7 April 2025

To: Distribution List:

Re: Submission of the Ekati Diamond Mine 2024 Wildlife Effects Monitoring Plan Annual Report

Burgundy Diamond Mines Ltd. (Burgundy) is pleased to provide you with a copy of the 2024 Wildlife Effects Monitoring Plan Annual Report. The Wildlife Effects Monitoring Plan (WEMP) reports on wildlife monitoring activities and documents wildlife effects resulting from mining development and associated activities at the Ekati Diamond Mine. The WEMP also assesses the effectiveness of wildlife mitigation and management efforts. The program focuses on animal species identified as potentially experiencing residual effects from some aspects of the Project, termed Valued Ecosystem Components or VECs (e.g., caribou, grizzly bear, wolf, wolverine, and raptors). This report covers the reporting period from January 1st , 2024, to December 31st , 2024.

For any questions or concerns regarding the content of the report, please contact the undersigned at 403-613-8417 / Sheila.Chernys sheila.chernys@burgundydiamonds.com.

S Chernys

Sheila Chernys

Head, HSECT

Burgundy is the sole owner and operator of Ekati mine, having purchased the asset from the previous owner, Arctic Canadian Diamond Company Limited, in July 2023. Burgundy is the parent company of Arctic Canadian, which continues to maintain the previous company name as the named Licence/Permit holder however, all business is conducted directly by Burgundy.

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EKATI DIAMOND MINE

2024 Wildlife Effects Monitoring Program

April 2025

BURGUNDY
DIAMOND MINES

ERM

EKATI DIAMOND MINE

2024 Wildlife Effects Monitoring Program

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Executive Summary

Burgundy Diamond Mines Ltd. (Burgundy) implements a number of environmental plans and programs, all of which are interrelated (Figure 1). The results of the Wildlife Effects Monitoring Program (WEMP) are driven directly and/or indirectly by the plans in place, each with the overarching goal to protect land, air, water, and wildlife.

The following report presents the results of the 2024 WEMP conducted at the Ekati Mine to meet the requirements of the Environmental Agreement (Article V1(a) and Article VII) and the *Wildlife Act* (subsection 95(1) [1998]). The WEMP reports on wildlife monitoring activities and documents wildlife effects resulting from mining development and associated activities at the Ekati Mine. The WEMP also assesses the effectiveness of wildlife mitigation and management efforts. The program focuses on animal species that experience residual effects from some aspects of the project. These species are referred to as Valued Ecosystem Components or VECs (e.g., caribou, grizzly bear, wolf, wolverine, and raptors). This report covers the period from January 1, 2024, to December 31, 2024 (hereafter the 2024 reporting period).

Wildlife monitoring around the Ekati Mine is conducted in a study area of approximately 2,800 km^2 (square kilometres). The predominant vegetation type within the study area is heath tundra.

Habitat Alteration and Loss

Habitat loss reported from January 2024 to December 2024 was the result of expansion of the Sable Waste Rock Storage Area (WRSA) and construction of Point Lake Pit. Total habitat loss in 2024 was 95.4 ha (hectares; less than 0.01% of available habitat in study area). The amount of direct habitat loss caused by the project footprint from 1997 to 2024 is 4,043 ha (2.5% of the total pre-development habitat in the study area).

Wildlife Attractants and Waste Management

Waste is managed to minimize the presence of wildlife attractants throughout the Ekati Mine Site. As part of the WEMP, the landfill and waste bins are surveyed one to two times per week. The percentage of surveys detecting food or food packages at the landfill was 32% in 2024, which was slightly higher than in 2023 (27%).

Overall, 1% of waste bins surveyed in 2024 contained items of misdirected waste or wildlife attractants at the Ekati Mine Main Camp and Misery Camp. At Sable office which is located near Sable Pit and Sable haul road, 3% of waste bins surveyed contained misdirected wastes, or wildlife attractants. Results at the Ekati Mine of misdirected waste percentages have continued to decline in the past 10 years.

Improper disposal of waste is an ongoing challenge that Burgundy considers a management priority and the responsibility of all staff to address. Strategies employed include regular education efforts that stress the dangers posed to wildlife and staff from improperly discarded waste; increased communication with the Waste Management Department to isolate the origin of any reported misdirected waste; provision of on the ground training to individual departments; and timely cleanup of improperly discarded waste.

Figure 1 Environmental Protection through Environmental Management Program and Plans

Wildlife Management

During the 2024 reporting period, 455 general wildlife management actions were implemented in response to wildlife activity at the Ekati Mine, including actions directed at caribou (*Rangifer tarandus;* 197), grizzly bear (*Ursus arctos*; 194), wolf (*Canis lupus*; 44), wolverine (*Gulo gulo*; eight), fox (*Vulpes vulpes*; 10) and moose (*Alces alces*; one). The remaining wildlife management actions (seven) were general to all wildlife, or a combination of species, encountered. Management actions implemented in 2024 followed a successive hierarchy, starting with site-wide notifications, wildlife notice signs, road closures and/or work stoppages. Burgundy continues to explore effective mitigation actions to reduce potential interactions with wildlife.

The Caribou Road Mitigation Plan (CRMP), a three-level hierarchy of management and mitigation above the regular Operational Level (Blue) response to wildlife interactions with roads at the Ekati Mine, was applied to Misery haul road and Sable haul road beginning in mid-2016. The 2024 reporting year represents the eighth full year that the CRMP was implemented. In 2024, the Operational Level (Blue) was in effect for 28 days from January 5 to February 2, and 17 days from February 12 to 29. While CRMP alert levels beyond the Operational Level were triggered for the majority of the year due to caribou occurrences near the roads. Level 1 (Yellow – low risk) was triggered on two occasions for a total duration of five days, and Level 3 (Red – high risk) was triggered for a duration of 302 days. There were no days when the Operational Level was Level 2 (Orange – medium risk). Reporting management activities that adhere to the CRMP will continue to be a component of future iterations of the WEMP Report.

Wildlife-Vehicle Interactions

During the 2024 reporting period, there were 28 vehicle-related wildlife mortalities reported at the Ekati Mine. These included arctic hare (eight individuals), caribou (two individuals), arctic ground squirrel (one individual), wolverine (one individual), and an unknown species of ptarmigan (16 individuals). There were no aircraft-related mortalities and one interaction involving a caribou being deterred from the airstrip. Mitigation efforts to reduce wildlife conflicts with aircraft and ground traffic include a variety of measures: always giving wildlife the right-of-way, employee education, reducing speed limits, and site-wide notifications about wildlife observations, road closures, and the use of Inuksuit (traditional rock structures) to discourage wildlife from approaching high traffic areas.

Eight interactions between wildlife and vehicles occurred in 2024. Three events involved vehicle mitigations where grizzly bears were deterred off roadways, using light vehicles. All individuals involved in wildlife-vehicle interactions were unharmed and all work continued when the wildlife moved out of the area.

The use of vehicles to deter wildlife was not required for caribou on roads in 2024. To provide additional wildlife safety, visual monitoring, temporary road closures, site-wide notifications, and/or wildlife signs were implemented while caribou and other wildlife were adjacent to or crossing mine roads. The use of Traditional Knowledge (TK) to inform construction of accessible road crossing ramps and implementation of the CRMP are key measures in limiting wildlife-vehicle interactions.

Non-Vehicle Wildlife Mortalities and Incidents

During the 2024 reporting period, there were four wildlife mortalities reported at the Ekati Mine. They included two VEC species: two caribou and one grizzly bear, and one non-VEC species; one common raven. The cause of death for one caribou was unknown, and the second was potential predation, with wolves being observed feeding on the caribou carcass. The common raven mortality was due to unknown causes. One adult male grizzly bear was observed feeding on the carcass of a grizzly bear cub.

During the 2024 reporting period, a total of 51 non-vehicle wildlife incidents were reported. Caribou accounted for the majority of the incidents, with 29 recorded incidents. These incidents occurred when caribou were on the road or near mine infrastructure, leading to road closures or work stoppages. Fourteen incidents involving grizzly bear deterrence from mine infrastructure or roads. There were 11 other incidents involving red fox, unknown species of fox, wolves, and common raven. Burgundy has implemented multiple mitigation practices to minimize attractants and limit the occurrence of wildlife on-site, including waste management education and awareness programs. Deterrents were used during wildlife interactions that involved field crews or mine infrastructure; in 2024 deterrents were used on 16 occasions and included bear bangers, scare cartridges, rubber bullets, light vehicles, and a helicopter.

Infrastructure Inspections

During the 2024 reporting period, a total of 124 skirting inspections were completed over 113 sampling days at the Ekati Mine Camp and Misery Camp. Two reports of damage or holes to skirting were reported to facilities management for repair. Arctic hare tracks were recorded on two occasions and wolverine tracks were recorded on one occasion.

Areas with fencing were inspected for damage on 60 occasions over 60 sampling dates at Misery Camp. Along the Misery Camp fence, damage to fencing was observed during three surveys. No wildlife was observed in 2024 during fencing surveys.

Caribou

Collared Caribou Monitoring

Seasonal ranges were calculated for Bathurst female caribou in six seasons, and in four seasons for Bathurst male caribou. In 2024, the ranges of collared male caribou were recalculated, following a hiatus since 2015. The calculation of these ranges will be carried on for subsequent WEMP reports. The Government of the Northwest Territories Department of Environment and Natural Resources (GNWT ENR or ENR) telemetry data indicates that the Bathurst herd has seasonal ranges that have historically overlapped with the Ekati Mine wildlife study area. The fixed kernel 50% Utilization Distributions (UDs) representing core ranges, and the broader seasonal range extent (described by the 95% kernel UD) were determined from 2024 telemetry data acquired from satellite-collared male and female caribou. For the seasonal ranges, the 95% UDs indicate that winter and spring migration seasonal ranges for female and male Bathurst caribou overlapped with the Ekati Mine. Male caribou ranges were predominantly situated further south compared to female caribou, particularly during the spring and fall migrations when female caribou travel to and from their calving groups in northern Northwest Territories and Nunavut.

Information from satellite-collared Beverly/Ahiak female caribou collected by ENR continues to indicate that the Beverly/Ahiak herd overlaps with the Ekati Mine during winter (2023/2024 winter 95% UD), although the annual range for collared Beverly/ Ahiak caribou during all periods spans a large geographic area mostly to the east of the Ekati Mine. Incidental caribou observations at the Ekati Mine in 2024 support the kernel UD maps that indicate caribou were observed most often at the Ekati Mine during the winter and the fall migration periods.

Incidental Observations

During 2024, 207 incidental observations of caribou were reported, totaling 5,306 animals. However, it is important to note that these incidental observations likely included the same individuals or groups on multiple occasions, rather than representing 5,306 different individuals. The number of incidental observations in 2024 (207) was almost the same as those recorded in 2023 (206). However, the total number of caribou observed in 2024 (5,306) was lower than the number of caribou observed in 2023 (11,555).

Consistent with the collar data, the highest percentage of caribou observed incidentally in 2024 were recorded during the winter (January 1 to April 19 and December 1 to 31) and fall migration season (September 7 to November 30), approximately 48%. In most reporting years, the migration periods have been when most animals are observed around the Ekati Mine.

Caribou Behaviour

During 2024, a total of 53 focal behavioural surveys were completed on 50 caribou: 37 male, eight female, and five individuals of unknown sex. The observations indicated that male caribou spent most of their time feeding (35%) or walking (27%) and female caribou spent most time walking (26%), feeding (24%), or other (14%).
In addition, eight behavioural scan surveys were completed for the 2024 reporting period. Scan surveys were completed on four different caribou composition groups: female/male mixed groups with young (n = 1), mixed groups with only adults (n = 2), male only (n = 1), and female only (n = 1), with two additional groups with unknown ages and sexes. On average, the most common behaviour was walking, with 17% of observed time for mixed adult groups with young, 80% for mixed groups with adults only, 100% for male only groups, and 88% for female only groups. Feeding was the second most common behaviour, with 54% of observed time spent for mixed adult groups with young, 20% for mixed groups with adults only, 50% for male only groups, and 75% for female only groups. Alert behaviour was not consistently observed following stressor events.

Long Lake Containment Facility Monitoring

During the 2024 reporting period, there were 13 caribou observations (1,041 individuals) over 83 surveys at the Long Lake Containment Facility (LLCF). For most observations, group size was less than 50 individuals. However, there was one observation of approximately 1,000 caribou. Most of the behaviour observed was classified by caribou travelling, feeding, and standing. No injuries or signs of distress were recorded for caribou. Other wildlife and their tracks were also observed in the LLCF including six mammal and 36 bird species suggesting wildlife species are using the LLCF area. Bird species recorded during LLCF surveys included one VEC (Peregrine falcon (*Falco peregrinus anatomy/tundrius*) however is no longer a species of conservation concern federally or in the NWT. Breeding was not observed for peregrine falcon however, breeding was observed on eight occasions for six other bird species, five waterbird and one shorebird. Birds with broods were also observed on five occasions.

Road and Power Line Surveys

In 2024, road surveys and powerline surveys along Sable, Misery, and Lac du Sauvage roads were completed for a combined total of 295 days. As per ENR request powerline and road surveys along Misery haul road have been combined for reporting since 2021. Caribou were observed on 390 occasions; a total of 12,646 caribou were reported. However, it is important to note that these observations likely included the same individuals or groups on multiple occasions, rather than representing 12,646 different individuals. The three largest groups estimated at 800, 1,000 and 1,500 caribou each, were observed along Sable and Misery haul roads.

To date, no caribou injuries or deaths have been attributed to the power line. Observations of caribou near the power line and crossing beneath the power line suggest that the power line does not impede caribou movement or change caribou behaviour.

In 2024, the most common behaviour observed among the groups was feeding (52%, n = 154), followed by travelling (19%, n = 56). Caribou that were within 500 m of the road/power line represented 46% of observations, with 2% of observations involving distressed caribou (deflection, hesitation, and alert). Observations of caribou near and crossing all roads/powerline suggest that the roads do not impede caribou movement at a local scale.

Traffic Monitoring

Three individual cameras were deployed on the Misery and Sable haul roads and Point Lake to monitor vehicle passage. The cameras were programmed to take pictures when triggered by infrared motion sensor (motion triggered photos). From January 1, 2024, to December 31, 2024, these cameras recorded for a combined total of 564 days, however there were notable gaps in effort for each camera throughout the year. The traffic camera methods worked well to identify vehicles. A total of 15,448 vehicles were detected on Misery haul road, 36,291 vehicles were detected on Sable haul road, and 36,213 vehicles detected at Point Lake. At the Misery haul road camera, the average daily count of vehicles in 2024 was 72, which was higher than 52 in 2023. At the Sable haul road camera, the average daily count of vehicles in 2024 was 141 compared to 127 in 2023. At the Point Lake camera average daily count of vehicles in 2024 was 227.

Grizzly Bear

During the 2024 reporting period, there were 994 incidental grizzly bear sightings, totaling 136 grizzly bears on 65 separate days near the Ekati Mine. The first sighting occurred on April 23, 2024, and the last sighting prior to winter was on October 8, 2024.

During the LLCF surveys, five incidental grizzly bear sightings were reported on five separate days. The first on January 6, 2024, and the last on September 7, 2024. No family groups were observed during these surveys.

Multiple animals or family groups were observed on 19 occasions in 2024. The most observed family group composition included one adult female with three cubs, which was observed on four occasions. Other family group compositions included three sightings of a female with one cub, two sightings of a female with two cubs, one sighting of a female and three cubs with one large adult male in the vicinity, one sighting of an adult male with one cub, and one sighting of an unknown adult with three cubs.

The number of grizzly bear sightings with family groups observed in 2024 decreased from 2023 (n = 30), while the number of individual grizzly bear sightings also decreased in 2024 (n = 74) from 2023 (n = 104). The decreased number of observations of grizzly bears in 2024 may be a result of natural fluctuations in breeding females around the Ekati Mine.

In 2024, one potential grizzly bear den was located, with one adult female with three cubs spotted in the area of the den, indicating it may have been in use.

Grizzly bear sightings tended to be concentrated around areas of work, staff, and roads due to an increased probability of bears being seen by staff when present in these areas. The number of incidental observations is not indicative of whether the number of individuals near the mine has remained consistent, as individual bears could have been observed on multiple occasions in previous years. Reports of grizzly bear sightings showed a decrease in 2024 (n = 94) when compared to 2023 (n = 132). This may be due to increased bear activity in 2023 from the Pigeon Stream Diversion. As in past years, grizzly bear site-wide notifications were delivered following the first evidence of grizzly bear activity of the season.

Wolf

There were 45 incidental wolf sightings, totaling 63 wolves on 39 separate days near the Ekati Mine during the 2024 reporting period.

One incidental wolf sighting was reported during LLCF surveys on February 16, 2024.

The majority of wolf observations occurred at sites relatively close to mine infrastructure, in areas with increased human activity, and hence a higher probability of an animal being recorded if present. The 44 observations are below the average yearly wolf observations (n = 59) since monitoring began in 2001: the highest being 117 in 2019. The lower number of observations in recent years may be associated with natural changes to wolf migratory patterns and behaviour and is in line with past reporting years.

Wolverine

In 2024, there were 10 incidental observations of wolverines recorded on nine separate days near the Ekati Mine, which falls below the average (n = 25) number of observations recorded since 2003. No additional wolverines were recorded during LLCF surveys. Burgundy has implemented adaptive mitigation measures to reduce the likelihood of attracting wolverines to site, including a proactive waste management program, increased educational awareness, improvements and regular examination and maintenance to the accommodation structures that inhibit possible access to buildings by wolverines, and proactive management activities that include site-wide notifications about wolverine and other carnivore species near infrastructure.

Fox

During the 2024 reporting period, there were 58 incidental sightings of 65 individual foxes on 57 separate days near the Ekati Mine. Most observations (53 individuals) were red fox, the remaining observations were unknown species (nine individuals). In addition, five red foxes, three arctic foxes, two cross foxes and one unknown fox species were observed during LLCF surveys. Fox sightings were distributed among many roads around the Ekati Mine Site, the Main Camp, the incinerator building, and the landfill area.

Raptors and Corvids

In 2024, there were 20 incidental sightings of 33 individual raptors representing five species, over 24 separate days near the Ekati Mine. Species observed incidentally included; bald eagle (*Haliaeetus leucocephalus*; two individuals), gyrfalcon (*Falco rusticolus*; seven individuals), peregrine falcon (four individuals), and rough-legged hawk (*Buteo lagopus*; two individuals). The common raven (five individuals) was also observed and are included with raptors due to similar nesting habitat. Two common raven nests were recorded: one active nest at the Misery Crusher power substation in April, and one active nest inside a ventilation hood of the incinerator building in May.

In addition, four common ravens, three bald eagles, three northern harrier (*Circus cyaneus*), two rough-legged hawks and one peregrine falcon were observed over 10 separate days during LLCF surveys. Burgundy monitors pits at the Ekati Mine to identify raptor nesting activity, as a variety of bird species (including common ravens, peregrine falcons, rough-legged hawks, and gyrfalcon) will use pit walls as nesting habitat. During the 2024 reporting period, a total of 264 pit wall nest surveys over 82 days were conducted at Sable Pit between March 27, 2024 and June 25, 2024Migratory Birds

During the 2024 reporting period, there were 13 incidental bird sightings, including approximately 274 individuals from seven species. Species observed included greater white-fronted goose (n = 110), cackling goose (n = 60), snow goose (n = 40), northern pintail (n = 37), unknown ptarmigan (n = 24), rock ptarmigan (n = 2) and one unidentified bird species.

An additional 5,842 migratory birds representing 32 unique species over 58 separate days were recorded during LLCF surveys in 2024.

All species observed incidentally in 2024 had been recorded at the Ekati Mine in past years. In 2024, one species of conservation concern ranked as Sensitive in the NWT (GNWT 2024) was recorded; northern pintail (*Anas acuta)*. Breeding wasn't confirmed for any incidental species sightings in 2024.

Other Wildlife Observations

In 2024, there were two incidental sightings of moose recorded (as individual animals) over two separate days near the Ekati Mine. No calves were observed in 2024. Observations of moose have become more common in recent years at the Ekati Mine, with a total of 106 moose individuals recorded between 2013 and 2024.

There were two incidental sightings of muskox recorded (in groups of seven and 15 animals) over two separate days near the Ekati Mine. Two calves were confirmed in 2024. No observations of muskox were recorded in 2022 or 2023.

There were six incidental observations of arctic ground squirrel over two separate days during LLCF surveys in 2024.

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Acronyms and Abbreviations

Abbreviation/Acronym	Definition
%	Percent
Burgundy	Burgundy Diamond Mines Ltd.
CRMP	Caribou Road Mitigation Plan
DAR	Developer's Assessment Report
DDEC	Dominion Diamond Ekati Corporation
Diavik	Diavik Diamond Mines Inc.
ECCC	Environment and Climate Change Canada
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
ERM	Environmental Resources Management
GIS	Geographic Information System
GNWT ENR (or ENR)	Government of the Northwest Territories Department of Environment and Natural Resources, now the Department of Environment and Climate Change
GNWT ECC (or ECC)	GNWT Department of Environment and Climate Change
ha	Hectare
km	Kilometre
KM	Kilometre marker
km^2	Square kilometre
km/h	Kilometre per hour
LDS	Lac du Sauvage
LLCF	Long Lake Containment Facility
m	Metre
NABBS	North American Breeding Bird Surveys
NWT	Northwest Territories
PSD	Pigeon Stream Diversion
SARA	*Species at Risk Act* (2002)
The Plan	Wildlife Mitigation and Monitoring Plan
TK	Traditional Knowledge
UD	Utilization Distribution
UTM	Universal Transverse Mercator coordinate system

Abbreviation/Acronym	Definition
VEC	Valued Ecosystem Component
WEMP	Wildlife Effects Monitoring Program
WEMP Report	Wildlife Effects Monitoring Program Report (this document)
WMMP	Wildlife Mitigation and Monitoring Plan
ZOI	Zone of Influence

1. Introduction

1.1 The Ekati Mine

The Ekati Mine, constructed in 1997, is located in the Northwest Territories (NWT), approximately 200 kilometres (km) south of the Arctic Circle and 300 km northeast of Yellowknife (Figure 1.1-1). The mine officially opened in October 1998 as the first Diamond mine in Canada. In 2024 production mining continued at Sable Open Pit, Misery Underground, and construction began at Point Lake Open Pit in May 2024 (Figure 1.1-2). The mine is situated within the Lac de Gras watershed at the headwaters of the Coppermine River drainage basin, which flows north to the Arctic Ocean (Figure 1.1-1). The Ekati Mine is located 100 km north of the tree line on the Arctic tundra in a semi-arid environment. Infrastructure changes in 2024 were related to the continued development of Sable Development East Waste Rock Storage and Point Lake Pit.

The Ekati Mine (Ekati Mine) is owned and operated by Burgundy Diamond Mines Ltd. (Burgundy). Burgundy acquired the Ekati Mine and Arctic Canadian Diamond Company Ltd. as a wholly owned subsidiary in July 2023.

The local terrain is characterized by boulder fields, tundra, wetlands, eskers, and numerous lakes with interconnecting streams. There are more than 6,000 lakes within the 2,139 km^2 mineral lease area. It is an area of continuous permafrost with a shallow active layer (less than 2 metres [m] thick) which thaws during the brief summer. While extreme winter temperatures dominate the majority of the year, there are generally five months of spring, summer and fall weather, but only four of those months (June through September) experience daytime temperatures above freezing.

1.2 The Ekati Mine Wildlife Study Area

Wildlife monitoring at the Ekati Mine was completed in a study area of approximately 1,600 km^2 from 1997 and 2005. Beginning in 2006, the study area expanded to an area of 2,800 km^2 (Figure 1.2-1). The predominant vegetation type within the study area is heath tundra.

