/A	300	96	West	No	-96.1809	65.0181			No	Not Exceeded	
Incidental	2023-04-27 12:02 PM	Yes	Caribou	3	Foraging	N/A	150	102	East	No	-96.1278	65.0517			No	Not Exceeded	
Road	2023-04-28 6:44 AM	Yes	Caribou	150	Resting	S	300	87	West	No	-96.2410	64.9542			No	Exceeded	Road closed
Road	2023-04-28 6:44 AM	Yes	Caribou	180	Walking	N	350	76	West	No	-96.3457	64.8879			No	Exceeded	Road closed
Road	2023-04-28 6:44 AM	Yes	Caribou	200	Foraging	N/A	2	73	West	No	-96.3242	64.8621			No	Exceeded	Road closed
Road	2023-04-28 6:44 AM	Yes	Caribou	44	Walking	N	800	56	West	No	-96.3514	64.7259			No	Exceeded	Road closed
Road	2023-04-28 6:44 AM	Yes	Caribou	70	Walking	SE	450	57	West	No	-96.3601	64.7314			No	Exceeded	Road closed
Road	2023-04-28 6:44 AM	Yes	Caribou	82	Walking	NE	400	37	West	No	-96.2690	64.5842			No	Exceeded	Road closed
Road	2023-04-28 6:44 AM	Yes	Caribou	270	Foraging	NE	500	32	West	No	-96.2045	64.5647			No	Exceeded	Road closed
Road	2023-04-28 6:44 AM	Yes	Caribou	85	Foraging	NE	700	24	West	No	-96.1365	64.5079			No	Exceeded	Road closed
Road	2023-04-28 6:44 AM	Yes	Caribou	96	Foraging	SE	50	22	West	No	-96.1126	64.4935			No	Exceeded	Road closed
Road	2023-04-28 6:44 AM	Yes	Caribou	450	Walking	NW	800	7	West	No	-96.0092	64.3726			No	Exceeded	Road closed
Road	2023-04-28 6:44 AM	Yes	Caribou	200	Foraging	SE	5	57	Both	No	-96.3601	64.7314			No	Exceeded	Road closed
Road	2023-04-29 8:06 AM	Yes	Caribou	6	Walking	N	100	100	West	No	-96.1465	65.0488			No	Not Exceeded	
Road	2023-04-29 8:06 AM	Yes	Caribou	210	Walking	S	0	89	Both	No	-96.2196	64.9674			No	Exceeded	Road closed
Road	2023-04-29 8:06 AM	Yes	Caribou	23	Walking	S	500	88	West	No	-96.2206	64.9581			No	Not Exceeded	
Road	2023-04-29 8:06 AM	Yes	Caribou	11	Feeding	N/A	300	87	West	No	-96.2410	64.9542			No	Not Exceeded	
Road	2023-04-29 8:06 AM	Yes	Caribou	73	Walking	NE	600	77	West	No	-96.3391	64.8951			No	Exceeded	Road closed
Road	2023-04-29 8:06 AM	Yes	Caribou	50	Resting	N/A	600	75	West	No	-96.3361	64.8795			No	Exceeded	Road closed
Road	2023-04-29 8:06 AM	Yes	Caribou	525	Resting	N/A	0	69	Both	No	-96.3143	64.8277			No	Exceeded	Road closed
Road	2023-04-30 7:00 AM	Yes	Caribou	10	Walking	S	200	67	West	No	-96.3262	64.8123			No	Not Exceeded	
Road	2023-04-29 8:06 AM	Yes	Caribou	39	Walking	S	700	65	West	No	-96.3406	64.7948			No	Exceeded	Road closed
Road	2023-04-29 8:06 AM	Yes	Caribou	12	Walking	SE	200	59	West	No	-96.3706	64.7495			No	Not Exceeded	
Road	2023-04-29 8:06 AM	Yes	Caribou	9	Standing	N/A	500	59	West	No	-96.3706	64.7495			No	Not Exceeded	
Road	2023-04-29 8:06 AM	Yes	Caribou	5	Walking	S	1200	35	West	No	-96.2443	64.5739			No	Not Exceeded	
Road	2023-04-30 7:00 AM	Yes	Caribou	4	Foraging	N/A	5	98	West	No	-96.1576	65.0325			No	Not Exceeded	
Road	2023-04-30 7:00 AM	Yes	Caribou	6	Foraging	N/A	300	93	West	No	-96.2220	65.0008			No	Not Exceeded	
Road	2023-04-30 7:00 AM	Yes	Caribou	50	Lying Down	N/A	330	91	West	No	-96.2249	64.9847			No	Exceeded	Road closed
Road	2023-04-30 7:00 AM	Yes	Caribou	45	Lying Down	N/A	230	89	East	No	-96.2196	64.9674			No	Exceeded	Road closed
Road	2023-04-30 7:00 AM	Yes	Caribou	60	Foraging	N/A	200	86	West	No	-96.2528	64.9468			No	Exceeded	Road closed
Road	2023-04-30 7:00 AM	Yes	Caribou	49	Foraging	SE	990	83	West	No	-96.3011	64.9350			No	Exceeded	Road closed
Road	2023-04-30 7:00 AM	Yes	Caribou	17	Foraging	SE	200	74	West	No	-96.3303	64.8752			No	Not Exceeded	
Road	2023-04-30 7:00 AM	Yes	Caribou	2	Foraging	W	150	68	West	No	-96.3268	64.8203			No	Not Exceeded	
Road	2023-04-30 7:00 AM	Yes	Caribou	4	Foraging	E	150	67	East	No	-96.3262	64.8123			No	Not Exceeded	



Table A-1: Wildlife Observations along the All Weather Access Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2023-04-30 7:00 AM	Yes	Wolf	1	Trotting/running	S	580	65	West	No	-96.3406	64.7948			No	Not Exceeded	
Road	2023-04-30 7:00 AM	Yes	Caribou	11	Foraging	NE	900	61	West	No	-96.3547	64.7633			No	Not Exceeded	
Road	2023-04-30 7:00 AM	Yes	Caribou	25	Foraging	N/A	600	44	West	No	-96.3035	64.6417			No	Not Exceeded	
Incidental	2023-04-30 2:02 PM	Yes	Caribou	300	Not recorded	N/A	700	56	West	N/A	-192.3536	N/A			No	Exceeded	Road closed
Road	2023-05-01 3:43 AM	Yes	Caribou	111	Feeding	N/A	75	94	West	No	-96.2127	65.0075			No	Exceeded	Road closed
Road	2023-05-01 3:43 AM	Yes	Caribou	124	Walking	N	250	91	West	No	-96.2249	64.9847			No	Exceeded	Road closed
Road	2023-05-01 3:43 AM	Yes	Caribou	74	Standing	N/A	100	89	West	No	-96.2196	64.9674			No	Exceeded	Road closed
Road	2023-05-01 3:43 AM	Yes	Caribou	37	Standing	N/A	0	87	Both	Yes	-96.2410	64.9542			No	Exceeded	Road closed
Road	2023-05-01 3:43 AM	Yes	Caribou	7	Running	E	1000	80	East	No	-96.3062	64.9171			No	Not Exceeded	
Road	2023-05-01 3:43 AM	Yes	Caribou	83	Walking	N	800	76	West	No	-96.3457	64.8879			No	Exceeded	Road closed
Road	2023-05-01 3:43 AM	Yes	Caribou	28	Walking	SW	700	22	West	No	-96.1126	64.4935			No	Not Exceeded	
Road	2023-05-01 3:43 AM	Yes	Wolf	1	Walking	E	50	20	East	No	-96.0960	64.4787			No	Not Exceeded	
Road	2023-05-01 3:43 AM	Yes	Caribou	38	Walking	SE	150	14	East	No	-96.0430	64.4312			No	Exceeded	Road closed
Incidental	2023-05-01 1:01 PM	Yes	Caribou	31	Resting	N/A	150	57	West	No	-96.3601	64.7314			No	Not Exceeded	
Road	2023-05-02 4:17 AM	Yes	Caribou	38	Feeding	N/A	500	97	West	No	-96.1711	65.0259			No	Exceeded	Road closed
Road	2023-05-02 4:17 AM	Yes	Caribou	52	Walking	E	800	96	West	No	-96.1809	65.0181			No	Exceeded	Road closed
Road	2023-05-02 4:17 AM	Yes	Caribou	50	Walking	N	300	87	West	No	-96.2410	64.9542			No	Exceeded	Road closed
Road	2023-05-02 4:17 AM	Yes	Caribou	58	Walking	N	300	87	West	No	-96.2410	64.9542			No	Exceeded	Road closed
Road	2023-05-02 4:17 AM	Yes	Caribou	28	Standing	N/A	800	79	West	No	-96.3149	64.9095			No	Not Exceeded	
Road	2023-05-02 4:17 AM	Yes	Caribou	18	Walking	SE	500	71	West	No	-96.3197	64.8447			No	Not Exceeded	
Road	2023-05-02 4:17 AM	Yes	Caribou	3	Feeding	N/A	400	66	West	No	-96.3350	64.8045			No	Not Exceeded	
Road	2023-05-03 4:10 AM	Yes	Caribou	180	Foraging	N/A	400	89	West	No	-96.2196	64.9674			No	Exceeded	Road closed
Road	2023-05-03 4:10 AM	Yes	Caribou	130	Foraging	N	800	72	West	No	-96.3238	64.8539			No	Exceeded	Road closed
Road	2023-05-03 4:10 AM	Yes	Caribou	34	Foraging	S	300	68	West	No	-96.3268	64.8203			No	Exceeded	Road closed
Road	2023-05-03 4:10 AM	Yes	Caribou	4	Walking	SE	0	59	West	Yes	-96.3706	64.7495			No	Not Exceeded	
Road	2023-05-03 4:10 AM	Yes	Caribou	16	Walking	S	500	48	West	No	-96.3688	64.6642			No	Not Exceeded	
Road	2023-05-05 4:59 AM	Yes	Caribou	6	Foraging	S	400	89	West	No	-96.2196	64.9674			No	Not Exceeded	
Road	2023-05-05 4:59 AM	Yes	Caribou	50	Walking	W	600	85	West	No	-96.2614	64.9389			No	Exceeded	Road closed
Road	2023-05-05 4:59 AM	Yes	Caribou	10	Foraging	N	300	79	West	No	-96.3149	64.9095			No	Not Exceeded	
Road	2023-05-05 4:59 AM	Yes	Caribou	45	Foraging	N/A	400	50	West	No	-96.3731	64.6794			No	Exceeded	Road closed
Road	2023-05-06 7:00 AM	Yes	Caribou	17	Walking	N/A	1000	92	East	No	-96.2219	64.9943			No	Not Exceeded	
Road	2023-05-06 7:00 AM	Yes	Caribou	23	Foraging	N/A	500	90	West	No	-96.2221	64.9750			No	Not Exceeded	
Road	2023-05-06 7:00 AM	Yes	Caribou	160	Foraging	N/A	300	90	East	No	-96.2221	64.9750			No	Exceeded	Road is closed due to caribou presence
Incidental	2023-05-12 8:55 AM	Yes	Siksik	1	Dead	N/A	0	98	East	Yes	-96.1576	65.0325		Project related	No	Not Exceeded	
Road	2023-05-13 8:25 AM	Yes	Caribou	45	Foraging	SW	200	42	West	No	-96.2949	64.6276			No	Exceeded	Road closed
Road	2023-05-13 8:25 AM	Yes	Caribou	210	Foraging	SE	600	55	West	No	-96.3460	64.7185			No	Exceeded	Road closed
Road	2023-05-13 8:25 AM	Yes	Caribou	25	Foraging	N/A	100	59	West	No	-96.3706	64.7495			No	Not Exceeded	
Road	2023-05-13 8:25 AM	Yes	Caribou	98	Walking	NE	120	68	West	No	-96.3268	64.8203			No	Exceeded	Road closed
Road	2023-05-14 7:00 AM	Yes	Caribou	4	Foraging	N/A	50	101	East	No	-96.1403	65.0567			No	Not Exceeded	
Road	2023-05-14 7:00 AM	Yes	Caribou	2	Foraging	N/A	300	84	East	No	-96.2828	64.9366			No	Not Exceeded	
Road	2023-05-14 7:00 AM	Yes	Caribou	18	Foraging	N/A	150	83	West	No	-96.3011	64.9350			No	Not Exceeded	
Road	2023-05-14 7:00 AM	Yes	Caribou	40	Foraging	N/A	1300	82	West	No	-96.3120	64.9306			No	Exceeded	Road closed due to caribou
Road	2023-05-14 7:00 AM	Yes	Caribou	120	Foraging	N/A	150	79	West	No	-96.3149	64.9095			No	Exceeded	Road closed due to caribou
Road	2023-05-14 7:00 AM	Yes	Caribou	21	Foraging	N/A	150	77	West	No	-96.3391	64.8951			No	Not Exceeded	
Road	2023-05-14 7:00 AM	Yes	Caribou	22	Foraging	N/A	500	72	West	No	-96.3238	64.8539			No	Not Exceeded	
Road	2023-05-14 7:00 AM	Yes	Caribou	15	Foraging	N/A	50	69	West	No	-96.3143	64.8277			No	Not Exceeded	
Road	2023-05-14 7:00 AM	Yes	Caribou	20	Foraging	N/A	75	68	West	No	-96.3268	64.8203			No	Not Exceeded	
Road	2023-05-14 7:00 AM	Yes	Caribou	20	Foraging	N/A	75	64	West	No	-96.3400	64.7867			No	Not Exceeded	
Road	2023-05-14 7:00 AM	Yes	Caribou	83	Walking	Not Recorded	10	63	Both	No	-96.3444	64.7793			No	Exceeded	Road closed due to caribou
Road	2023-05-14 7:00 AM	Yes	Caribou	2	Foraging	N/A	50	50	West	No	-96.3731	64.6794			No	Not Exceeded	
Road	2023-05-14 7:00 AM	Yes	Caribou	8	Foraging	N/A	75	37	West	No	-96.2690	64.5842			No	Not Exceeded	
Road	2023-05-15 6:09 AM	Yes	Caribou	55	Walking	E	0	21	West	Yes	-96.1045	64.4869			No	Exceeded	Road closed
Road	2023-05-15 6:09 AM	Yes	Caribou	40	Foraging	N	130	43	West	No	-96.3007	64.6348			No	Exceeded	Road closed



Table A-1: Wildlife Observations along the All Weather Access Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2023-05-15 6:09 AM	Yes	Caribou	45	Foraging	E	130	49	West	No	-96.3707	64.6688			No	Exceeded	Road closed
Road	2023-05-15 6:09 AM	Yes	Caribou	16	Walking	N	900	52	West	No	-96.3774	64.7009			No	Not Exceeded	
Road	2023-05-15 6:09 AM	Yes	Caribou	117	Walking	SE	290	58	West	No	-96.3579	64.7416			No	Exceeded	Road closed
Road	2023-05-15 6:09 AM	Yes	Caribou	52	Foraging	E	600	64	West	No	-96.3400	64.7867			No	Exceeded	Road closed
Road	2023-05-15 6:09 AM	Yes	Caribou	72	Foraging	N/A	310	73	West	No	-96.3242	64.8621			No	Exceeded	Road closed
Road	2023-05-15 6:09 AM	Yes	Caribou	22	Foraging	NW	200	78	West	No	-96.3244	64.9032			No	Not Exceeded	
Road	2023-05-15 6:09 AM	Yes	Caribou	55	Walking	NW	500	79	West	No	-96.3149	64.9095			No	Exceeded	Road closed
Road	2023-05-15 6:09 AM	Yes	Caribou	9	Resting	N/A	1000	81	West	No	-96.3021	64.9252			No	Not Exceeded	
Road	2023-05-15 6:09 AM	Yes	Caribou	45	Foraging	S	100	82	West	No	-96.3120	64.9306			No	Exceeded	Road closed
Road	2023-05-15 6:09 AM	Yes	Caribou	57	Walking	NW	500	83	West	No	-96.3011	64.9350			No	Exceeded	Road closed
Road	2023-05-15 6:09 AM	Yes	Caribou	25	Walking	S	250	87	West	No	-96.2410	64.9542			No	Not Exceeded	
Road	2023-05-15 6:09 AM	Yes	Caribou	11	Foraging	N/A	800	88	West	No	-96.2206	64.9581			No	Not Exceeded	
Road	2023-05-15 6:09 AM	Yes	Arctic hare	1	Foraging	N/A	5	92	West	No	-96.2219	64.9943			No	Not Exceeded	
Road	2023-05-15 6:09 AM	Yes	Caribou	3	Foraging	N	450	95	West	No	-96.1952	65.0129			No	Not Exceeded	
Road	2023-05-15 6:09 AM	Yes	Caribou	4	Foraging	S	10	102	East	No	-96.1278	65.0517			No	Not Exceeded	
Road	2023-05-15 6:09 AM	Yes	Caribou	5	Foraging	N/A	75	103	West	No	-96.1108	65.0489			No	Not Exceeded	
Road	2023-05-18 6:45 AM	Yes	Caribou	6	Walking	E	10	104	East	No	-96.0972	65.0446			No	Not Exceeded	
Road	2023-05-18 6:45 AM	Yes	Caribou	3	Walking	S	800	83	West	No	-96.3011	64.9350			No	Not Exceeded	
Road	2023-05-18 6:45 AM	Yes	Caribou	19	Feeding	N/A	150	82	West	No	-96.3120	64.9306			No	Not Exceeded	
Road	2023-05-18 6:45 AM	Yes	Caribou	8	Walking	E	1000	78	West	No	-96.3244	64.9032			No	Not Exceeded	
Road	2023-05-18 6:45 AM	Yes	Caribou	8	Walking	N	800	77	West	No	-96.3391	64.8951			No	Not Exceeded	
Road	2023-05-18 6:45 AM	Yes	Caribou	60	Walking	S	800	76	West	No	-96.3457	64.8879			No	Exceeded	Road closed
Road	2023-05-18 6:45 AM	Yes	Caribou	55	Feeding	S	500	55	West	No	-96.3460	64.7185			No	Exceeded	Road closed
Road	2023-05-18 6:45 AM	Yes	Caribou	31	Feeding	N/A	1200	34	West	No	-96.2405	64.5687			No	Not Exceeded	
Road	2023-05-19 6:49 AM	Yes	Caribou	7	Walking	E	250	103	West	No	-96.1108	65.0489			No	Not Exceeded	
Road	2023-05-19 6:49 AM	Yes	Caribou	16	Foraging	N	150	102	Both	No	-96.1278	65.0517			No	Not Exceeded	
Road	2023-05-19 6:49 AM	Yes	Caribou	7	Walking	S	450	93	West	No	-96.2220	65.0008			No	Not Exceeded	
Road	2023-05-19 6:49 AM	Yes	Muskox	2	Foraging	N/A	100	92	West	No	-96.2219	64.9943			No	Not Exceeded	
Road	2023-05-19 6:49 AM	Yes	Caribou	1	Foraging	S	200	82	West	No	-96.3120	64.9306			No	Not Exceeded	
Road	2023-05-19 6:49 AM	Yes	Caribou	7	Foraging	N/A	500	86	West	No	-96.2528	64.9468			No	Not Exceeded	
Road	2023-05-19 6:49 AM	Yes	Caribou	5	Foraging	N	600	85	West	No	-96.2614	64.9389			No	Not Exceeded	
Road	2023-05-19 6:49 AM	Yes	Caribou	12	Foraging	N	800	79	West	No	-96.3149	64.9095			No	Not Exceeded	
Road	2023-05-19 6:49 AM	Yes	Caribou	3	Foraging	N	500	78	West	No	-96.3244	64.9032			No	Not Exceeded	
Road	2023-05-19 6:49 AM	Yes	Caribou	9	Resting	N/A	900	77	West	No	-96.3391	64.8951			No	Not Exceeded	
Road	2023-05-19 6:49 AM	Yes	Caribou	31	Foraging	S	200	76	West	No	-96.3457	64.8879			No	Not Exceeded	
Road	2023-05-19 6:49 AM	Yes	Caribou	3	Walking	S	600	65	West	No	-96.3406	64.7948			No	Not Exceeded	
Road	2023-05-19 6:49 AM	Yes	Caribou	7	Walking	W	750	61	West	No	-96.3547	64.7633			No	Not Exceeded	
Road	2023-05-19 6:49 AM	Yes	Caribou	6	Foraging	N/A	650	61	West	No	-96.3547	64.7633			No	Not Exceeded	
Road	2023-05-19 6:49 AM	Yes	Caribou	4	Walking	S	650	50	West	No	-96.3731	64.6794			No	Not Exceeded	
Road	2023-05-19 6:49 AM	Yes	Caribou	8	Walking	S	700	45	West	No	-96.3134	64.6524			No	Not Exceeded	
Road	2023-05-19 6:49 AM	Yes	Caribou	42	Walking	S	500	26	West	No	-96.1615	64.5235			No	Exceeded	Road closed
Road	2023-05-19 6:49 AM	Yes	Caribou	10	Walking	S	400	23	West	No	-96.1244	64.5006			No	Not Exceeded	
Road	2023-05-19 6:49 AM	Yes	Caribou	38	Walking	E	100	22	East	Yes	-96.1126	64.4935			No	Exceeded	Road closed
Road	2023-05-20 10:57 AM	Yes	Caribou	25	Walking	W	200	85	West	No	-96.2614	64.9389			No	Not Exceeded	
Incidental	2023-05-20 2:23 PM	Yes	Caribou	32	Walking	S	1000	51	West	No	-96.3791	64.6932			No	Not Exceeded	
Road	2023-05-21 8:40 AM	Yes	Caribou	6	Resting	N/A	250	95	West	No	-96.1952	65.0129			No	Not Exceeded	
Road	2023-05-21 8:40 AM	Yes	Caribou	16	Foraging	N/A	1000	94	West	No	-96.2127	65.0075			No	Not Exceeded	
Road	2023-05-21 8:40 AM	Yes	Caribou	8	Walking	S	250	91	West	No	-96.2249	64.9847			No	Not Exceeded	
Road	2023-05-21 8:40 AM	Yes	Caribou	18	Foraging	N/A	900	88	West	No	-96.2206	64.9581			No	Not Exceeded	
Road	2023-05-21 8:40 AM	Yes	Caribou	9	Foraging	N/A	950	83	West	No	-96.3011	64.9350			No	Not Exceeded	
Road	2023-05-21 8:40 AM	Yes	Caribou	3	Walking	N	350	81	West	No	-96.3021	64.9252			No	Not Exceeded	
Road	2023-05-21 8:40 AM	Yes	Caribou	7	Foraging	N/A	1000	79	West	No	-96.3149	64.9095			No	Not Exceeded	
Road	2023-05-21 8:40 AM	Yes	Caribou	2	Foraging	S	250	75	East	No	-96.3361	64.8795			No	Not Exceeded	
Road	2023-05-21 8:40 AM	Yes	Caribou	12	Foraging	S	400	67	West	No	-96.3262	64.8123			No	Not Exceeded	
Road	2023-05-21 8:40 AM	Yes	Caribou	19	Walking	S	350	65	West	No	-96.3406	64.7948			No	Not Exceeded	
Road	2023-05-21 8:40 AM	Yes	Caribou	8	Foraging	N/A	200	60	West	No	-96.3636	64.7555			No	Not Exceeded	
Road	2023-05-21 8:40 AM	Yes	Caribou	28	Walking	S	200	53	West	No	-96.3731	64.7061			No	Not Exceeded	
Road	2023-05-21 8:40 AM	Yes	Caribou	25	Walking	S	150	40	West	No	-96.2814	64.6043			No	Not Exceeded	
Incidental	2023-05-21 1:22 PM	Yes	Caribou	18	Walking	E	0	32	West,East	Yes	-96.2045	64.5647			No	Not Exceeded	
Incidental	2023-05-21 1:22 PM	Yes	Caribou	31	Feeding	Not Recorded	450	65	West	No	-96.3406	64.7948			No	Not Exceeded	