The study area is characterized by several large eskers that provide travel routes for barren-ground caribou (*Rangifer tarandus groenlandicus*) and denning habitat for wolves (*Canis lupus*) and grizzly bears (*Ursus arctos*). Numerous grass and sedge wetland areas provide food for grizzly bears in the spring and breeding habitat for migratory shorebirds, waterfowl, and some songbird species. Rocky cliffs and outcrops near lakes provide nesting areas for falcons and hawks. Other species known to inhabit the study area throughout the year include arctic fox (*Alopex* lagopus), arctic ground squirrel (*Spermophilus* p*arryii*), arctic hare (*Lepus arcticus)*, lemmings (numerous species), ptarmigan (*Lapogus sp.),* red fox (*Lagopus sp.*), wolverine (*Gulo gulo*) and occasionally moose (*Alces alces*) and muskox (*Ovibos moschatus).*

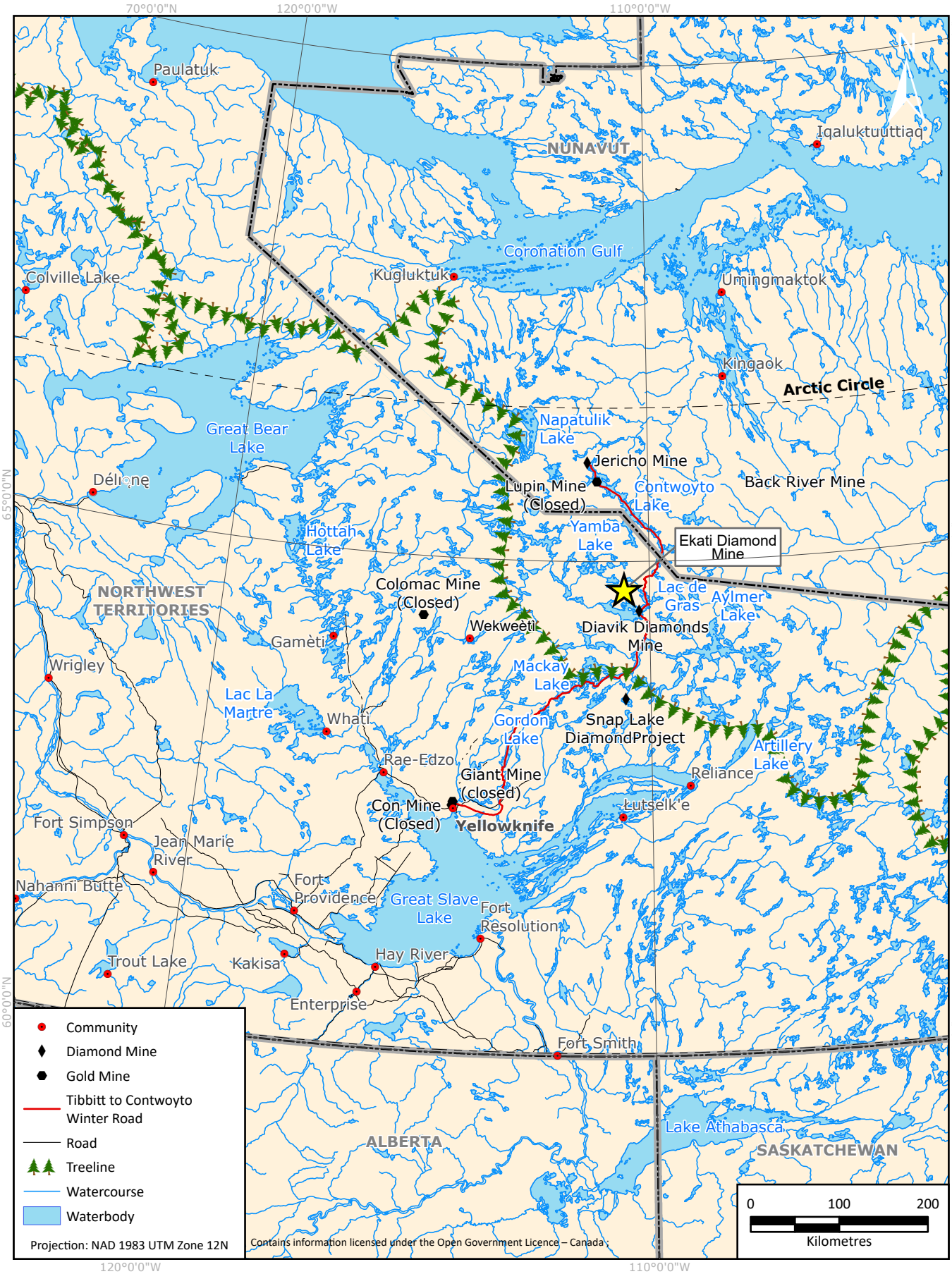


Figure 1.1-1 Location of the Ekati Mine, Northwest Territories

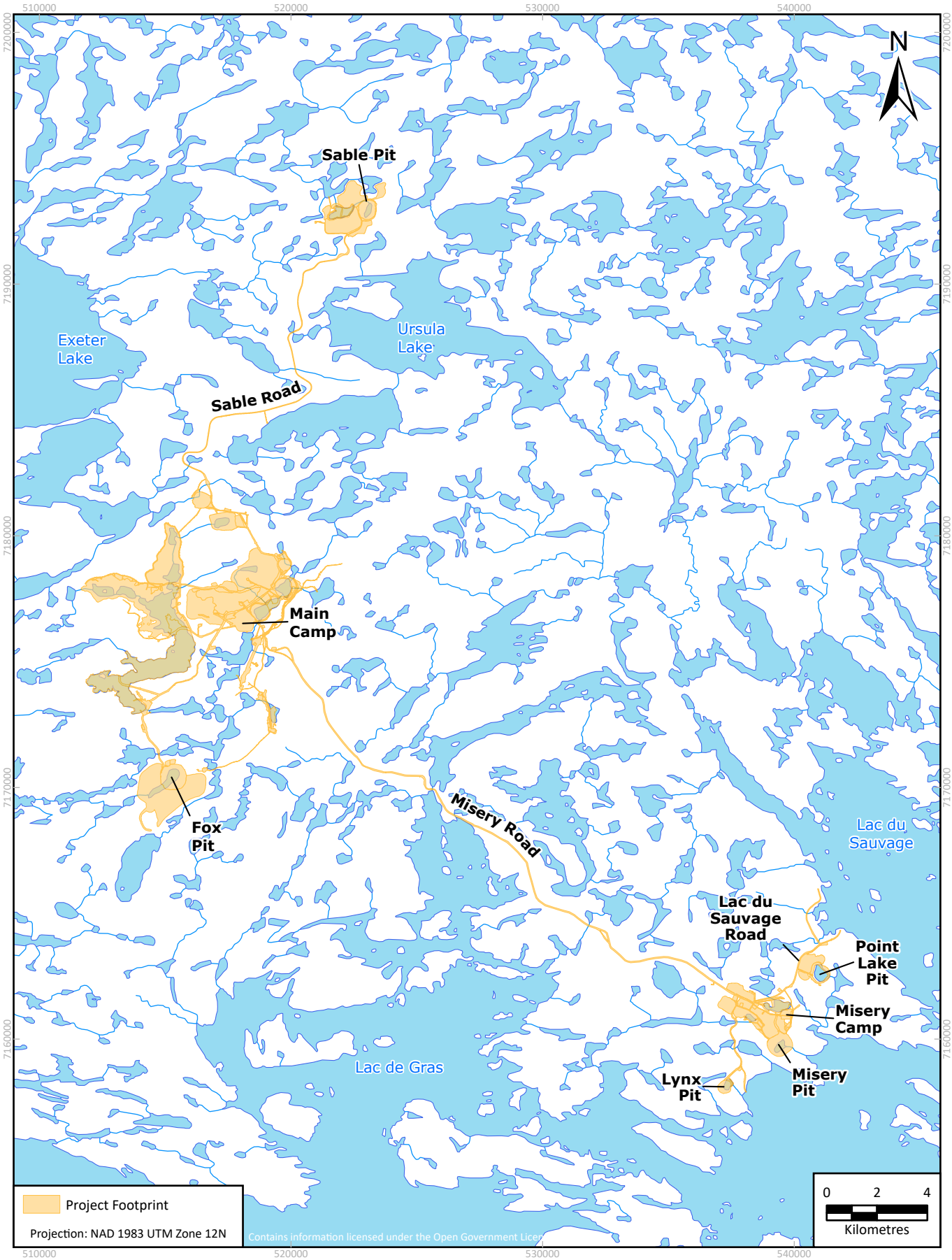


Figure 1.1-2 The Ekati Mine Site Map

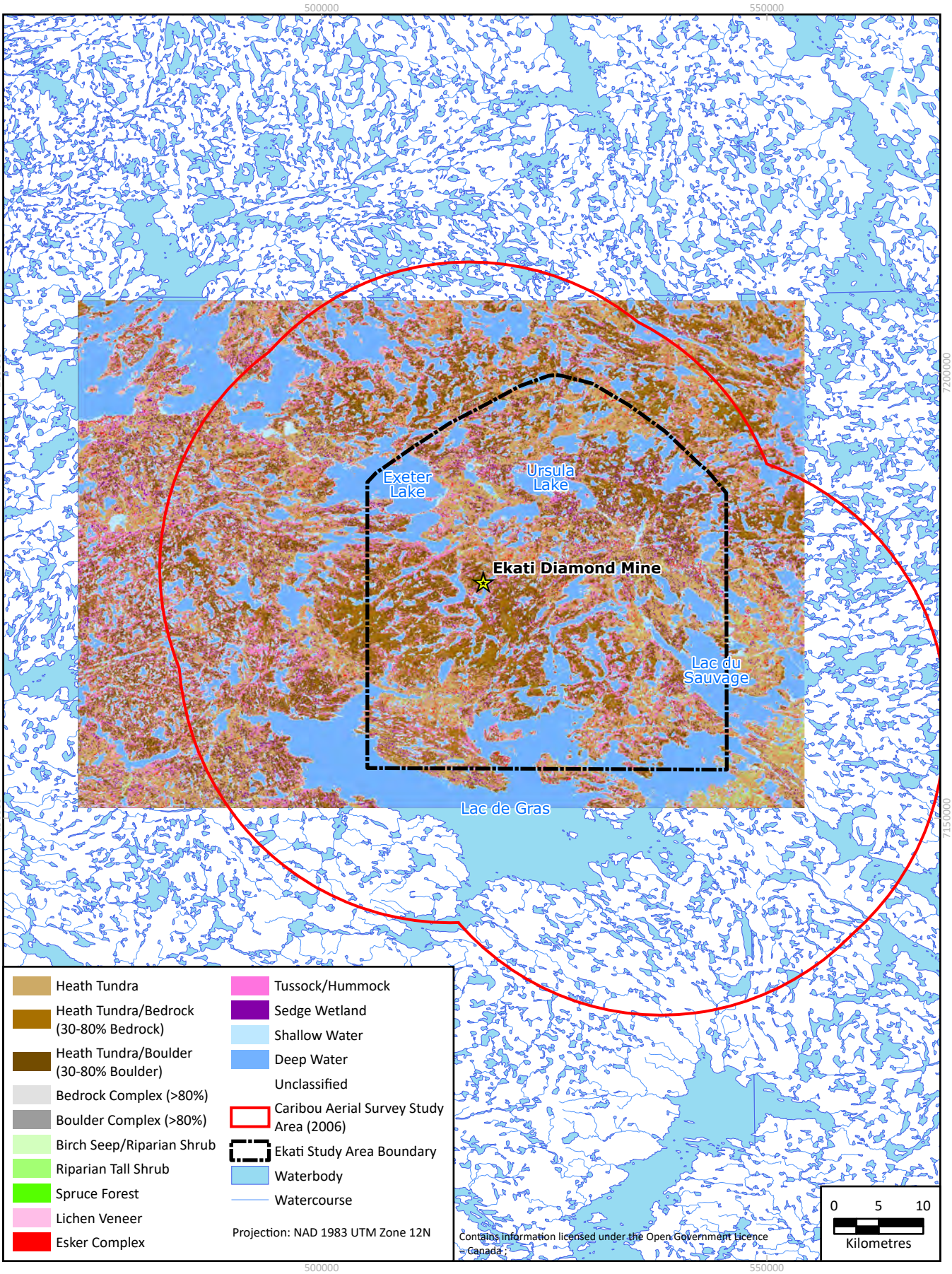


Figure 1.2-1 Habitat Types within and Adjacent to the Ekati Mine Study Area

1.3 Wildlife Effects Monitoring Program

The Wildlife Effects Monitoring Program (WEMP) is a requirement of the Environmental Agreement (Articles V and VII) and the *Wildlife Act* (subsection 95 [1998]) for the Ekati Mine. The WEMP is guided by the Wildlife Effects Monitoring Plan (the Plan; Golder Associates 2017). The Plan was last updated in 2017 (Golder Associates 2017) to incorporate effects identified during the Jay Project Environmental Assessment (EA; DDEC 2014) and obligations under various Acts and regulations relevant to wildlife in the NWT (see Table 1.5-1 in Golder Associates 2017). On June 1, 2017, DDEC received conditional approval for the Plan, including the Caribou Road Mitigation Plan (GNWT 2017). Final approval was received on July 31, 2018. Through a stakeholder workshop in December 2021 and subsequent comment and response cycles, the Point Lake WEMP Addendum (Arctic Canadian 2021a) was finalized in 2022 with post-dewatering monitoring initiatives. Burgundy is currently in the process of finalizing an updated Wildlife Mitigation and Monitoring Plan (WMMP), which will be implemented upon final approval by the Government of the Northwest Territories Department of Environment and Natural Resources (GNWT ENR or ENR, now the Department of Environment and Climate Change; ECC) expected in 2025.

The Plan is based on the predicted effects to wildlife identified in the Ekati Environmental Impact Statement (EIS; BHP Billiton 1995), the Environmental Assessment Report for the Sable, Pigeon, and Beartooth Kimberlite Pipes (BHP and Dia Met 2000), the Developer's Assessment Report (DAR; DDEC 2014) for the Jay Project, and the Point Lake Project Description (Arctic Canadian 2021b). Although the Jay Project has been cancelled, the wildlife monitoring and mitigation initiatives for the area have been adopted and implemented site-wide and will also be applied to the Point Lake Project.

The Plan is a living document that is reviewed every five years and updated as needed. The Plan incorporates revisions based on feedback from extensive consultation with stakeholders, including regulators, scientists, and Indigenous people. The Plan uses scientific methodology and Traditional Knowledge (TK) as sources of information regarding wildlife and local ecology.

The Ekati Mine employs several full-time Environment Specialists, an Environment Advisor dedicated to the implementation of the Plan, seasonal hires and consultant wildlife biologists to assist with the Plan, as required.

1.4 Valued Ecosystem Components and Species of Concern

The WMMP identifies five Valued Ecosystem Components (VECs) and two additional species and wildlife groups that are studied and reported in the WEMP Report. Wildlife VEC species and groups include caribou, grizzly bear, wolf, wolverine and raptors. Additional species and groups include foxes and migratory birds because they interact with the Ekati Mine regularly. There are two species of foxes at Ekati, the red or cross fox (*Vulpes vulpes*) and the Arctic fox (*Vulpes lagopus*).

Wildlife VECs represent physical, biological, cultural, social, and economic properties of the environment that are considered by society to be important. VECs also include species of conservation concern. For the purposes of the Plan, wildlife species may be considered conservation concern based on their federal or territorial status. Federal status includes those listed on Schedule 1 of the *Species at Risk Act* (SARA; 2002) and/or those assessed by COSEWIC (Committee on the Status of the Endangered Wildlife in Canada; Government of Canada 2025).

Territorial status includes those listed on the *Species at Risk (NWT) Act* (2009) or ranked in the NWT (GNWT 2024). Wildlife VECs selected for the WEMP and the rationale for their selection are provided in Table 1.4-1.

Table 1.4-1 Valued Ecosystem Component Species Selected for the Wildlife Effects Monitoring Plan

VEC	Rationale
Caribou	Barren-ground caribou are seasonal migrants to the area, are a biologically and culturally important component in the Arctic and are a species of conservation concern, federally designated as "*Threatened"* by COSEWIC (2016), and not listed on Schedule 1 of *SARA* (2002). In the NWT, barren-ground caribou are listed as "*Threatened"* under the *Species at Risk (NWT) Act* (GNWT 2024).
Grizzly Bear	Grizzly bears (western population) are a species of conservation concern, federally designated as "*Special Concern"* by COSEWIC (2012) and also on Schedule 1 of *SARA* (2002). In the NWT, Grizzly bear are listed as "*No status*" under the *Species at Risk (NWT) Act* (GWNT 2024) and assessed as Sensitive (GNWT 2024).
Wolf	Wolves (*Canis lupus*) were assessed as "*Secure*" in the Northwest Territories (GNWT 2021) and are not listed federally, but Burgundy monitors wolves near infrastructure.
Wolverine	Wolverines are a species of conservation concern, federally designated as "*Special Concern"* by COSEWIC (2014) and also on Schedule 1 of the *SARA* (2002). In the NWT, wolverine are assessed as Sensitive (GNWT 2024). Burgundy monitors wolverines near infrastructure.
Raptors	Peregrine falcon (*Falco peregrinus anatum/tundrius*) is no longer a listed species of conservation concern and is federally designated as "*Not at Risk*" by COSEWIC (2007), and not listed on Schedule 1 of SARA (2002). In the NWT, peregrine falcon are listed as "*Not at Risk*" under the *Species at Risk (NWT) Act* (GNWT 2024) a. Most raptor species nest on cliffs at the Ekati Mine, while the short-eared owl nests on the ground. The short-eared owl (*Asio flammeus*; federally designated as "*Threatened*" by COSEWIC, listed as "*Special Concern*" on *SARA* Schedule 1, listed as "*Not at Risk*" under the *Species at Risk (NWT) Act* [GNWT 2024]) and assessed as At Risk (GNWT 2021b). The peregrine falcon and other raptor species nest on cliffs in the Ekati Mine regional study area while the short-eared owl nests on the ground. Burgundy monitors cliff-nesting raptor use of pit walls for breeding.

Migratory birds are protected in Canada under the *Migratory Birds Convention Act* (1994) while listed species of migratory birds receive additional protection under the *SARA* (2002; discussed in this document as "species of concern"). Migratory birds are not a VEC but are monitored because this group includes species of concern. The Harris's sparrow (*Zonotrichia querula*) red-necked phalarope (*Phalaropus lobatus*), and rusty blackbird (*Euphagus carolinus*), are all listed as Special Concern by COSEWIC (2006; 2014a; 2017) and on Schedule 1 of SARA (2002). Lesser yellowlegs (*Tringa flavipes*) is listed as Threatened by COSEWIC (2020) and is under consideration under Schedule 1 of SARA (2002). The Harris's sparrow, lesser yellowlegs, red-necked phalarope, and rusty blackbird are not listed under the *Species at Risk (NWT) Act* (2009); however, they are ranked as Sensitive in the NWT (GNWT 2024).

1.5 Objectives of the 2024 WEMP Report

The 2024 WEMP marks the 27th annual program and report to be completed at the Ekati Mine. The 2024 reporting period is the calendar year from January 1 to December 31, 2024. For comparison, observations from prior years are also provided in this report.

There are nine main components of the WEMP intended to evaluate the environmental impact predictions and potential effects on VECs, foxes and migratory birds, and to address key residual environmental risks to wildlife as identified in the Environmental Impact Report (EIR); and the pathways identified in the Jay Project DAR:

1. Monitoring caribou;
2. Monitoring carnivores, including grizzly bears, wolves, wolverine, and foxes;
3. Monitoring raptors and migratory birds;
4. Monitoring interactions between wildlife and traffic, and assessing success of mitigation efforts;
5. Monitoring wildlife mortalities and incidents and assessing the effectiveness of mitigation efforts;
6. Monitoring potential wildlife attractants and assessing the effectiveness of waste management efforts;
7. Inspecting buildings (i.e., accommodation skirting) and fencing structures at the Ekati Mine's Main Camp and Misery Camp for evidence of interaction with or disturbance by wildlife;
8. Monitoring wildlife interactions with the Long Lake Containment Facility; and
9. Monitoring wildlife interactions with the Misery haul road power line and additional mine roads.

Results of the 2024 WEMP will be compared against predictions in the 1995 EIS during the next EIR period. The most recent EIR period included monitoring years 2019 to 2021 (Arctic Canadian, 2023).

2. Wildlife Habitat

2.1 Habitat Alteration and Loss

2.1.1 Introduction

Direct loss of terrestrial wildlife habitat may occur through site clearing, industrial structural development, and facility expansion. The cumulative annual amount of direct habitat loss accrued from the Construction and Operation phases of the Ekati Mine have been monitored annually since 1997. These losses were predicted and approved through the EIR process; i.e., the EIS (BHP Billiton 1995), the Environmental Assessment Report conducted for Sable, Pigeon, and Beartooth (BHP and Dia Met 2000), the amendment processes for the Lynx and Point Lake developments (Water License W2020L2-0004), and the Jay Project DAR (DDEC 2014).

2.1.2 Objectives

The objective for this component of the WEMP is to:

- determine the amount of direct habitat loss due to ongoing development and operations of the Ekati Mine.

2.1.3 Methods

The cumulative area of direct habitat loss was determined by superimposing the current footprint of the Ekati Mine on the pre-development (i.e., baseline) habitat map of the study area using Geographic Information System software (GIS; Figure 1.2-1). Both the mine footprint and the baseline habitat map were developed from LANDSAT Thematic Mapper satellite imagery (BHP Billiton 2004). Fifteen habitat types (Table 2.1-1) were classified from pre-disturbance land cover mapping of associations of vegetation, soil, and moisture characteristics, using the Ecological Land Classification system developed for the Slave Geological Province (Matthews et al. 2001).

Yearly and cumulative direct habitat loss was measured in hectares (ha) by mapping the new areas of the mine footprint each year. Disturbed areas that are under reclamation were included in the tabulated results.

Results from 2024 included loss from a small expansion of the Sable WRSA, construction to establish the Point Lake overburden stockpile and the Point Lake WRSA. Exploration activities were not included in the analysis as all exploration to this point was conducted by helicopter and no roads or material were brought in or excavated around the drill sites (i.e., resulting in only slight temporary disturbance around the drill sites, but no resulting habitat loss).

2.1.4 Results

Habitat loss reported from January 2024 to December 2024 was the result of expansions of the Sable WRSA and development at Point Lake Pit. Total habitat loss in 2024 was 95.4 ha (less than 0.01% of available habitat in the study area; Table 2.1-2).

A total of 4,043.0 ha of habitat has been lost due to development of the mine footprint since 1997, or 2.5% of the total pre-development habitat in the study area. The land cover types most affected by the development of the mine, relative to their availability within the study area, include: heath tundra bedrock (3.6%), heath tundra boulder (3.3%), tussock/hummock (3.2%), and spruce forest (3.1%).

Table 2.1-1 Description of Habitat Types within the Ekati Mine Wildlife Study Area

Habitat Type	Description
Bedrock complex (>80% rock)	Exposed bedrock with very little vegetative cover.
Birch seep / riparian shrub	Vegetation in areas of active water seepage through boulder fields and boulder streams. Moist and well drained areas of low shrub with continuous vegetation cover. Birch and willow species dominate these areas.
Boulder complex (>80% rock)	Large areas of boulder fields including boulder outcrops, boulder streams and drainages. This land cover type supports very little plant growth.
Deep water (>2 m)	Deep, clear lakes and major river systems with water depths greater than 2 m.
Esker complex	Linear structures of sand and gravel, formed by glacial rivers that provide significant topographic relief. Eskers support a number of plant communities and are important to wildlife. Esker tops are windswept and accumulate very little snow during winter.
Heath tundra (<30% rock)	Closed mat plant community that grows on moderate to well drained soils, covering most of the upland areas. Plants generally belong to the heath family (*Ericaceae*) and vegetation covers at least 70% of the ground surface.
Heath tundra (30-80% bedrock)	Sparse heath tundra and bedrock outcrops are exposed; vegetation is discontinuous and described as open mat heath tundra.
Heath tundra (30-80% boulder)	Open mat plant community with heath tundra and boulder fields.
Lichen veneer	Flat islands, low peninsulas and esker tops are covered with a continuous mat of lichen that appears as “veneer”. Sites are windswept and dry, allowing very little plant growth.
Riparian tall shrub	Linear plant associations of birch, willow, and alder that follow active stream courses, usually with a cobble or boulder substrate. Understory plant species may include dwarf raspberry, dwarf marsh violet, cloudberry, grasses, sedges, club mosses, and common horsetail.
Sedge wetland	Wet sedge meadows and other sedge associations of non-tussock plant species. Sedge species such as *Carex aquatilis* and *C. bigelowii*, and cotton grass (*Eriophorum angustifolium*) are dominant vegetation types within wet, low-lying sites where standing water is present throughout much of the growing season.
Shallow water (<2 m)	Water bodies that contain submerged or emergent vegetation with water depths less than 2 m.
Spruce forest	Spruce-lichen woodland in lowland, sheltered areas such as river valleys. Typically, clumped forest in a predominantly tundra landscape.
Tussock / hummock	Plants belonging to the sedge family (*Cyperaceae* spp.) are dominant and tussock cotton grasses such as *Eriophorum vaginatum* and *E. russeolum* are common. These sites are drier and less frequently flooded than sedge wetlands.
Unclassified	Pixels (the smallest sub-division of the mapped area) that could not be successfully assigned to one of the above classes are considered to be unclassified.

Source: Matthews et al. (2001)

Notes:

‘>’ refers to greater than; ‘<’ refers to less than.

Spp. Refers to multiple species.