Table A-1: Wildlife Observations along the All Weather Access Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Incidental	2023-05-21 1:22 PM	Yes	Caribou	28	Walking	SW	500	86	West	No	-96.2528	64.9468			No	Not Exceeded	
Road	2023-05-22 6:36 AM	Yes	Caribou	1	Foraging	N/A	10	97	West	No	-96.1711	65.0259			No	Not Exceeded	
Road	2023-05-22 6:36 AM	Yes	Caribou	10	Walking	W	350	87	West	No	-96.2389	64.9548			No	Not Exceeded	
Road	2023-05-22 6:36 AM	Yes	Caribou	36	Resting	N/A	500	85	West	No	-96.2614	64.9389			No	Exceeded	Road closed
Road	2023-05-22 6:36 AM	Yes	Caribou	21	Foraging	N/A	850	82	West	No	-96.3120	64.9306			No	Not Exceeded	
Road	2023-05-22 6:36 AM	Yes	Caribou	4	Foraging	N/A	150	79	West	No	-96.3149	64.9095			No	Not Exceeded	
Road	2023-05-22 6:36 AM	Yes	Caribou	4	Walking	S	500	77	West	No	-96.3391	64.8951			No	Not Exceeded	
Road	2023-05-22 6:36 AM	Yes	Caribou	2	Foraging	N/A	200	76	East	No	-96.3457	64.8879			No	Not Exceeded	
Road	2023-05-22 6:36 AM	Yes	Caribou	5	Foraging	N/A	350	75	West	No	-96.3361	64.8795			No	Not Exceeded	
Road	2023-05-22 6:36 AM	Yes	Caribou	7	Walking	S	800	73	West	No	-96.3242	64.8621			No	Not Exceeded	
Road	2023-05-22 6:36 AM	Yes	Caribou	16	Walking	W	200	69	West	No	-96.3143	64.8277			No	Not Exceeded	
Road	2023-05-22 6:36 AM	Yes	Caribou	8	Foraging	N/A	400	61	West	No	-96.3547	64.7633			No	Not Exceeded	
Road	2023-05-22 6:36 AM	Yes	Caribou	25	Walking	W	250	60	West	No	-96.3636	64.7555			No	Not Exceeded	
Road	2023-05-22 6:36 AM	Yes	Caribou	3	Foraging	N	450	53	West	No	-96.3731	64.7061			No	Not Exceeded	
Road	2023-05-22 6:36 AM	Yes	Caribou	1	Walking	S	300	52	West	No	-96.3774	64.7009			No	Not Exceeded	
Road	2023-05-22 6:36 AM	Yes	Caribou	10	Walking	S	850	34	West	No	-96.2405	64.5687			No	Not Exceeded	
Road	2023-05-22 6:36 AM	Yes	Caribou	13	Walking	N	50	33	West	No	-96.2163	64.5715			No	Not Exceeded	
Road	2023-05-22 6:36 AM	Yes	Caribou	38	Foraging	N/A	1000	31	West	No	-96.1957	64.5543			No	Exceeded	Road closed
Road	2023-05-22 6:36 AM	Yes	Caribou	10	Foraging	N/A	1300	30	West	No	-96.1958	64.5543			No	Not Exceeded	
Road	2023-05-22 6:36 AM	Yes	Caribou	3	Walking	S	250	7	West	No	-96.0092	64.3726			No	Not Exceeded	
Incidental	2023-05-22 12:36 PM	Yes	Caribou	18	Walking	S	400	49	West	No	-96.3707	64.6688			No	Not Exceeded	
Road	2023-05-23 7:58 AM	Yes	Caribou	9	Foraging	NW	800	86	West	No	-96.2528	64.9468			No	Not Exceeded	
Road	2023-05-23 7:58 AM	Yes	Caribou	9	Walking	S	500	89	West	No	-96.2196	64.9674			No	Not Exceeded	
Road	2023-05-23 7:58 AM	Yes	Caribou	10	Walking	S	150	85	West	No	-96.2614	64.9389			No	Not Exceeded	
Road	2023-05-23 7:58 AM	Yes	Caribou	4	Foraging	N/A	700	83	West	No	-96.3011	64.9350			No	Not Exceeded	
Road	2023-05-23 7:58 AM	Yes	Caribou	8	Foraging	S	750	82	West	No	-96.3120	64.9306			No	Not Exceeded	
Road	2023-05-23 7:58 AM	Yes	Caribou	8	Foraging	S	500	81	West	No	-96.3021	64.9252			No	Not Exceeded	
Road	2023-05-23 7:58 AM	Yes	Caribou	4	Foraging	S	400	79	West	No	-96.3149	64.9095			No	Not Exceeded	
Road	2023-05-23 7:58 AM	Yes	Caribou	4	Foraging	S	350	78	West	No	-96.3244	64.9032			No	Not Exceeded	
Road	2023-05-23 7:58 AM	Yes	Caribou	11	Walking	S	250	70	West	No	-96.3165	64.8365			No	Not Exceeded	
Road	2023-05-23 7:58 AM	Yes	Caribou	20	Foraging	N/A	1200	69	West	No	-96.3143	64.8277			No	Not Exceeded	
Road	2023-05-23 7:58 AM	Yes	Caribou	2	Resting	N/A	400	68	West	No	-96.3268	64.8203			No	Not Exceeded	
Road	2023-05-23 7:58 AM	Yes	Caribou	17	Walking	S	700	67	West	No	-96.3262	64.8123			No	Not Exceeded	
Road	2023-05-23 7:58 AM	Yes	Caribou	5	Walking	S	800	65	West	No	-96.3406	64.7948			No	Not Exceeded	
Road	2023-05-23 7:58 AM	Yes	Caribou	22	Walking	S	200	61	West	No	-96.3547	64.7633			No	Not Exceeded	
Road	2023-05-23 7:58 AM	Yes	Caribou	46	Walking	W	800	60	West	No	-96.3636	64.7555			No	Exceeded	Road closed
Road	2023-05-23 3:47 PM	Yes	Caribou	38	Walking	SW	600	39	West	No	-96.2751	64.5959			No	Exceeded	Road closed
Road	2023-05-23 3:47 PM	Yes	Caribou	28	Feeding	Not Recorded	750	56	West	No	-96.3514	64.7259			No	Not Exceeded	
Road	2023-05-23 3:47 PM	Yes	Caribou	4	Walking	S	1300	69	West	No	-96.3143	64.8277			No	Not Exceeded	
Road	2023-05-23 3:47 PM	Yes	Caribou	22	Feeding	Not Recorded	400	78	West	No	-96.3244	64.9032			No	Not Exceeded	
Road	2023-05-23 3:47 PM	Yes	Caribou	42	Walking	NW	500	82	West	No	-96.3120	64.9306			No	Exceeded	Road closed
Road	2023-05-24 6:12 AM	Yes	Caribou	2	Lying Down	Not Recorded	600	103	East	No	-96.1108	65.0489			No	Not Exceeded	
Road	2023-05-24 6:12 AM	Yes	Caribou	8	Feeding	Not Recorded	800	96	West	No	-96.1809	65.0181			No	Not Exceeded	
Road	2023-05-24 6:12 AM	Yes	Caribou	9	Walking	SW	800	88	West	No	-96.2206	64.9581			No	Not Exceeded	
Road	2023-05-24 6:12 AM	Yes	Caribou	10	Feeding	Not Recorded	600	87	West	No	-96.2410	64.9542			No	Not Exceeded	
Road	2023-05-24 6:12 AM	Yes	Caribou	8	Foraging	Not Recorded	700	83	West	No	-96.3011	64.9350			No	Not Exceeded	
Road	2023-05-24 6:12 AM	Yes	Caribou	6	Lying Down	Not Recorded	1100	80	West	No	-96.3062	64.9171			No	Not Exceeded	
Road	2023-05-24 6:12 AM	Yes	Caribou	12	Feeding	N/A	400	77	Both	No	-96.3391	64.8951			No	Not Exceeded	
Road	2023-05-24 6:12 AM	Yes	Caribou	4	Walking	S	500	72	West	No	-96.3238	64.8539			No	Not Exceeded	
Road	2023-05-24 6:12 AM	Yes	Caribou	6	Walking	N	800	62	West	No	-96.3444	64.7737			No	Not Exceeded	
Road	2023-05-24 6:12 AM	Yes	Caribou	4	Standing	Not Recorded	0	61	Both	Yes	-96.3547	64.7633			No	Not Exceeded	
Road	2023-05-24 6:12 AM	Yes	Caribou	12	Walking	S	300	53	West	No	-96.3731	64.7061			No	Not Exceeded	
Road	2023-05-24 6:12 AM	Yes	Caribou	6	Walking	S	150	50	West	No	-96.3731	64.6794			No	Not Exceeded	
Road	2023-05-24 6:12 AM	Yes	Caribou	6	Feeding	Not Recorded	1200	49	West	No	-96.3707	64.6688			No	Not Exceeded	
Road	2023-05-24 6:12 AM	Yes	Caribou	2	Walking	S	400	39	West	No	-96.2751	64.5959			No	Not Exceeded	
Incidental	2023-05-24 3:48 PM	Yes	Caribou	41	Walking	NW	30	82	West	No	-96.3120	64.9306			No	Exceeded	Road closed
Incidental	2023-05-25 8:32 AM	Yes	Caribou	13	Walking	SW	600	83	West	No	-96.3011	64.9350			No	Not Exceeded	
Incidental	2023-05-25 8:32 AM	Yes	Caribou	12	Walking	S	600	80	West	No	-96.3062	64.9171			No	Not Exceeded	
Incidental	2023-05-25 8:32 AM	Yes	Caribou	6	Foraging	N/A	150	76	West	No	-96.3457	64.8879			No	Not Exceeded	
Incidental	2023-05-25 8:32 AM	Yes	Caribou	7	Walking	N	350	67	West	No	-96.3262	64.8123			No	Not Exceeded	



Table A-1: Wildlife Observations along the All Weather Access Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Incidental	2023-05-25 8:32 AM	Yes	Caribou	47	Walking	S	800	65	West	No	-96.3406	64.7948			No	Exceeded	Road closed
Incidental	2023-05-25 8:32 AM	Yes	Muskox	1	Feeding	S	10	99	East	No	-96.1532	65.0420			No	Not Exceeded	
Incidental	2023-05-25 8:32 AM	Yes	Caribou	3	Walking	N	50	101	West	No	-96.1403	65.0567			No	Not Exceeded	
Road	2023-05-25 11:04 AM	Yes	Caribou	8	Walking	N	500	29	West	No	-96.1813	64.5473			No	Not Exceeded	
Road	2023-05-25 11:04 AM	Yes	Caribou	6	Walking	N	500	29	West	No	-96.1813	64.5473			No	Not Exceeded	
Road	2023-05-25 11:04 AM	Yes	Caribou	1	Feeding	N	500	42	East	No	-96.2949	64.6276			No	Not Exceeded	
Road	2023-05-25 11:04 AM	Yes	Caribou	33	Walking	W	2000	53	West	No	-96.3731	64.7061			No	Not Exceeded	
Road	2023-05-25 11:04 AM	Yes	Caribou	9	Walking	N/A	800	54	West	No	-96.3584	64.7132			No	Not Exceeded	
Road	2023-05-25 11:04 AM	Yes	Caribou	3	Feeding	N/A	500	75	East	No	-96.3361	64.8795			No	Not Exceeded	
Road	2023-05-25 11:04 AM	Yes	Caribou	1	Feeding	N/A	150	99	West	No	-96.1532	65.0420			No	Not Exceeded	
Road	2023-05-25 11:04 AM	Yes	Caribou	5	Resting	N/A	500	101	West	No	-96.1403	65.0567			No	Not Exceeded	
Road	2023-05-26 12:32 PM	Yes	Caribou	9	Foraging	S	500	20	West	No	-96.0960	64.4787			No	Not Exceeded	
Road	2023-05-26 12:32 PM	Yes	Caribou	44	Foraging	N/A	800	30	West	No	-96.1958	64.5543			No	Exceeded	Road closed
Road	2023-05-26 12:32 PM	Yes	Caribou	10	Foraging	S	900	65	West	No	-96.3406	64.7948			No	Not Exceeded	
Road	2023-05-26 12:32 PM	Yes	Caribou	11	Lying Down	N/A	600	82	West	No	-96.3120	64.9306			No	Not Exceeded	
Road	2023-05-26 12:32 PM	Yes	Caribou	36	Foraging	NW	600	85	West	No	-96.2614	64.9389			No	Exceeded	Road closed
Road	2023-05-26 12:32 PM	Yes	Caribou	113	Walking	SW	100	86	West	No	-96.2528	64.9468			No	Exceeded	Road closed
Road	2023-05-27 2:00 PM	Yes	Caribou	23	Walking	S	100	26	West	No	-96.1615	64.5235			No	Not Exceeded	
Road	2023-05-27 2:00 PM	Yes	Caribou	4	Foraging	S	300	70	West	No	-96.3165	64.8365			No	Not Exceeded	
Road	2023-05-27 2:00 PM	Yes	Caribou	63	Foraging	SW	230	77	West	No	-96.3391	64.8951			No	Exceeded	Road closed
Road	2023-05-27 2:00 PM	Yes	Caribou	52	Foraging	S	350	82	West	No	-96.3120	64.9306			No	Exceeded	Road closed
Road	2023-05-27 2:00 PM	Yes	Caribou	13	Foraging	NW	90	83	Both	No	-96.3011	64.9350			No	Not Exceeded	
Road	2023-05-28 7:22 AM	Yes	Caribou	43	Foraging	SW	120	87	West	No	-96.2410	64.9542			No	Exceeded	Road closed
Road	2023-05-28 7:22 AM	Yes	Caribou	33	Foraging	SW	100	83	Both	No	-96.3011	64.9350			No	Exceeded	Road closed
Road	2023-05-28 7:22 AM	Yes	Caribou	38	Foraging	SW	100	59	West	No	-96.3706	64.7495			No	Exceeded	Road closed
Road	2023-05-28 7:22 AM	Yes	Caribou	42	Walking	S	90	57	West	No	-96.3601	64.7314			No	Exceeded	Road closed
Incidental	2023-05-28 10:46 AM	Yes	Caribou	38	Running	N/A	200	88	West	No	-96.2206	64.9581			No	Exceeded	Road closed
Incidental	2023-05-28 10:46 AM	Yes	Wolf	1	Hunting	N/A	0	88	West	Yes	-96.2206	64.9581			No	Not Exceeded	
Incidental	2023-05-28 10:46 AM	Yes	Caribou	18	Feeding	N/A	250	82	West	No	-96.3120	64.9306			No	Not Exceeded	
Incidental	2023-05-28 10:46 AM	Yes	Caribou	7	Walking	N	600	76	West	No	-96.3457	64.8879			No	Not Exceeded	
Incidental	2023-05-28 10:46 AM	Yes	Caribou	7	Walking	N	600	74	West	No	-96.3303	64.8752			No	Not Exceeded	
Incidental	2023-05-28 12:35 PM	Yes	Caribou	4	Foraging	S	1200	8	West	No	-96.0155	64.3813			No	Not Exceeded	
Incidental	2023-05-28 12:35 PM	Yes	Caribou	15	Foraging	S	180	18	West	No	-96.0824	64.4610			No	Not Exceeded	
Incidental	2023-05-28 12:35 PM	Yes	Caribou	11	Walking	NW	250	29	West	No	-96.1813	64.5473			No	Not Exceeded	
Incidental	2023-05-28 12:35 PM	Yes	Caribou	30	Foraging	N/A	800	61	West	No	-96.3547	64.7633			No	Exceeded	Road closed
Incidental	2023-05-28 12:35 PM	Yes	Caribou	10	Walking	S	90	66	West	No	-96.3350	64.8045			No	Not Exceeded	
Incidental	2023-05-28 12:35 PM	Yes	Caribou	23	Lying Down	N/A	20	78	West	No	-96.3244	64.9032			No	Not Exceeded	
Incidental	2023-05-28 12:35 PM	Yes	Caribou	9	Foraging	N/A	90	82	West	No	-96.3120	64.9306			No	Not Exceeded	
Incidental	2023-05-28 12:35 PM	Yes	Caribou	10	Walking	SE	1	85	West	Yes	-96.2614	64.9389			No	Not Exceeded	
Road	2023-05-29 7:39 AM	Yes	Caribou	4	Lying Down	N/A	400	96	West	No	-96.1809	65.0181			No	Not Exceeded	
Road	2023-05-29 7:39 AM	Yes	Caribou	16	Foraging	SW	490	95	West	No	-96.1952	65.0129			No	Not Exceeded	
Road	2023-05-29 7:39 AM	Yes	Caribou	28	Lying Down	N/A	110	92	West	No	-96.2219	64.9943			No	Exceeded	Road closed
Road	2023-05-29 7:39 AM	Yes	Caribou	10	Foraging	N	120	91	West	No	-96.2249	64.9847			No	Not Exceeded	
Road	2023-05-29 7:39 AM	Yes	Caribou	10	Foraging	N/A	200	78	West	No	-96.3244	64.9032			No	Not Exceeded	
Road	2023-05-29 7:39 AM	Yes	Caribou	8	Foraging	S	90	76	West	No	-96.3457	64.8879			No	Not Exceeded	
Road	2023-05-29 7:39 AM	Yes	Caribou	29	Walking	S	60	66	West	No	-96.3350	64.8045			No	Exceeded	Road closed
Road	2023-05-29 7:39 AM	Yes	Caribou	20	Foraging	N/A	340	29	West	No	-96.1813	64.5473			No	Not Exceeded	
Road	2023-05-29 7:39 AM	Yes	Caribou	21	Foraging	SE	240	22	West	No	-96.1126	64.4935			No	Not Exceeded	
Road	2023-05-29 7:39 AM	Yes	Caribou	6	Foraging	W	80	16	West	No	-96.0624	64.4463			No	Not Exceeded	
Road	2023-05-30 12:49 PM	Yes	Caribou	12	Foraging	N	800	37	West	No	-96.2690	64.5842			No	Not Exceeded	
Road	2023-05-30 12:49 PM	Yes	Caribou	15	Foraging	NE	50	62	West	No	-96.3444	64.7737			No	Not Exceeded	
Road	2023-05-30 12:49 PM	Yes	Caribou	11	Foraging	N/A	180	66	West	No	-96.3350	64.8045			No	Not Exceeded	
Road	2023-05-30 12:49 PM	Yes	Caribou	6	Foraging	N	90	76	West	No	-96.3457	64.8879			No	Not Exceeded	
Road	2023-05-30 12:49 PM	Yes	Caribou	52	Lying Down	N/A	300	82	Both	No	-96.3120	64.9306			No	Exceeded	Road closed
Incidental	2023-05-31 8:00 AM	Yes	Caribou	18	Foraging	N/A	200	83	West	No	-96.3011	64.9350			No	Not Exceeded	
Road	2023-06-01 12:49 PM	Yes	Caribou	26	Foraging	S	250	38	West	No	-96.2758	64.5907			No	Exceeded	Restriction
Road	2023-06-01 12:49 PM	Yes	Caribou	2	Walking	N	230	50	East	No	-96.3731	64.6794			No	Not Exceeded	
Road	2023-06-01 12:49 PM	Yes	Caribou	2	Walking	S	100	53	West	No	-96.3731	64.7061			No	Not Exceeded	
Road	2023-06-01 12:49 PM	Yes	Caribou	3	Walking	N	45	76	East	No	-96.3457	64.8879			No	Not Exceeded	
Road	2023-06-01 12:49 PM	Yes	Caribou	7	Feeding	SE	450	78	West	No	-96.3244	64.9032			No	Not Exceeded	



Table A-1: Wildlife Observations along the All Weather Access Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2023-06-01 12:49 PM	Yes	Caribou	3	Feeding	NW	250	82	West	No	-96.3120	64.9306			No	Not Exceeded	
Road	2023-06-01 12:49 PM	Yes	Caribou	6	Standing	S	1000	95	West	No	-96.1952	65.0129			No	Not Exceeded	
Road	2023-06-01 12:49 PM	Yes	Caribou	10	Feeding	S	250	96	West	No	-96.1809	65.0181			No	Not Exceeded	
Incidental	2023-06-02 10:00 AM	Yes	Caribou	18	Foraging	N/A	250	85	West	No	-96.2614	64.9389			No	Not Exceeded	
Road	2023-06-04 8:45 AM	Yes	Muskox	1	Foraging	N/A	50	103	West	No	-96.1108	65.0489			No	Not Exceeded	
Road	2023-06-04 8:45 AM	Yes	Caribou	10	Foraging	N/A	300	96	West	No	-96.1809	65.0181			No	Not Exceeded	
Road	2023-06-04 8:45 AM	Yes	Peregrine falcon	1	Standing	N/A	25	93	West	No	-96.2220	65.0008			No	Not Exceeded	
Road	2023-06-04 8:45 AM	Yes	Caribou	3	Trotting/running	S	400	90	West	No	-96.2221	64.9750			No	Not Exceeded	
Road	2023-06-04 8:45 AM	Yes	Caribou	4	Resting	N/A	350	89	West	No	-96.2196	64.9674			No	Not Exceeded	
Road	2023-06-04 8:45 AM	Yes	Muskox	2	Resting	N/A	50	87	West	No	-96.2410	64.9542			No	Not Exceeded	
Road	2023-06-04 8:45 AM	Yes	Caribou	1	Walking	N/A	30	84	West	No	-96.2828	64.9366			No	Not Exceeded	
Road	2023-06-04 8:45 AM	Yes	Peregrine falcon	1	Alert	N/A	100	81	West	No	-96.3021	64.9252			No	Not Exceeded	
Road	2023-06-04 8:45 AM	Yes	Caribou	1	Walking	N	300	71	West	No	-96.3197	64.8447			No	Not Exceeded	
Road	2023-06-04 8:45 AM	Yes	Caribou	15	Walking	N	800	68	West	No	-96.3268	64.8203			No	Not Exceeded	
Road	2023-06-04 8:45 AM	Yes	Peregrine falcon	2	Standing	N/A	150	53	West	No	-96.3731	64.7061			No	Not Exceeded	
Road	2023-06-04 8:45 AM	Yes	Muskox	14	Foraging	N/A	1500	49	East	No	-96.3707	64.6688			No	Exceeded	1500 meters away from the road. So did not put a speed restriction
Road	2023-06-04 8:45 AM	Yes	Peregrine falcon	2	Standing	N/A	50	42	West	No	-96.2949	64.6276			No	Not Exceeded	
Road	2023-06-05 8:48 AM	Yes	Caribou	7	Foraging	N	1000	7	West	No	-96.0092	64.3726			No	Not Exceeded	
Road	2023-06-05 8:48 AM	Yes	Caribou	1	Lying Down	N/A	300	79	West	No	-96.3149	64.9095			No	Not Exceeded	
Road	2023-06-05 8:48 AM	Yes	Caribou	1	Feeding	N/A	800	72	West	No	-96.3238	64.8539			No	Not Exceeded	
Road	2023-06-05 8:48 AM	Yes	Caribou	8	Feeding	N/A	2000	71	West	No	-96.3197	64.8447			No	Not Exceeded	
Road	2023-06-05 8:48 AM	Yes	Caribou	2	Feeding	N/A	13	69	West	No	-96.3143	64.8277			No	Not Exceeded	
Road	2023-06-05 8:48 AM	Yes	Caribou	3	Walking	S	850	62	West	No	-96.3444	64.7737			No	Not Exceeded	
Road	2023-06-05 8:48 AM	Yes	Caribou	3	Running	S	40	53	West	No	-96.3731	64.7061			No	Not Exceeded	
Road	2023-06-05 8:48 AM	Yes	Caribou	10	Feeding	N/A	1000	53	West	No	-96.3731	64.7061			No	Not Exceeded	
Road	2023-06-05 8:48 AM	Yes	Caribou	1	Feeding	N/A	5	37	East	No	-96.2690	64.5842			No	Not Exceeded	
Road	2023-06-05 8:48 AM	Yes	Caribou	30	Walking	N	250	18	West	No	-96.0824	64.4610			No	Exceeded	Restriction
Road	2023-06-05 8:48 AM	Yes	Caribou	1	Running	S	900	7	West	No	-96.0092	64.3726			No	Not Exceeded	
Road	2023-06-05 8:48 AM	Yes	Caribou	7	Walking	S	200	5	East	No	-96.0000	64.3566			No	Not Exceeded	
Road	2023-06-05 8:48 AM	Yes	Caribou	5	Running	W	100	41	West	No	-96.2811	64.6203			No	Not Exceeded	
Road	2023-06-05 8:48 AM	Yes	Caribou	1	Walking	SW	100	44	East	No	-96.3035	64.6417			No	Not Exceeded	
Road	2023-06-05 8:48 AM	Yes	Caribou	13	Lying Down	N/A	850	92	East	No	-96.2219	64.9943			No	Not Exceeded	
Road	2023-06-06 8:02 AM	Yes	Muskox	1	Lying Down	N/A	50	89	West	No	-96.2196	64.9674			No	Not Exceeded	
Road	2023-06-06 8:02 AM	Yes	Caribou	3	Lying Down	N/A	600	83	East	No	-96.3011	64.9350			No	Not Exceeded	
Road	2023-06-06 8:02 AM	Yes	Caribou	3	Feeding	N/A	1000	63	West	No	-96.3444	64.7793			No	Not Exceeded	
Road	2023-06-06 8:02 AM	Yes	Caribou	14	Feeding	N/A	800	9	West	No	-96.0143	64.3890			No	Not Exceeded	
Incidental	2023-06-06 3:58 PM	Yes	Caribou	7	Walking	S	400	34	West,East	No	-96.2405	64.5687			No	Not Exceeded	
Incidental	2023-06-07 7:51 AM	Yes	Caribou	3	Walking	S	100	102	East	No	-96.1278	65.0517			No	Not Exceeded	
Incidental	2023-06-07 7:51 AM	Yes	Caribou	4	Feeding	N/A	200	81	East	No	-96.3021	64.9252			No	Not Exceeded	
Incidental	2023-06-07 7:51 AM	Yes	Muskox	20	Lying Down	N/A	700	42	West	No	-96.2949	64.6276			No	Exceeded	Speed Restriction
Road	2023-06-09 11:21 AM	Yes	Caribou	3	Walking	Not Recorded	10	107	West	No	-96.0719	65.0234			No	Not Exceeded	
Road	2023-06-09 11:21 AM	Yes	Caribou	14	Feeding	Not Recorded	400	88	West	No	-96.2206	64.9581			No	Not Exceeded	
Road	2023-06-09 11:21 AM	Yes	Caribou	5	Walking	NE	500	83	West	No	-96.3011	64.9350			No	Not Exceeded	
Road	2023-06-09 11:21 AM	Yes	Caribou	37	Feeding	N	600	79	West	No	-96.3149	64.9095			No	Exceeded	Speed restriction
Road	2023-06-09 11:21 AM	Yes	Muskox	16	Feeding	Not Recorded	1000	70	East	No	-96.3165	64.8365			No	Exceeded	Speed restriction
Road	2023-06-09 11:21 AM	Yes	Caribou	2	Foraging	Not Recorded	900	65	West	No	-96.3406	64.7948			No	Not Exceeded	
Road	2023-06-09 11:21 AM	Yes	Caribou	2	Walking	NE	800	59	West	No	-96.3706	64.7495			No	Not Exceeded	



Table A-1: Wildlife Observations along the All Weather Access Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2023-06-14 7:56 AM	Yes	Muskox	1	Trotting/running	E	5	104	West	No	-96.0972	65.0446			No	Not Exceeded	
Road	2023-06-14 7:56 AM	Yes	Caribou	1	Foraging	N/A	75	75	East	No	-96.3361	64.8795			No	Not Exceeded	
Road	2023-06-14 7:56 AM	Yes	Caribou	7	Foraging	N/A	50	73	West	No	-96.3242	64.8621			No	Not Exceeded	
Road	2023-06-14 7:56 AM	Yes	Muskox	1	Resting	W	200	41	West	N/A	-96.2811	64.6203			No	Not Exceeded	
Road	2023-06-14 7:56 AM	Yes	Muskox	1	Feeding	N/A	75	38	East	No	-96.2758	64.5907			No	Not Exceeded	
Road	2023-06-16 9:00 PM	Yes	Muskox	1	Walking	S	75	47	West	No	-96.3466	64.6580			No	Not Exceeded	
Road	2023-06-16 9:00 PM	Yes	Arctic fox	1	Running	S	25	49	East	No	-96.3707	64.6688			No	Not Exceeded	
Road	2023-06-16 9:00 PM	Yes	Wolf	1	Running	E	0	51	West	Yes	-96.3791	64.6932			No	Not Exceeded	
Road	2023-06-20 7:41 AM	Yes	Siksik	1	Running	W	0	105	Both	No	-96.0877	65.0341			No	Not Exceeded	
Road	2023-06-20 7:41 AM	Yes	Ptarmigan	1	Standing	N/A	50	87	West	No	-96.2410	64.9542			No	Not Exceeded	
Road	2023-06-20 7:41 AM	Yes	Siksik	1	Running	S	50	78	West	No	-96.3244	64.9032			No	Not Exceeded	
Road	2023-06-20 7:41 AM	Yes	Muskox	1	Foraging	N	100	62	West	No	-96.3444	64.7737			No	Not Exceeded	
Road	2023-06-20 7:41 AM	Yes	Muskox	32	Foraging	N/A	1000	59	West	No	-96.3706	64.7495			No	Exceeded	>1000m from the road
Road	2023-06-20 7:41 AM	Yes	Muskox	2	Foraging	N/A	100	55	East	No	-96.3460	64.7185			No	Not Exceeded	
Road	2023-06-20 7:41 AM	Yes	Arctic fox	5	Walking	N/A	25	47	East	No	-96.3466	64.6580			No	Not Exceeded	
Road	2023-06-20 7:41 AM	Yes	Arctic fox	2	Foraging	N/A	50	33	East	No	-96.2163	64.5715			No	Not Exceeded	
Road	2023-06-20 7:41 AM	Yes	Canada goose	5	Foraging	N/A	500	24	West	No	-96.1365	64.5079			No	Not Exceeded	
Road	2023-06-20 7:41 AM	Yes	Muskox	2	Foraging	N/A	750	23	East	No	-96.1244	64.5006			No	Not Exceeded	
Road	2023-06-20 7:41 AM	Yes	Muskox	8	Lying Down	N/A	500	16	West	No	-96.0624	64.4463			No	Not Exceeded	
Road	2023-06-20 7:41 AM	Yes	Bald Eagle	1	Flying	S	500	16	East	No	-96.0624	64.4463			No	Not Exceeded	
Incidental	2023-06-20 3:09 PM	Yes	Sandhill crane	2	Walking	S	50	46	West	No	-96.3296	64.6562			No	Not Exceeded	
Road	2023-06-23 9:49 AM	Yes	Muskox	1	Feeding	N/A	200	97	West	No	-96.1711	65.0259			No	Not Exceeded	
Road	2023-06-23 9:49 AM	Yes	Siksik	1	Walking	S	0	72	Both	N/A	-96.3238	64.8539			No	Not Exceeded	
Road	2023-06-23 9:49 AM	Yes	Siksik	1	Standing	N/A	0	48	West	No	-96.3688	64.6642			No	Not Exceeded	
Road	2023-06-23 9:49 AM	Yes	Sandhill crane	1	Walking	E	5	35	East	No	-96.2443	64.5739			No	Not Exceeded	
Road	2023-06-23 9:49 AM	Yes	Muskox	2	Standing	N/A	2000	34	East	No	-96.2405	64.5687			No	Not Exceeded	
Road	2023-06-23 9:49 AM	Yes	Muskox	3	Lying Down	N/A	150	20	West	No	-96.0960	64.4787			No	Not Exceeded	
Road	2023-06-25 6:01 AM	Yes	Muskox	1	Foraging	E	50	102	East	No	-96.1278	65.0517			No	Not Exceeded	
Road	2023-06-25 6:01 AM	Yes	Wolf	1	Walking	NE	60	98	West	No	-96.1576	65.0325			No	Not Exceeded	
Road	2023-06-25 6:01 AM	Yes	Muskox	5	Walking	W	80	37	West	No	-96.2690	64.5842			No	Not Exceeded	
Road	2023-06-25 6:01 AM	Yes	Muskox	20	Feeding	N/A	110	27	East	No	-96.1612	64.5322			No	Exceeded	Speed reduction
Road	2023-06-26 4:28 PM	Yes	Muskox	20	Foraging	N/A	1500	25	West	No	-96.1495	64.5142			No	Exceeded	> 1.5Km from the road
Road	2023-06-26 4:28 PM	Yes	Muskox	1	Foraging	N/A	190	48	East	No	-96.3688	64.6642			No	Not Exceeded	
Road	2023-06-26 4:28 PM	Yes	Muskox	1	Standing	N/A	120	60	West	No	-96.3636	64.7555			No	Not Exceeded	
Road	2023-06-30 9:39 AM	Yes	Muskox	1	Foraging	N/A	50	99	West	No	-96.1532	65.0420			No	Not Exceeded	
Road	2023-06-30 9:39 AM	Yes	Muskox	1	Foraging	N/A	150	97	West	No	-96.1711	65.0259			No	Not Exceeded	
Road	2023-06-30 9:39 AM	Yes	Muskox	11	Foraging	N/A	600	68	East	No	-96.3268	64.8203			No	Not Exceeded	
Road	2023-06-30 9:39 AM	Yes	Caribou	1	Foraging	N	50	60	West	No	-96.3636	64.7555			No	Not Exceeded	
Road	2023-06-30 9:39 AM	Yes	Muskox	1	Foraging	N/A	700	55	West	No	-96.3460	64.7185			No	Not Exceeded	
Road	2023-06-30 9:39 AM	Yes	Muskox	4	Foraging	N/A	300	29	West	No	-96.1813	64.5473			No	Not Exceeded	
Road	2023-06-30 9:39 AM	Yes	Sandhill crane	2	Standing	N/A	100	25	West	No	-96.1495	64.5142			No	Not Exceeded	
Road	2023-07-02 8:03 AM	Yes	Muskox	4	Foraging	N/A	0	106	Both	Yes	-96.0829	65.0271			Yes - Seen them the other	Not Exceeded	
Road	2023-07-02 8:03 AM	Yes	Muskox	2	Resting	N/A	10	103	East	No	-96.1108	65.0489			No	Not Exceeded	
Road	2023-07-02 8:03 AM	Yes	Bald Eagle	1	Flying	N/A	290	102	West	No	-96.1278	65.0517			No	Not Exceeded	
Road	2023-07-02 8:03 AM	Yes	Muskox	5	Foraging	N/A	900	55	East	No	-96.3460	64.7185			No	Not Exceeded	
Road	2023-07-02 8:03 AM	Yes	Muskox	2	Foraging	N/A	900	52	West	No	-96.3774	64.7009			No	Not Exceeded	
Road	2023-07-02 8:03 AM	Yes	Sandhill crane	2	Walking	N/A	100	48	West	No	-96.3688	64.6642			No	Not Exceeded	
Road	2023-07-02 8:03 AM	Yes	Muskox	1	Foraging	N/A	100	45	West	No	-96.3134	64.6524			No	Not Exceeded	
Road	2023-07-02 8:03 AM	Yes	Arctic hare	1	Foraging	N/A	1	39	West	No	-96.2751	64.5959			No	Not Exceeded	