Table 2.1-2 Amount of Habitat in the Ekati Mine Study Area during Pre-Development and Direct Loss of Habitat (ha) from Mine Development, 1997 to 2024

Habitat Type	Amount in Study Area during Pre-development (ha)	Loss: October 1997 to December 2023 (ha)	Loss: January 2024 to December 2024 (ha)	Total Loss (ha)	Percentage Loss of Available Habitat in the Study Area (%)
Bedrock complex (> 80% rock)	4,092	79.6	0.7	80.3	1.96%
Birch seep/riparian shrub	2,971	79.6	5.5	85.1	2.86%
Boulder complex (> 80% rock)	2,273	33.8	0.0	33.8	1.48%
Deep water (> 2 m)	31,348	636.3	0.4	636.7	2.03%
Esker complex	3,196	39.5	1.0	40.5	1.27%
Heath tundra (< 30% rock)	28,403	736.5	29.7	766.2	2.70%
Heath tundra (30 - -80% bedrock)	15,361	554.0	3.3	557.2	3.63%
Heath tundra (30 - -80% boulder)	22,623	730.4	11.0	741.4	3.28%
Lichen veneer	2,059	6.1	0.0	6.1	0.30%
Riparian tall shrub	5,225	108.1	13.2	121.3	2.32%
Sedge wetland	3,100	27.5	0.5	28.0	0.90%
Shallow water (< 2 m)	21,979	425.4	4.4	429.9	1.96%
Spruce forest	970	28.1	1.8	29.9	3.09%
Tussock/hummock	14,854	454.0	23.7	477.7	3.22%
Unclassified	629	8.8	0.1	8.9	1.42%
Total	**159,083**	**3,947.6**	**95.4**	**4,043.0**	**2.54%**

Notes:
'>' refers to greater than; '<' refers to less than.

2.1.5 Discussion

Habitat loss due to the Ekati Mine was 3.6% or less of any single habitat type within the Wildlife Study Area. Direct habitat loss since 1997 corresponds to 2.5% of the Wildlife Study Area (4,043.0 ha of 159,083 ha). Some of the habitat loss will be mitigated through progressive reclamation activities prior to closure and during post-closure reclamation. For example, progressive reclamation efforts are currently underway to reclaim habitat within Cell B in the LLCF and Old Camp (Dominion Diamond 2018).

3. Waste Management

Improper waste disposal can attract wildlife to communities and anthropogenic sites, potentially resulting in various challenges such as wildlife injuries, heightened human-wildlife interactions, and disruptions to predator-prey relationships. Managing attractants at the mine, including waste, is intended to reduce the numbers of scavenging wildlife (i.e., carnivores and ravens) attracted to the mine. The landfill and waste bins are the locations with historically the highest accessibility for wildlife to waste and are therefore monitored regularly to ensure waste is properly managed at these sites.

3.1 Landfill Monitoring

3.1.1 Introduction

At the Ekati Mine, waste is managed to minimize the presence of attractants in the landfill. Unlike a municipal landfill, which can contain batteries, various chemical waste, and food waste, the Ekati Mine landfill is designed and permitted for the disposal of inert waste (i.e., metal and rubber). Waste is sorted by using specific garbage containers for each type of waste (e.g., oily rags, used absorbent pads, oil and fuel filters, used grease, aerosol cans, incinerator waste, and inert waste; Figure 3.1-1). Hazardous materials (i.e., oil filters, paint, and batteries) are transported south for recycling. Most wood products are segregated and incinerated, with the remnant ash deposited in the landfill. Since 2011, wooden pallets and heavy cardboard containers have been segregated for recycling.

Composting and off-site removal of waste reduces the amount of material being incinerated or directed to the landfill. Beginning in 2012, the Ekati Mine's Waste Management Department removed significant amounts of waste off-site for recycling or proper disposal, including all plastic and metal food packaging, and oily rags. In October 2015, the Ekati Mine's Waste Management Department began hand sorting food contaminated waste (i.e., biodegradable lunch bags) and food remains, for compost. Wet and dry compostable items are placed in the Brome Composting System, located in the incinerator building.

Despite these efforts to reduce waste and minimize the presence of attractants in the landfill, attractants and hazardous materials are sometimes misdirected to the landfill, where they may be available to wildlife. Therefore, as part of the WEMP, Burgundy monitors the waste bins and the landfill at least once per week. In 2011 Misery Landfill was closed and is no longer being used. Misery Landfill surveys were completed separately from the main Ekati Mine landfill from 2001 to 2011.After the closure of the landfill, surveys were no longer completed at Misery Landfill.

3.1.2 Objectives

The objectives of this component of the WEMP are to:

- monitor the misdirection of wildlife attractants and hazardous waste at the landfill to avoid and minimize potential wildlife incidents at these locations;
- evaluate the effectiveness of waste management protocols for reducing misdirected waste at the landfill;
- identify areas where improvements may be required; and
- manage potential wildlife attractants, wildlife activity, and habituation to the landfill.

Type of Waste	Description	Instructions	Disposal Location
Food Waste	Fruit peels, paper/plastic wrappers and containers, pop cans, food	Place into labelled "Food Waste", "Compost", or "Incinerator Waste" containers.	Main Camp Incinerators
Oily Rags	Used rags and absorbent pads that contain petroleum products	Place in red coloured 45-gallon drum lined with a plastic bag labelled "Oily Rags". Take bags to WMB. Do not overload bags.	Waste Management Building
Office Waste	Paper, newsprint, food waste	Place in garbage containers found in offices.	Main Camp Incinerators
Biohazard Waste	Razors, razor blades, needles, empty medicated glass vials, syringes	Places in yellow plastic bins labelled "Biohazard Waste" found in all common bathrooms and laundry rooms	Main Camp Incinerators
Dry Cell Batteries	Dry cell batteries (I.e. AA, D, C, etc.)	Place in containers labelled "Batteries" or "Dry Cell Batteries".	Waste Management Building
Empty Aerosol Cans	Empty cans containing pressurized gas such as WD40 and spray paint	Place in containers labelled "Aerosol Cans" found at the beginning of each wing and throughout the site.	Waste Management Building
Used Oil and Fuel Filters	Used oil and fuel filter from heavy equipment	Place in drums labelled "oil and Fuel Filters". Waste Mgmt Techs drain, crush and then ship off site for recycling	Waste Management Building
Used Engine and Lube Oil	Used oil from vehicles and heavy equipment	Place in closed lid 45-gallon drum and label as "Waste Oil". Do not mix with any other liquid or product.	Waste Management Building
Used Coolant	Antifreeze and glycol used in equipment and vehicles	Place in closed lid 45-gallon drum and label as "Waste Coolant". Do not mix with any other liquid or product.	Lube Storage Building
Used Flammable Liquids	Waste Flammable liquids such as diesel, gasoline and jet B	Place in closed lid 45-gallon drum and label as "Waste Diesel", "waste gasoline", or "waste Jet-B". Do not mix with and other liquid or product.	Waste Management Building
Vehicle and Equipment Batteries	Light vehicle and heavy equipment batteries	Bring to Truckshop Bay 13 to be drained of Acid. Contact the Team Leaders when dropping the batteries off for further instruction.	Truckshop Bay 13
Used Solvent	Waste solvents generated from maintenance of heavy equipment parts and machinery (i.e.. Degreasers)	Minimize and reuse as much as possible. Place in closed lid 45-gallon drum and label "Waste Solvent - product name". Do not mix the waste solvent with any other liquid or product.	Waste Management Building
5-gallon Product Pails	Empty 5-gallon pails that contained gear oil, grease, etc.	Remove as much residue from the pails DO NOT BRING TO LANDFILL.	Waste Management Building

Type of Waste	Description	Instructions	Disposal Location
Used Floor Dry	Used floor dry that contains petroleum products	Do not mix with other waste. Place in 45-gallon drum and label as "Floor Dry Containing Hydrocarbons".	Waste Management Building
Pop Cans	Empty carbonated beverage bottles, plastic juice bottles or waterbottles	Place in labelled "Recycling" containers	Waste Management Building
Air Filters	Air Filter from heavy equipment	Transport to landfill	Landfill
Waste Grease	Waste Grease generated from operational work	Place in 45-gallon drum and label as "waste Grease" or put in 5-gallon pail and bring to the waste management building.	Waste Management Building
Oil Based Paint Cans	Empty oil based paint cans	Take to the Waste Management Building so it can be drained of residual paint.	Waste Management Building
Water Based Paints	Empty water based paint cans	Take to the Waste Management Building so it can be drained of residual paint and dried out. The empty can gets landfilled.	Waste Management Building
Soot	Soot collected from generator stacks and incinerator stacks	Place in 45-gallon drum and label as "Soot".	Waste Management Building
Incinerator Ash	Ash from the incineration of waste	Allow ash to cool then place in 45-gallon drum and label as "Incineration Ash". Contact Mine Services for disposal.	Landfill
Inert waste	Wood, cardboard, metal, plastic, rubber, glass	Place in containers labelled "Landfill Waste".	Landfill
Hydrocarbon- impacted Soil > 4 cm diameter	Hydrocarbon-impacted soil with diameter size greater than 4.0 cm	Assess the situation. Stop the spill if safe to do so. Contact the Team Leader, Mine Services	Zone S
Hydrocarbon- impacted Soil < 4 cm diameter	Hydrocarbon-impacted soil with diameter size greater than 4.0 cm	Assess the situation. Stop the spill if safe to do so. Contact the Team Leader, Mine Services	Landfarm
Hydrocarbon- impacted snow or ice	Hydrocarbon-impacted snow or ice occurring as a result of operational spills	Assess the situation. Stop the spill if safe to do so. Contact the Team Leader, Mine Services	Contaminated Snow and Ice Containment Facility
Other Wastes	Miscellaneous wastes that are not mentioned in this table	Properly label the waste and get the Material Safety Data Sheets (MSDS) , then contact the waste tech for instruction.	Waste Management Building

Figure 3.1-1 Waste Management System at the Ekati Mine

3.1.3 Methods

Waste from Misery Camp, and Pigeon and Sable lunchrooms were hauled to the Ekati Mine landfill, incinerator, and composter. The landfill survey involved visual investigations of the Ekati Mine landfill on foot two or more times per week (more if concerns are noted by Environment Department staff). The amount and type of animal attractants (i.e., food, food packaging, oil products, and oil-contaminated waste) and other misdirected waste (i.e., batteries and aerosol cans) were recorded. The availability of attractants was categorized as none, low (one piece), medium (two to five pieces), high (six to 10 pieces), and very high (>10 pieces). All attractants and other misdirected waste were safely removed and properly discarded or immediately buried by the Waste Management Department if attractants could not be safely removed.

The presence of wildlife and wildlife signs (i.e., tracks and scats) were recorded, photographs were taken where possible, and behaviour of animals was recorded to document potential habituation, illness and/or injury.

3.1.4 Results

3.1.4.1 Attractants

During 2024, the landfill was surveyed approximately twice per week, 118 times from January 2 to December 27, 2024, for a total of 118 surveys. Wildlife attractants or misdirected waste was observed on 38 occasions (or 32% of surveys; Table 3.1-1). In 2024, food was found on five occasions (4% of surveys) in low (three occasions), medium (one occasions), and very high (one occasions) amounts. Food packaging was found on 20 occasions (17% of surveys) in 2024, present in low (nine occasions), medium (9 occasions), and very high (2 occasions) amounts (Figure 3.1-2). Other wildlife attractants included oil-product containers (five occasions), oil-contaminated waste (six occasions), aerosol cans (two occasions), and plastics (three occasions). On nine occasions more than one type of attractant was observed during surveys.

In 2024, attractants classified as “other” were observed on six surveys (5% of surveys). For five of the surveys there was not further information on what these attractants were and for one of them the attractant was latex gloves. There has been a decrease in attractants categorized as “other” every year since 2015, a year when 61% of surveys detected attractants in this category. Overall, each category of wildlife attractant misdirected to the Ekati Mine landfill decreased over the years (Figure 3.1-2). In 2024 there was a slight increase from 2023 (Figure 3.1-3), however, 2024 represents the third lowest percentage over 23 years (Table 3.1-1; Figure 3.1-3.

3.1.4.2 Wildlife Sightings

Wildlife was observed at the landfill during 30 of 118 surveys (25%) in 2024. Three species were observed: common raven (n = 7), red fox (n = 6), arctic fox (n = 2), and caribou (one observation of four individuals). Misdirected waste was recorded during seven of the 30 surveys involving wildlife sightings, primarily of food and food packaging. The percentage of landfill surveys with wildlife sightings (25%) was higher than in 2023 (8%). On May 1, 2024, a red fox was observed near the landfill, reluctant to leave upon the surveyor’s arrival. Individual common ravens were observed looking for food in the landfill pile on two occasions. One common raven was observed eating unspecified landfill waste from the landfill pile on October 4, 2024. An increase in wildlife sightings from 2023 to 2024 may be due to the increase of wildlife attractants observed during surveys (32% in 2024 compared to 27% in 2023). (Figure 3.1-3).

Table 3.1-1 Percentage of Surveys that Found Attractants or Misdirected Waste at the Ekati Mine and Misery Landfills, 2000 to 2024

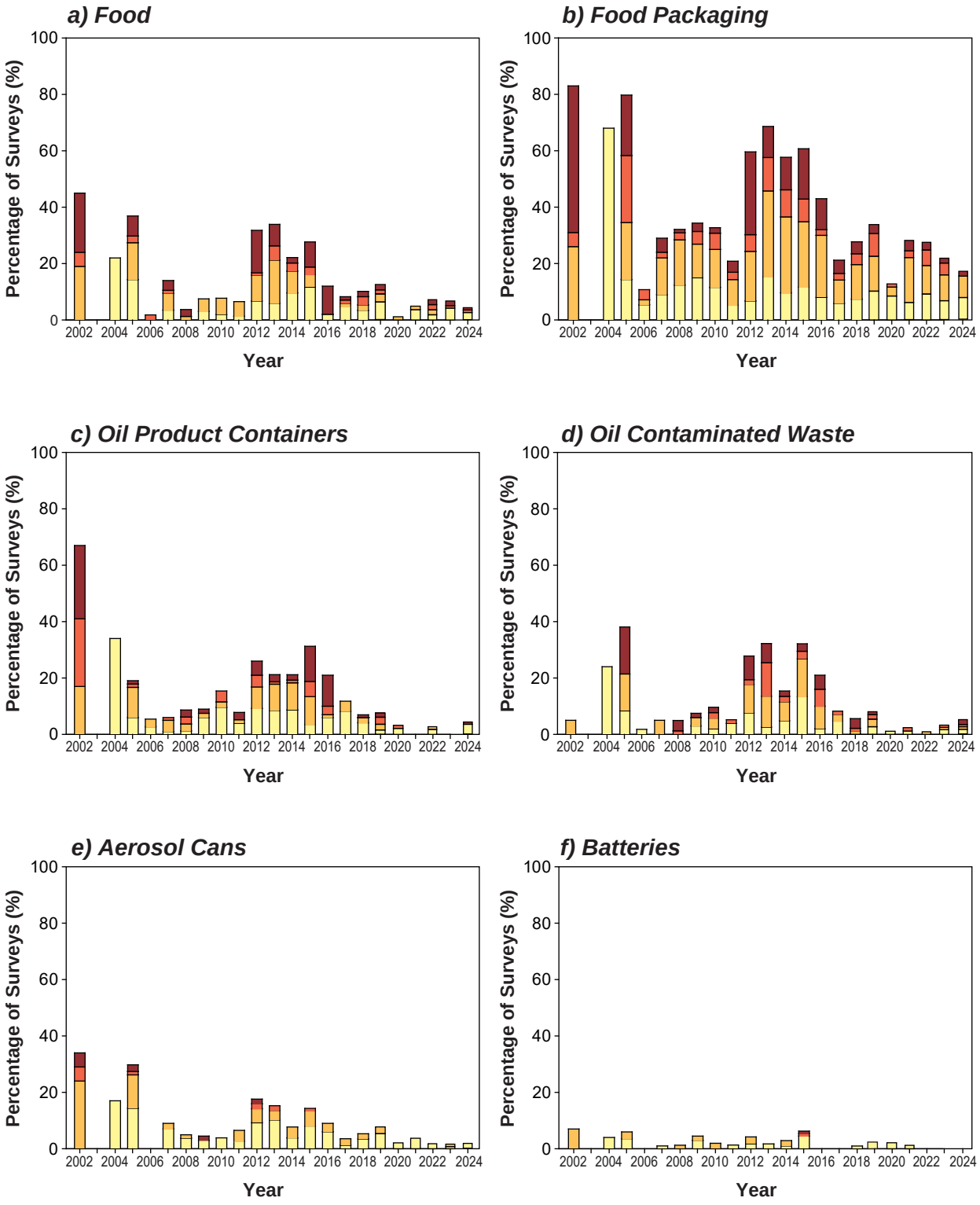
	2000[1]	2001	2002	2003	2004[2]	2005	2006	2007	2008	2009	2010	2011
Ekati Mine Landfill												
Percentage of surveys	95%	98%	86%	65%	79%	87%	66%	47%	41%	55%	46%	68%
(Total no. of surveys)	(35)	(45)	(42)	(91)	(47)	(84)	(74)	(85)	(81)	(67)	(52)	(65)

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Ekati Mine Landfill													
Percentage of surveys	76%	80%	69%	69%	52%	35%	39%	49%	20%	40%	34%	27%	32%
(Total no. of surveys)	(119)	(118)	(104)	(112)	(100)	(85)	(98)	(115)	(94)	(82)	(109)	(119)	(118)

Notes:

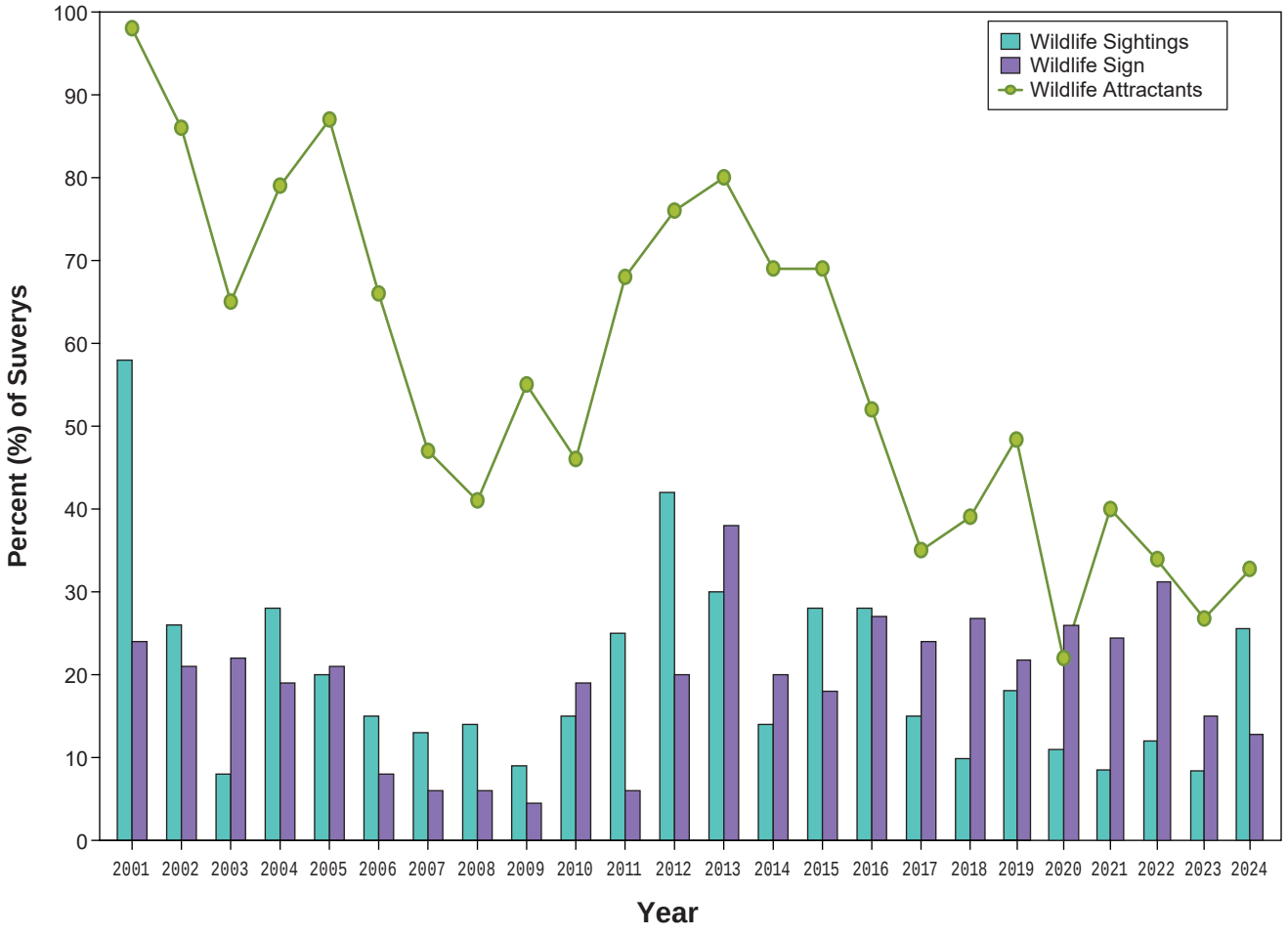
[1] Includes only food items.

[2] Winter Surveys not included



	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Number of Surveys	42	91	47	84	74	85	81	67	65	65	119	118	104	112	100	86	98	115	94	82	109	119	118

Figure 3.1-2 Summary of Wildlife Attractants Observed at the Ekati Mine Landfill, 2002 to 2024



	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Number of Surveys	42	91	47	84	74	85	81	67	65	65	119	118	104	112	100	86	98	115	94	82	109	119	118

Figure 3.1-3 Wildlife Sightings, Signs, and Attractants Observed at the Ekati Mine Landfill, 2001 to 2024

3.1.4.3 Wildlife Signs

One or more wildlife signs (i.e., scat, tracks, chew marks, and hair) were observed during 15 surveys (13%) in 2024, which was lower than 2023 (15%), and slightly lower than the trend of observations in the past nine years (Figure 3.1-3). Wildlife tracks were observed for three confirmed species (common raven, arctic fox, and grizzly bear). The remaining observations involved unknown species of fox or unknown species. The majority of wildlife signs were tracks from foxes (nine occasions). Misdirected waste was also recorded during eight of the 15 surveys and involved food packaging (low to high amounts), or other attractants (i.e., cigarette butts, aerosol cans, and windshield washer fluid containers) [low to medium amounts]).

3.1.5 Discussion

The increase in staff and site activity in recent years at the Ekati Mine highlighted the importance of ongoing waste management efforts to identify and remove attractants, and continued wildlife attractant awareness programs implemented by Burgundy to increase site-wide awareness of the risks to wildlife associated with improper waste disposal. Results from the last five years highlight the importance and effectiveness of continued education and waste management awareness, particularly on disposal of cigarettes and cigarette packages, food and food packaging, and the management of recyclable waste. This reinforcement will continue to minimize the amount of waste misdirected to the landfill.

There has been a general decrease in the amount of misdirected waste and attractants at the Ekati Mine landfill since 2013. The lowest number of surveys where misdirected waste was identified occurred in 2020 (20% of surveys). This was likely due to the decrease in on site staff and mining activities during the majority of the year as the mine switched to the Care and Maintenance phase between March and December 2020. The second lowest number of surveys with misdirected waste occurred in 2023 (27%). Despite an increase in misdirected waste from 2023 to 2024, the number of such surveys in 2024 was the third lowest recorded.

Misdirected waste was observed during 32% of the surveys at the landfill and 25% of surveys recorded either wildlife signs or sightings. In 25% of wildlife signs and sightings, misdirected waste was observed 23% of the time with sightings and 53% of the time with signs. This suggests that wildlife species may visit the landfill in search of food, even when no attractants are present. For example, common raven and red fox were observed searching for food when attractants were not present, with one occasion of red fox staying in the area even when surveyors arrived. Sightings of wildlife searching for food and the sightings of common raven eating at the landfill, suggests that wildlife have found food at the landfill in the past.

While 2024 data indicated an increase in misdirected waste observed during surveys, there has been a general decreasing trend over the years in misdirected waste and attractants. Due to the indicated increase in misdirected waste in 2024, on site staff were required to re-take training modules of landfill food waste in May. The decrease in recent years in misdirected waste has been consistent with the increase in the number of contractors and new employees with the expansion of Misery Camp, development of Misery Underground, and construction of the Sable and Lac du Sauvage (LDS) Road in recent years. In response to this increase in activity and the potential for increased misdirected waste, the Environment Department increased the frequency of surveys to track this issue and in 2024 an additional Waste Management Awareness module was added to training, targeted at misdirected food waste being put into landfill. Training focused more on identifying and

removing attractants, launched a series of waste management presentations targeting problem areas and departments with large numbers of temporary contractors, and logged incidents of misdirected waste as an event in the corporate tracking system.

3.2 Waste Bin Monitoring

3.2.1 Introduction

At the Ekati Mine, waste is segregated and disposed of in appropriate category-specific bins, that include: incinerator waste (i.e., food packaging), landfill waste (i.e., all inert, non-reactive solid wastes), recycled waste (i.e., plastic and metal containers, batteries, oil filters, and oil), and hazardous waste (i.e., dangerous goods).

Following the Waste Management Plan, staff regularly monitor the waste bins destined for landfills.

3.2.2 Objectives

The objectives of this component of the WEMP are to:

- monitor the misdirection of wildlife attractants and hazardous waste in waste bins to avoid and minimize possible wildlife incidents at these locations;
- evaluate the effectiveness of waste management protocols for reducing misdirected waste in waste bins;
- identify areas where improvements may be required; and
- manage potential wildlife attractants, wildlife activity, and habituation to the waste bins.