Table A-1: Wildlife Observations along the All Weather Access Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2023-07-02 8:03 AM	Yes	Muskox	2	Foraging	S	0	34	Both	Yes	-96.2405	64.5687			No	Not Exceeded	
Road	2023-07-02 8:03 AM	Yes	Muskox	2	Foraging	N/A	80	21	West	No	-96.1045	64.4869			No	Not Exceeded	
Road	2023-07-04 7:01 AM	Yes	Muskox	2	Feeding	N/A	30	104	East	No	-96.0972	65.0446			No	Not Exceeded	
Road	2023-07-04 7:01 AM	Yes	Arctic hare	1	Running	W	5	70	West	No	-96.3165	64.8365			No	Not Exceeded	
Road	2023-07-04 7:01 AM	Yes	Muskox	1	Feeding	N/A	150	62	East	No	-96.3444	64.7737			No	Not Exceeded	
Road	2023-07-04 7:01 AM	Yes	Arctic fox	1	Running	W	0	56	Both	Yes	-96.3514	64.7259			No	Not Exceeded	
Road	2023-07-04 7:01 AM	Yes	Sandhill crane	2	Walking	N	30	29	East	No	-96.1813	64.5473			No	Not Exceeded	
Road	2023-07-04 7:01 AM	Yes	Bald Eagle	1	Standing	N/A	100	17	East	No	-96.0771	64.4533			No	Not Exceeded	
Road	2023-07-07 7:55 AM	Yes	Muskox	2	Foraging	N/A	20	105	East	No	-96.0877	65.0341			No	Not Exceeded	
Road	2023-07-07 7:55 AM	Yes	Muskox	1	Foraging	N/A	300	102	East	No	-96.1278	65.0517			No	Not Exceeded	
Road	2023-07-07 7:55 AM	Yes	Muskox	1	Foraging	N/A	300	101	West	No	-96.1403	65.0567			No	Not Exceeded	
Road	2023-07-07 7:55 AM	Yes	Muskox	1	Resting	W	100	98	West	No	-96.1576	65.0325			No	Not Exceeded	
Road	2023-07-07 7:55 AM	Yes	Muskox	1	Foraging	N/A	40	62	East	No	-96.3444	64.7737			No	Not Exceeded	
Road	2023-07-07 7:55 AM	Yes	Arctic hare	2	Standing	E	0	57	East	Yes	-96.3601	64.7314			No	Not Exceeded	
Road	2023-07-07 7:55 AM	Yes	Arctic fox	1	Walking	W	0	51	Both	Yes	-96.3791	64.6932			No	Not Exceeded	
Road	2023-07-07 7:55 AM	Yes	Sandhill crane	2	Walking	W	0	48	West	Yes	-96.3688	64.6642			No	Not Exceeded	
Road	2023-07-07 7:55 AM	Yes	Muskox	1	Standing	E	20	43	East	No	-96.3007	64.6348			No	Not Exceeded	
Road	2023-07-07 7:55 AM	Yes	Muskox	3	Foraging	E	50	21	East	No	-96.1045	64.4869			No	Not Exceeded	
Road	2023-07-07 7:55 AM	Yes	Bald Eagle	2	Standing	N/A	40	14	East	No	-96.0430	64.4312			No	Not Exceeded	
Incidental	2023-07-07 4:50 PM	Yes	Muskox	14	Resting	E	150	54	West	No	-96.3584	64.7132			No	Exceeded	Speed restriction as been called to the dispatch (30km/h for 2 hours at km54)
Incidental	2023-07-07 5:38 PM	Yes	Caribou	1	Alert	N/A	10	89	East	No	-96.2196	64.9674			No	Not Exceeded	
Road	2023-07-11 7:25 AM	Yes	Muskox	2	Foraging	N/A	5	101	West	No	-96.1403	65.0567			No	Not Exceeded	
Road	2023-07-11 7:25 AM	Yes	Wolf	1	Walking	S	20	96	West	No	-96.1809	65.0181			No	Not Exceeded	
Road	2023-07-11 7:25 AM	Yes	Arctic hare	1	Alert	W	10	79	West	No	-96.3149	64.9095			No	Not Exceeded	
Road	2023-07-11 7:25 AM	Yes	Siksik	1	Alert	E	1	71	East	Yes	-96.3197	64.8447			No	Not Exceeded	
Road	2023-07-11 7:25 AM	Yes	Muskox	1	Foraging	N/A	2	43	West	No	-96.3007	64.6348			No	Not Exceeded	
Road	2023-07-11 7:25 AM	Yes	Arctic hare	1	Alert	E	5	34	East	No	-96.2405	64.5687			No	Not Exceeded	
Road	2023-07-11 7:25 AM	Yes	Muskox	1	Foraging	E	20	23	East	No	-96.1244	64.5006			No	Not Exceeded	
Road	2023-07-11 7:25 AM	Yes	Siksik	3	Walking	W	3	19	West	Yes	-96.0866	64.4702			No	Not Exceeded	
Road	2023-07-11 7:25 AM	Yes	Bald Eagle	1	Standing	E	3	17	East	No	-96.0771	64.4533			No	Not Exceeded	
Road	2023-07-11 7:25 AM	Yes	Wolf	1	Walking	W	50	17	West	No	-96.0771	64.4533			No	Not Exceeded	
Road	2023-07-11 7:25 AM	Yes	Siksik	1	Alert	E	1	2	East	Yes	-95.9743	64.3326			No	Not Exceeded	
Road	2023-07-14 7:16 AM	Yes	Muskox	3	Feeding	N/A	30	105	Both	No	-96.0877	65.0341			No	Not Exceeded	
Road	2023-07-14 7:16 AM	Yes	Ptarmigan	6	Walking	W	0	95	West	Yes	-96.1952	65.0129			No	Not Exceeded	
Road	2023-07-14 7:16 AM	Yes	Ptarmigan	4	Walking	S	0	82	Both	Yes	-96.3120	64.9306			No	Not Exceeded	
Road	2023-07-14 7:16 AM	Yes	Siksik	1	Standing	N/A	0	53	Both	Yes	-96.3731	64.7061			No	Not Exceeded	
Road	2023-07-14 7:16 AM	Yes	Arctic hare	1	Walking	W	5	54	West	No	-96.3584	64.7132			No	Not Exceeded	
Road	2023-07-14 7:16 AM	Yes	Muskox	1	Feeding	N/A	10	44	West	No	-96.3035	64.6417			No	Not Exceeded	
Road	2023-07-14 7:16 AM	Yes	Muskox	17	Feeding	N/A	75	41	East	No	-96.2811	64.6203			No	Exceeded	Speed restriction put in place
Road	2023-07-14 7:16 AM	Yes	Sandhill crane	2	Walking	W	15	35	West	No	-96.2443	64.5739			No	Not Exceeded	
Road	2023-07-14 7:16 AM	Yes	Siksik	1	Running	S	0	25	Both	Yes	-96.1495	64.5142			No	Not Exceeded	
Road	2023-07-16 8:10 AM	Yes	Muskox	4	Foraging	N/A	750	67	East	No	-96.3262	64.8123			No	Not Exceeded	
Road	2023-07-16 8:10 AM	Yes	Muskox	2	Foraging	N/A	125	53	West	No	-96.3731	64.7061			No	Not Exceeded	
Road	2023-07-16 8:10 AM	Yes	Siksik	1	Walking	W	15	40	West	No	-96.2814	64.6043			No	Not Exceeded	
Road	2023-07-16 8:10 AM	Yes	Muskox	1	Lying Down	N/A	25	38	East	No	-96.2758	64.5907			No	Not Exceeded	
Road	2023-07-16 8:10 AM	Yes	Muskox	1	Foraging	N/A	25	7	West	No	-96.0092	64.3726			No	Not Exceeded	
Road	2023-07-18 8:45 AM	Yes	Muskox	4	Feeding	N	200	46	West	No	-96.3296	64.6562			No	Not Exceeded	
Road	2023-07-18 8:45 AM	Yes	Arctic hare	1	Trotting/running	E	0	37	East	Yes	-96.2690	64.5842			No	Not Exceeded	
Road	2023-07-18 8:45 AM	Yes	Muskox	1	Feeding	N/A	70	11	West	No	-96.0239	64.4054			No	Not Exceeded	



Table A-1: Wildlife Observations along the All Weather Access Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2023-07-18 8:45 AM	Yes	Muskox	1	Feeding	N/A	2	5	West	No	-96.0000	64.3566			No	Not Exceeded	
Road	2023-07-18 12:29 PM	No		N/A			N/A	N/A			N/A	N/A					
Road	2023-07-21 1:23 PM	Yes	Muskox	2	Lying Down	N/A	300	19	West	No	-96.0866	64.4702			No	Not Exceeded	
Road	2023-07-21 1:23 PM	Yes	Muskox	10	Foraging	N	2500	20	East	No	-96.0960	64.4787			No	Not Exceeded	
Road	2023-07-21 1:23 PM	Yes	Muskox	1	Walking	NE	150	30	West	No	-96.1958	64.5543			No	Not Exceeded	
Road	2023-07-21 1:23 PM	Yes	Muskox	2	Lying Down	N/A	100	51	West	No	-96.3791	64.6932			No	Not Exceeded	
Road	2023-07-21 1:23 PM	Yes	Muskox	15	Foraging	N	350	65	East	No	-96.3406	64.7948			No	Exceeded	Speed Restriction
Road	2023-07-21 1:23 PM	Yes	Muskox	1	Lying Down	N/A	150	104	East	No	-96.0972	65.0446			No	Not Exceeded	
Road	2023-07-26 11:42 AM	Yes	Muskox	1	Walking	N	200	11	East	No	-96.0239	64.4054			No	Not Exceeded	
Road	2023-07-26 11:42 AM	Yes	Muskox	1	Walking	N	300	14	East	No	-96.0430	64.4312			No	Not Exceeded	
Road	2023-07-26 11:42 AM	Yes	Muskox	1	Foraging	N/A	100	35	West	No	-96.2443	64.5739			No	Not Exceeded	
Road	2023-07-26 11:42 AM	Yes	Muskox	1	Foraging	N/A	690	52	East	No	-96.3774	64.7009			No	Not Exceeded	
Road	2023-07-26 11:42 AM	Yes	Muskox	3	Foraging	N/A	280	95	East	No	-96.1952	65.0129			No	Not Exceeded	
Incidental	2023-07-28 7:33 AM	Yes	Arctic hare	1	Dead	N/A	0	73	South,North,West,East	Yes	-96.3242	64.8621		Project related	No	Not Exceeded	
Incidental	2023-07-29 6:30 AM	Yes	Caribou	2	Walking	SE	300	103	East	No	-96.1108	65.0489			No	Not Exceeded	
Incidental	2023-07-30 6:24 AM	Yes	Wolf	1	Walking	E	50	5	East	N/A	-96.0000	64.3566			No	Not Exceeded	
Road	2023-08-01 1:33 PM	No		N/A			N/A	N/A			N/A	N/A					
Road	2023-08-04 9:59 AM	Yes	Siksik	1	Walking	SE	115	30	West	No	-96.1958	64.5543			No	Not Exceeded	
Road	2023-08-04 9:59 AM	Yes	Siksik	1	Walking	W	0	58	West	Yes	-96.3579	64.7416			No	Not Exceeded	
Road	2023-08-06 7:49 AM	Yes	Siksik	1	Running	S	0	40	West	Yes	-96.2814	64.6043			No	Not Exceeded	
Road	2023-08-06 7:49 AM	Yes	Muskox	9	Foraging	S	800	38	West	No	-96.2758	64.5907			No	Not Exceeded	
Road	2023-08-06 7:49 AM	Yes	Arctic fox	1	Foraging	W	15	33	West	No	-96.2163	64.5715			No	Not Exceeded	
Incidental	2023-08-06 1:34 PM	Yes	Muskox	9	Foraging	S	800	65	West	No	-96.3406	64.7948			No	Not Exceeded	
Incidental	2023-08-06 1:34 PM	Yes	Muskox	1	Foraging	NE	350	67	East	No	-96.3262	64.8123			No	Not Exceeded	
Road	2023-08-08 12:38 PM	Yes	Muskox	11	Foraging	NW	100	13	West	No	-96.0368	64.4234			No	Not Exceeded	
Road	2023-08-08 12:38 PM	Yes	Muskox	1	Foraging	N	300	4	West	No	-95.9985	64.3461			No	Not Exceeded	
Road	2023-08-12 7:19 AM	Yes	Muskox	1	Resting	N/A	15	95	West	No	-96.1952	65.0129			No	Not Exceeded	
Road	2023-08-12 7:19 AM	Yes	Arctic fox	1	Foraging	SW	15	67	West	No	-96.3262	64.8123			No	Not Exceeded	
Road	2023-08-14 7:05 AM	Yes	Muskox	1	Foraging	SE	100	32	East	No	-96.2045	64.5647			No	Not Exceeded	
Road	2023-08-14 7:05 AM	Yes	Muskox	1	Foraging	NE	100	11	East	No	-96.0239	64.4054			No	Not Exceeded	
Road	2023-08-16 7:22 AM	Yes	Muskox	1	Foraging	N	350	55	East	No	-96.3460	64.7185			No	Not Exceeded	
Road	2023-08-17 7:46 AM	Yes	Muskox	1	Foraging	N	1000	71	East	No	-96.3197	64.8447			No	Not Exceeded	
Road	2023-08-17 7:46 AM	Yes	Muskox	1	Foraging	N	800	61	East	No	-96.3547	64.7633			No	Not Exceeded	
Road	2023-08-19 8:26 AM	Yes	Canada goose	38	Walking	N	30	94	West	No	-96.2127	65.0075			No	Not Exceeded	
Road	2023-08-19 8:26 AM	Yes	Caribou	1	Walking	S	100	50	East	No	-96.3731	64.6794			No	Not Exceeded	
Road	2023-08-19 8:26 AM	Yes	Sandhill crane	2	Walking	W	30	37	West	No	-96.2690	64.5842			No	Not Exceeded	
Road	2023-08-19 8:26 AM	Yes	Canada goose	27	Walking	E	50	24	East	No	-96.1365	64.5079			No	Not Exceeded	
Road	2023-08-20 12:10 PM	Yes	Muskox	33	Foraging	N/A	1900	67	East	No	-96.3262	64.8123			No	Exceeded	> 1.5Km from the road
Road	2023-08-23 3:06 PM	Yes	Canada goose	22	Feeding	NW	20	104	West	No	-96.0972	65.0446			No	Not Exceeded	
Road	2023-08-23 3:06 PM	Yes	Canada goose	7	Feeding	SW	40	99	West	No	-96.1532	65.0420			No	Not Exceeded	
Road	2023-08-23 3:06 PM	Yes	Muskox	1	Foraging	S	150	91	West	No	-96.2249	64.9847			No	Not Exceeded	
Road	2023-08-23 3:06 PM	Yes	Muskox	1	Lying Down	N/A	100	56	East	No	-96.3514	64.7259			No	Not Exceeded	
Road	2023-08-23 3:06 PM	Yes	Bald Eagle	2	Flying	E	0	29	East	No	-96.1813	64.5473			No	Not Exceeded	
Road	2023-08-24 2:09 PM	Yes	Sandhill crane	2	Feeding	N/A	300	83	West	N/A	-96.3011	64.9350			No	Not Exceeded	
Road	2023-08-25 8:00 AM	No		N/A			N/A	N/A			N/A	N/A					
Road	2023-08-25 12:51 PM	No		N/A			N/A	N/A			N/A	N/A					
Road	2023-08-27 9:06 AM	Yes	Siksik	1	Running	E	0	101	East	No	-96.1403	65.0567			No	Not Exceeded	
Road	2023-08-27 9:06 AM	Yes	Canada goose	18	Flying	SE	30	94	East	No	-96.2127	65.0075			No	Not Exceeded	
Road	2023-08-27 9:06 AM	Yes	Snow goose	150	Standing	N/A	30	81	East	No	-96.3021	64.9252			No	Not Exceeded	

Table A-1: Wildlife Observations along the All Weather Access Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2023-08-28 10:26 AM	Yes	Muskox	6	Foraging	N/A	1700	7	East	No	-96.0092	64.3726			No	Not Exceeded	
Road	2023-08-29 9:04 AM	Yes	Bald Eagle	1	Flying	E	300	59	East	No	-96.3706	64.7495			No	Not Exceeded	
Road	2023-09-05 7:44 AM	Yes	Ptarmigan	10	Foraging	S	20	103	Both	No	-96.1108	65.0489			No	Not Exceeded	
Incidental	2023-09-05 3:26 PM	Yes	Muskox	21	Foraging	N/A	1000	102	West	No	-96.1278	65.0517			No	Exceeded	Speed restriction at km 101 to km 102 for 2 hours
Road	2023-09-08 6:54 AM	No		N/A			N/A	N/A			N/A	N/A					
Incidental	2023-09-08 1:45 PM	Yes	Muskox	18	Walking	W	500	26	West	No	-96.1615	64.5235			No	Exceeded	Speed restriction until end of shift as they were walking away from road
Incidental	2023-09-08 1:45 PM	Yes	Muskox	20	Foraging	N/A	500	94	West	No	-96.2127	65.0075			No	Exceeded	Speed restriction placed for 2 hours at km 94
Road	2023-09-13 12:07 PM	Yes	Muskox	6	Foraging	N/A	100	99	West	No	-96.1532	65.0420			No	Not Exceeded	
Road	2023-09-13 12:07 PM	Yes	Snow goose	76	Lying Down	N/A	200	93	West	No	-96.2220	65.0008			No	Not Exceeded	
Road	2023-09-13 12:07 PM	Yes	Snow goose	5	Feeding	N/A	25	92	West	No	-96.2219	64.9943			No	Not Exceeded	
Road	2023-09-13 12:07 PM	Yes	Snow goose	103	Flying	W	100	87	East	Yes	-96.2410	64.9542			No	Not Exceeded	
Road	2023-09-13 12:07 PM	Yes	Snow goose	68	Feeding	N/A	215	86	East	No	-96.2528	64.9468			No	Not Exceeded	
Road	2023-09-13 12:07 PM	Yes	Snow goose	33	Feeding	N/A	22	84	Both	No	-96.2828	64.9366			No	Not Exceeded	
Road	2023-09-13 12:07 PM	Yes	Snow goose	11	Flying	NW	90	63	East	No	-96.3444	64.7793			No	Not Exceeded	
Road	2023-09-13 12:07 PM	Yes	Siksik	1	Standing	E	5	44	East	No	-96.3035	64.6417			No	Not Exceeded	
Road	2023-09-13 12:07 PM	Yes	Snow goose	7	Resting	N/A	60	37	West	No	-96.2690	64.5842			No	Not Exceeded	
Road	2023-09-13 12:07 PM	Yes	Sandhill crane	4	Resting	N/A	50	27	East	No	-96.1612	64.5322			No	Not Exceeded	
Road	2023-09-13 12:07 PM	Yes	Duck	19	Flying	S	200	24	East	No	-96.1365	64.5079			No	Not Exceeded	
Road	2023-09-13 12:07 PM	Yes	Snow goose	42	Resting	N/A	100	5	East	No	-96.0000	64.3566			No	Not Exceeded	
Road	2023-09-15 6:36 AM	Yes	Snow goose	6	Standing	N/A	100	95	West	No	-96.1952	65.0129			No	Not Exceeded	
Road	2023-09-15 6:36 AM	Yes	Wolverine	1	Trotting/running	E	200	53	East	No	-96.3731	64.7061			No	Not Exceeded	
Incidental	2023-09-15 3:37 PM	Yes	Muskox	1	Foraging	N/A	200	11	East	No	-96.0239	64.4054			No	Not Exceeded	
Road	2023-09-20 8:58 AM	Yes	Muskox	5	Foraging	SW	200	98	West	No	-96.1576	65.0325			No	Not Exceeded	
Road	2023-09-20 8:58 AM	Yes	Muskox	2	Foraging	E	20	98	East	No	-96.1576	65.0325			No	Not Exceeded	
Road	2023-09-21 1:50 PM	Yes	Muskox	5	Foraging	NE	50	101	East	No	-96.1403	65.0567			No	Not Exceeded	
Road	2023-09-21 1:50 PM	Yes	Muskox	1	Foraging	W	5	92	West	No	-96.2219	64.9943			No	Not Exceeded	
Road	2023-09-23 7:21 AM	Yes	Muskox	1	Feeding	N/A	50	92	West	No	-96.2219	64.9943			No	Not Exceeded	
Road	2023-09-23 7:21 AM	Yes	Snow goose	16	Resting	N/A	100	86	West	No	-96.2528	64.9468			No	Not Exceeded	
Road	2023-09-23 7:21 AM	Yes	Snow goose	85	Feeding	N/A	75	85	East	No	-96.2614	64.9389			No	Not Exceeded	
Incidental	2023-09-23 1:34 PM	Yes	Muskox	1	Feeding	N/A	800	7	West	No	-96.0092	64.3726			No	Not Exceeded	
Road	2023-09-25 7:15 AM	Yes	Muskox	2	Foraging	N/A	10	99	West	No	-96.1532	65.0420			No	Not Exceeded	
Road	2023-09-26 7:03 AM	Yes	Caribou	1	Walking	N	50	2	East	No	-95.9743	64.3326			No	Not Exceeded	
Road	2023-09-26 7:03 AM	Yes	Muskox	7	Foraging	S	150	71	West	No	-96.3197	64.8447			No	Not Exceeded	
Incidental	2023-09-26 3:17 PM	Yes	Muskox	1	Lying Down	N/A	100	92	East	No	-96.2219	64.9943			No	Not Exceeded	
Road	2023-09-27 10:27 AM	Yes	Muskox	1	Foraging	N/A	20	14	East	No	-96.0430	64.4312			No	Not Exceeded	