3.2.3 Methods

The amount and type of animal attractants (e.g., food, food packaging, oil products, and oil-contaminated waste) and other misdirected waste (e.g., batteries, bulbs and aerosol cans) within the various waste bin types were counted, recorded, and removed if possible. The attractants were categorized as none, low (one piece), medium (two to five pieces), high (six to 10 pieces), and very high (>10 pieces). Wildlife signs (e.g., visual observations, tracks, scat), species, number of individuals, and behaviour was also recorded.

Misdirected waste (wildlife attractants and/or waste placed incorrectly in the specified waste bin category), and wildlife observations during surveys were reported to the Environment Department and Waste Management Superintendent, and the supervisor of the area was contacted to arrange for removal of all misdirected wastes from waste bins prior to disposal in landfills. The waste bins at the Ekati Mine Camp, Misery Camp, and Sable lunchroom were surveyed approximately once every two weeks (more frequently if concerns were noted by surveyors).

3.2.4 Results

The waste bins at the Main Camp were surveyed on 60 occasions during the 2024 reporting period, between January 10 to December 31, 2024. On each survey day, an average of 26 waste bins were inspected (2 to 56 bins per survey), for a total of 1,840 surveys of bins over the year. The number of surveyed bins varied between surveys due to the movement of waste bins, addition of bins, and incomplete surveys.

Wildlife attractants were recorded on 23 occasions (1% of those surveyed). Food packaging was found in low amounts (1 occasion) and medium amounts (1 occasion). Other wildlife attractants of misdirected waste included oil contaminated waste found in medium amounts (2 occasion), oil product containers found in low (2 occasion), medium (2 occasion) and high (1 occasion) amounts, plastics found in low amounts (6 occasion), aerosol cans found in low amounts (1 occasion). In 2024, attractants classified as “other” were found on seven occasions during waste bin surveys. Examples of “other” attractants included window washer fluid containers, hazardous waste containers, and cigarette butts.

At Misery Camp, waste bins were surveyed on 60 occasions with an average of five bins per survey (range five to 19 bins per survey), for a total of 556 surveys of bins over the year. Misdirected waste was reported in 1% of bins (8 occasions), with three bins that included multiple categories of misdirected waste. Food packages were observed in low (4 occasions) and high (1 occasion) amounts. Plastics were observed in low (2 occasions) amounts. Oil product containers were observed in a low (1 occasion) and medium (1 occasion) amounts. Other attractants were observed in medium (2 occasions), high (1 occasion), and very high (1 occasion) amounts (see Methods for amount categories).

At the Sable office located near the Sable Pit, waste bins were surveyed on 54 occasions with an average of five waste bins per survey (range one to 15 bins per survey), for a total of 446 surveys of bins over the year. Misdirected waste was reported in 3% of bins (n = 14), with one bin including multiple categories of misdirected waste. Food and food packaging waste was observed in bins in high quantities on one occasion, and low quantities on one occasion. Other wildlife attractants included three occurrences of oil contaminated waste in high quantities, three occurrences of oil contaminated waste in low quantities , two occurrences of oil product containers in low quantities, one occurrence of plastic waste in medium quantities, one occurrence of plastic waste in very high quantities, two occurrences of other attractants in low quantities, and three occurrences of other attractants in medium quantities.

Wildlife signs were recorded on one occasion at the Ekati Mine Main Camp and one occasion at the Sable Office. Unknown fox scat was observed at Main Camp on November 3, 2024, and unknown fox tracks of two individuals were observed at Sable Office on November 23, 2024. No misdirected waste was reported on either day where wildlife signs were recorded. On January 23, 2024, two red foxes were observed at the Main Camp, chewing on an oil tote cap. No misdirected waste was reported during the waste bin surveys when the arctic foxes were observed or on days leading up to the sighting.

3.2.5 Discussion

Overall, in 2024, 1 to 3% of waste bins surveyed at Main Camp, Misery Camp and the Sable office contained misdirected waste or wildlife attractants.

During the early years of this monitoring program (2014-2016), waste detections ranged from 5 to 10% of bins at Main Camp to 2 to 6% of bins at Misery Camp. Over the past 10 years, the percentage of bins with misdirected waste has declined to 3 to 4%, reaching a low of < 1% in 2024.

When attractants and misdirected waste are identified, they are immediately reported to the Waste Management Department to isolate the origin of the misdirected waste and confirm that the responsible department receives the proper training on waste disposal procedures. For example, in 2024, on four separate

occasions, common ravens were reported to be feeding on food waste near waste bins. In two cases, common ravens were observed entering the camp buildings accessing food. An increase in misdirected waste during landfill and waste bin monitoring in 2024, along with waste related wildlife incidents, led to a requirement for all on site staff to retake Waste Management Awareness modules.

Reporting waste bin monitoring results helps identify misdirected waste and documents the types and volumes of improperly discarded waste materials. This monitoring program supports adaptive management of potential problem areas and informs updates to Burgundy staff education modules on proper waste management practices. Current waste management awareness programs (e.g., new employee orientation, presentations, and posters) contribute to reducing the amount of waste misdirected into waste bins. Continued education and waste management awareness, particularly on disposal of cigarettes and cigarette packages (beginning with the orientation tour and reinforced in the “Environmental Awareness” module), will minimize the amount of misdirected waste.

4. Wildlife and Infrastructure

Wildlife are monitored both actively and through incidental observations on and surrounding mine infrastructure. This monitoring allows for prompt management to manage traffic, problem animals and reporting wildlife mortalities and incidents.

4.1 Wildlife Management

4.1.1 General Wildlife Management

4.1.1.1 Introduction

General wildlife management actions at the Ekati Mine are carried out for cases in which actual or potential interactions between wildlife and human(s) may compromise the safety of the animal(s) and/or human(s).

Wildlife management has evolved during the life of the mine, based on engagement, monitoring results, and adaptive management. Management has generally increased since reporting began in 2013. In most cases, the trigger for wildlife management activities is the observation and/or reporting of wildlife to the Environment Department by site staff (i.e., site wildlife notifications). The procedures, program work instructions, site-wide policies, and the WEMP that Burgundy has in place dictate other management actions. These include short and long-term road closures required as per the Caribou Road Mitigation Plan, work stoppage procedures in work instructions (Golder Associates 2017), and training/presentations for onboarding or to meet annual training requirements (i.e., grizzly bear safety training). These controls are in place to ensure the safety of wildlife and site staff alike.

Burgundy implements several general management actions to reduce potential interactions with wildlife, including:

1. Site-wide notification about the presence of wildlife via:
    a. site-wide emails,
    b. safety meetings at the beginning of each shift,
    c. department-specific radio channels by the Environment Department and/or the Security Department,
    d. all call radio announcement by the Security Department, and
    e. safety alerts issued by the Health and Safety Department.
2. Wildlife awareness presentations to specific departments;
3. Posting road signs about reduced speed limits or to alert drivers that wildlife is in the area;
4. Delayed or postponed blasting activity if wildlife is within a 1 km distance of the planned blasting area; and
5. Temporary road closures and/or work stoppages due to the presence of wildlife.

Since 2013, all wildlife management actions have been documented in the WEMP Report and reviewed as part of ongoing assessment of management measures for reducing wildlife incidents and their associated risks to both wildlife and people.

4.1.1.2 Objectives

The purpose of managing wildlife incidents is to proactively reduce the potential for wildlife-related safety concerns for employees, and to minimize potential effects of mine activities on wildlife. The objective of this component of the WEMP is to:

- Document general wildlife management efforts undertaken to reduce the potential for wildlife-related incidents.

4.1.1.3 Methods

General wildlife management actions were tracked by the Environment Department, including the type of management action undertaken (i.e., site-wide notification, road signs, short or long term road closure, or temporary work stoppage); the wildlife species involved (e.g., caribou, grizzly bear, or general if it addressed site management practices that benefit all wildlife and staff); why the management action was undertaken (e.g., a wildlife incident); and who requested the management action. Other information, such as location, time, and date, were also recorded.

4.1.1.4 Results

During the 2024 reporting period, 642 general wildlife management actions were implemented in response to wildlife activity at the Ekati Mine (Table 4.1-1). Management was mainly directed at caribou and grizzly bear, which made up 86% of wildlife management actions. In 2024 general wildlife management actions involved caribou (n = 278), grizzly bear (n = 265), wolf (n = 45), wolverine (n = 8), fox (n = 11), and moose (n = 1). Management actions were also implemented for bird species on seven occasions (Table 4.1-1).

The types of management actions used for each species are summarized in Table 4.1-2. The majority (n = 455) involved sending site-wide notifications to on site staff. In 2024, there were 23 training sessions on Wildlife Deterrents and 68 training events for bear spray and/or bear bangers.

Table 4.1-1 Number of General Wildlife Management Actions Reported at the Ekati Mine, 2013 to 2024

Species	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Total
Mammals													
Caribou	4	7	5	38	91	183	385	87	252	197	153	278	1,680
Grizzly bear	8	31	51	88	155	244	252	88	327	260	276	265	2,045
Fox (red, arctic, cross, or unknown)	5	4	5	8	1	3	12	1	13	17	11	11	91
Moose	0	0	2	0	0	0	8	2	3	2	2	1	20
Wolf	3	4	5	10	28	54	103	27	106	80	19	45	484
Wolverine	1	6	8	13	13	17	18	16	10	10	4	8	124

Species	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Total
Birds													
Common redpoll	0	0	0	1	0	0	0	0	0	0	0	0	1
Common raven	0	0	1	0	0	0	0	0	0	0	0	6	7
Tundra swan	0	0	1	0	0	0	0	0	0	0	0	0	1
Raptor species	0	0	0	0	0	0	4	0	0	0	0	1	5
Unknown songbird	0	0	0	0	0	0	0	0	1	0	0	0	1
General wildlife	7	1	15	14	6	14	22	15	10	7	26	27	165
Total	**28**	**53**	**93**	**172**	**294**	**515**	**804**	**236**	**722**	**573**	**491**	**642**	**4,624**

Table 4.1-2 Summary of General Management Actions Implemented at the Ekati Mine, 2024

Species	Site-Wide Notification	Presentation or Meeting	Signs	Work Stopped/ Short-term Road Closures	Safety Alert	Blast Cancelled or Postponed	Training	Total
Caribou	197	0	0	81	0	0	0	278
Grizzly bear	194	0	0	3	0	0	68	265
Wolf	44	0	0	1	0	0	0	45
Fox	10	0	0	1	0	0	0	11
Wolverine	8	0	0	0	0	0	0	8
Moose	1	0	0	0	0	0	0	1
General	1	0	0	1	0	0	25	27
Total	**455**	**0**	**0**	**87**	**0**	**0**	**93**	**642**

Work stoppages or short-term road closures were required on 87 occasions in 2024. A detailed description is provided in Appendix A.

4.1.1.5 Discussion

The general management actions in 2024 were proactively implemented in response to wildlife being observed near infrastructure. A total of 81 short-term road closures and work stoppages occurred due to observations of caribou by roadside, of which 43 occurred along Sable Haul Road. Thirty-two work stoppages occurred to protect wildlife in 2024.

Traffic delays due to vehicles independently stopping for wildlife on or near roadways, in accordance with the Caribou Road Mitigation Plan (CRMP), are described separately in Section 4.1.2. No negative interactions took place between wildlife and mine site staff in 2024 (Sections 4.2 and 4.3). In 2024, there were 642 wildlife management actions at the Ekati Mine, including 455 site-wide notifications (Table 4.1-2). Management

measures were largely aimed at large mammals such as caribou and grizzly bears, scavengers and birds and were in all cases successful.

Wildlife incidents are reported in Sections 4.2.4 and 4.3.2.4, vehicle-related mortalities are reported in Section 4.2.4 and non-vehicle-related mortalities are reported in Section 4.3.1.4.

Waste management procedures, site awareness (e.g., closing doors), wildlife interactions, and wildlife reporting will continue to be a part of the orientation that all new employees receive upon first arrival at site. Documenting wildlife management actions will continue in future years to enable ongoing evaluation of the programs to determine their effectiveness in mitigating wildlife interactions.

4.1.2 Caribou Road Mitigation Plan

4.1.2.1 Introduction

The Caribou Road Mitigation Plan (CRMP) is a management plan specific to managing risks to caribou (and other wildlife) associated with roads. The CRMP is a hierarchal three level approach to mitigation and monitoring, above the regular Operational Level response to wildlife interactions with roads at the Ekati Mine (see Section 4.2.1; Figure 4.1-1). Burgundy's strategy for managing risks to caribou (and other wildlife) associated with roads is to increase mitigation and monitoring activities as caribou approach the Ekati Mine Site (Golder Associates 2017).

Monitoring is expected to provide early detection of caribou approaching roads and to assist in management of the appropriate levels of mitigation to protect caribou and other wildlife. Monitoring related to the CRMP is documented and reviewed for the purposes of adaptive management and mitigation at the Ekati Mine.

4.1.2.2 Objectives

The objectives for the CRMP are to:

- avoid and reduce the risk of caribou and other wildlife mortalities from traffic;
- avoid and reduce potential barrier effects of the LDS and Misery roads (and other Ekati Mine roads) to caribou movement and migration; and
- limit the effect of sensory disturbance from roads and traffic on caribou behaviour.

4.1.2.3 Methods

Mitigation and monitoring efforts related to the CRMP are documented in a wildlife management database by the Environment Department. Information about the number and duration of blue, yellow, orange, and red alert levels, and reasons for triggering change in alert levels, were recorded (see Section 4.2.1 for definition of colour alerts). When possible, the following information was recorded for speed limit reductions and road closures related to the CRMP: location (road), frequency, duration, and length of road segments actions applied to and duration of the action. Other information, such as time and date, were also recorded.

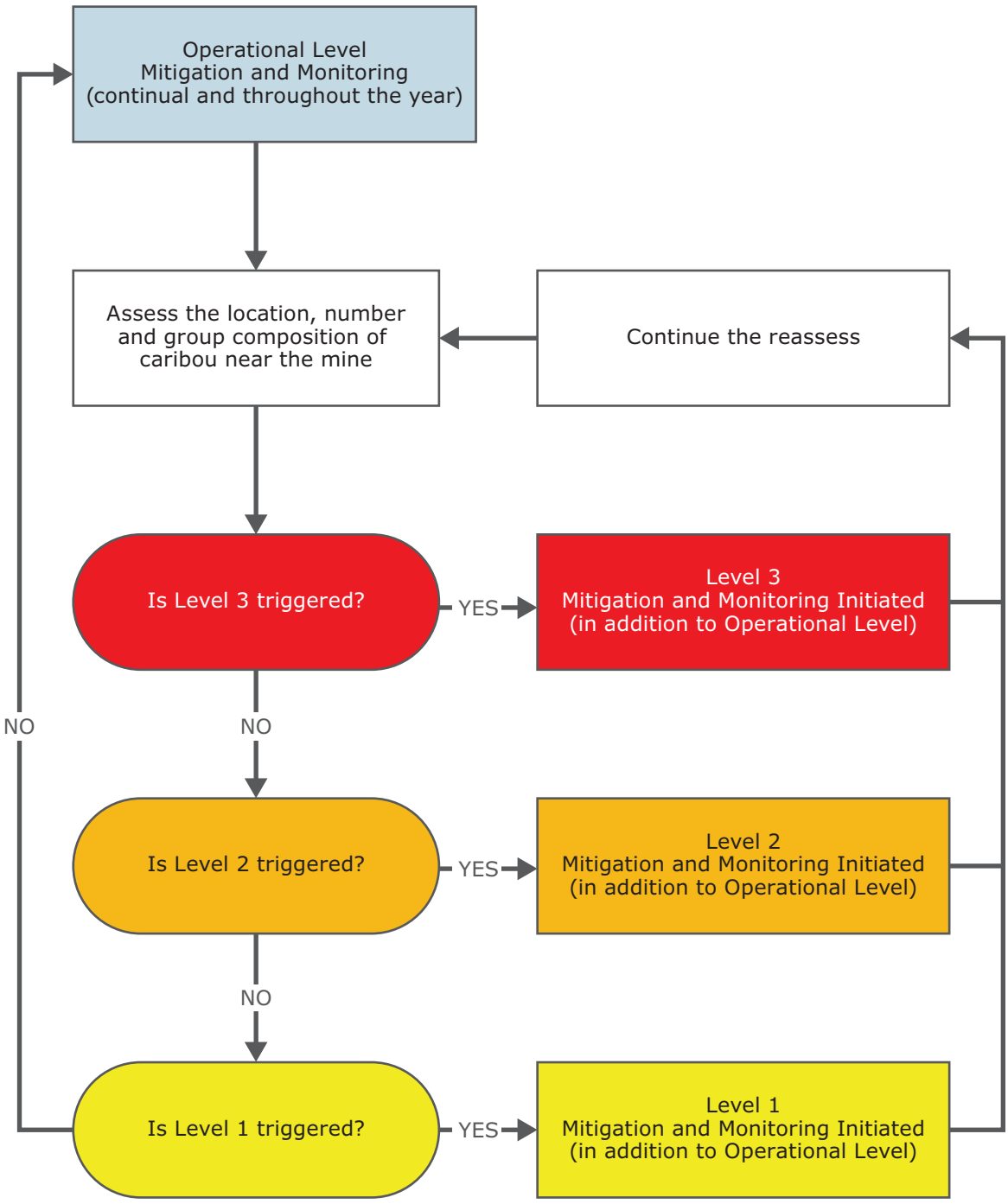


Figure 4.1-1 Decision Tree for the Caribou Road Mitigation Plan

4.1.2.4 Results

The 2024 reporting year is the eighth complete year that the CRMP was implemented. In 2024, the Operational Level (Blue) was in effect for 28 days in January and 17 days in February while CRMP alert levels beyond the Operational Level were triggered for the majority of the year due to caribou occurrences near the roads (Table 4.1-3). Level 1 (Yellow – low risk) was triggered on two occasions for a duration of 10 days in February and four days in October. Level 2 (orange – medium risk) was not triggered in 2024, and Level 3 (Red – high risk) was triggered for a duration of 302 days.

Table 4.1-3 Summary of Caribou Road and Mitigation Plan Activities at the Ekati Mine, 2024

Event #	Start Date 2024	End Date 2024	Duration (days)	Previous Level	Alert Level	Alert Trigger and Management Actions
1	5-Jan	2-Feb	28	Yellow	Blue	Initiated 2024 at yellow level. No caribou presence (collar data and observations) for 2 weeks. Changed to blue level on February 2.
2	12-Feb	12-Feb	1	Blue	Yellow	Changed to level 1 (Yellow) based on Caribou observations on Fox Haul Road.
3	12-Feb	29-Feb	17	Yellow	Blue	Changed to Operational (Blue). No caribou observed during road surveys in 10 days, no collared caribou nearby.
4	29-Feb	19-Oct	234	Blue	Red	Escalated to Level 3 (Red). Collar data reported that caribou are starting to move into the Mine area.
5	19-Oct	24-Oct	4	Red	Yellow	Changed to Level 1 (Yellow). Only 3 caribou (observations and collar data) in the last 30 days
6	24-Oct	31-Dec	68	Yellow	Red	Changed to Level 3 (Red) for the start of Caribou migration. Stayed in Level 3 until the end of 2024.

Blue (Operational): continual and throughout the year.

Yellow (Level 1 – low risk): ≥ 1 collared caribou or caribou sightings within 30 km of the Ekati Mine (i.e., RSA).

Orange (Level 2 – medium risk): ≥ 1 collared caribou within 14 km of the Ekati Mine and/or caribou sightings near roads, and/or 0.25% of total female caribou in the Bathurst herd are between 200 to 500 m of the LDS or Misery roads during any season.

Red (Level 3 – high risk): 0.25% of total female caribou in Bathurst herd within 200 m of roads, ≥ 1 caribou group sighting within 500 m of roads during northern migration (May) and/or ≥ 1 caribou crossing road.

Following the CRMP, daily road surveys occurred, and site-wide notifications were initiated in response to each report of caribou near roads (Level 3; Section 5.6). These included reminders for vehicle operators to watch for caribou, give caribou the right-of-way, keep distances of at least 100 m away from caribou, and slow to 20 km/h when caribou are within 200 m of the road or 40 km/h when caribou are within 500 m of the road. Speed limits were decreased, and road signage at the entrance and exits of active haul roads changed to indicate caribou are highly likely (Red alert; 302 days; Table 4.1-3) to be encountered in the area. Signs were also displayed in multiple locations within Main Camp and Misery Camp to advise staff on site of changing levels of caribou activity. Notifications were also provided to Operational Departments following alert level changes. When

caribou attempted to cross the road (Red alert), or were in very close proximity, Environment Staff were consulted and ensured proper procedures to protect caribou were implemented.

In addition to the short-term road closures due to caribou described in Section 4.1.1, traffic was delayed due to wildlife on or near roadways, in accordance with the CRMP, on 77 occasions. The traffic delays occurred at Sable haul road (43 occasions), and other roads (eight occasions; Table 4.1-4). Most traffic delays occurred in July (92%). Consequently, loss of equipment operating hours in 2024 due to wildlife totalled 104 hours. There was additional loss of person-hours when, for example, several heavy, medium, and light vehicles were stopped because of wildlife being less than 100 m from roads.

Table 4.1-4 Summary of Traffic Delay Due to Wildlife

Location	# of Traffic Delay Events	Total Time Delayed (Min)
Sable Haul Road	43	3,835
Other	8	2,377
Total	**51**	**2,580**

4.1.2.5 Discussion

The CRMP alert level changes were triggered on four occasions due to caribou activity near roads in 2024. Level 3 (Red – high risk) was in place for two periods for a total of 302 days. During 2024, there were 77 events triggering work stoppage or road closure due to caribou in close proximity to roads (Section 4.1.1.4). Level 2 was in effect for one occasion for five days and Level 1 was in effect for 45 days.

In 2024, the Red-level response occurred for two periods totaling 83% of the year (302 days) with the longest period occurring from February to October (234 days), primarily due to caribou collar data reporting caribou near the mine. In 2024, there were multiple sightings of caribou near both roads, and collared caribou satellite mapping that indicated the presence of caribou in close proximity to the roads.

In the first five years of CRMP implementation (2017 to 2022) there was an increase in the number of days under the Red-level response (17 to 310). After 2022, there was a decrease to 284 days in Red-level response in 2023. In 2024, Red-level response days increased from 2023 with similar response days to 2022. Documenting the mitigation and monitoring efforts related to CRMP will continue in future years and provide information for adaptive management, as required.

4.2 Wildlife-Vehicle and -Aircraft Interactions

4.2.1 Introduction

Burgundy has implemented a series of design mitigation and management measures to address the potential for wildlife mortality due to collisions. Vehicles and aircraft encountering wildlife can pose a risk for wildlife and human safety. Below is a list of the major mitigation and management measures to manage potential wildlife-vehicle collisions.

4.2.1.1 Road Design

Road design can reduce wildlife-vehicle interactions by incorporating measures such as:

- road designs that incorporate caribou crossings;
- signage indicating caribou are likely to be encountered;
- the use of TK to develop accessible roads and caribou crossing ramps, ensuring that the surface height and side-slopes of Misery, Sable, and Lynx roads are constructed as close possible to surrounding land surface to facilitate easy caribou access; and
- construct caribou crossings along the Lac du Sauvage Road that respect the importance of this area for caribou migration and movement, as identified by community engagement and TK; caribou crossings were constructed along 70% of the Lac du Sauvage Road.

4.2.1.2 Road Maintenance

Effective road maintenance can deter wildlife from entering roadways and reduce the barrier effect by implementing strategies such as:

- wildlife carcasses on or near the roads are removed to minimize the attraction of predators and scavengers to roads and road edges where they would be at an increased risk of a collision with vehicles; and
- snow berm height is managed during the winter by pushing out and leveling off accumulated snowbanks to 1 m to reduce the continual drifting of windblown snow along roads, whereby reducing the potential impact that roads with snowbanks may have in presenting visual or physical barriers to caribou movement. Monitoring along Misery haul road during spring migration found deflections of caribou when berms were at least 1.6 m high, therefore berms are continuously cleared during spring migration.

4.2.1.3 Driving Rules

To help drivers avoid wildlife interactions and collisions on roadways, the following rules were implemented:

- employee education;
- speed limits are posted and enforced; speed limits are 60 km/h along haul roads, 20 km/h around Main Camp, and 40 km/h along other roads unless otherwise indicated; and
- wildlife always has the right-of-way.

4.2.1.4 Monitoring and Feedback

Monitoring and feedback in management measures and mitigations is crucial for continuous improvement, to allow for the identification of successful strategies and areas needing adjustment. Monitoring and feedback for improvement is collected through:

- implementation of the CRMP;
- work with communities to monitor caribou movement and effectiveness of mitigation and provide feedback on adaptive management;
- vehicles encountering wildlife on roads are required to stop and communicate the presence of wildlife on the road(s) to the Environment Department and others in the area;

- site-wide notifications of caribou approach to the Ekati Mine; and
- reduced speed limits, and short and long-term road closures are implemented according to action levels in the CRMP.

4.2.1.5 Camp Mitigation

To deter wildlife from mining infrastructure Ekati Mine implemented:

- A gated chain-link fence around Misery Camp to prevent wildlife from entering.

4.2.1.6 Airstrip Mitigation

To effectively manage and mitigate wildlife hazards on airstrips, the following measures were implemented:

- visual airstrip inspections for wildlife are completed prior to take-off and landing of all aircraft;
- a barrier fence is in place around the airstrip to deter wildlife from the area; and
- Inuksuit (traditional rock structures; Photo 4.2-1) are placed at intervals around the airstrip, Pigeon Culvert, Fox Haul Road, Beartooth Pit, and other potentially hazardous mine structures to deter caribou from these areas.

Photo 4.2-1 Example of an Inuksuit (Traditional Rock Structures) that are placed at Intervals Around Infrastructure to Deter Wildlife and Minimize Potential Interactions Between Mine-Related Traffic and Wildlife.

4.2.2 Objectives

The objectives for this component of the WEMP are to:

- monitor if any wildlife is killed or injured as a result of vehicle and aircraft interactions; and
- evaluate whether preventative measures are sufficient to minimize risks of wildlife injury and mortality.

4.2.3 Methods

All vehicle and aircraft interactions with VEC (i.e., bear, caribou, wolf, wolverine, and raptors) and non-VEC wildlife species (i.e., foxes, arctic hare, ground squirrel) on roads or the airstrip were reported to the Environment Department. The species, number of individuals, sex and age, location, condition of the animal, type of incident and a description, and deterrent types used were recorded (if any). If there were mortalities, the cause of death and any follow-up notes were also recorded.

Deterrents (i.e., bear bangers, trucks, air horns, and helicopters) may be used to remove wildlife from the airstrip and potentially hazardous sites and activities. Wildlife are only deterred as a last resort, when there is a risk to either humans or wildlife, as determined by the Environment staff.

Caribou are given the right of–way; vehicles stop and wait for caribou to move out of the way. Caribou are only deterred from roads or the airstrip under specific circumstances, for example when there are incoming flights or if there is an emergency. Risks are assessed prior to any use of deterrents for caribou.

Caribou can be deterred by having people dismount a vehicle within ~150 m of caribou at which point caribou typically move off. Stubborn caribou can be convinced by yelling or clapping hands. If possible, the deterrence approach us discussed with GNWT ECC prior to initiating.

4.2.4 Results

4.2.4.1 Wildlife Mortalities

No aircraft-related mortalities occurred in 2024. A total of 28 vehicle-related wildlife mortalities were recorded at the mine in 2024 (Table 4.2-1). Species mortalities included arctic hare (eight individuals), caribou (two individuals), arctic ground squirrel (one individual), wolverine (one individual), and an unknown species of ptarmigan (16 individuals). All incidents involved light or heavy vehicles hitting individuals on roads. All mortalities were reported to the Environment Department and carcasses were moved far from site on the tundra or were incinerated.

On July 14, a light vehicle was driving on the Sable Haul Road at approximately 40 km/h and collided with a young male caribou. When the caribou was hit, the driver had rounded a corner with sunlight in their eyes, obstructing their vision from the caribou on the road. The second caribou mortality occurred on November 15, 2024, on Misery haul road, when a vehicle was stopped for a female and calf on the road. However, the calf ran into the stopped vehicle and succumbed to its injuries. Both caribou mortality incidents were reported to ENR. Vehicle-related wildlife mortality also occurred for the first time for wolverine in 2024 on Sable Haul Road.

4.2.4.2 Wildlife Management

A total of nine interactions, not resulting in mortality, with wildlife and vehicles and one interaction with wildlife and aircraft were recorded occurred in 2024. Species interactions included grizzly bear (five interactions with six individuals) and caribou (four interactions with 11 individuals).

Table 4.2-1 Vehicle-related Wildlife Mortalities at the Ekati Mine, 1997 to 2024

Species	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Total
Mammals																													
Arctic ground squirrel	0	0	0	0	0	1	0	0	0	1	0	2	2	1	1	3	4	2	2	1	0	0	0	0	0	0	2	1	**23**
Arctic hare	0	0	0	0	0	9	0	3	3	6	5	5	2	2	2	6	11	6	4	4	4	3	7	0	6	12	10	8	**118**
Caribou	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	0	2	**2**
Muskrat	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	2	0	0	1	0	0	0	0	0	0	0	**5**
Fox (red, arctic, cross, or unknown)	0	0	0	0	0	1	0	0	1	0	0	1	1	1	1	0	1	3	1	3	1	0	1	1	0	0	0	0	**17**
Wolf[2]	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	**2**
Wolverine	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	**1**
Birds																													
Canada goose	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	**1**
Common raven	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	**2**
Greater white-fronted goose	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	2	0	0	0	0	0	**5**
Green-winged teal	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**
Long-tailed duck[3]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	1	0	0	0	0	0	0	0	**3**
Rock ptarmigan	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	0	6	0	**10**
Rough-legged hawk[2]	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**
Short-eared owl[1]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
Peregrine falcon[1]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	**1**
Unknown ptarmigan sp.	0	0	0	0	0	1	0	2	8	2	5	1	1	2	3	2	5	0	2	2	1	1	0	0	3	4	4	16	**65**
Unknown waterfowl sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	1	1	0	0	0	0	4	0	0	**65**
Willow ptarmigan	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	0	**3**
Total	**0**	**0**	**0**	**0**	**0**	**13**	**0**	**5**	**14**	**9**	**10**	**9**	**7**	**6**	**8**	**14**	**26**	**19**	**9**	**11**	**10**	**4**	**11**	**5**	**12**	**16**	**23**	**28**	**269**

Notes:

[1] VEC species and species of conservation concern.

[2] VEC species.

[3] Species of conservation concern.

An adult grizzly bear was observed on October 25, 2024, eating the remains of an arctic hare that was hit along the Sable Haul Road. Traffic was stopped until the Environment Department staff lead arrived to deter the grizzly bear off the road with a truck. Two other incidents occurred in June 2024 where grizzly bears were deterred off the road using a vehicle, and one incident where a grizzly bear was startled at Point Lake WRSA when a vehicle arrived.

Caribou-vehicle interactions occurred when caribou were on Misery and Sable Haul Road. No deterrents were used for caribou on the road, roads remained closed until caribou moved off the road.

4.2.5 Discussion

The first ever caribou mortalities due to collisions were reported in 2024. The caribou mortalities occurred during the summer (July 14, 2024) and fall (November 13, 2024) when the mine was in Level 3 (red). When Level 3 is triggered, alert signs are posted as red alert, all drivers are notified of the level at the beginning of their shift and are provided with maps of recent caribou sightings. The driver involved in the July mortality incident was reported to be traveling at 40 km/h, which is the designated speed limit for Sable Haul Road during a Level 3 (red) alert. During the summer mortality, Ekati Mine's road surveys noted one to two caribou near Sable Haul Road (50 to 350 m away) on the day of and the day before the incident.

For the November incident, one to two caribou 175 to 250 m from Misery haul road were recorded on the day of and the day before the mortality. It was reported by the driver that the caribou ran into the vehicle.

The number of vehicle-related non-VEC wildlife mortalities reported in 2024 was 28 which is an increase from the 23 reported in 2023, and 16 reported in 2022. There has been a continual increase since 2020, likely due to a low number of staff on site in 2020 while the mine was in Care and Maintenance. Reports were highest in 2013 (n = 26), 2014 (n = 19), and 2023 (n = 23). Haul truck traffic has increased in frequency on Misery haul road since 2011.

Burgundy has implemented a number of mitigation practices to minimize potential interactions between mine-related traffic and wildlife. Mitigation measures for roads including giving wildlife the right-of-way, temporarily closing roads, monitoring wildlife adjacent to roads, and posting wildlife caution signs (Section 4.1). Removing carcasses on roads helps to minimize traffic risks to predator and scavenger species. Finally, education and awareness efforts (i.e., posters, presentations, and site-wide email notifications) for mine staff has been effective at reducing wildlife-traffic conflicts.

For more details on specific vehicle, aircraft, and non-vehicle incidents see Detailed Wildlife Incident Reports in Appendix A.

4.3 Non-Vehicle Wildlife Mortalities and Incidents

4.3.1 Wildlife Mortalities

4.3.1.1 Introduction

Wildlife mortalities are monitored at the Ekati Mine to track the number of naturally occurring mortalities near the site and any mortalities that may occur due to interactions with the site. Wildlife mortalities are tracked to look for trends, improve mitigation and determine appropriate adaptive management. Wildlife carcasses can

also attract scavengers to the mine site, creating risks for both carnivores (e.g., being drawn to the road by carrion and subsequently being struck by a vehicle) and people who encounter them. Mitigation measures, such as removing carcasses, are in place to avoid any potential negative interactions between wildlife and humans, and to reduce the likelihood of wildlife associating the site with food.

4.3.1.2 Objectives

The objective of this component of the WEMP is to:

- document and mitigate potential effects of mine activities on wildlife mortalities at site; and
- reduce risk to both wildlife and people.

4.3.1.3 Methods

Burgundy records detailed information on wildlife mortality events in a wildlife mortality database. Staff are required to report wildlife mortalities to the Environment Department, who inspects the mortality to determine the probable cause of death. Obvious injuries, the position of the animal, and anything considered unusual are photographed and recorded. Further information including time, date, location, estimated time of death, and any sightings of other wildlife in the area are also recorded. The Environment Department keeps a separate record of potential conflicts with, or deterrence of wildlife, which require a response from the Environment Department staff (Section 4.1).

Burgundy is required to report wildlife mortality details to GNWT ECC each time a VEC species, fox, common raven, or raptor is found dead at the mine. Mortalities of migratory birds are to be reported to Environment and Climate Change Canada (ECCC).

Unless otherwise directed by GNWT ECC or ECCC, carcasses found close to the mine site are incinerated or moved away from any work areas (i.e., further out onto the tundra) to prevent attraction of scavengers to the mine site. Natural wildlife activity and ecological processes are left undisturbed unless there is risk of harm to on site staff or wildlife.

4.3.1.4 Results

During 2024, four wildlife mortalities were reported at the mine that were not attributed to vehicle collisions (reported in Section 4.2). These included two caribou, one grizzly bear, and one common raven (Table 4.3-1).

Caribou:

On February 13, 2024, one deceased caribou was reported 100 m away from Misery Haul Road, and on August 3, 2024, another caribou was reported deceased approximately 200 m off Sable Haul Road. The cause to the mortalities is unknown, but both caribou were reported with wolves feeding on them.

Table 4.3-1 Non-vehicle-related Wildlife Mortalities at the Ekati Mine, 1997 to 2024

Species	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Total
Mammals																													
Arctic hare	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	1	0	0	0	0	0	0	1	0	1	0	**5**
Caribou[1]	0	0	0	0	7	13	5	7	3	5	2	1	8	7	5	2	1	2	0	1	2	2	8	2	4	4	4	2	**97**
Grizzly bear[1]	0	1	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	**4**
Muskrat or unknown rodent	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	**5**
Fox (Red, Arctic, Cross, or unknown)	2	0	0	0	0	1	0	0	0	0	8	4	1	4	0	1	1	2	0	0	1	1	0	0	0	0	0	0	**26**
Wolverine[1]	0	0	0	0	8	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**10**
Wolf[2]	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1	1	0	2	0	0	0	0	0	0	0	**6**
Birds																													
American green-winged teal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	**1**
American robin	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	**3**
American tree sparrow	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	**1**
Common loon	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	**1**
Common Raven	0	0	0	0	0	0	0	0	0	0	0	1	0	2	0	0	0	1	1	2	0	1	0	0	2	0	1	1	**12**
Common redpoll	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	**4**
Greater white-fronted goose	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	**2**
Green-winged teal	0	0	0	0	0	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**8**
Lapland longspur	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	**1**
Long-tailed duck3	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	**2**
Merlin[2]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	**1**
Northern pintail[3]	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	**2**
Northern shoveler	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**2**
Peregrine falcon[1]	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	**2**
Red-throated loon	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**
Rock ptarmigan	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**
Rough-legged hawk[2]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2	0	**4**
Savannah sparrow	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**
Short-eared owl[1]	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	**2**
Snow goose	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
Snowy owl	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**
White-crowned sparrow	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	**2**
Willow ptarmigan	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**
Yellow-billed loon	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**2**
Unknown goose species	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	**1**

Species	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Total
Unknown merganser species	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**2**
Unknown passerine species	0	5	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	0	0	1	0	0	0	0	0	2	3	0	**15**
Unknown plover species	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	**1**
Unknown ptarmigan species	0	0	0	0	0	0	0	0	0	0	1	0	0	4	0	0	2	0	0	1	0	0	1	0	1	0	0	0	**10**
Unknown sparrow species	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	0	0	0	**8**
Unknown waterfowl species	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	2	0	1	0	0	0	0	0	0	**5**
Total	**2**	**7**	**0**	**0**	**15**	**18**	**7**	**7**	**20**	**9**	**13**	**11**	**9**	**20**	**5**	**4**	**9**	**9**	**3**	**17**	**8**	**6**	**11**	**11**	**8**	**7**	**13**	**4**	**2,496**

Notes:

[1] VEC species and species of conservation concern.

[2] VEC species.

[3] Species of conservation concern.

4.3.1.5 Discussion

Between 1997 and 2024, wildlife mortalities not related to vehicles have varied between zero and 20 per year, with 2024 results on the lower end of reported mortalities since 1997. Mitigation measures occur following each observation of an animal carcass, and may include notifying the GNWT ECC and ECCC, sending site-wide notifications of animal activity in the area, wildlife warning signs and road closures for the safety of staff in vehicles and for wildlife. Carcasses found in an area where they do not pose any threat to wildlife or human safety are left where they were found on the tundra. To prevent attracting scavengers, carcasses found close to the mine are incinerated, relocated away from the mine, or frozen for later necropsy if requested by GNWT ECC or ECCC.

4.3.2 Wildlife Incidents

4.3.2.1 Introduction

A wildlife "incident" is defined as an interaction between wildlife and human(s) that may compromise the safety of the wildlife and/or human(s). Incidents also include any action where deterrents are deemed necessary. Incidents involving wildlife in close proximity to mine infrastructure, such as roads, open pits, waste rock storage areas, and the LLCF must be managed to minimize risk to wildlife and staff. As part of the WEMP, all wildlife incidents are recorded and reviewed to adaptively manage these incidents.

Burgundy practices progressive levels of deterrence, starting with avoidance (removing crews from the area), visual monitoring, truck deterrence (including horn), bear bangers, rubber bullets, and use of helicopters. Relocating or killing of an animal is only considered after successive levels of deterrents are not successful at moving an animal from site. Whenever possible and safe to do so, all deterrent actions are completed in consultation with GNWT ECC.

4.3.2.2 Objectives

The objectives of wildlife incident monitoring are to:

- document, minimize, and mitigate potential effects of mine activities and infrastructure on wildlife; and
- reduce risks to both wildlife and people.

4.3.2.3 Methods

Wildlife incidents were reported to the Environment Department, recorded on an Incident/Accident Form and entered in a database. Incidents included observations of wildlife-infrastructure interactions and wildlife-human interactions where there was a potential risk of harm to people, wildlife, and/or infrastructure. Descriptions of species, number of individuals, sex and age, location, condition of the animal, management responses, wildlife behaviour, type of incident (i.e., interaction with field crew, vehicle, aircraft, mine infrastructure, mortality, or other), type and number of deterrents used, and outcome, were recorded for all incidents.

On occasions when there is a need to use deterrents, GNWT ECC is contacted to inform them and to seek advice when necessary. Deterrent measures used during the pit wall nest monitoring program are reported separately (Section 10.3).

Where appropriate, the first response to potential wildlife interactions is to remove staff from an unsafe situation and reschedule work in the area. Only as a last resort (e.g., immediate safety concern) will a helicopter be used to deter grizzly bears from areas where staff are working. Pilots are instructed to position the helicopter 120 m behind the bear and to travel at a maximum speed of 10 to 15 km/h.

Whenever possible, Environment Department staff are present in the helicopter to monitor the wellbeing of the animal during the deterrent efforts and to direct the pilot accordingly. The intent is to guide bears away from staff and infrastructure without overexerting or overheating them. For example, an animal is allowed to rest and recover when approaching difficult terrain. In addition, the helicopter maintains a 150 m altitude and backs off to 300 m away from the grizzly bear when it is cooperating (i.e., continues travelling in the direction of the movement without further prompting). At all times, the animal's energy, the terrain, and the air temperature are considered during a move.

Detailed inspections of skirting around buildings and fencing are conducted on a weekly basis by walking or driving around buildings with skirting (i.e., the Ekati Mine Camp and Misery Camp), and around fencing structures (i.e., Misery Camp, and Ekati Mine Airport). Surveyors record any sign of wildlife (e.g., scats, tracks, and digs), as well as evidence of damage (e.g., holes, tears) to the skirting or fencing.

4.3.2.4 Results

During the 2024 reporting period, a total of 60 wildlife incidents were reported, involving four VEC species (30 caribou incidents, 19 grizzly bear incidents, two wolf incidents, and one peregrine falcon incident), three non-VEC species that aren't species of concern (six common raven incidents, one red fox incident, and one unknown species of fox incident; Table 4.3-2). Incidents were related to wildlife interactions associated with mine infrastructure, such as being on the road, entering camp areas, or interacting with equipment (n = 43). Other incidents included wildlife interactions with staff (n = 4), and incidents classified as "other" (n = 4).

These 51 incidents are excluding the ones previously reported as mortalities (Section 4.3.1). The Wildlife Incident Reports are in Appendix A.

Caribou and Large Mammals

One incident involved caribou, a VEC species, on July 7, 2024. A caribou was observed walking on the Sable Pit Ramp in an active work area. A truck was positioned near the ramp to stop the caribou from further walking into the Sable Pit. The caribou was able to walk away without further use of deterrence. There were 29 reported caribou incidents where work had to be stopped due to caribou on the road, however an additional 51 work stoppages were recorded for caribou but were not reported on the wildlife incident forms (See Section 4.1.1). There was one incident involving a wolf on February 18, 2024. A wolf had chewed and damaged a fiber optic cable at the Sable office. The damaged wire caused the Sable pit network to go down for approximately 9 hours.

Table 4.3-2 Wildlife Incidents at the Ekati Mine, 2010 to 2024

Species	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019[4]	2020	2021	2022	2023[4]	2024	Total[4]
Mammals																
Caribou[1]	1	1	0	1	0	0	0	0	0	1	0	0	0	1	30	**35**
Grizzly bear[1]	18	4	8	1	1	4	9	8	17	35	5	19	27	31	19	**206**
Fox (red, arctic, cross, or unknown)	49	0	5	2	4	1	6	0	7	5	1	0	1	4	2	**86**
Wolf[2]	0	2	2	0	2	4	0	0	0	3	0	0	0	2	2	**17**
Wolverine[1]	1	0	0	0	0	3	0	1	0	1	0	1	0	0	0	**7**
Mink	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	**1**
Muskrat	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	**1**
Unknown small mammal	0	0	0	0	1	0	0	2	0	0	0	0	0	2	0	**5**
Birds																
American pipit	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	**1**
American robin	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	**1**
Canada goose	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
Common raven	1	0	0	0	0	0	0	1	0	1	0	1	0	1	6	**12**
Long-tailed duck[3]	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	**2**
Peregrine falcon	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	**1**
Surf scoter[3]	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	**1**
Tundra swan	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	**1**
White-crowned sparrow	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**

Species	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019[4]	2020	2021	2022	2023[4]	2024	Total[4]
Unknown duck sp.	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	**1**
Unknown ptarmigan sp.	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	**1**
Unknown songbird sp.	0	0	0	0	0	0	1	0	0	0	0	0	1	2	0	**4**
Total[4]	**70**	**7**	**15**	**6**	**8**	**13**	**18**	**12**	**25**	**46**	**6**	**22**	**32**	**45**	**60**	**385**

Notes:

[1] VEC species and species of conservation concern.

[2] VEC species.

[3] Species of conservation concern.

[4] In 2019, a red fox and common raven were jointly involved in one incident, another incident jointly involved a grizzly bear and a wolverine, and a third incident jointly involved a red fox and a grizzly bear. In 2023, a common raven and red fox were both involved in one incident. The total incidents are not the sum of the individual species incidents.

Fox and Small Mammals

Two incidents involving foxes, and one incident involving a weasel or mink, all non-VEC species, occurred in 2024. On January 26, 2024 a red fox entered an empty 1000L tote in the Waste Management Yard and got trapped inside. The fox was able to escape the tote on its own, prior to the mine staff's assistance. An unknown species of fox was also reported sleeping on Sable Haul Road on July 20, 2024. The Environment Department staff deterred the fox off the road by making load noises.

Migratory Birds and Raptors

Seven interactions involving migratory birds and raptors occurred in 2024. One species involved was a peregrine falcon (VEC species); the remaining six incidents involved common raven (non-VEC species). An injured peregrine falcon was found on August 19, 2024, at Point Lake Pit. The Environmental Wildlife Advisor contacted the GNWT Wildlife Hotline however, there was no response. The Environment Department staff safely captured and relocated the peregrine falcon to the Misery WRSA.

An additional six incidents involving common raven were recorded in 2024. Four wildlife incidents recorded common ravens feeding on food waste, with two incidents reporting a common raven entering into the site buildings to access food. Two common raven nests were also recorded, one nest was observed on April 22, 2024, at the Misery Crusher Power Substation and the second was observed on May 21, 2024, in the ventilation hood of the incinerator building.

Grizzly Bear

There were 14 grizzly bear incidents at the Ekati Mine during the 2024 reporting period. Two incidents involved grizzly bears entering camp areas. On August 13,2024 a grizzly bear was sighted walking on the Sable waste rock ramp and climbing to the top of the waste rock pile. The bear moved from the Sable waste rock pile towards the Sable office. The bear sighting was reported to the Environment staff and a truck was used to direct the bear away from the Sable office and site workers. The bear was successfully re-directed away from camp. On September 26, 2024, a grizzly bear sow with 3 cubs was sighted going under the Misery Camp fence. Work was stopped in the area until the bears moved back to the outside of the fence and left the area. The Environment Department staff was notified and investigated the condition of the fence.

On January 5, a potential bear den was identified at the east side of the Sable east dump. No further details were recorded regarding whether the den was active or not.

Eleven additional incidents were recorded with grizzly bears, 10 were single adult bears, and one was a single cub. These incidents occurred at the Misery Camp, the landfill at the ERT training grounds, Waste Management Yard, upper Exeter Lake, and along roadways. Deterrents used included bear bangers, light vehicles (horn honk or used to direct animal), whistle, helicopter, and a scare cartridge. Grizzly bear incidents occurred between May 8 and October 27, 2024. A total of 32 deterrents were used for grizzly bear incidents. Bears were always monitored after deterrent use, and it was noted they all appeared to be in good condition following deterrent us. The Environment Department was notified about each incident.

Skirting Incidents

During the 2024 reporting period, a total of 124 skirting inspections were completed over 113 sampling days at the Main Camp and Misery Camp.

- Main Camp was inspected on 62 separate days and included two inspection reports of skirting damage, holes or no skirting. Skirting was fixed following the inspections. Arctic hare tracks were recorded on two occasions and wolverine tracks were recorded on one occasion.
- Misery Camp was inspected on a total of 62 different days and included three inspection reports of skirting damage, holes, or no skirting. No wildlife signs were observed. All skirting damages were reported to facilities management for repair.

Fencing Incidents

During the 2024 reporting period, areas with Misery Camp fencing were inspected for damage on 60 occasions over 60 days with three reports of damage, which were reported to Operations for repairs.

4.3.2.5 Discussion

The number of incidents involving grizzly bears and foxes that required the use of deterrents away from site and/or staff decreased after 2010. Part of this reduction has resulted from an increase in monitoring, removing all outdoor waste bins to reduce potential sources of attraction, and relocating Burgundy field crews or delaying work before making a decision to actively deter an animal.

Since 2011, fewer than 10 fox incidents have been reported annually. In 2024, only two incidents occurred. Following six fox incidents reported in the landfill bins in 2016, the Environment Department increased efforts to raise awareness amongst staff about the importance of proper waste management. The monitoring of waste bins continues to be an important component of the WEMP for preventing misdirected waste from reaching the landfill, thereby minimizing the number of wildlife incidents.

The 14 grizzly bear incidents in 2024 were in the middle of the range of recorded annual incidents since monitoring began in 2010. In 2024, the grizzly bear incidents declined by 55% compared to 2023. In 2023, 10 of the observations included a single bear with an ear tag. In 2024, no sightings of that individual occurred, which may explain the decrease in grizzly bear incidents from 2023. Additionally, there was a lot of bear activity associated with the construction of the Pigeon Stream Diversion in 2023.

ERM (2018) completed a DNA study that showed the regional grizzly bear population may be increasing, which would suggest that the mining projects in the region have not prevented grizzly bear population growth.

In recent years, Burgundy has implemented mitigation practices for wildlife attractants on site with the goal of minimizing wildlife activity on site. These practices include waste management education and awareness programs, waste management procedures, site awareness (e.g., closing doors), and wildlife awareness.

For more details on specific vehicle, aircraft, and non-vehicle incidents see Detailed Wildlife Incident Reports in Appendix A.