Table A-1: Wildlife Observations along the All Weather Access Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2023-09-28 8:51 AM	Yes	Muskox	1	Feeding	N	15	97	West	No	-96.1711	65.0259			No	Not Exceeded	
Road	2023-09-28 8:51 AM	Yes	Caribou	3	Walking	N	250	44	East	No	-96.3035	64.6417			No	Not Exceeded	
Road	2023-09-28 8:51 AM	Yes	Muskox	10	Resting	N/A	1000	26	East	No	-96.1615	64.5235			No	Not Exceeded	
Road	2023-09-29 6:58 AM	Yes	Arctic fox	1	Walking	N/A	5	105	Both	Yes	-96.0877	65.0341			No	Not Exceeded	
Road	2023-09-29 6:58 AM	Yes	Muskox	1	Foraging	N/A	10	93	East	No	-96.2220	65.0008			No	Not Exceeded	
Road	2023-09-29 6:58 AM	Yes	Caribou	4	Walking	NW	200	55	West	No	-96.3460	64.7185			No	Not Exceeded	
Road	2023-09-29 6:58 AM	Yes	Arctic fox	1	Walking	W	150	21	West	No	-96.1045	64.4869			No	Not Exceeded	
Road	2023-10-01 7:39 AM	Yes	Muskox	1	Feeding	W	10	98	West	No	-96.1576	65.0325			No	Not Exceeded	
Road	2023-10-01 7:39 AM	Yes	Muskox	1	Feeding	E	15	92	East	No	-96.2219	64.9943			No	Not Exceeded	
Road	2023-10-01 7:39 AM	Yes	Arctic fox	1	Walking	NW	200	47	West	No	-96.3466	64.6580			No	Not Exceeded	
Road	2023-10-01 7:39 AM	Yes	Caribou	1	Walking	S	250	19	West	No	-96.0866	64.4702			No	Not Exceeded	
Incidental	2023-10-02 6:39 PM	Yes	Muskox	1	Standing	N/A	150	89	East	No	-96.2196	64.9674			No	Not Exceeded	
Road	2023-10-04 9:13 AM	Yes	Muskox	1	Feeding	N/A	30	97	East	No	-96.1711	65.0259			No	Not Exceeded	
Road	2023-10-06 8:00 AM	Yes	Arctic fox	1	Walking	N	200	101	West	N/A	-96.1403	65.0567			No	Not Exceeded	
Road	2023-10-06 8:00 AM	Yes	Muskox	2	Feeding	N/A	25	96	East	N/A	-96.1809	65.0181			No	Not Exceeded	
Road	2023-10-07 9:02 AM	Yes	Arctic fox	1	Walking	W	100	38	West	No	-96.2758	64.5907			No	Not Exceeded	
Road	2023-10-09 8:16 AM	Yes	Muskox	3	Feeding	W	12	91	West	N/A	-96.2249	64.9847			No	Not Exceeded	
Road	2023-10-11 11:18 AM	Yes	Muskox	1	Feeding	N/A	10	97	West	N/A	-96.1711	65.0259			No	Not Exceeded	
Road	2023-10-13 8:30 AM	Yes	Muskox	22	Foraging	N/A	2500	18	West	No	-96.0824	64.4610			No	Exceeded	Observed 2500m from the road
Road	2023-10-13 8:30 AM	Yes	Arctic fox	1	Running	SW	20	35	West	No	-96.2443	64.5739			No	Not Exceeded	
Road	2023-10-13 8:30 AM	Yes	Caribou	7	Foraging	E	300	66	East	No	-96.3350	64.8045			No	Not Exceeded	
Road	2023-10-13 8:30 AM	Yes	Muskox	1	Lying Down	N/A	200	92	East	No	-96.2219	64.9943			No	Not Exceeded	
Road	2023-10-13 8:30 AM	Yes	Muskox	3	Lying Down	N/A	150	98	West	No	-96.1576	65.0325			No	Not Exceeded	
Road	2023-10-14 12:17 PM	Yes	Caribou	29	Foraging	S	2900	69	East	No	-96.3143	64.8277			No	Not Exceeded	
Incidental	2023-10-17 8:48 AM	Yes	Muskox	1	Foraging	W	20	97	West	No	-96.1711	65.0259			No	Not Exceeded	
Road	2023-10-18 1:01 PM	Yes	Muskox	40	Foraging	N/A	2300	23	West	No	-96.1244	64.5006			No	Exceeded	> 1.5Km from the road
Incidental	2023-10-20 11:03 AM	Yes	Muskox	5	Resting	Not Recorded	100	1	West	No	-95.9717	64.3253			No	Not Exceeded	
Road	2023-10-20 1:01 PM	Yes	Muskox	10	Foraging	N/A	1900	75	West	No	-96.3361	64.8795			No	Not Exceeded	
Road	2023-10-21 8:46 AM	Yes	Muskox	2	Foraging	N/A	10	92	West	No	-96.2219	64.9943			No	Not Exceeded	
Road	2023-10-22 3:00 PM	No		N/A			N/A	N/A			N/A	N/A					
Road	2023-10-23 6:01 PM	Yes	Muskox	2	Foraging	W	10	92	West	No	-96.2219	64.9943			No	Not Exceeded	
Road	2023-10-23 6:01 PM	Yes	Muskox	1	Foraging	W	10	93	West	No	-96.2220	65.0008			No	Not Exceeded	
Road	2023-10-24 2:00 PM	No		N/A			N/A	N/A			N/A	N/A					
Road	2023-10-25 8:49 AM	Yes	Muskox	2	Foraging	N	100	90	West	No	-96.2221	64.9750			No	Not Exceeded	
Road	2023-10-26 10:36 AM	Yes	Caribou	37	Foraging	N/A	2000	4	East	No	-95.9985	64.3461			No	Not Exceeded	
Road	2023-10-26 10:36 AM	Yes	Caribou	18	Foraging	N/A	500	17	East	No	-96.0771	64.4533			No	Not Exceeded	
Road	2023-10-26 10:36 AM	Yes	Caribou	40	Foraging	N/A	1900	23	East	No	-96.1244	64.5006			No	Not Exceeded	
Road	2023-10-26 10:36 AM	Yes	Caribou	102	Foraging	N/A	2000	23	East	No	-96.1244	64.5006			No	Exceeded	Caribou are 2000m from road HTO closed road from km 15 to 23 and did convoy to bring trucks home
Road	2023-10-26 10:36 AM	Yes	Caribou	65	Foraging	N/A	2000	18	East	No	-96.0824	64.4610			No	Not Exceeded	
Road	2023-10-27 11:47 AM	Yes	Caribou	107	Foraging	N/A	350	2	East	No	-95.9743	64.3326			No	Exceeded	Road was closed the day before
Road	2023-10-27 11:47 AM	Yes	Caribou	96	Foraging	N/A	250	8	East	No	-96.0155	64.3813			No	Exceeded	Road was closed oct 26
Road	2023-10-27 11:47 AM	Yes	Caribou	382	Lying Down	N/A	1250	18	East	No	-96.0824	64.4610			No	Exceeded	Road was closed on oct 26
Road	2023-10-27 11:47 AM	Yes	Muskox	2	Foraging	N/A	25	89	East	No	-96.2196	64.9674			No	Not Exceeded	
Road	2023-10-27 11:47 AM	Yes	Muskox	2	Foraging	N/A	50	93	West	No	-96.2220	65.0008			No	Not Exceeded	

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Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2023-10-27 11:47 AM	Yes	Muskox	1	Lying Down	N/A	25	95	West	No	-96.1952	65.0129			No	Not Exceeded	
Road	2023-10-28 11:06 AM	Yes	Muskox	3	Resting	N/A	5	97	East	No	-96.1711	65.0259			No	Not Exceeded	
Road	2023-10-28 11:06 AM	Yes	Muskox	2	Foraging	E	10	90	East	No	-96.2221	64.9750			No	Not Exceeded	
Road	2023-10-28 11:06 AM	Yes	Caribou	20	Walking	N	100	12	East	No	-96.0299	64.4139			No	Not Exceeded	
Road	2023-10-28 11:06 AM	Yes	Caribou	2	Walking	N	100	11	East	No	-96.0239	64.4054			No	Not Exceeded	
Road	2023-10-28 11:06 AM	Yes	Caribou	39	Foraging	S	1000	7	East	No	-96.0092	64.3726			No	Not Exceeded	
Road	2023-10-28 11:06 AM	Yes	Caribou	3	Walking	E	100	3	East	No	-95.9900	64.3377			No	Not Exceeded	
Incidental	2023-10-28 4:49 PM	Yes	Caribou	500	Walking	W	5	15	East	Yes	-96.0525	64.4398			No	Exceeded	Road closed
Road	2023-10-29 8:26 AM	Yes	Muskox	4	Foraging	E	100	91	East	No	-96.2249	64.9847			No	Not Exceeded	
Road	2023-10-29 8:26 AM	Yes	Muskox	11	Walking	E	1000	53	West	No	-96.3731	64.7061			No	Not Exceeded	
Road	2023-10-29 8:26 AM	Yes	Muskox	8	Foraging	NE	1500	38	West	No	-96.2758	64.5907			No	Not Exceeded	
Road	2023-10-29 8:26 AM	Yes	Muskox	70	Foraging	W	1500	27	West	No	-96.1612	64.5322			No	Exceeded	Road closed
Road	2023-10-29 8:26 AM	Yes	Caribou	450	Walking	W	3000	24	West	No	-96.1365	64.5079			No	Exceeded	Road closed
Road	2023-10-29 8:26 AM	Yes	Caribou	7	Walking	W	250	23	West	No	-96.1244	64.5006			No	Not Exceeded	
Road	2023-10-29 8:26 AM	Yes	Caribou	2	Walking	SE	75	22	East	Yes	-96.1126	64.4935			No	Not Exceeded	
Road	2023-10-29 8:26 AM	Yes	Caribou	8	Walking	NW	100	22	East	Yes	-96.1126	64.4935			No	Not Exceeded	
Road	2023-10-29 8:26 AM	Yes	Caribou	1000	Trotting/runn ing	NW	100	21	West	Yes	-96.1045	64.4869			No	Exceeded	Road closedHunters on the road
Road	2023-10-29 8:26 AM	Yes	Caribou	500	Walking	S	1000	20	East	No	-96.0960	64.4787			No	Exceeded	Road closed
Road	2023-10-29 8:26 AM	Yes	Caribou	1200	Foraging	NW	1000	19	East	No	-96.0866	64.4702			No	Exceeded	Road closed
Incidental	2023-10-29 4:38 PM	Yes	Caribou	12	Walking	W	300	93	West	No	-96.2220	65.0008			No	Not Exceeded	
Road	2023-10-30 9:08 AM	Yes	Muskox	2	Foraging	SW	300	89	West	No	-96.2196	64.9674			No	Not Exceeded	
Road	2023-10-30 9:08 AM	Yes	Caribou	13	Foraging	S	100	87	West	No	-96.2410	64.9542			No	Not Exceeded	
Road	2023-10-30 9:08 AM	Yes	Muskox	13	Foraging	E	1000	53	West	No	-96.3731	64.7061			No	Not Exceeded	
Road	2023-10-30 9:08 AM	Yes	Caribou	200	Walking	N	700	24	East	No	-96.1365	64.5079			No	Exceeded	Road closed
Road	2023-10-30 9:08 AM	Yes	Caribou	24	Walking	N	500	23	East	No	-96.1244	64.5006			No	Not Exceeded	
Road	2023-10-30 9:08 AM	Yes	Caribou	11	Walking	N	400	23	East	No	-96.1244	64.5006			No	Not Exceeded	
Road	2023-10-30 9:08 AM	Yes	Caribou	25	Walking	N	500	22	East	No	-96.1126	64.4935			No	Not Exceeded	
Road	2023-10-30 9:08 AM	Yes	Caribou	450	Walking	NW	800	21	East	No	-96.1045	64.4869			No	Exceeded	Road closed
Road	2023-10-30 9:08 AM	Yes	Caribou	130	Walking	S	200	18	East	No	-96.0824	64.4610			No	Exceeded	Road closedHunters deflect
Road	2023-10-30 9:08 AM	Yes	Caribou	500	Walking	W	100	16	West	Yes	-96.0624	64.4463			No	Exceeded	Road closed
Road	2023-10-30 9:08 AM	Yes	Caribou	300	Walking	N	200	16	East	No	-96.0624	64.4463			No	Exceeded	Road closed
Road	2023-10-30 9:08 AM	Yes	Caribou	900	Walking	W	10	15	Both	Yes	-96.0525	64.4398			No	Exceeded	Road closed
Road	2023-10-30 9:08 AM	Yes	Caribou	7	Walking	SW	100	12	East	Yes	-96.0299	64.4139			No	Not Exceeded	
Road	2023-10-30 9:08 AM	Yes	Caribou	60	Walking	NE	150	6	East	No	-96.0008	64.3643			No	Not Exceeded	
Incidental	2023-10-30 3:43 PM	Yes	Caribou	2500	Walking	W	75	15	East	No	-96.0525	64.4398			No	Exceeded	Road closed
Road	2023-10-31 10:36 AM	Yes	Muskox	3	Foraging	N	10	97	East	No	-96.1711	65.0259			No	Not Exceeded	
Road	2023-10-31 10:36 AM	Yes	Muskox	4	Foraging	S	500	90	West	No	-96.2221	64.9750			Yes - Same group counted day before	Not Exceeded	
Road	2023-10-31 10:36 AM	Yes	Caribou	17	Walking	N	100	68	East	No	-96.3268	64.8203			No	Not Exceeded	
Road	2023-10-31 10:36 AM	Yes	Caribou	5	Walking	N	50	67	East	No	-96.3262	64.8123			No	Not Exceeded	
Road	2023-10-31 10:36 AM	Yes	Caribou	10	Walking	N	100	63	East	No	-96.3444	64.7793			No	Not Exceeded	
Road	2023-10-31 10:36 AM	Yes	Caribou	3	Walking	N	200	57	East	No	-96.3601	64.7314			No	Not Exceeded	
Road	2023-10-31 10:36 AM	Yes	Caribou	100	Walking	S	75	52	East	No	-96.3774	64.7009			No	Exceeded	Road closed
Road	2023-10-31 10:36 AM	Yes	Caribou	100	Walking	S	300	40	East	No	-96.2814	64.6043			No	Exceeded	Rosd closed
Road	2023-11-01 10:15 AM	Yes	Muskox	1	Foraging	N	100	98	West	No	-96.1576	65.0325			No	Not Exceeded	
Road	2023-11-01 10:15 AM	Yes	Muskox	3	Foraging	N	50	97	West	No	-96.1711	65.0259			No	Not Exceeded	
Road	2023-11-01 10:15 AM	Yes	Muskox	3	Foraging	S	500	90	West	No	-96.2221	64.9750			No	Not Exceeded	
Road	2023-11-01 10:15 AM	Yes	Caribou	20	Walking	N	200	75	East	No	-96.3361	64.8795			No	Not Exceeded	
Road	2023-11-01 10:15 AM	Yes	Caribou	15	Foraging	N	450	65	East	No	-96.3406	64.7948			No	Not Exceeded	
Road	2023-11-01 10:15 AM	Yes	Caribou	250	Foraging	S	500	63	East	No	-96.3444	64.7793			No	Exceeded	Road closed
Road	2023-11-02 9:23 AM	Yes	Muskox	11	Foraging	S	800	94	West	No	-96.2127	65.0075			No	Not Exceeded	
Road	2023-11-02 9:23 AM	Yes	Muskox	4	Foraging	S	10	91	West	No	-96.2249	64.9847			No	Not Exceeded	
Road	2023-11-02 9:23 AM	Yes	Caribou	46	Walking	N	150	75	East	No	-96.3361	64.8795			No	Not Exceeded	
Road	2023-11-02 9:23 AM	Yes	Ptarmigan	5	Flying	S	1	73	East	No	-96.3242	64.8621			No	Not Exceeded	



Table A-1: Wildlife Observations along the All Weather Access Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2023-11-02 9:23 AM	Yes	Caribou	8	Walking	E	300	72	East	No	-96.3238	64.8539			No	Not Exceeded	
Road	2023-11-02 9:23 AM	Yes	Caribou	230	Walking	S	100	50	East	No	-96.3731	64.6794			No	Exceeded	Road closed
Road	2023-11-02 9:23 AM	Yes	Caribou	100	Resting	N/A	50	47	East	No	-96.3466	64.6580			No	Exceeded	Road closed
Road	2023-11-03 8:35 AM	Yes	Muskox	3	Resting	N/A	50	95	East	No	-96.1952	65.0129			No	Not Exceeded	
Road	2023-11-03 8:35 AM	Yes	Muskox	4	Resting	N/A	80	90	East	No	-96.2221	64.9750			No	Not Exceeded	
Road	2023-11-03 8:35 AM	Yes	Caribou	45	Walking	S	250	74	East	No	-96.3303	64.8752			No	Not Exceeded	
Road	2023-11-03 8:35 AM	Yes	Caribou	54	Resting	N/A	200	73	East	No	-96.3242	64.8621			No	Not Exceeded	
Road	2023-11-03 8:35 AM	Yes	Ptarmigan	20	Flying	E	5	56	East	No	-96.3514	64.7259			No	Not Exceeded	
Road	2023-11-03 8:35 AM	Yes	Caribou	28	Resting	N/A	150	50	West	No	-96.3731	64.6794			No	Not Exceeded	
Road	2023-11-03 8:35 AM	Yes	Caribou	2	Resting	N/A	200	47	East	No	-96.3466	64.6580			No	Not Exceeded	
Road	2023-11-03 8:35 AM	Yes	Caribou	130	Resting	N/A	100	45	East	No	-96.3134	64.6524			No	Exceeded	Road closed
Incidental	2023-11-03 4:11 PM	Yes	Caribou	120	Walking	S	200	44	East	No	-96.3035	64.6417			No	Exceeded	Road closed
Incidental	2023-11-03 4:11 PM	Yes	Caribou	6	Foraging	W	700	46	West	No	-96.3296	64.6562			No	Not Exceeded	
Incidental	2023-11-03 4:11 PM	Yes	Caribou	16	Foraging	S	500	50	West	No	-96.3731	64.6794			No	Not Exceeded	
Incidental	2023-11-03 4:11 PM	Yes	Muskox	10	Walking	S	500	95	West	No	-96.1952	65.0129			No	Not Exceeded	
Road	2023-11-04 9:11 AM	Yes	Muskox	1	Foraging	N	15	97	East	No	-96.1711	65.0259			No	Not Exceeded	
Road	2023-11-04 9:11 AM	Yes	Muskox	1	Foraging	N	10	96	East	No	-96.1809	65.0181			No	Not Exceeded	
Road	2023-11-04 9:11 AM	Yes	Muskox	3	Foraging	N	75	94	East	No	-96.2127	65.0075			No	Not Exceeded	
Road	2023-11-04 9:11 AM	Yes	Muskox	4	Foraging	E	5	90	Both	No	-96.2221	64.9750			No	Not Exceeded	
Road	2023-11-04 9:11 AM	Yes	Caribou	2	Foraging	N	100	79	East	No	-96.3149	64.9095			No	Not Exceeded	
Road	2023-11-04 9:11 AM	Yes	Caribou	90	Foraging	N	100	77	East	No	-96.3391	64.8951			No	Not Exceeded	
Road	2023-11-04 9:11 AM	Yes	Caribou	18	Foraging	N	150	70	East	No	-96.3165	64.8365			No	Not Exceeded	
Road	2023-11-04 9:11 AM	Yes	Caribou	17	Foraging	S	300	54	East	No	-96.3584	64.7132			No	Not Exceeded	
Road	2023-11-04 9:11 AM	Yes	Caribou	20	Foraging	S	150	53	East	No	-96.3731	64.7061			No	Not Exceeded	
Road	2023-11-04 9:11 AM	Yes	Caribou	280	Foraging	W	200	53	West	No	-96.3731	64.7061			No	Exceeded	Rosd closed
Road	2023-11-04 9:11 AM	Yes	Caribou	174	Foraging	N	300	50	East	No	-96.3731	64.6794			No	Exceeded	Road closed
Road	2023-11-04 9:11 AM	Yes	Caribou	22	Walking	S	400	49	West	No	-96.3707	64.6688			No	Not Exceeded	
Road	2023-11-05 8:39 AM	Yes	Muskox	3	Foraging	N	50	96	East	No	-96.1809	65.0181			No	Not Exceeded	
Road	2023-11-05 8:39 AM	Yes	Caribou	45	Foraging	S	200	75	East	No	-96.3361	64.8795			No	Not Exceeded	
Road	2023-11-05 8:39 AM	Yes	Caribou	18	Walking	S	200	72	East	No	-96.3238	64.8539			No	Not Exceeded	
Road	2023-11-05 8:39 AM	Yes	Caribou	8	Foraging	W	300	61	West	No	-96.3547	64.7633			No	Not Exceeded	
Road	2023-11-05 8:39 AM	Yes	Caribou	5	Foraging	W	200	60	West	No	-96.3636	64.7555			No	Not Exceeded	
Road	2023-11-05 8:39 AM	Yes	Caribou	25	Foraging	W	50	56	Both	No	-96.3514	64.7259			No	Not Exceeded	
Road	2023-11-05 8:39 AM	Yes	Caribou	2	Foraging	N	350	54	West	No	-96.3584	64.7132			No	Not Exceeded	
Road	2023-11-05 8:39 AM	Yes	Caribou	15	Foraging	NW	75	49	West	No	-96.3707	64.6688			No	Not Exceeded	
Incidental	2023-11-05 2:49 PM	Yes	Caribou	5	Foraging	N	400	23	East	No	-96.1244	64.5006			No	Not Exceeded	
Incidental	2023-11-05 2:49 PM	Yes	Caribou	8	Walking	NW	300	32	East	No	-96.2045	64.5647			No	Not Exceeded	
Incidental	2023-11-05 2:49 PM	Yes	Caribou	6	Walking	NW	150	38	East	Yes	-96.2758	64.5907			No	Not Exceeded	
Incidental	2023-11-05 2:49 PM	Yes	Caribou	200	Walking	NW	350	53	West	No	-96.3731	64.7061			No	Exceeded	Road closed
Incidental	2023-11-05 2:49 PM	Yes	Caribou	100	Walking	W	250	58	East	Yes	-96.3579	64.7416			No	Exceeded	Road closed
Road	2023-11-06 8:21 AM	Yes	Muskox	1	Standing	N/A	5	97	East	No	-96.1711	65.0259			No	Not Exceeded	
Road	2023-11-06 8:21 AM	Yes	Muskox	3	Resting	N/A	100	96	East	No	-96.1809	65.0181			No	Not Exceeded	
Road	2023-11-06 8:21 AM	Yes	Ptarmigan	12	Running	S	1	92	East	No	-96.2219	64.9943			No	Not Exceeded	
Road	2023-11-06 8:21 AM	Yes	Caribou	3	Foraging	SW	100	62	East	No	-96.3444	64.7737			No	Not Exceeded	
Road	2023-11-06 8:21 AM	Yes	Caribou	10	Walking	NE	300	61	East	No	-96.3547	64.7633			No	Not Exceeded	
Road	2023-11-06 8:21 AM	Yes	Ptarmigan	15	Resting	N/A	50	53	West	No	-96.3731	64.7061			No	Not Exceeded	
Road	2023-11-06 8:21 AM	Yes	Ptarmigan	7	Flying	SE	20	52	East	No	-96.3774	64.7009			No	Not Exceeded	
Road	2023-11-06 8:21 AM	Yes	Caribou	8	Walking	NE	500	26	East	No	-96.1615	64.5235			No	Not Exceeded	
Incidental	2023-11-06 1:36 PM	Yes	Caribou	227	Walking	SW	1850	38	West	No	-96.2758	64.5907			No	Exceeded	Group was outside 1.5 km and moving away from road
Road	2023-11-07 8:23 AM	Yes	Muskox	1	Standing	N/A	50	96	East	No	-96.1809	65.0181			No	Not Exceeded	
Road	2023-11-07 8:23 AM	Yes	Caribou	4	Foraging	N/A	100	77	East	No	-96.3391	64.8951			No	Not Exceeded	
Road	2023-11-07 8:23 AM	Yes	Arctic fox	1	Running	NE	100	71	East	No	-96.3197	64.8447			No	Not Exceeded	
Road	2023-11-07 8:23 AM	Yes	Caribou	296	Foraging	S	300	77	West	No	-96.3391	64.8951			No	Exceeded	Road closed
Road	2023-11-07 8:23 AM	Yes	Caribou	12	Walking	E	0	57	West	Yes	-96.3601	64.7314			No	Not Exceeded	
Road	2023-11-07 8:23 AM	Yes	Caribou	88	Foraging	N/A	900	56	West	No	-96.3514	64.7259			No	Not Exceeded	
Road	2023-11-08 6:45 AM	Yes	Muskox	4	Foraging	S	50	92	East	No	-96.2219	64.9943			No	Not Exceeded	



Table A-1: Wildlife Observations along the All Weather Access Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2023-11-08 6:45 AM	Yes	Caribou	4	Foraging	S	100	78	East	No	-96.3244	64.9032			No	Not Exceeded	
Road	2023-11-08 6:45 AM	Yes	Caribou	14	Foraging	N	150	77	West	No	-96.3391	64.8951			No	Not Exceeded	
Road	2023-11-08 6:45 AM	Yes	Caribou	2	Walking	NW	250	69	East	No	-96.3143	64.8277			No	Not Exceeded	
Road	2023-11-08 6:45 AM	Yes	Caribou	350	Foraging	W	100	64	Both	No	-96.3400	64.7867			No	Exceeded	Road closed
Road	2023-11-08 6:45 AM	Yes	Caribou	15	Foraging	N	125	58	East	No	-96.3579	64.7416			No	Not Exceeded	
Road	2023-11-08 6:45 AM	Yes	Caribou	45	Foraging	NW	500	57	East	No	-96.3601	64.7314			No	Not Exceeded	
Road	2023-11-08 6:45 AM	Yes	Caribou	20	Foraging	N	500	53	West	No	-96.3731	64.7061			No	Not Exceeded	
Road	2023-11-08 6:45 AM	Yes	Caribou	75	Foraging	W	750	42	West	No	-96.2949	64.6276			No	Not Exceeded	
Road	2023-11-08 6:45 AM	Yes	Caribou	100	Foraging	W	800	33	East	No	-96.2163	64.5715			No	Exceeded	Road closed
Road	2023-11-08 6:45 AM	Yes	Caribou	130	Foraging	N	250	29	East	No	-96.1813	64.5473			No	Exceeded	Road closed
Road	2023-11-08 6:45 AM	Yes	Caribou	5	Foraging	NW	200	10	East	No	-96.0179	64.3971			No	Not Exceeded	
Road	2023-11-09 8:09 AM	Yes	Muskox	4	Foraging	N/A	100	97	East	No	-96.1711	65.0259			No	Not Exceeded	
Road	2023-11-09 8:09 AM	Yes	Caribou	60	Foraging	SE	500	72	East	No	-96.3238	64.8539			No	Not Exceeded	
Road	2023-11-09 8:09 AM	Yes	Caribou	65	Foraging	S	500	68	West	No	-96.3268	64.8203			No	Not Exceeded	
Road	2023-11-09 8:09 AM	Yes	Caribou	13	Foraging	S	400	66	West	No	-96.3350	64.8045			No	Not Exceeded	
Road	2023-11-09 8:09 AM	Yes	Caribou	18	Foraging	S	1000	64	West	No	-96.3400	64.7867			No	Not Exceeded	
Road	2023-11-09 8:09 AM	Yes	Caribou	35	Foraging	NE	150	61	East	No	-96.3547	64.7633			No	Not Exceeded	
Road	2023-11-09 8:09 AM	Yes	Caribou	21	Foraging	N/A	500	56	East	No	-96.3514	64.7259			No	Not Exceeded	
Road	2023-11-09 8:09 AM	Yes	Caribou	5	Foraging	N	500	54	West	No	-96.3584	64.7132			No	Not Exceeded	
Incidental	2023-11-09 1:44 PM	Yes	Caribou	255	Foraging	N/A	500	40	East	No	-96.2814	64.6043			No	Exceeded	Road closed
Road	2023-11-10 12:06 PM	Yes	Muskox	4	Foraging	N/A	1000	92	East	No	-96.2219	64.9943			No	Not Exceeded	
Road	2023-11-10 12:06 PM	Yes	Caribou	3	Foraging	N	500	72	West	No	-96.3238	64.8539			No	Not Exceeded	
Road	2023-11-10 12:06 PM	Yes	Caribou	62	Walking	NW	10	62	West	Yes	-96.3444	64.7737			No	Not Exceeded	
Road	2023-11-10 12:06 PM	Yes	Wolf	6	Trotting/running	NW	300	61	West	No	-96.3547	64.7633			No	Not Exceeded	
Road	2023-11-10 12:06 PM	Yes	Caribou	92	Foraging	N/A	1000	55	East	No	-96.3460	64.7185			No	Not Exceeded	
Road	2023-11-10 12:06 PM	Yes	Caribou	13	Walking	N	500	53	West	No	-96.3731	64.7061			No	Not Exceeded	
Road	2023-11-10 12:06 PM	Yes	Caribou	43	Foraging	N	300	51	East	No	-96.3791	64.6932			No	Not Exceeded	
Road	2023-11-10 12:06 PM	Yes	Caribou	10	Foraging	E	50	50	East	No	-96.3731	64.6794			No	Not Exceeded	
Road	2023-11-10 12:06 PM	Yes	Caribou	78	Foraging	N	900	28	East	No	-96.1701	64.5413			No	Not Exceeded	
Road	2023-11-10 12:06 PM	Yes	Caribou	53	Foraging	S	1000	23	East	No	-96.1244	64.5006			No	Not Exceeded	
Road	2023-11-10 12:06 PM	Yes	Caribou	34	Walking	NW	250	15	West	No	-96.0525	64.4398			No	Not Exceeded	
Road	2023-11-10 12:06 PM	Yes	Caribou	50	Walking	NW	400	12	West	No	-96.0299	64.4139			No	Not Exceeded	
Road	2023-11-10 12:06 PM	Yes	Caribou	600	Foraging	N/A	1000	8	West	No	-96.0155	64.3813			No	Exceeded	Road closed
Road	2023-11-11 9:18 AM	Yes	Caribou	3	Foraging	N/A	500	8	East	No	-96.0155	64.3813			No	Not Exceeded	
Road	2023-11-11 11:59 AM	Yes	Caribou	120	Walking	NE	300	54	Both	No	-96.3584	64.7132			No	Exceeded	Road is already closed due to caribou
Road	2023-11-11 11:59 AM	Yes	Caribou	13	Walking	W	800	59	West	No	-96.3706	64.7495			No	Not Exceeded	
Road	2023-11-11 11:59 AM	Yes	Caribou	15	Foraging	NE	300	60	West	No	-96.3636	64.7555			No	Not Exceeded	
Road	2023-11-11 11:59 AM	Yes	Caribou	27	Lying Down	N/A	300	60	West	No	-96.3636	64.7555			No	Not Exceeded	
Road	2023-11-11 12:50 PM	Yes	Caribou	60	Foraging	N/A	800	65	West	No	-96.3406	64.7948			No	Not Exceeded	
Road	2023-11-11 1:00 PM	No		N/A			N/A	N/A			N/A	N/A					
Road	2023-11-11 1:46 PM	Yes	Caribou	5	Foraging	N/A	200	76	West	No	-96.3457	64.8879			No	Not Exceeded	
Road	2023-11-12 8:09 AM	Yes	Caribou	28	Foraging	N/A	400	73	West	No	-96.3242	64.8621			No	Not Exceeded	
Road	2023-11-12 8:09 AM	Yes	Caribou	120	Walking	NW	310	69	West	No	-96.3143	64.8277			No	Exceeded	Road closed
Road	2023-11-12 8:09 AM	Yes	Caribou	31	Foraging	N/A	230	68	West	No	-96.3268	64.8203			No	Not Exceeded	
Road	2023-11-12 8:09 AM	Yes	Caribou	240	Walking	S	200	65	West	No	-96.3406	64.7948			No	Exceeded	Road closed
Road	2023-11-12 8:09 AM	Yes	Caribou	280	Foraging	NW	0	64	Both	Yes	-96.3400	64.7867			No	Exceeded	Road closed
Road	2023-11-12 8:09 AM	Yes	Caribou	58	Walking	N	600	52	East	No	-96.3774	64.7009			No	Not Exceeded	
Road	2023-11-12 8:09 AM	Yes	Caribou	32	Foraging	NW	300	37	West	No	-96.2690	64.5842			No	Not Exceeded	
Road	2023-11-12 8:09 AM	Yes	Caribou	15	Walking	W	600	31	East	No	-96.1957	64.5543			No	Not Exceeded	
Road	2023-11-12 8:09 AM	Yes	Caribou	25	Foraging	N/A	1500	22	West	No	-96.1126	64.4935			No	Not Exceeded	
Incidental	2023-11-12 3:18 PM	Yes	Caribou	285	Foraging	N	300	16	West	No	-96.0624	64.4463			No	Exceeded	Road closed
Incidental	2023-11-12 3:18 PM	Yes	Caribou	89	Walking	S	250	35	West	No	-96.2443	64.5739			No	Not Exceeded	
Incidental	2023-11-12 3:18 PM	Yes	Caribou	49	Walking	S	900	40	East	No	-96.2814	64.6043			No	Not Exceeded	
Road	2023-11-13 8:55 AM	Yes	Caribou	120	Foraging	N/A	100	72	West	No	-96.3238	64.8539			No	Exceeded	Road closed
Road	2023-11-13 8:55 AM	Yes	Caribou	70	Foraging	N/A	280	67	West	No	-96.3262	64.8123			No	Not Exceeded	
Road	2023-11-13 8:55 AM	Yes	Caribou	250	Foraging	N/A	320	65	West	No	-96.3406	64.7948			No	Exceeded	Road closed
Road	2023-11-13 8:55 AM	Yes	Caribou	64	Walking	W	150	31	West	No	-96.1957	64.5543			No	Not Exceeded	