5. Caribou

The WEMP includes several annual studies to monitor the predicted potential effects of the mining activities on caribou. Burgundy supports collaborative approaches to regional monitoring of caribou. Burgundy monitors annual variation in caribou seasonal ranges and core areas at a regional scale and relative to the Ekati Mine using collared caribou data from GNWT ECC (Section 5.2).

Studies incorporate ground-based monitoring by local community members, Burgundy staff, and biologists, including incidental caribou sightings (Section 5.3), traffic monitoring using cameras (Section 5.7), and behavioural surveys (Section 5.4).

In response to concerns that caribou may become trapped in the processed kimberlite in the LLCF, potentially leading to injury or death, or ingestion of processed kimberlite within the LLCF, formal surveys are conducted annually around the LLCF as part of the WEMP (Section 5.5).

Road and powerline surveys are also conducted to identify when caribou are near the road and trigger mitigation (Section 5.6).

Elders and holders of TK are regularly invited to site to participate in these programs and to share their knowledge about caribou behaviour, diet, health, body condition, and movement paths while the caribou are migrating through the Ekati Mine area.

To expand on these caribou monitoring programs in 2019 a site tour with the Kitikmeot Inuit Association on October 24, 2019 was hosted. It focused on the Sable haul road caribou crossings and receiving feedback and recommendations for these crossings. The following TK Community Based Projects occurred in 2019: Tłı̨chǫ – Boots on the Ground Caribou Monitoring, Łutselk'e Dene First Nation – Moccasins on the Ground Caribou Monitoring, and Yellowknives Dene First Nation – Dene on-the-land Caribou Monitoring Programs. Discussions with Impact Benefit Agreement communities regarding developing a TK-based research program for studying the drivers of the Zone of Influence (ZOI) and on site sessions with the TK Elders group were deferred in 2019 while the Jay Project continued to undergo an optimization study.

More recently, Burgundy supported the comprehensive telemetry analysis on the Bathurst caribou herd to determine the effectiveness of mitigation for caribou at the Ekati Mine (Rettie et al. 2024). The comprehensive telemetry project on Bathurst caribou informed the updated WMMP to help determine the effectiveness of mitigation measures for caribou at a regional scale (Rettie et al. 2024). Using the results of the comprehensive telemetry analysis and other recent publications for the Bathurst caribou herd (Boulanger et al. 2021), minor changes to mitigation and monitoring measures from the CRMP were made where warranted. The results of this research, reported separately from the WMMP annual report, were produced in the 2024 telemetry report.

Members of the Yellowknives Dene First Nation, Kitikmeot Inuit Association, Łutselk'e Dene First Nation, Deninu Kų́ę́ First Nation, Fort Resolution Métis Council, North Slave Métis Alliance and Tłı̨chǫ communities had a site tour of the Point Lake area during the summer of 2022. Information about the Point Lake development was shared including the current status of the project with an emphasis on caribou mitigation and monitoring, and a tour of the Point Lake area to obtain TK and community feedback.

The following sections outline the caribou studies conducted by Burgundy as part of the 2024 WEMP requirements.

5.1 Background

Barren-ground caribou are a biologically and culturally important species in the Arctic. Caribou provide a critical resource for human populations living in the North, particularly Indigenous communities. Caribou also sustain predator populations such as wolves, grizzly bear and wolverine. As a result of recent population declines, barren-ground caribou were assessed as Threatened by COSEWIC (2016) but are not currently listed in Schedule 1 of the *SARA* (2002). In the NWT, barren-ground caribou are listed as Threatened (GNWT 2022) and ranked as at Risk (GNWT 2024).

Caribou populations can be affected by numerous factors including, harvest, disease, predation, industrial activities, climate change and environmental variability. Potential effects from industrial activities have been monitored for management of caribou for more than 20 years. To date, the effects of industrial activities on caribou populations have not been conclusively determined.

In 2021, Arctic Canadian produced a technical report that used a ZOI analytical approach to test the theory that caribou occurrence is strongly determined by the distribution of higher quality habitat (ERM 2021). Overall, the analyses indicated that the occurrence of caribou on the landscape can reasonably be explained by the percentage of land cover classes (i.e., habitat quality) alone.

To determine the effectiveness of mitigation for caribou, a comprehensive telemetry data analysis was completed in 2024 (Rettie et al. 2024). The analysis used a step-selection approach to model movement steps in relation to ecological covariates including land cover classes and proximity to mine infrastructure. Step-selection functions (SSFs) were used to examine caribou movements by season, year, and sex. The results of the analysis indicated that caribou habitat use was similar both far from the mine (>30 km away) and close to it (<30 km from infrastructure). In response to mine roads, only males increased the length of their movements and only during the winter. The results also indicated that caribou that spend time near the Ekati Mine do not travel farther than caribou that are not near the mine. Also, their arrival times on their seasonal ranges isn't affected by travelling close to the mine.

Information from TK and satellite-collared adult female caribou collected by GNWT ECC indicates that two barren-ground caribou herds, the Bathurst herd, and to a lesser extent the Beverly/Ahiak herd, have historically overlapped the area of the Ekati Mine wildlife study area (Figure 5.1-1). The historical distribution of these herds in Figure 5.1-1 represents the larger ranges occupied when populations were larger. The most southwestern portion of the Beverly/Ahiak herd range overlapped with the Ekati Mine in recent winters, when Beverly/Ahiak caribou appeared to assume a broader wintering range. Since the Bathurst herd is more likely to overlap the area of the Ekati Mine wildlife study area than the Beverly/Ahiak herd, the Bathurst migration seasonal dates have been used for analysing the data (Table 5.1-1).

Population surveys of the calving ground report that Bathurst herd declined from approximately 472,000 animals in 1986 (GNWT ENR 2012) to 31,982 animals in 2009 (Nishi et al. 2010). The herd appeared to have stabilized between 2009 and 2012 at about 34,690 animals (GNWT ENR 2013) but then declined to 19,769 animals in 2015 (Boulanger et al. 2017),8,207 animals in 2019, and 6,240 animals in 2022 (Adamczewski et al. 2022).

Both TK and scientific studies indicate that caribou herd size cycles relatively regularly with climate patterns (GNWT ENR 2005; GNWT ENR 2006); however, the current Bathurst herd population estimate is low compared to its historical minimum population size.

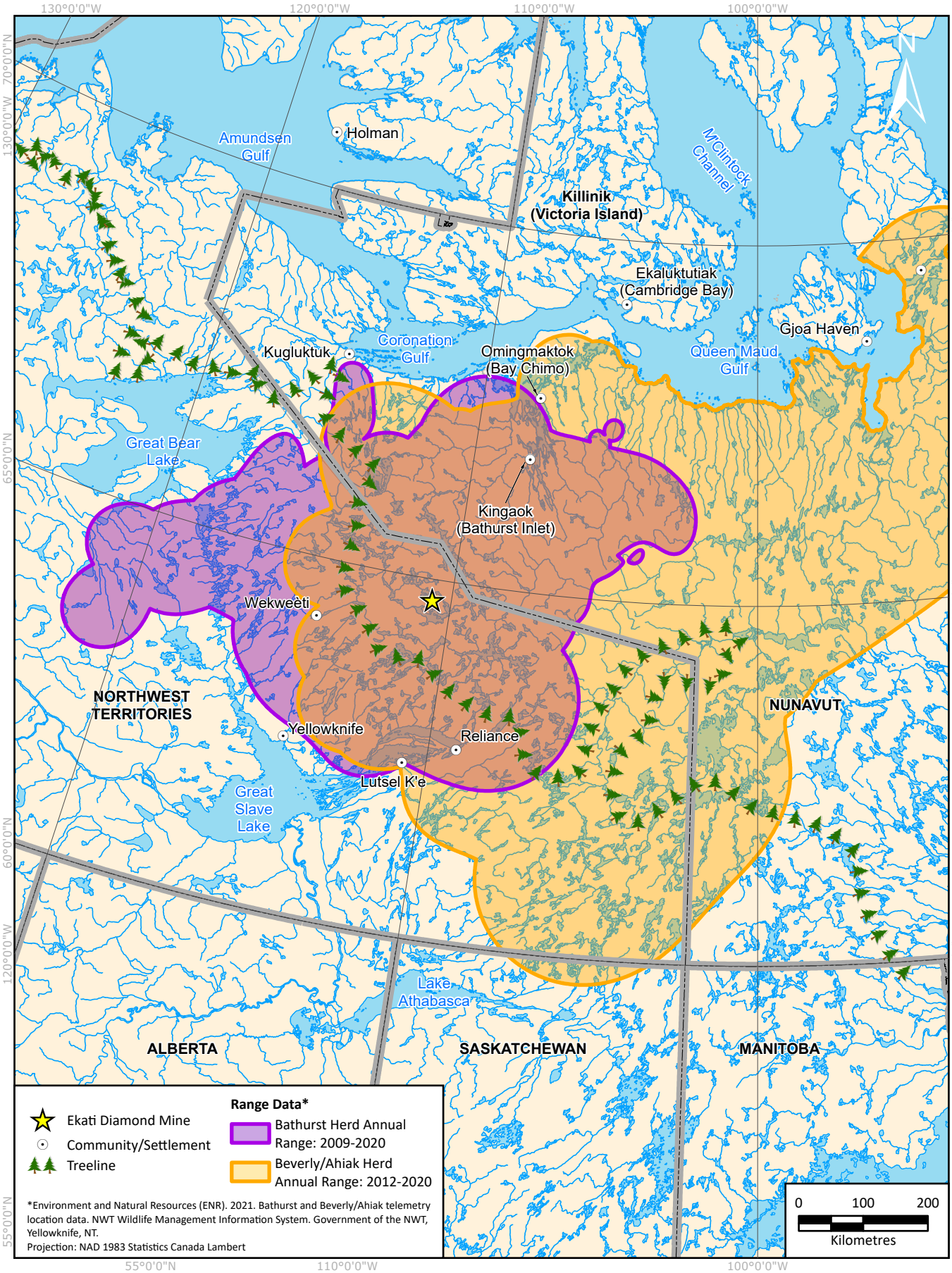


Figure 5.1-1 Annual Ranges of the Bathurst and Beverly/Ahiak Caribou Herds

Table 5.1-1 General Seasonal Period Dates for Bathurst Caribou

Seasonal Period	Dates
Winter*	December 1 to April 19
Spring migration*	April 20 to June 1
Calving*	June 2 to June 16
Post-calving*	June 17 to June 28
Summer*	June 29 to September 6
Fall migration*	September 7 to November 30

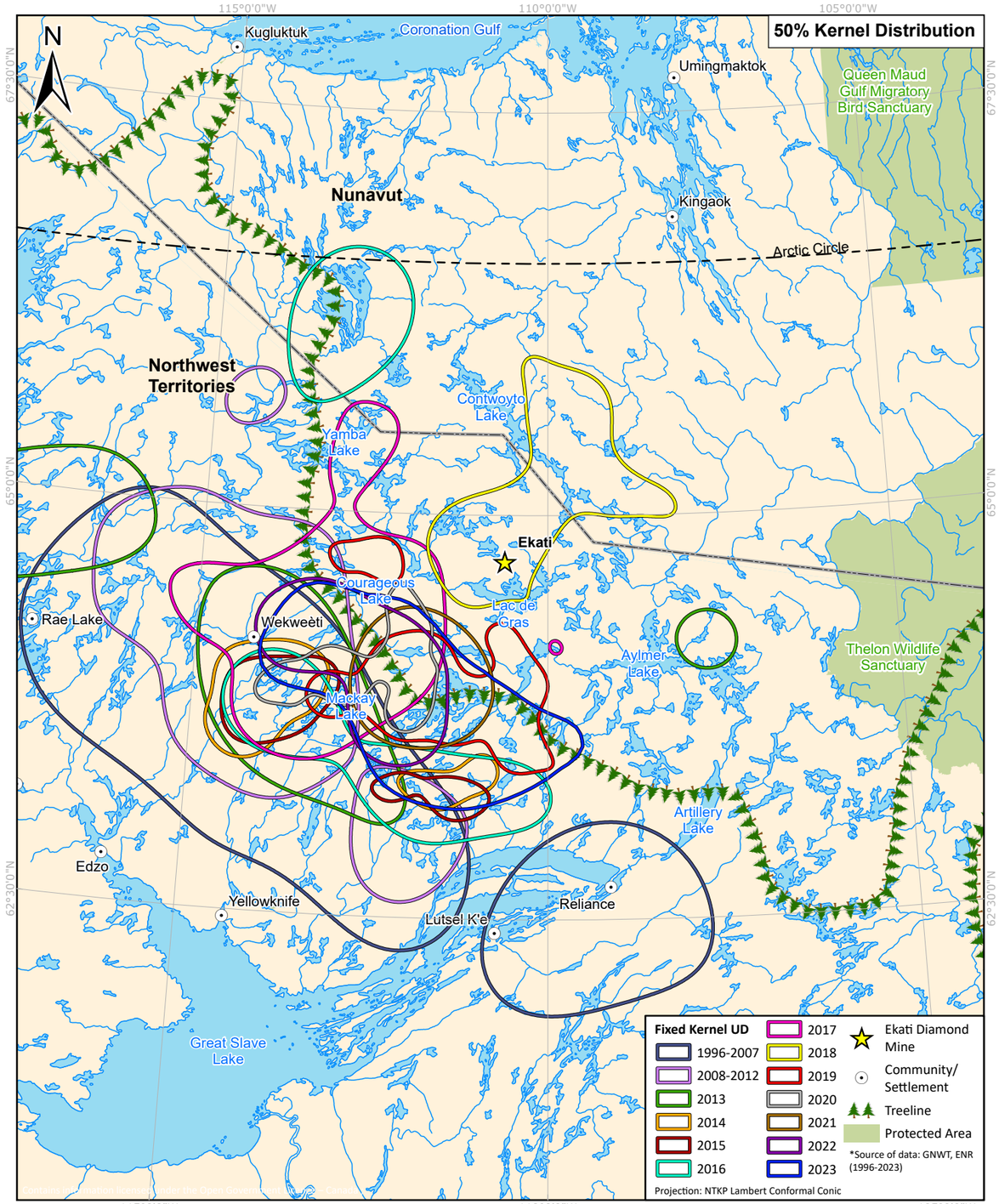
Notes:
* Defined by Nagy 2011.

Bathurst caribou use of the land can be broadly classified into two groups: 1) migrations (spring and fall) when the animals are moving quickly across the landscape, and 2) resident periods (calving, post-calving, summer, and winter) when the daily movement rate of caribou is lower than during migrations and the herd tends to occupy a distinct area of the landscape (Table 5.1-1).

During the winter, Bathurst herd caribou were historically found south of the tree line in the NWT, though the winter range has recently included areas north of the tree line (i.e., in each winter since 2015/2016; Figure 5.1-2). Bathurst caribou remain on the wintering grounds until mid-April when they begin their migration north to the calving grounds. In most years the winter range did not overlap with the Ekati Mine, but the winter range has overlapped the Ekati Mine from 2018 to 2024 (Figure 5.1-2). During the spring migration, Bathurst caribou migrate over a large area (275,000 km^2) from their wintering area to the calving grounds west of Bathurst Inlet in a relatively short period of time (Figure 5.1-2 and Figure 5.1-3). Movement corridors varied depending on the distribution of caribou on the wintering grounds. Spring migration tracks of collared caribou have passed through or near the Ekati Mine, although in most years, migration routes of collared caribou occur to the west of the Ekati Mine.

Bathurst female caribou usually arrive in late May on their calving grounds, which are currently concentrated between the James and Burnside Rivers, west of Bathurst Inlet (Figure 5.1-3), however sometimes arrive as early as April, and calving begins in early June (Table 5.1-1; KIA 2015). Female caribou that aren't pregnant migrate more slowly than pregnant cows and may or may not reach the calving grounds. Male caribou and juvenile caribou (born in the year previous) likely also follow females as some are present during calving, but generally north-bound males and juveniles are thought to meet females with calves in late June and early July on the post-calving and summer ranges, which are more spread out relative to the calving grounds and located south of the calving grounds (Gunn and D'Hont 2002). The post-calving range overlapped with the Ekati Mine in earlier years (1996 to 2007) however has not overlapped since 2007 (Figure 5.1-4).

During the summer (June 29 to September 6), most of the Bathurst caribou have traditionally used the area surrounding Contwoyto Lake (Gunn et al. 2008a; Gunn et al. 2008b). The summer range has overlapped with the Ekati Mine in several years (Figure 5.1-5). During the fall (September 7 to November 30), Bathurst caribou migrate south towards the winter range (Figure 5.1-6). A portion of the Bathurst caribou range has frequently overlapped with the Ekati Mine during the fall period (Figure 5.1-6).



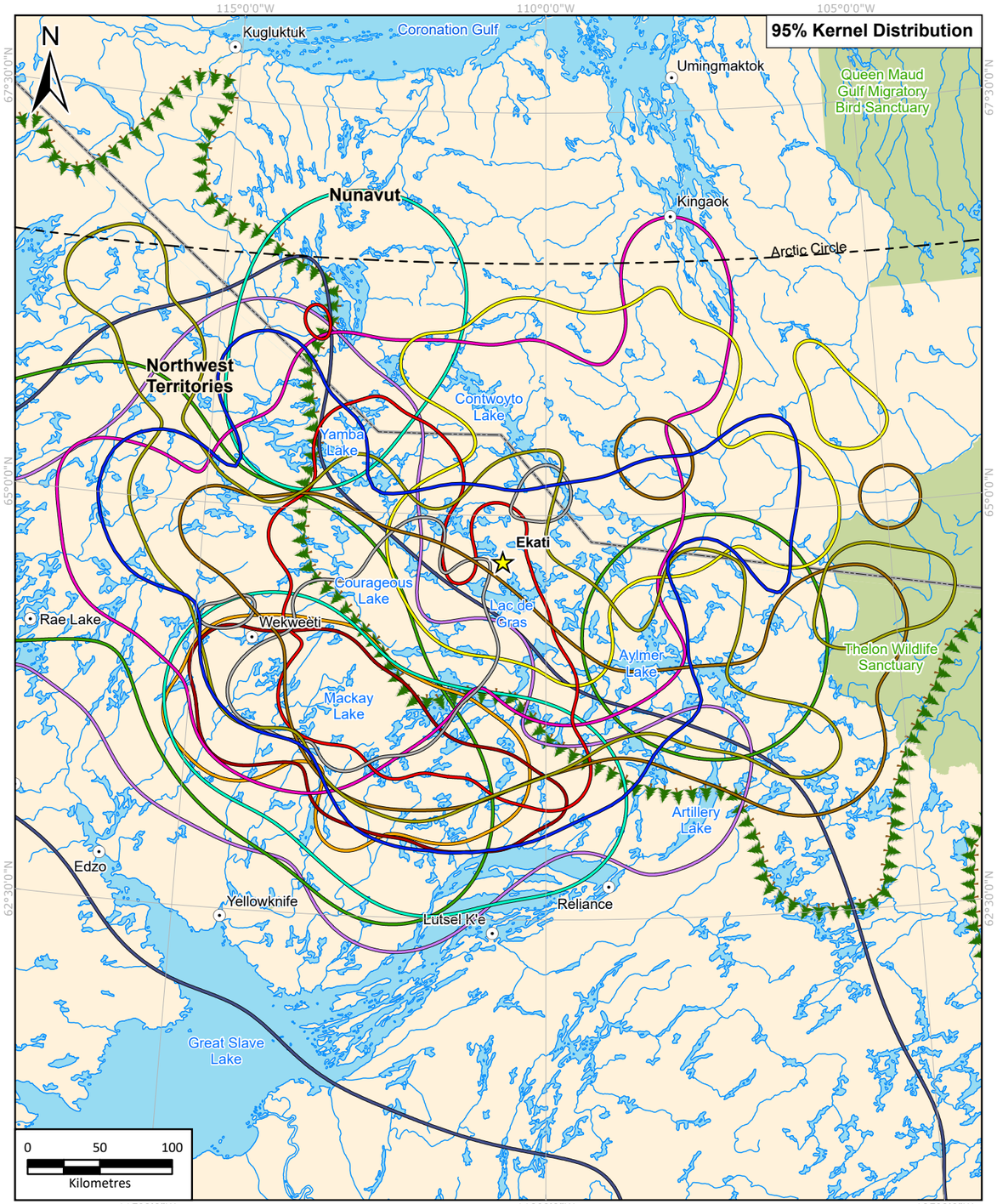
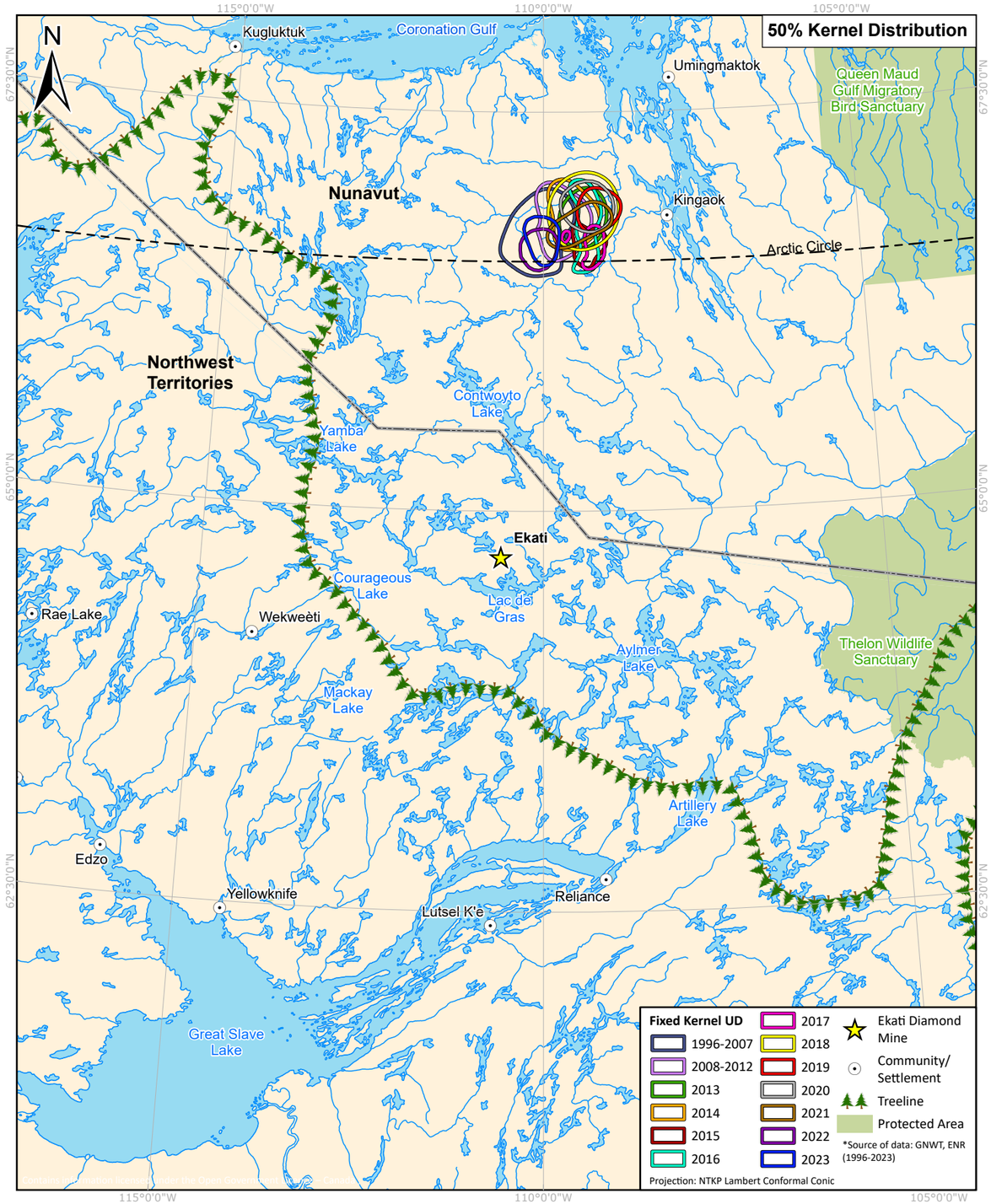


Figure 5.1-2 Distribution of Satellite-Collared Bathurst Caribou During Winter, 1996 to 2023