Table A-1: Wildlife Observations along the All Weather Access Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2023-11-14 8:14 AM	Yes	Caribou	50	Foraging	N/A	1000	68	East	No	-96.3268	64.8203			No	Not Exceeded	
Road	2023-11-14 8:14 AM	Yes	Caribou	109	Foraging	N	300	65	East	No	-96.3406	64.7948			No	Exceeded	Road closed
Road	2023-11-14 8:14 AM	Yes	Caribou	40	Foraging	N/A	320	62	East	No	-96.3444	64.7737			No	Not Exceeded	
Road	2023-11-14 8:14 AM	Yes	Caribou	120	Foraging	N/A	1000	53	West	No	-96.3731	64.7061			No	Exceeded	Road closed
Road	2023-11-14 8:14 AM	Yes	Caribou	200	Foraging	N	1000	40	East	No	-96.2814	64.6043			No	Exceeded	Road closed
Road	2023-11-14 8:14 AM	Yes	Caribou	290	Foraging	N	10	16	East	No	-96.0624	64.4463			No	Exceeded	Road closed
Road	2023-11-15 10:23 AM	Yes	Caribou	9	Foraging	N/A	400	78	West	No	-96.3244	64.9032			No	Not Exceeded	
Road	2023-11-15 10:23 AM	Yes	Caribou	9	Foraging	NW	250	67	West	No	-96.3262	64.8123			No	Not Exceeded	
Road	2023-11-15 10:23 AM	Yes	Caribou	7	Foraging	N/A	180	37	East	No	-96.2690	64.5842			No	Not Exceeded	
Road	2023-11-15 10:23 AM	Yes	Caribou	15	Foraging	N	250	34	East	No	-96.2405	64.5687			No	Not Exceeded	
Road	2023-11-16 7:34 AM	Yes	Caribou	180	Foraging	N/A	30	99	East	No	-96.1532	65.0420			No	Exceeded	Road closed
Road	2023-11-16 7:34 AM	Yes	Caribou	9	Walking	N	0	93	Both	Yes	-96.2220	65.0008			No	Not Exceeded	
Road	2023-11-16 7:34 AM	Yes	Caribou	9	Foraging	N/A	1000	79	West	No	-96.3149	64.9095			No	Not Exceeded	
Road	2023-11-16 7:34 AM	Yes	Caribou	10	Foraging	N/A	400	75	West	No	-96.3361	64.8795			No	Not Exceeded	
Road	2023-11-17 7:53 AM	Yes	Caribou	260	Foraging	SW	400	94	East	No	-96.2127	65.0075			No	Exceeded	Road closed
Road	2023-11-17 7:53 AM	Yes	Caribou	56	Foraging	N	290	90	East	No	-96.2221	64.9750			No	Not Exceeded	
Road	2023-11-17 7:53 AM	Yes	Caribou	70	Foraging	N/A	40	89	East	No	-96.2196	64.9674			No	Not Exceeded	
Road	2023-11-18 8:55 AM	Yes	Muskox	36	Foraging	N/A	1900	93	West	No	-96.2220	65.0008			No	Exceeded	Road closed
Road	2023-11-18 8:55 AM	Yes	Caribou	15	Foraging	N/A	140	92	East	No	-96.2219	64.9943			No	Not Exceeded	
Road	2023-11-18 8:55 AM	Yes	Caribou	290	Foraging	SW	290	85	East	No	-96.2614	64.9389			No	Exceeded	Road closed
Road	2023-11-18 8:55 AM	Yes	Caribou	76	Foraging	N/A	300	78	East	No	-96.3244	64.9032			No	Not Exceeded	
Road	2023-11-18 8:55 AM	Yes	Caribou	23	Foraging	SW	190	77	West	No	-96.3391	64.8951			No	Not Exceeded	
Road	2023-11-18 8:55 AM	Yes	Caribou	23	Lying Down	N/A	320	74	East	No	-96.3303	64.8752			No	Not Exceeded	
Road	2023-11-18 8:55 AM	Yes	Caribou	24	Foraging	N	1800	68	East	No	-96.3268	64.8203			No	Not Exceeded	
Road	2023-11-18 8:55 AM	Yes	Caribou	25	Lying Down	N/A	290	66	East	No	-96.3350	64.8045			No	Not Exceeded	
Road	2023-11-18 8:55 AM	Yes	Caribou	15	Foraging	N/A	200	64	East	No	-96.3400	64.7867			No	Not Exceeded	
Road	2023-11-18 8:55 AM	Yes	Caribou	52	Foraging	SW	310	54	East	No	-96.3584	64.7132			No	Not Exceeded	
Road	2023-11-18 8:55 AM	Yes	Caribou	130	Foraging	N/A	280	52	East	No	-96.3774	64.7009			No	Exceeded	Road closed
Road	2023-11-18 8:55 AM	Yes	Caribou	19	Walking	S	400	42	West	No	-96.2949	64.6276			No	Not Exceeded	
Road	2023-11-19 9:56 AM	Yes	Caribou	4	Foraging	N/A	400	89	East	No	-96.2196	64.9674			No	Not Exceeded	
Road	2023-11-19 9:56 AM	Yes	Caribou	24	Foraging	N/A	900	80	East	No	-96.3062	64.9171			No	Not Exceeded	
Road	2023-11-19 9:56 AM	Yes	Caribou	105	Lying Down	N/A	330	76	Both	No	-96.3457	64.8879			No	Exceeded	Road closed
Road	2023-11-20 8:23 AM	Yes	Caribou	37	Foraging	SW	290	77	West	No	-96.3391	64.8951			No	Not Exceeded	
Road	2023-11-20 8:23 AM	Yes	Caribou	120	Foraging	N/A	190	76	West	No	-96.3457	64.8879			No	Exceeded	Road closed
Incidental	2023-11-24 8:17 AM	Yes	Caribou	18	Foraging	S	300	55	East	No	-96.3460	64.7185			No	Not Exceeded	
Incidental	2023-11-24 8:17 AM	Yes	Caribou	85	Foraging	N/A	300	46	East	No	-96.3296	64.6562			No	Not Exceeded	
Incidental	2023-11-24 8:17 AM	Yes	Caribou	220	Foraging	N/A	130	46	East	No	-96.3296	64.6562			No	Exceeded	Road closed
Incidental	2023-11-24 8:17 AM	Yes	Caribou	80	Foraging	N	1500	43	East	No	-96.3007	64.6348			No	Not Exceeded	
Road	2023-11-24 12:00 PM	Yes	Muskox	3	Foraging	N/A	100	3	West	No	-95.9900	64.3377			No	Not Exceeded	
Road	2023-11-24 12:00 PM	Yes	Caribou	2	Walking	N	1500	48	East	No	-96.3688	64.6642			No	Not Exceeded	
Road	2023-11-24 12:00 PM	Yes	Caribou	20	Foraging	N/A	1700	50	East	No	-96.3731	64.6794			No	Not Exceeded	
Road	2023-11-24 12:00 PM	Yes	Caribou	40	Foraging	N/A	2000	55	East	No	-96.3460	64.7185			No	Not Exceeded	
Road	2023-11-24 12:00 PM	Yes	Caribou	27	Resting	N/A	500	59	West	No	-96.3706	64.7495			No	Not Exceeded	
Road	2023-11-24 12:00 PM	Yes	Caribou	155	Foraging	N/A	600	66	West	No	-96.3350	64.8045			No	Exceeded	Road closed
Road	2023-11-24 12:00 PM	Yes	Caribou	35	Walking	S	150	66	East	No	-96.3350	64.8045			No	Not Exceeded	
Road	2023-11-24 12:00 PM	Yes	Caribou	13	Foraging	N/A	400	68	East	No	-96.3268	64.8203			No	Not Exceeded	
Road	2023-11-24 12:00 PM	Yes	Caribou	10	Walking	S	800	68	West	No	-96.3268	64.8203			No	Not Exceeded	
Road	2023-11-24 12:00 PM	Yes	Caribou	41	Walking	S	200	68	West	No	-96.3268	64.8203			No	Not Exceeded	
Road	2023-11-24 12:00 PM	Yes	Caribou	50	Foraging	N/A	1700	69	East	No	-96.3143	64.8277			No	Not Exceeded	
Road	2023-11-25 2:07 PM	Yes	Caribou	47	Walking	S	200	48	West	No	-96.3688	64.6642			No	Not Exceeded	
Road	2023-11-25 2:07 PM	Yes	Caribou	3	Walking	NE	400	49	East	No	-96.3707	64.6688			No	Not Exceeded	
Road	2023-11-25 2:07 PM	Yes	Caribou	113	Walking	N	200	56	Both	No	-96.3514	64.7259			No	Exceeded	Road was already closed due to caribou
Road	2023-11-25 2:07 PM	Yes	Muskox	2	Resting	N/A	100	96	West	No	-96.1809	65.0181			No	Not Exceeded	
Road	2023-11-25 2:07 PM	Yes	Muskox	2	Foraging	N/A	150	95	East	No	-96.1952	65.0129			No	Not Exceeded	
Road	2023-11-25 2:07 PM	Yes	Muskox	4	Foraging	N/A	250	91	East	No	-96.2249	64.9847			No	Not Exceeded	
Road	2023-11-25 2:07 PM	Yes	Caribou	105	Walking	N	350	69	East	No	-96.3143	64.8277			No	Exceeded	Road closed
Road	2023-11-25 2:07 PM	Yes	Caribou	42	Foraging	S	200	67	West	No	-96.3262	64.8123			No	Not Exceeded	
Road	2023-11-25 2:07 PM	Yes	Caribou	140	Walking	S	200	67	West	No	-96.3262	64.8123			No	Exceeded	Road closed





Table A-1: Wildlife Observations along the All Weather Access Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2023-11-25 2:07 PM	Yes	Caribou	280	Walking	S	5	64	Both	Yes	-96.3400	64.7867			No	Exceeded	Road closed. Waited for the caribou to go distant from the road to proceed south
Road	2023-11-25 2:07 PM	Yes	Caribou	500	Walking	W	10	62	East	Yes	-96.3444	64.7737			No	Exceeded	Road closed
Road	2023-11-25 2:07 PM	Yes	Caribou	12	Foraging	W	650	59	West	No	-96.3706	64.7495			No	Not Exceeded	
Road	2023-11-25 2:07 PM	Yes	Caribou	20	Walking	N	150	57	East	No	-96.3601	64.7314			No	Not Exceeded	
Road	2023-11-27 8:02 AM	Yes	Caribou	19	Walking	S	100	86	East	No	-96.2528	64.9468			No	Not Exceeded	
Road	2023-11-27 8:02 AM	Yes	Caribou	100	Walking	S	1000	79	East	No	-96.3149	64.9095			No	Exceeded	Road closed
Road	2023-11-27 8:02 AM	Yes	Caribou	90	Walking	S	400	73	East	No	-96.3242	64.8621			No	Not Exceeded	
Road	2023-11-27 8:02 AM	Yes	Caribou	70	Walking	S	500	66	East	No	-96.3350	64.8045			No	Not Exceeded	
Road	2023-11-27 8:02 AM	Yes	Caribou	2	Walking	E	200	64	East	No	-96.3400	64.7867			No	Not Exceeded	
Road	2023-11-27 8:02 AM	Yes	Caribou	13	Foraging	N/A	500	61	East	No	-96.3547	64.7633			No	Not Exceeded	
Road	2023-11-27 8:02 AM	Yes	Caribou	70	Walking	S	300	52	West	No	-96.3774	64.7009			No	Not Exceeded	
Road	2023-11-27 8:02 AM	Yes	Caribou	7	Walking	S	300	51	East	No	-96.3791	64.6932			No	Not Exceeded	
Road	2023-11-27 8:02 AM	Yes	Caribou	2	Walking	S	200	50	West	No	-96.3731	64.6794			No	Not Exceeded	
Road	2023-11-27 8:02 AM	Yes	Caribou	9	Walking	S	1000	23	West	No	-96.1244	64.5006			No	Not Exceeded	
Incidental	2023-11-27 1:53 PM	Yes	Caribou	125	Resting	N/A	500	38	West	No	-96.2758	64.5907			No	Exceeded	Road closed
Incidental	2023-11-27 1:53 PM	Yes	Muskox	20	Foraging	SE	1000	38	West	No	-96.2758	64.5907			No	Exceeded	Road closed
Incidental	2023-11-27 1:53 PM	Yes	Caribou	450	Walking	SE	500	46	West	No	-96.3296	64.6562			No	Exceeded	Road closed
Road	2023-11-28 9:06 AM	Yes	Muskox	13	Foraging	E	1000	93	West	No	-96.2220	65.0008			No	Not Exceeded	
Road	2023-11-28 9:06 AM	Yes	Caribou	4	Walking	E	150	54	East	No	-96.3584	64.7132			No	Not Exceeded	
Road	2023-11-28 9:06 AM	Yes	Caribou	85	Walking	N	2000	53	West	No	-96.3731	64.7061			No	Not Exceeded	
Road	2023-11-28 9:06 AM	Yes	Caribou	40	Walking	SE	400	53	West	No	-96.3731	64.7061			No	Not Exceeded	
Road	2023-11-28 9:06 AM	Yes	Caribou	150	Walking	N	250	49	West	No	-96.3707	64.6688			No	Exceeded	Road closed - HTO fuel/passenger convoy
Road	2023-11-28 9:06 AM	Yes	Caribou	170	Walking	S	250	43	West	No	-96.3007	64.6348			No	Exceeded	Road closed
Road	2023-11-28 9:06 AM	Yes	Caribou	28	Walking	NE	500	42	East	No	-96.2949	64.6276			No	Not Exceeded	
Road	2023-11-28 9:06 AM	Yes	Caribou	13	Walking	NW	400	28	West	No	-96.1701	64.5413			No	Not Exceeded	
Road	2023-12-01 7:03 AM	Yes	Caribou	60	Resting	NW	500	96	West	No	-96.1809	65.0181			No	Not Exceeded	
Road	2023-12-01 7:03 AM	Yes	Muskox	12	Foraging	W	50	93	West	No	-96.2220	65.0008			No	Not Exceeded	
Road	2023-12-01 7:03 AM	Yes	Muskox	2	Foraging	NW	75	90	East	No	-96.2221	64.9750			No	Not Exceeded	
Road	2023-12-01 7:03 AM	Yes	Caribou	1	Walking	N	50	77	East	No	-96.3391	64.8951			No	Not Exceeded	
Road	2023-12-01 7:03 AM	Yes	Caribou	6	Foraging	E	200	71	East	No	-96.3197	64.8447			No	Not Exceeded	
Road	2023-12-01 7:03 AM	Yes	Caribou	11	Walking	SE	100	58	West	No	-96.3579	64.7416			No	Not Exceeded	
Road	2023-12-01 7:03 AM	Yes	Caribou	37	Foraging	W	1	57	Both	Yes	-96.3601	64.7314			No	Not Exceeded	
Road	2023-12-01 7:03 AM	Yes	Caribou	2	Standing	W	50	50	West	No	-96.3731	64.6794			No	Not Exceeded	
Road	2023-12-01 7:03 AM	Yes	Caribou	31	Foraging	S	75	48	West	No	-96.3688	64.6642			No	Not Exceeded	
Incidental	2023-12-01 3:07 PM	Yes	Caribou	36	Foraging	W	1000	37	West	No	-96.2690	64.5842			No	Not Exceeded	
Incidental	2023-12-01 3:07 PM	Yes	Muskox	21	Foraging	N/A	1500	38	West	No	-96.2758	64.5907			No	Exceeded	Road closed
Incidental	2023-12-01 3:07 PM	Yes	Caribou	190	Walking	S	2000	43	West	No	-96.3007	64.6348			No	Exceeded	Road closed
Incidental	2023-12-01 3:07 PM	Yes	Caribou	41	Walking	S	450	53	West	No	-96.3731	64.7061			No	Not Exceeded	
Incidental	2023-12-01 3:07 PM	Yes	Caribou	106	Walking	S	250	60	West	No	-96.3636	64.7555			No	Exceeded	Road closed
Road	2023-12-02 8:57 AM	Yes	Caribou	7	Foraging	N	200	102	West	No	-96.1278	65.0517			No	Not Exceeded	
Road	2023-12-02 8:57 AM	Yes	Muskox	5	Foraging	N/A	50	96	East	No	-96.1809	65.0181			No	Not Exceeded	
Road	2023-12-02 8:57 AM	Yes	Caribou	80	Foraging	N	400	89	East	No	-96.2196	64.9674			No	Not Exceeded	
Road	2023-12-02 8:57 AM	Yes	Muskox	3	Foraging	N/A	300	89	East	No	-96.2196	64.9674			No	Not Exceeded	
Road	2023-12-02 8:57 AM	Yes	Caribou	12	Foraging	N	750	85	West	No	-96.2614	64.9389			No	Not Exceeded	
Road	2023-12-02 8:57 AM	Yes	Caribou	16	Foraging	N/A	1000	80	West	No	-96.3062	64.9171			No	Not Exceeded	
Road	2023-12-02 8:57 AM	Yes	Caribou	1	Foraging	N	300	77	East	No	-96.3391	64.8951			No	Not Exceeded	
Road	2023-12-02 8:57 AM	Yes	Caribou	39	Foraging	S	1000	59	West	No	-96.3706	64.7495			No	Not Exceeded	
Road	2023-12-02 8:57 AM	Yes	Caribou	5	Foraging	N	300	55	West	No	-96.3460	64.7185			No	Not Exceeded	
Road	2023-12-02 8:57 AM	Yes	Caribou	7	Foraging	N	1000	54	East	No	-96.3584	64.7132			No	Not Exceeded	
Road	2023-12-02 8:57 AM	Yes	Caribou	8	Running	S	1000	53	West	No	-96.3731	64.7061			No	Not Exceeded	
Road	2023-12-02 8:57 AM	Yes	Wolf	2	Walking	W	2000	53	West	No	-96.3731	64.7061			No	Not Exceeded	
Road	2023-12-02 8:57 AM	Yes	Caribou	14	Foraging	S	1000	40	East	No	-96.2814	64.6043			No	Not Exceeded	

Table A-1: Wildlife Observations along the All Weather Access Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Incidental	2023-12-02 3:22 PM	Yes	Muskox	20	Foraging	N/A	1000	38	West	No	-96.2758	64.5907			No	Exceeded	Road closed
Incidental	2023-12-02 3:22 PM	Yes	Caribou	16	Walking	S	200	66	West	No	-96.3350	64.8045			No	Not Exceeded	
Road	2023-12-03 7:24 AM	Yes	Muskox	2	Foraging	E	100	96	East	No	-96.1809	65.0181			No	Not Exceeded	
Road	2023-12-04 8:18 AM	Yes	Muskox	6	Foraging	N/A	10	96	West	No	-96.1809	65.0181			No	Not Exceeded	
Road	2023-12-04 8:18 AM	Yes	Muskox	11	Foraging	N/A	1500	91	West	No	-96.2249	64.9847			No	Not Exceeded	
Road	2023-12-04 8:18 AM	Yes	Muskox	34	Foraging	N	1000	90	West	No	-96.2221	64.9750			No	Exceeded	Road closed
Road	2023-12-04 8:18 AM	Yes	Caribou	1	Foraging	N	500	79	East	No	-96.3149	64.9095			No	Not Exceeded	
Road	2023-12-04 8:18 AM	Yes	Caribou	27	Foraging	W	1000	26	West	No	-96.1615	64.5235			No	Not Exceeded	
Road	2023-12-05 9:10 AM	Yes	Muskox	10	Foraging	N	800	93	West	No	-96.2220	65.0008			No	Not Exceeded	
Road	2023-12-05 9:10 AM	Yes	Caribou	9	Walking	S	2000	54	East	No	-96.3584	64.7132			No	Not Exceeded	
Road	2023-12-05 9:10 AM	Yes	Caribou	8	Foraging	W	1000	47	West	No	-96.3466	64.6580			No	Not Exceeded	
Road	2023-12-05 9:10 AM	Yes	Caribou	9	Walking	NE	1000	10	East	No	-96.0179	64.3971			No	Not Exceeded	
Incidental	2023-12-05 2:02 PM	Yes	Muskox	14	Foraging	N/A	2000	38	East	No	-96.2758	64.5907			No	Exceeded	Over a kilometer away
Incidental	2023-12-05 2:02 PM	Yes	Caribou	19	Foraging	S	2000	36	West	No	-96.2619	64.5804			No	Not Exceeded	
Road	2023-12-06 9:27 AM	Yes	Muskox	4	Resting	N/A	150	96	East	No	-96.1809	65.0181			No	Not Exceeded	
Road	2023-12-06 9:27 AM	Yes	Muskox	12	Resting	N/A	800	93	West	No	-96.2220	65.0008			No	Not Exceeded	
Road	2023-12-06 9:27 AM	Yes	Caribou	15	Walking	N	2000	52	West	No	-96.3774	64.7009			No	Not Exceeded	
Road	2023-12-06 9:27 AM	Yes	Caribou	5	Foraging	N	500	49	West	No	-96.3707	64.6688			No	Not Exceeded	
Road	2023-12-06 9:27 AM	Yes	Caribou	5	Foraging	N	350	46	West	No	-96.3296	64.6562			No	Not Exceeded	
Road	2023-12-06 9:27 AM	Yes	Caribou	27	Walking	NW	800	25	West	No	-96.1495	64.5142			No	Not Exceeded	
Road	2023-12-06 9:27 AM	Yes	Caribou	165	Foraging	N	300	20	West	No	-96.0960	64.4787			No	Exceeded	Road closed
Road	2023-12-06 9:27 AM	Yes	Caribou	12	Foraging	NW	1000	18	West	No	-96.0824	64.4610			No	Not Exceeded	
Road	2023-12-06 9:27 AM	Yes	Caribou	75	Foraging	W	1000	17	West	No	-96.0771	64.4533			No	Not Exceeded	
Road	2023-12-06 9:27 AM	Yes	Caribou	200	Foraging	W	200	13	West	No	-96.0368	64.4234			No	Exceeded	Road closed
Road	2023-12-06 9:27 AM	Yes	Caribou	4	Foraging	N	200	11	West	No	-96.0239	64.4054			No	Not Exceeded	
Road	2023-12-07 8:36 AM	Yes	Muskox	6	Lying Down	N	200	95	East	No	-96.1952	65.0129			No	Not Exceeded	
Road	2023-12-07 8:36 AM	Yes	Muskox	13	Lying Down	N	1000	93	West	No	-96.2220	65.0008			No	Not Exceeded	
Road	2023-12-07 8:36 AM	Yes	Muskox	5	Lying Down	N	800	91	East	No	-96.2249	64.9847			No	Not Exceeded	
Road	2023-12-07 8:36 AM	Yes	Caribou	15	Foraging	W	300	46	West	No	-96.3296	64.6562			No	Not Exceeded	
Road	2023-12-07 8:36 AM	Yes	Caribou	37	Walking	NE	1000	22	East	No	-96.1126	64.4935			No	Not Exceeded	
Road	2023-12-07 8:36 AM	Yes	Caribou	250	Foraging	N	1000	18	West	No	-96.0824	64.4610			No	Exceeded	Road closed
Road	2023-12-08 7:55 AM	Yes	Muskox	12	Lying Down	N/A	1000	90	West	No	-96.2221	64.9750			No	Not Exceeded	
Road	2023-12-08 7:55 AM	Yes	Caribou	7	Foraging	NE	Caribou	63	East	No	-96.3444	64.7793			No	Not Exceeded	
Road	2023-12-08 7:55 AM	Yes	Caribou	11	Foraging	N	100	57	East	No	-96.3601	64.7314			No	Not Exceeded	
Road	2023-12-08 7:55 AM	Yes	Wolf	10	Walking	E	3000	47	East	No	-96.3466	64.6580			No	Not Exceeded	
Road	2023-12-08 7:55 AM	Yes	Caribou	10	Foraging	W	250	45	West	No	-96.3134	64.6524			No	Not Exceeded	
Road	2023-12-08 7:55 AM	Yes	Caribou	6	Standing	S	150	37	West	No	-96.2690	64.5842			No	Not Exceeded	
Road	2023-12-08 7:55 AM	Yes	Caribou	2	Walking	N	250	27	West	No	-96.1612	64.5322			No	Not Exceeded	
Road	2023-12-08 7:55 AM	Yes	Caribou	37	Walking	NW	800	15	West	No	-96.0525	64.4398			No	Not Exceeded	
Incidental	2023-12-08 2:01 PM	Yes	Caribou	23	Walking	E	23	14	East	No	-96.0430	64.4312			No	Not Exceeded	
Road	2023-12-09 8:45 AM	Yes	Muskox	6	Lying Down	N	200	95	East	No	-96.1952	65.0129			No	Not Exceeded	
Road	2023-12-09 8:45 AM	Yes	Muskox	13	Foraging	N	1500	93	West	No	-96.2220	65.0008			No	Not Exceeded	
Road	2023-12-09 8:45 AM	Yes	Caribou	15	Walking	S	1000	75	East	No	-96.3361	64.8795			No	Not Exceeded	
Road	2023-12-09 8:45 AM	Yes	Caribou	38	Foraging	S	2000	69	East	No	-96.3143	64.8277			No	Not Exceeded	
Road	2023-12-09 8:45 AM	Yes	Caribou	2	Foraging	N	500	54	East	No	-96.3584	64.7132			No	Not Exceeded	
Road	2023-12-09 8:45 AM	Yes	Caribou	11	Walking	W	200	46	West	No	-96.3296	64.6562			No	Not Exceeded	
Road	2023-12-09 8:45 AM	Yes	Muskox	14	Foraging	N/A	2000	44	West	No	-96.3035	64.6417			No	Exceeded	Road restricted
Road	2023-12-09 8:45 AM	Yes	Caribou	24	Foraging	N/A	4000	24	West	No	-96.1365	64.5079			No	Not Exceeded	
Road	2023-12-10 7:35 AM	Yes	Muskox	6	Foraging	N	30	95	East	No	-96.1952	65.0129			No	Not Exceeded	
Road	2023-12-10 7:35 AM	Yes	Muskox	5	Foraging	N	1000	94	East	No	-96.2127	65.0075			No	Not Exceeded	
Road	2023-12-10 7:35 AM	Yes	Muskox	11	Foraging	N	30	92	West	No	-96.2219	64.9943			No	Not Exceeded	
Road	2023-12-10 7:35 AM	Yes	Caribou	27	Foraging	N	900	67	East	No	-96.3262	64.8123			No	Not Exceeded	
Road	2023-12-11 9:15 AM	Yes	Muskox	6	Foraging	N	200	95	West	No	-96.1952	65.0129			No	Not Exceeded	
Road	2023-12-11 9:15 AM	Yes	Muskox	8	Foraging	N	150	93	West	No	-96.2220	65.0008			No	Not Exceeded	
Road	2023-12-12 9:17 AM	Yes	Muskox	7	Lying Down	N/A	50	95	West	No	-96.1952	65.0129			No	Not Exceeded	
Road	2023-12-12 9:17 AM	Yes	Muskox	13	Foraging	N	50	92	West	No	-96.2219	64.9943			No	Not Exceeded	
Road	2023-12-12 9:17 AM	Yes	Caribou	2	Foraging	N	800	67	West	No	-96.3262	64.8123			No	Not Exceeded	
Road	2023-12-12 9:17 AM	Yes	Caribou	8	Foraging	N	800	57	East	No	-96.3601	64.7314			No	Not Exceeded	
Road	2023-12-12 9:17 AM	Yes	Caribou	24	Foraging	N	200	56	East	No	-96.3514	64.7259			No	Not Exceeded	