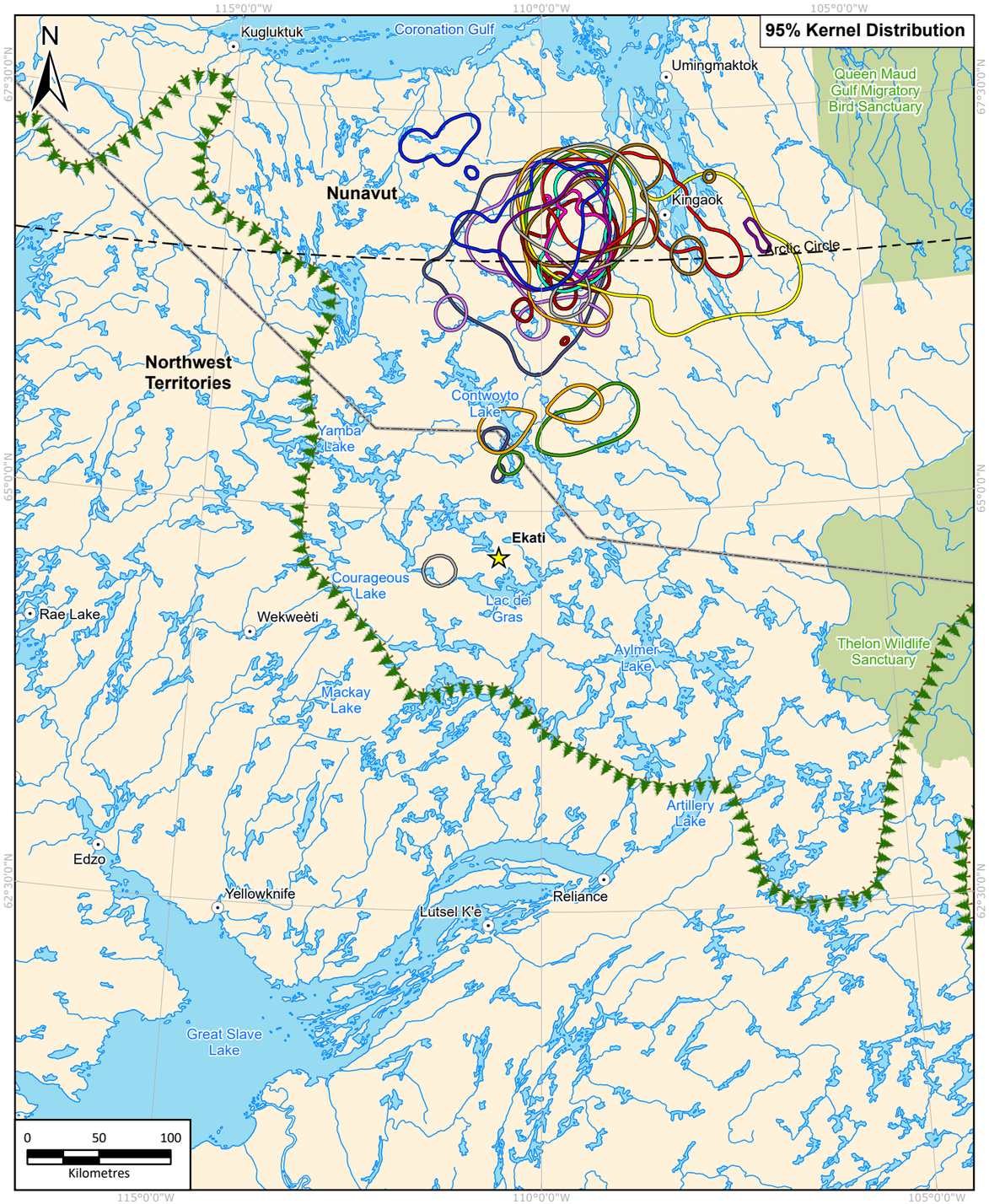
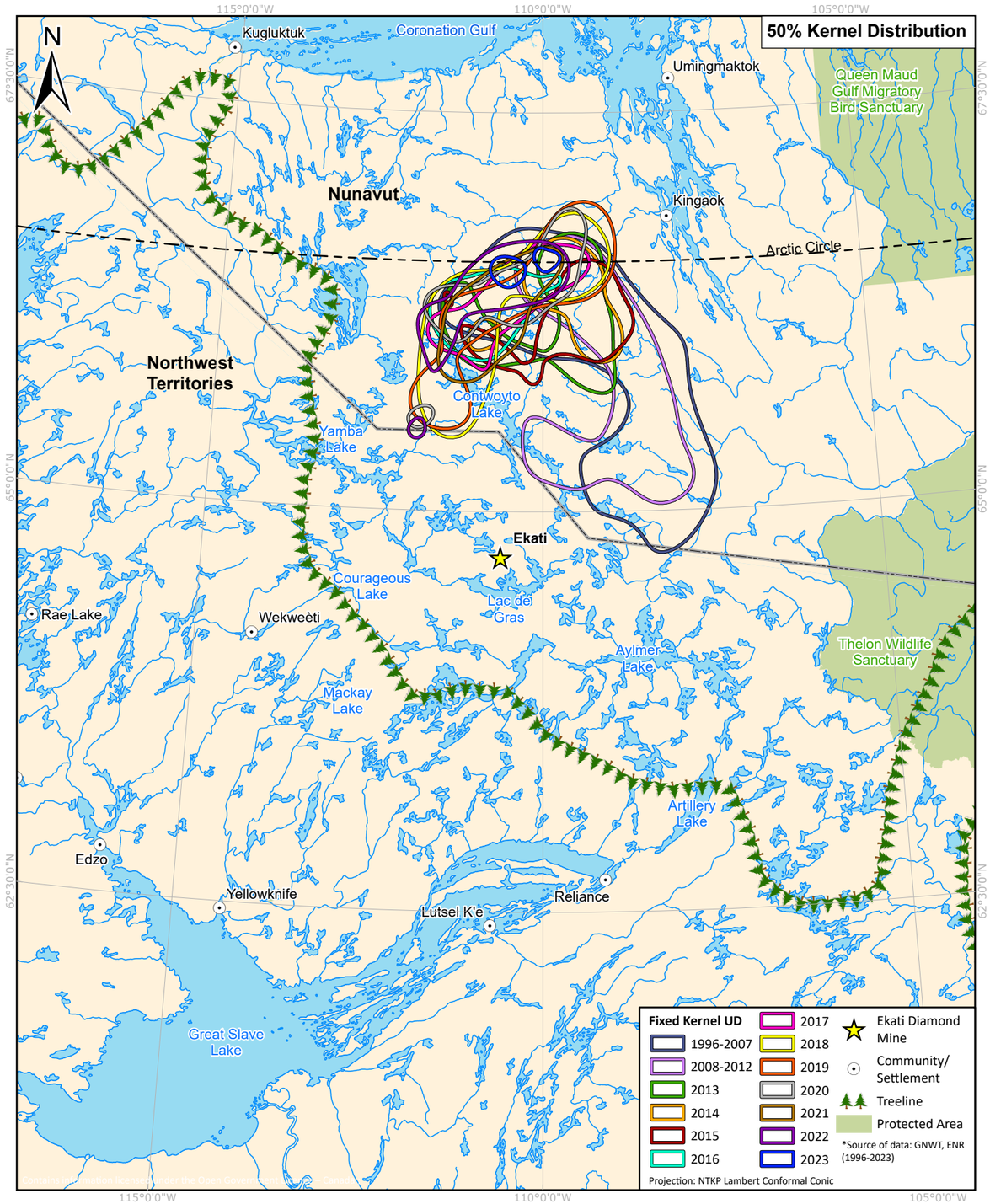


Figure 5.1-3 Distribution of Satellite-Collared Bathurst Caribou During Calving, 1996 to 2023



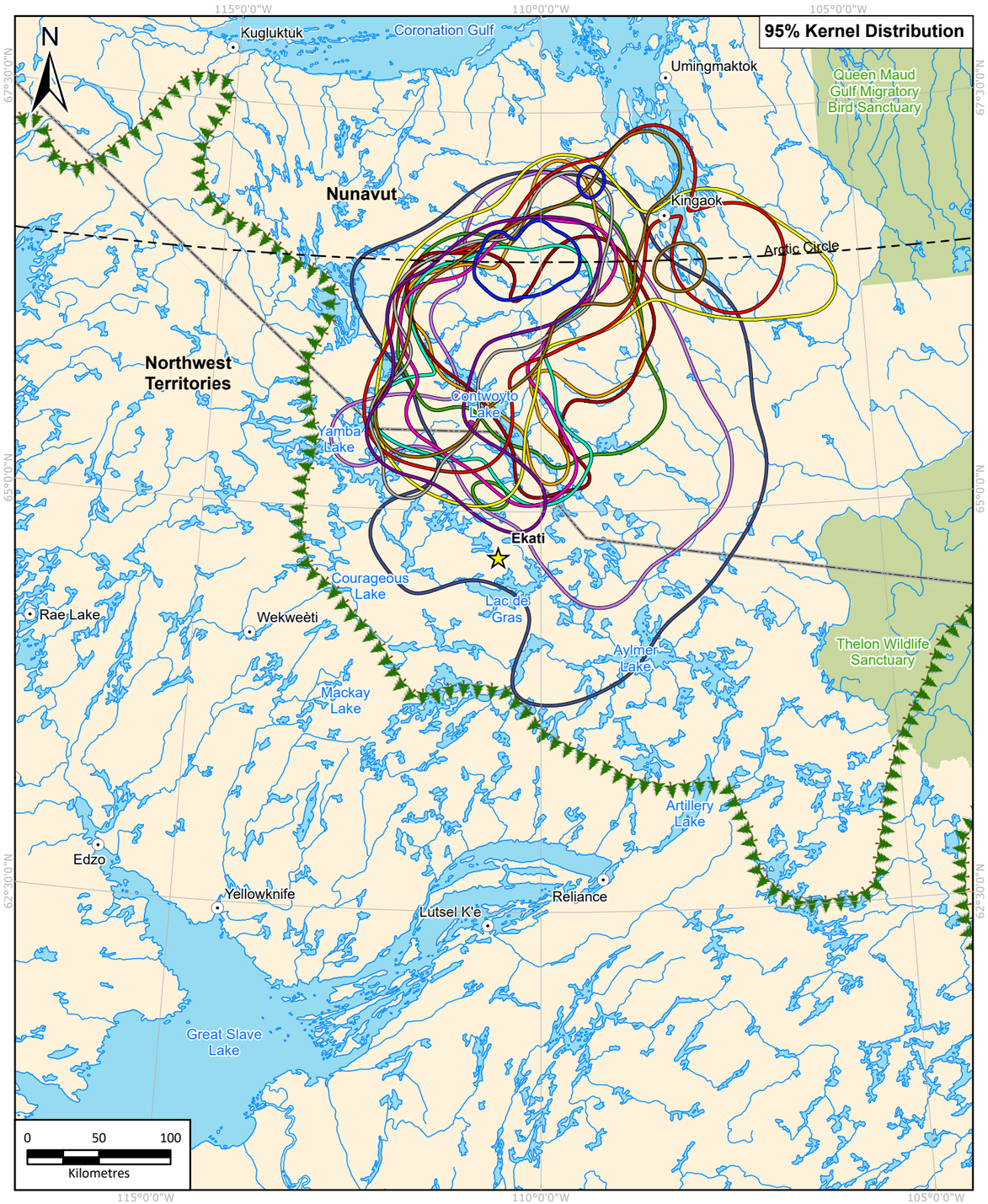
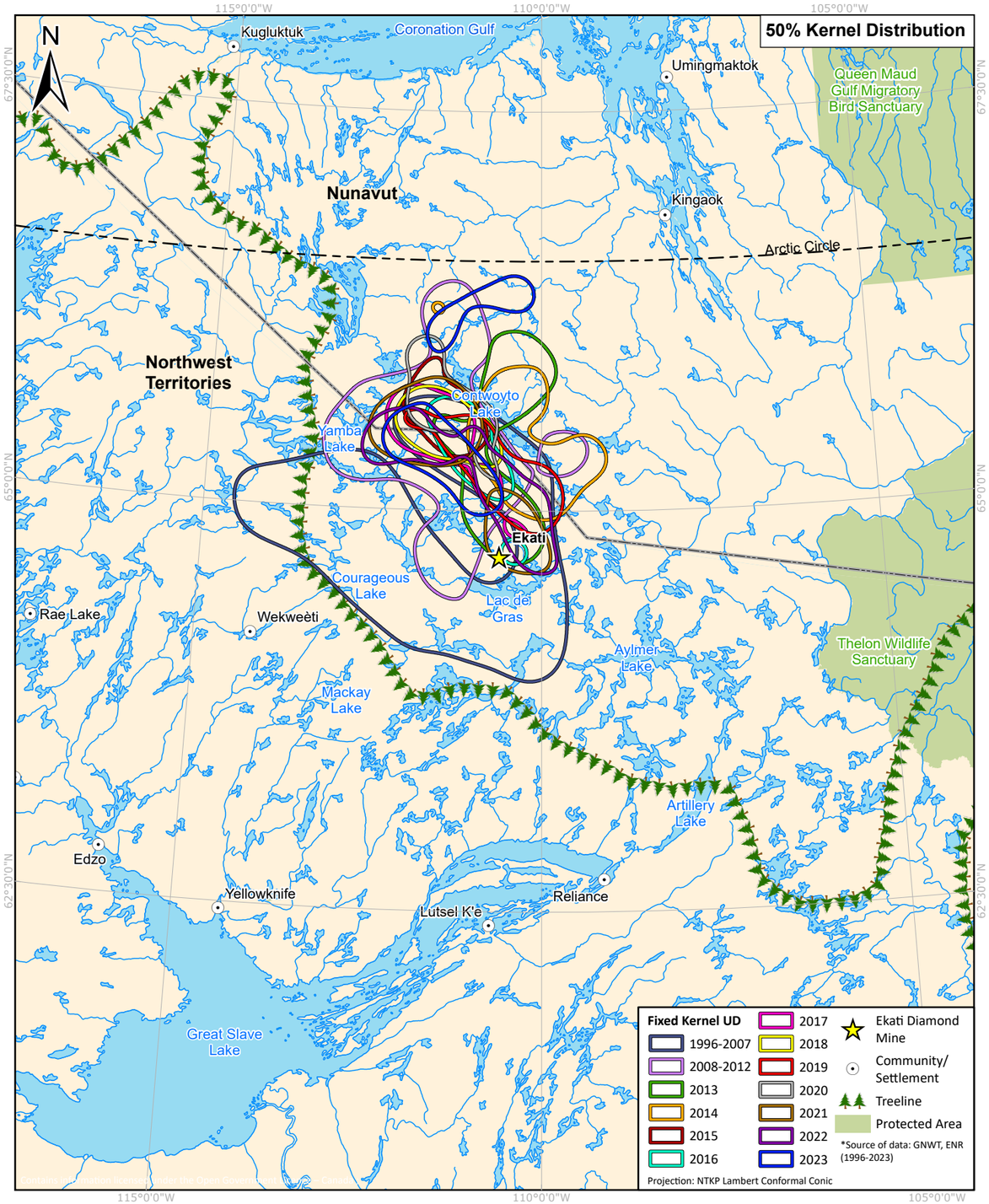


Figure 5.1-4 Distribution of Satellite-Collared Bathurst Caribou During Post-Calving, 1996 to 2023



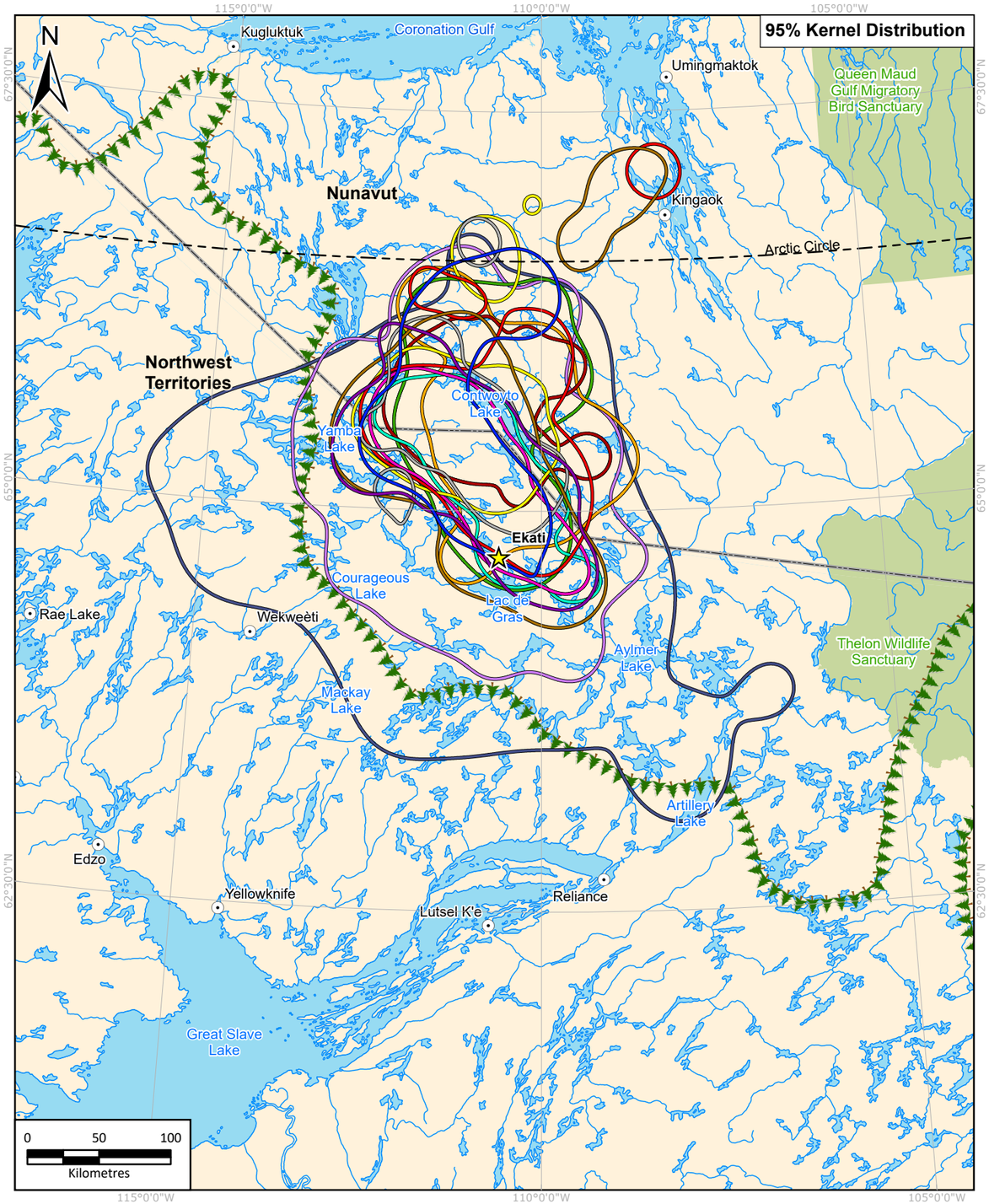
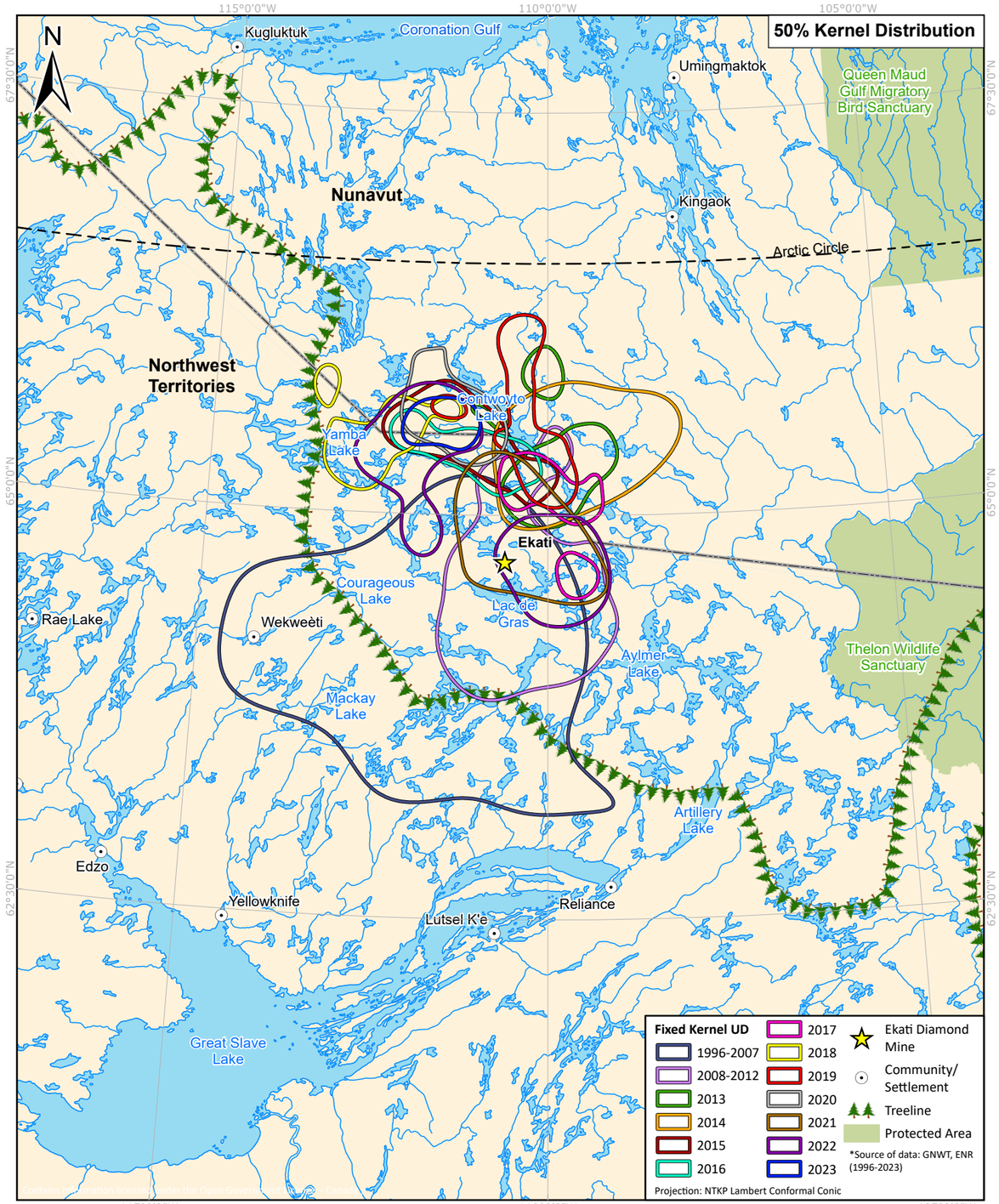


Figure 5.1-5 Distribution of Satellite-Collared Bathurst Caribou During Summer, 1996 to 2023



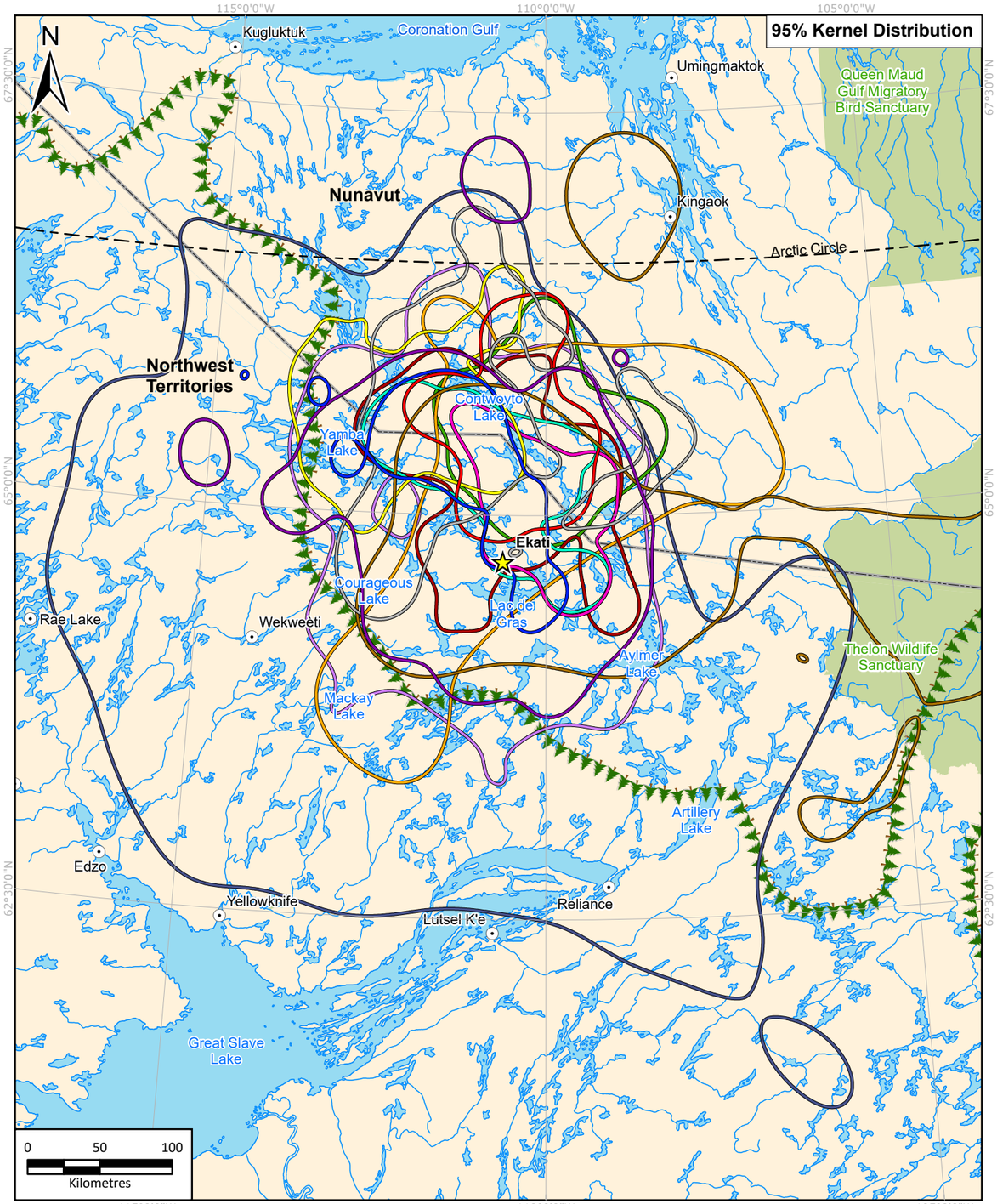


Figure 5.1-6 Distribution of Satellite-Collared Bathurst Caribou During Fall, 1996 to 2023

5.2 Collared Caribou Monitoring

Caribou herds exhibit periodic changes in migration routes and seasonal ranges (Gunn et al. 1997; Gunn et al. 2002; BCMPC 2004; Theoret et al. 2022). Seasonal ranges and core use areas can also vary from year to year within a large spatial extent, which can be illustrated by comparing historical collar data to more recent satellite data.