Table A-1: Wildlife Observations along the All Weather Access Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2023-12-12 9:17 AM	Yes	Muskox	16	Foraging	N/A	2000	40	West	No	-96.2814	64.6043			No	Exceeded	Over a kilometer away
Road	2023-12-13 8:54 AM	No		N/A			N/A	N/A			N/A	N/A					
Road	2023-12-15 2:15 PM	Yes	Caribou	12	Walking	N	2000	76	East	No	-96.3457	64.8879			No	Not Exceeded	
Road	2023-12-16 10:11 AM	Yes	Caribou	1	Standing	NW	700	73	East	No	-96.3242	64.8621			No	Not Exceeded	
Road	2023-12-16 11:18 AM	Yes	Caribou	1	Foraging	SE	60	46	West	No	-96.3296	64.6562			No	Not Exceeded	
Incidental	2023-12-16 2:43 PM	Yes	Caribou	21	Foraging	NW	2000	18	West	No	-96.0824	64.4610			No	Not Exceeded	
Incidental	2023-12-16 2:43 PM	Yes	Caribou	2	Foraging	E	700	53	East	No	-96.3731	64.7061			No	Not Exceeded	
Road	2023-12-17 10:08 AM	Yes	Caribou	9	Foraging	S	700	93	East	No	-96.2220	65.0008			No	Not Exceeded	
Road	2023-12-17 10:08 AM	Yes	Muskox	26	Foraging	SW	200	93	West	No	-96.2220	65.0008			No	Exceeded	Speed restriction km 92-94
Road	2023-12-17 10:08 AM	Yes	Caribou	18	Foraging	SW	400	80	East	No	-96.3062	64.9171			No	Not Exceeded	
Road	2023-12-17 10:08 AM	Yes	Caribou	11	Walking	N	1000	73	East	No	-96.3242	64.8621			No	Not Exceeded	
Road	2023-12-17 10:08 AM	Yes	Caribou	13	Walking	N	700	71	East	No	-96.3197	64.8447			No	Not Exceeded	
Road	2023-12-17 10:08 AM	Yes	Caribou	43	Foraging	N/A	1000	67	East	No	-96.3262	64.8123			No	Exceeded	Restricted access
Road	2023-12-17 10:08 AM	Yes	Caribou	6	Walking	SW	500	67	West	No	-96.3262	64.8123			No	Not Exceeded	
Road	2023-12-17 12:24 PM	Yes	Caribou	2	Foraging	N/A	800	53	West	No	-96.3731	64.7061			No	Not Exceeded	
Road	2023-12-17 12:24 PM	Yes	Caribou	4	Foraging	N/A	500	46	West	No	-96.3296	64.6562			No	Not Exceeded	
Road	2023-12-17 12:24 PM	Yes	Caribou	10	Walking	NE	400	45	East	No	-96.3134	64.6524			No	Not Exceeded	
Road	2023-12-18 9:43 AM	Yes	Muskox	13	Foraging	W	100	93	West	No	-96.2220	65.0008			No	Not Exceeded	
Road	2023-12-18 9:43 AM	Yes	Caribou	8	Foraging	NE	300	93	East	No	-96.2220	65.0008			No	Not Exceeded	
Road	2023-12-18 9:43 AM	Yes	Caribou	25	Foraging	NE	1000	92	East	No	-96.2219	64.9943			No	Not Exceeded	
Road	2023-12-18 9:43 AM	Yes	Caribou	7	Foraging	NW	1500	92	West	No	-96.2219	64.9943			No	Not Exceeded	
Road	2023-12-18 9:43 AM	Yes	Caribou	2	Walking	E	2000	73	East	No	-96.3242	64.8621			No	Not Exceeded	
Road	2023-12-18 9:43 AM	Yes	Caribou	21	Foraging	NE	1500	68	East	No	-96.3268	64.8203			No	Not Exceeded	
Road	2023-12-18 9:43 AM	Yes	Caribou	187	Foraging	NE	800	65	East	No	-96.3406	64.7948			No	Exceeded	30km/h km 64-66Road closed
Road	2023-12-18 12:31 PM	Yes	Caribou	4	Foraging	N	500	46	West	No	-96.3296	64.6562			No	Not Exceeded	
Road	2023-12-18 12:31 PM	Yes	Caribou	63	Walking	W	1000	25	West	No	-96.1495	64.5142			No	Exceeded	Road closed
Incidental	2023-12-18 1:56 PM	Yes	Caribou	18	Walking	NE	1000	55	East	No	-96.3460	64.7185			No	Not Exceeded	
Incidental	2023-12-19 11:06 AM	Yes	Caribou	14	Foraging	S	100	63	East	No	-96.3444	64.7793			No	Not Exceeded	
Incidental	2023-12-19 11:06 AM	Yes	Caribou	34	Foraging	S	800	68	East	No	-96.3268	64.8203			No	Exceeded	Road closed
Road	2023-12-19 2:50 PM	Yes	Caribou	31	Walking	E	500	20	West	No	-96.0960	64.4787			No	Exceeded	Restricted accessDispatch notified
Road	2023-12-19 2:50 PM	Yes	Caribou	22	Walking	S	1000	23	West	No	-96.1244	64.5006			No	Not Exceeded	
Road	2023-12-19 2:50 PM	Yes	Caribou	4	Foraging	N/A	500	46	West	No	-96.3296	64.6562			No	Not Exceeded	
Road	2023-12-20 10:52 AM	Yes	Muskox	3	Foraging	N/A	5	93	East	No	-96.2220	65.0008			No	Not Exceeded	
Road	2023-12-20 10:52 AM	Yes	Muskox	13	Foraging	NW	N/A	93			-96.2220	65.0008			No	Not Exceeded	
Road	2023-12-20 10:52 AM	Yes	Caribou	3	Lying Down	N/A	900	93	East	No	-96.2220	65.0008			No	Not Exceeded	
Road	2023-12-20 10:52 AM	Yes	Caribou	4	Foraging	N/A	900	91	East	No	-96.2249	64.9847			No	Not Exceeded	
Road	2023-12-20 10:52 AM	Yes	Caribou	139	Foraging	E	300	71	West	No	-96.3197	64.8447			No	Exceeded	Speed restriction 30km/hDispatch notified
Road	2023-12-20 12:39 PM	Yes	Caribou	200	Walking	SW	200	71	West	Yes	-96.3197	64.8447			No	Exceeded	Road closed km 66-72Dispatch notified
Road	2023-12-20 12:39 PM	Yes	Caribou	22	Foraging	E	1000	67	East	No	-96.3262	64.8123			No	Not Exceeded	
Road	2023-12-20 12:39 PM	Yes	Caribou	7	Foraging	N/A	900	57	East	No	-96.3601	64.7314			No	Not Exceeded	
Road	2023-12-20 12:39 PM	Yes	Caribou	40	Foraging	S	1000	47	West	No	-96.3466	64.6580			No	Exceeded	Speed restriction 30km/h
Road	2023-12-20 12:39 PM	Yes	Caribou	9	Foraging	SW	1000	16	West	No	-96.0624	64.4463			No	Not Exceeded	
Road	2023-12-22 8:27 AM	Yes	Muskox	7	Lying Down	N/A	300	95	West	No	-96.1952	65.0129			No	Not Exceeded	
Road	2023-12-22 8:27 AM	Yes	Muskox	18	Lying Down	N/A	350	93	West	No	-96.2220	65.0008			No	Exceeded	Speed restriction
Road	2023-12-22 8:27 AM	Yes	Muskox	9	Lying Down	N/A	400	92	East	No	-96.2219	64.9943			No	Not Exceeded	





Table A-1: Wildlife Observations along the All Weather Access Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2023-12-22 8:27 AM	Yes	Caribou	8	Walking	SE	300	91	East	No	-96.2249	64.9847			No	Not Exceeded	
Road	2023-12-22 8:27 AM	Yes	Caribou	28	Foraging	N/A	750	67	East	No	-96.3262	64.8123			No	Exceeded	Road Restricted
Road	2023-12-22 8:27 AM	Yes	Caribou	78	Foraging	N	750	58	East	No	-96.3579	64.7416			No	Exceeded	Road Restricted
Road	2023-12-22 8:27 AM	Yes	Caribou	28	Foraging	S	300	58	East	No	-96.3579	64.7416			No	Exceeded	Road Restricted
Road	2023-12-22 8:27 AM	Yes	Caribou	31	Foraging	S	200	57	East	No	-96.3601	64.7314			No	Exceeded	Road Restricted
Road	2023-12-22 8:27 AM	Yes	Ptarmigan	4	Walking	W	5	18	West	Yes	-96.0824	64.4610			No	Not Exceeded	
Incidental	2023-12-22 2:56 PM	Yes	Caribou	19	Foraging	N/A	300	67	East	No	-96.3262	64.8123			No	Not Exceeded	
Road	2023-12-23 9:17 AM	Yes	Muskox	6	Foraging	N/A	50	95	East	No	-96.1952	65.0129			No	Not Exceeded	
Road	2023-12-23 9:17 AM	Yes	Muskox	2	Foraging	N/A	1000	94	East	No	-96.2127	65.0075			No	Not Exceeded	
Road	2023-12-23 9:17 AM	Yes	Muskox	18	Foraging	N/A	100	93	West	No	-96.2220	65.0008			No	Exceeded	Speed restriction 30km/h put in place between km93 and 94
Road	2023-12-23 9:17 AM	Yes	Caribou	2	Foraging	N/A	300	90	West	No	-96.2221	64.9750			No	Not Exceeded	
Road	2023-12-23 9:17 AM	Yes	Caribou	34	Foraging	E	300	73	East	No	-96.3242	64.8621			No	Exceeded	Road Restricted
Road	2023-12-23 9:17 AM	Yes	Caribou	40	Foraging	N/A	500	68	East	No	-96.3268	64.8203			No	Exceeded	Road Restricted
Road	2023-12-23 9:17 AM	Yes	Caribou	200	Foraging	N/A	500	57	East	No	-96.3601	64.7314			No	Exceeded	Road closed
Road	2023-12-23 9:17 AM	Yes	Caribou	30	Walking	S	500	55	East	No	-96.3460	64.7185			No	Exceeded	Road closed
Road	2023-12-23 9:17 AM	Yes	Caribou	110	Foraging	E	600	54	East	No	-96.3584	64.7132			No	Exceeded	Road closed
Road	2023-12-23 9:17 AM	Yes	Caribou	31	Alert	E	400	53	East	No	-96.3731	64.7061			No	Exceeded	Road closed
Road	2023-12-23 9:17 AM	Yes	Caribou	43	Foraging	SE	400	52	East	No	-96.3774	64.7009			No	Exceeded	Road closed
Road	2023-12-23 9:17 AM	Yes	Caribou	78	Foraging	N/A	800	51	East	No	-96.3791	64.6932			No	Exceeded	Road closed
Road	2023-12-23 9:17 AM	Yes	Caribou	17	Foraging	N/A	900	50	East	No	-96.3731	64.6794			No	Not Exceeded	
Road	2023-12-23 9:17 AM	Yes	Caribou	3	Walking	W	300	46	West	No	-96.3296	64.6562			No	Not Exceeded	
Road	2023-12-23 9:17 AM	Yes	Caribou	25	Resting	N/A	700	31	East	No	-96.1957	64.5543			No	Not Exceeded	
Road	2023-12-23 9:17 AM	Yes	Caribou	23	Foraging	N/A	600	31	West	No	-96.1957	64.5543			No	Not Exceeded	
Road	2023-12-25 1:01 PM	Yes	Muskox	7	Foraging	N/A	100	95	West	No	-96.1952	65.0129			No	Not Exceeded	
Road	2023-12-25 1:01 PM	Yes	Muskox	22	Foraging	N/A	1500	93	West	No	-96.2220	65.0008			No	Exceeded	Road closed
Road	2023-12-25 1:01 PM	Yes	Caribou	2	Foraging	N/A	500	76	West	No	-96.3457	64.8879			No	Not Exceeded	
Road	2023-12-25 1:01 PM	Yes	Caribou	16	Lying Down	N/A	750	68	East	No	-96.3268	64.8203			No	Not Exceeded	
Road	2023-12-25 1:01 PM	Yes	Caribou	7	Foraging	W	500	57	East	No	-96.3590	64.7277			No	Not Exceeded	
Road	2023-12-25 1:01 PM	Yes	Caribou	250	Foraging	N/A	1250	53	West	No	-96.3731	64.7061			No	Exceeded	Road closed
Road	2023-12-25 1:01 PM	Yes	Caribou	41	Lying Down	N/A	1000	54	East	No	-96.3584	64.7132			No	Exceeded	Road closed
Road	2023-12-26 9:00 AM	Yes	Caribou	8	Walking	W	0	45	West	No	-96.3134	64.6524			No	Not Exceeded	
Road	2023-12-26 9:00 AM	Yes	Caribou	8	Foraging	N/A	300	45	West	No	-96.3134	64.6524			No	Not Exceeded	
Road	2023-12-26 9:00 AM	Yes	Caribou	1	Foraging	N/A	200	49	East	No	-96.3707	64.6688			No	Not Exceeded	
Road	2023-12-26 9:00 AM	Yes	Caribou	52	Walking	N/A	800	50	West	No	-96.3731	64.6794			No	Exceeded	Road closed
Road	2023-12-26 9:00 AM	Yes	Caribou	11	Walking	E	300	54	East	No	-96.3584	64.7132			No	Not Exceeded	
Road	2023-12-26 9:00 AM	Yes	Caribou	3	Walking	N	1000	54	East	No	-96.3584	64.7132			No	Not Exceeded	
Road	2023-12-26 9:00 AM	Yes	Caribou	11	Foraging	N/A	100	56	West	No	-96.3514	64.7259			No	Not Exceeded	
Road	2023-12-26 9:00 AM	Yes	Caribou	3	Walking	E	150	57	East	No	-96.3601	64.7314			No	Not Exceeded	
Road	2023-12-28 10:21 AM	Yes	Muskox	1	Foraging	N	350	93	East	No	-96.2220	65.0008			No	Not Exceeded	
Road	2023-12-28 10:21 AM	Yes	Caribou	2	Foraging	E	300	92	East	No	-96.2219	64.9943			No	Not Exceeded	
Road	2023-12-28 10:21 AM	Yes	Caribou	8	Walking	W	300	91	West	No	-96.2249	64.9847			No	Not Exceeded	
Road	2023-12-28 10:21 AM	Yes	Caribou	3	Foraging	N/A	500	74	East	No	-96.3303	64.8752			No	Not Exceeded	
Road	2023-12-28 10:21 AM	Yes	Caribou	6	Foraging	N/A	1000	69	East	No	-96.3143	64.8277			No	Not Exceeded	
Road	2023-12-28 10:21 AM	Yes	Caribou	6	Foraging	W	1000	59	West	No	-96.3706	64.7495			No	Not Exceeded	
Road	2023-12-28 10:21 AM	Yes	Caribou	6	Foraging	N/A	650	56	East	No	-96.3514	64.7259			No	Not Exceeded	
Road	2023-12-28 10:21 AM	Yes	Caribou	8	Foraging	N/A	300	54	West	No	-96.3584	64.7132			No	Not Exceeded	
Road	2023-12-28 10:21 AM	Yes	Caribou	4	Walking	S	500	49	West	No	-96.3707	64.6688			No	Not Exceeded	
Road	2023-12-28 10:21 AM	Yes	Caribou	16	Foraging	E	300	46	East	No	-96.3296	64.6562			No	Not Exceeded	
Road	2023-12-28 10:21 AM	Yes	Caribou	6	Lying Down	N/A	350	45	East	No	-96.3134	64.6524			No	Not Exceeded	
Road	2023-12-28 10:21 AM	Yes	Caribou	88	Foraging	N/A	750	44	East	No	-96.3035	64.6417			No	Exceeded	Road closed