The locations of collared caribou were monitored to determine the proximity of caribou relative to the Ekati Mine. Weekly maps generated by the GNWT that show the location of satellite-collared individuals are used as tools to inform the required local monitoring and/or change in the mitigation levels defined by the CRMP (Table 4.1-3). Male caribou were not historically included in monitoring of the Bathurst herd, and as they use different ranges than females at some periods within the year, data from male caribou were not included in previous years (2015 to 2023) however were included in 2024 and will be included moving forward following the WMMP.

5.2.1 Objectives

The objectives for collared caribou monitoring are to:

- provide advanced detection of caribou approaching the study area;
- document the presence and annual timing of caribou movements relative to the Ekati Mine; and
- compare temporal trends and spatial variability in migration patterns relative to the Ekati Mine.

5.2.2 Methods

Seasonal movements of the Bathurst herd were tracked in 2024 using satellite collars on 37 female caribou and 9 males (GNWT ECC unpublished data; Table 5.2-1). In 2024, 3 of the 46 collared caribou in the Bathurst herd were also counted in the total amount for the Beverly/Ahiak herd due to overlapping ranges. Male caribou from the Bathurst herd were first collared in 2015 and added to the database to track movements of male caribou relative to females but were not included in previous annual WEMP reports (2015 to 2023). Male caribou were incorporated into this year's WEMP report to provide a separate analysis, including seasonal range overlaps.

Table 5.2-1 Maximum Number of Satellite-collared Bathurst Caribou and Number of Locational Data Points, 1996 to 2024

Year	Maximum Number of Collared Caribou	Total Number of Location Data Points
1996	10	577
1997	8	541
1998	22	516
1999	18	947
2000	14	778
2001	12	638

Year	Maximum Number of Collared Caribou	Total Number of Location Data Points
2002	15	837
2003	15	988
2004	17	642
2005	19	1,409
2006	18	1,566
2007	22	2,340
2008	25	2,101
2009	13	3,477
2010	16	3,439
2011	18	4,027
2012	22	3,948
2013	21	3,765
2014	20	4,767
2015[1]	32	8,388
2016[1]	25	7,277
2017[1]	33	7,194
2018[1]	30	6,260
2019[1]	31	8,010
2020[1]	54	13,094
2021[1]	40	12,166
2022[1]	49	13,153
2023[1]	38	8,738
2024 [2]	46	53,258

[1] Excludes data available for males from 2015 to 2023.

[2] Three individuals counted for Bathurst and Beverly/Ahiak herd

Throughout the year, satellite collars provide point location data on caribou at fixed time intervals. With these data, linear pathways between consecutive points were created to plot spring migration routes from winter ranges north to the calving grounds. The data were also used to identify movement corridors and river crossings.

For periods other than spring migration, satellite daily collar location data were used to calculate fixed kernel UD that represent levels of use by caribou. The core range is defined by the 50% kernel UD, an area with a 50% probability that an animal (or group of animals) will be found inside that area. The seasonal range extent is represented by the 95% kernel UD, an area with a 95% probability that an animal (or group of animals) will be

found inside that area. Data collected during the fall are sporadic and movements of caribou during this time are slow relative to spring migration; therefore, these data are presented as ranges rather than movement paths.

The fixed kernel UDs were analysed by season/life history stage, which are defined by movement rates in different seasons (Nagy 2011; Table 5.1-1). For this mapping exercise, the calculation of the winter distribution uses data is combined for December 2023 to January-April 2024.

Since the Beverly/Ahiak caribou also overlap the mine during some years, the fixed kernel 50% and 95% UDs were also calculated for winters for this herd.

5.2.3 Results

Seasonal ranges were calculated for the female Bathurst herd in six seasons: winter, spring migration, calving, post-calving, summer, and fall migration and in four seasons for males: winter, spring migration, summer, and fall migration. For the Beverly/Ahiak herd, the winter season range was calculated since this is currently the only season when this herd may interact with the site. The results of these analyses, the periods when caribou ranges overlap the mine and any shifts in distribution are discussed in the following sections.

5.2.3.1 Bathurst Winter

During the winter of 2024, collared Bathurst caribou occupied a range that was southwest of/and overlapped the Ekati Mine (Figure 5.2-1). The broad winter range (95% kernel UD) straddled the treeline northwest to southeast, and the smaller core use area (50% kernel UD) also straddled the treeline to the west and south, of the Ekati Mine (Figure 5.2-1). Male and female ranges were relatively similar with male caribou occupying a smaller more southern winter range (Figure 5.1-2). The caribou range in 2024 was larger and farther north compared to the winters of 2021/2022 and 2020/2021 (Figure 5.1-2). During the winters of 2016/2017, 2017/2018, and 2018/2019 the Bathurst winter range was on the tundra, considerably north of their typical seasonal range below the tree line. Since 2020, the winter range has moved back south to occur along the tree line.

There were 2,544 caribou counted or estimated from 32 incidental observations at the Ekati Mine during the 2024 winter period (February 2 to April 19, 2024, and December 1 to December 26, 2024); between the winter reported numbers from 2022/2024 (n = 1,598), 2021/2022 (n = 433) and 2020/2021 (n = 2,832). The incidental observations include repeated observations of the same animals on different occasions and the total number of unique individuals is unknown.

5.2.3.2 Bathurst Spring Migration

During the spring migration in 2024, Bathurst collared female caribou migrated from their winter range south of the Ekati Mine to the calving range in Nunavut (Figure 5.2-2). As with past years, travel was most common in a northeast direction with most collared animals passing to the northwest of the Ekati Mine into Nunavut (Figure 5.2-2). Male caribou in 2024 migrated closer along the tree line than female caribou. Similarly to the winter range, male caribou were further south compared to female caribou and did not cross into Nunavut (Figure 5.2-2).

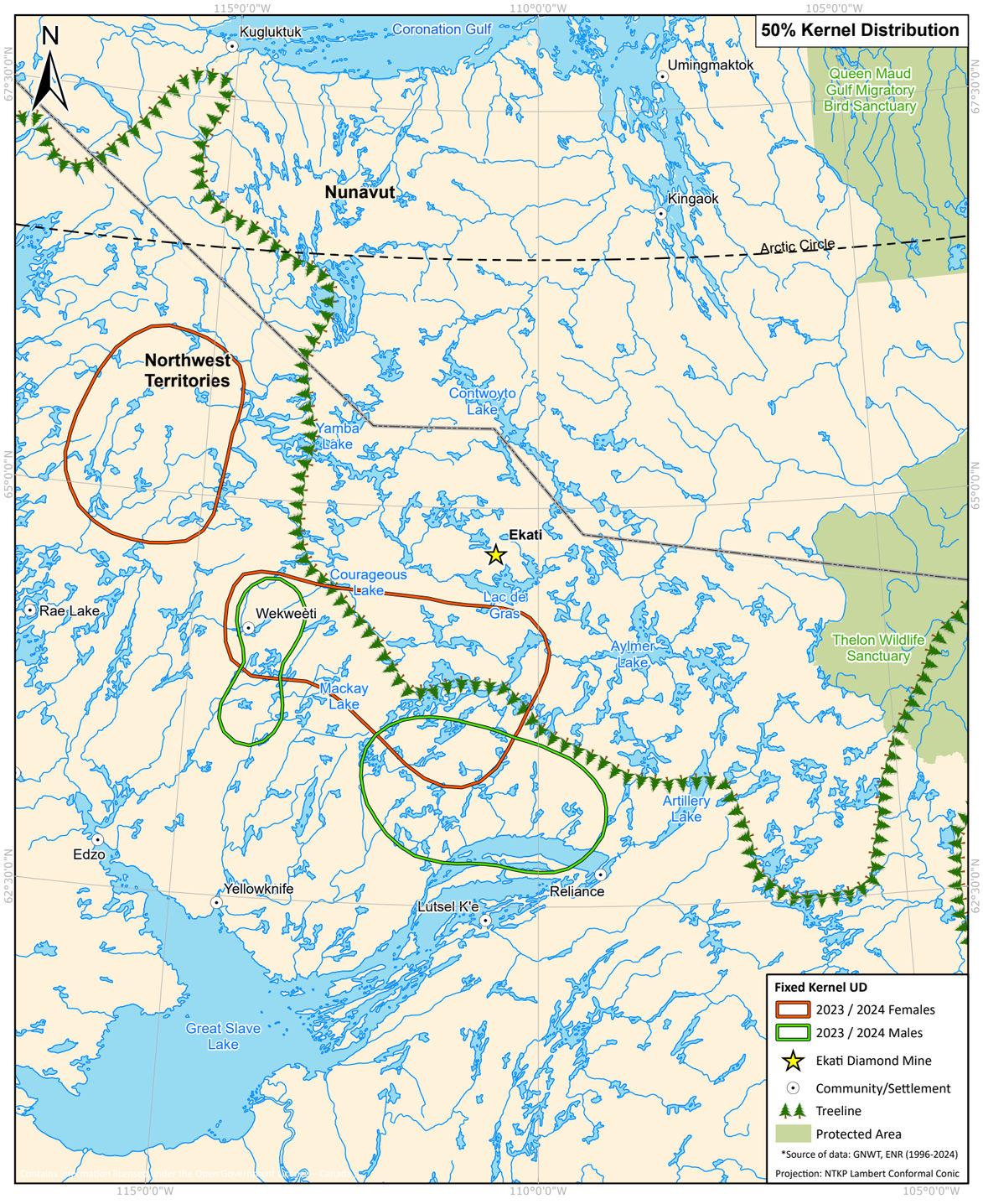
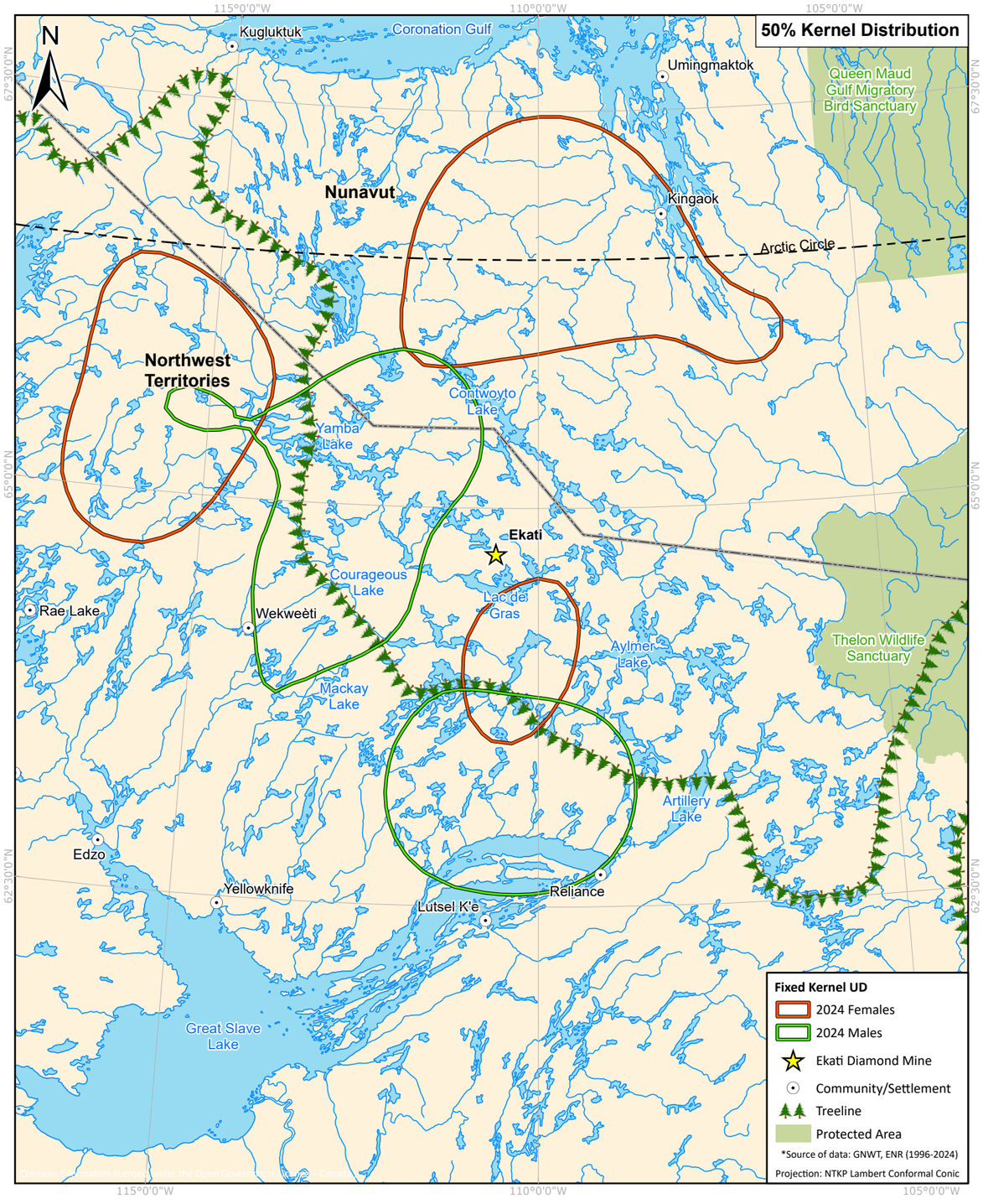


Figure 5.2-1 Distribution of Satellite-Collared Bathurst Caribou During Winter, 2023/2024



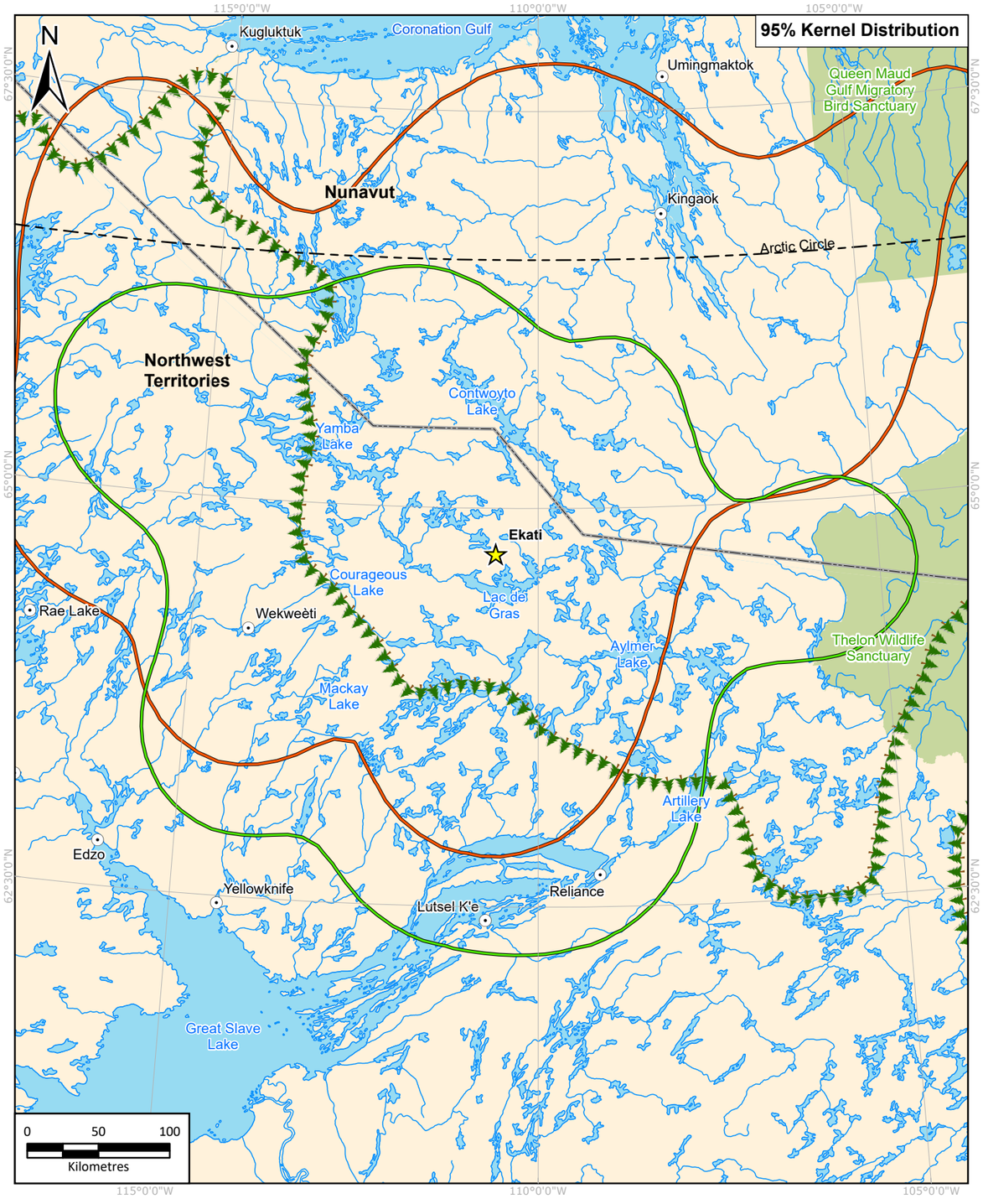


Figure 5.2-2 Distribution of Satellite-Collared Bathurst Caribou During Spring, 2024

5.2.3.3 Bathurst Calving

The calving range of Bathurst caribou in 2024 was located at the NWT and Nunavut border, approximately 300 km north of the Ekati Mine, with the core use area located just above the Arctic Circle (Figure 5.2-3). The location and size of the 2024 calving range (95% UD) is consistent with the historical calving range (Figure 5.1-3) 1996 to 2023, between Burnside River and James River (Figure 5.2-3 and Figure 5.1-3).

5.2.3.4 Bathurst Post-Calving

The post-calving range of Bathurst caribou in 2024 was located along the border of NWT and Nunavut, over 200 km north of, and not overlapping the Ekati Mine (Figure 5.2-4). This is consistent with the post-calving distribution since 2007 (Figure 5.2-4 and Figure 5.1-4). In 2018 and 2019 the post-calving range extended east beyond Bathurst Inlet matching the eastward extent of the 2018 and 2019 calving ranges (Figures 5.1-3 and 5.1-4), but in 2020 through 2022, the post-calving range was again restricted to the west side of Bathurst Inlet as in the period up until 2017 (Figure 5.1-4).

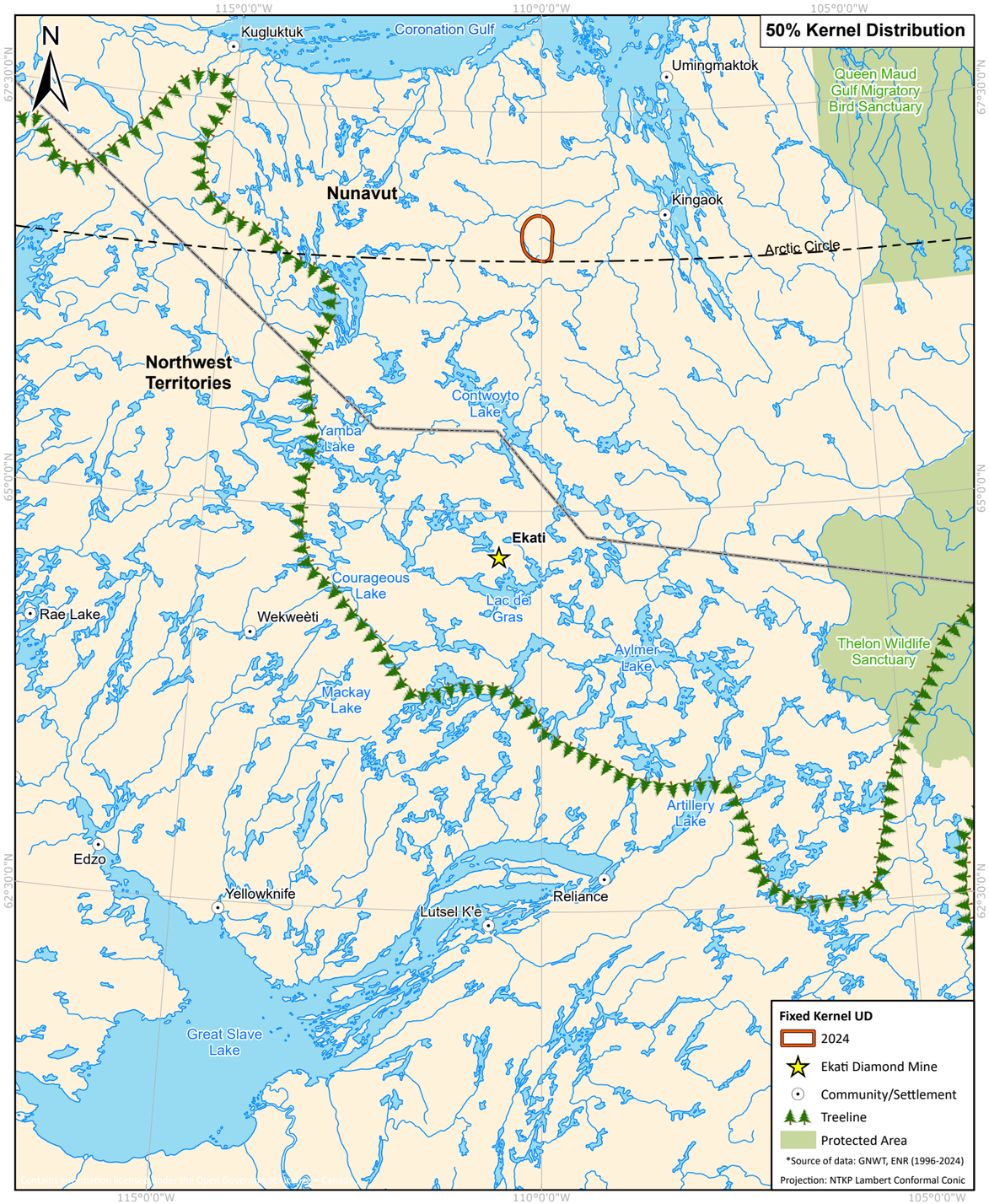
The 2024 post-calving range was similar to 2020 through 2023 where the range was mostly restricted to the area north of Contwoyto Lake. In 2024 the area identified in both the 50% and 95% UD is much more restricted in size compared to any of the previous years (Figures 5.1-3 and 5.1-4). Incidental observations of caribou in the post-calving season in 2024 were relatively low (n = 19; Section 5.3.3).

5.2.3.5 Bathurst Summer

The summer range of Bathurst collared male and female caribou in 2024 was centered around Contwoyto Lake (Figure 5.2-5). The core use area was on the southwestern edge of Contwoyto Lake, approximately 125 km north of the Ekati Mine (Figure 5.2-5). The female 95% distribution still expanded into Nunavut, close to the calving groups, while male caribou had remained further south. The male 95% distribution was approximately 150 km south of Ekati Diamond Mind along the tree line. In some years the summer core use area overlapped the mine, including the early years of the mine (1996 to 2007), as well as in 2013, 2016, 2021, 2022 and 2023 (Figure 5.1-5). The 95% UD summer range for females overlapped the mine site every year from 1996 to 2017 (Figure 5.1-5) except for 2015, 2018 and 2020. Prior to 2016, both the Bathurst summer range and core use area were larger in spatial extent (Figure 5.1-5).

5.2.3.6 Bathurst Fall Migration

Contwoyto Lake has been central to the fall migration range in all time periods (Figure 5.1-6). During the 2024 fall migration period, the core use area of male and female Bathurst caribou remained on the southwestern edge of Contwoyto Lake, north of the Ekati Mine (Figure 5.2-6). The female Bathurst caribou fall 95% UD range overlapped the mine except in 2018-2020. Similarly to other seasons, female caribou 95% UD range was more north than males. In the 95% UD range female caribou still extended into Nunavut, while the male 95% UD range was on the south of Aylmer Lake.



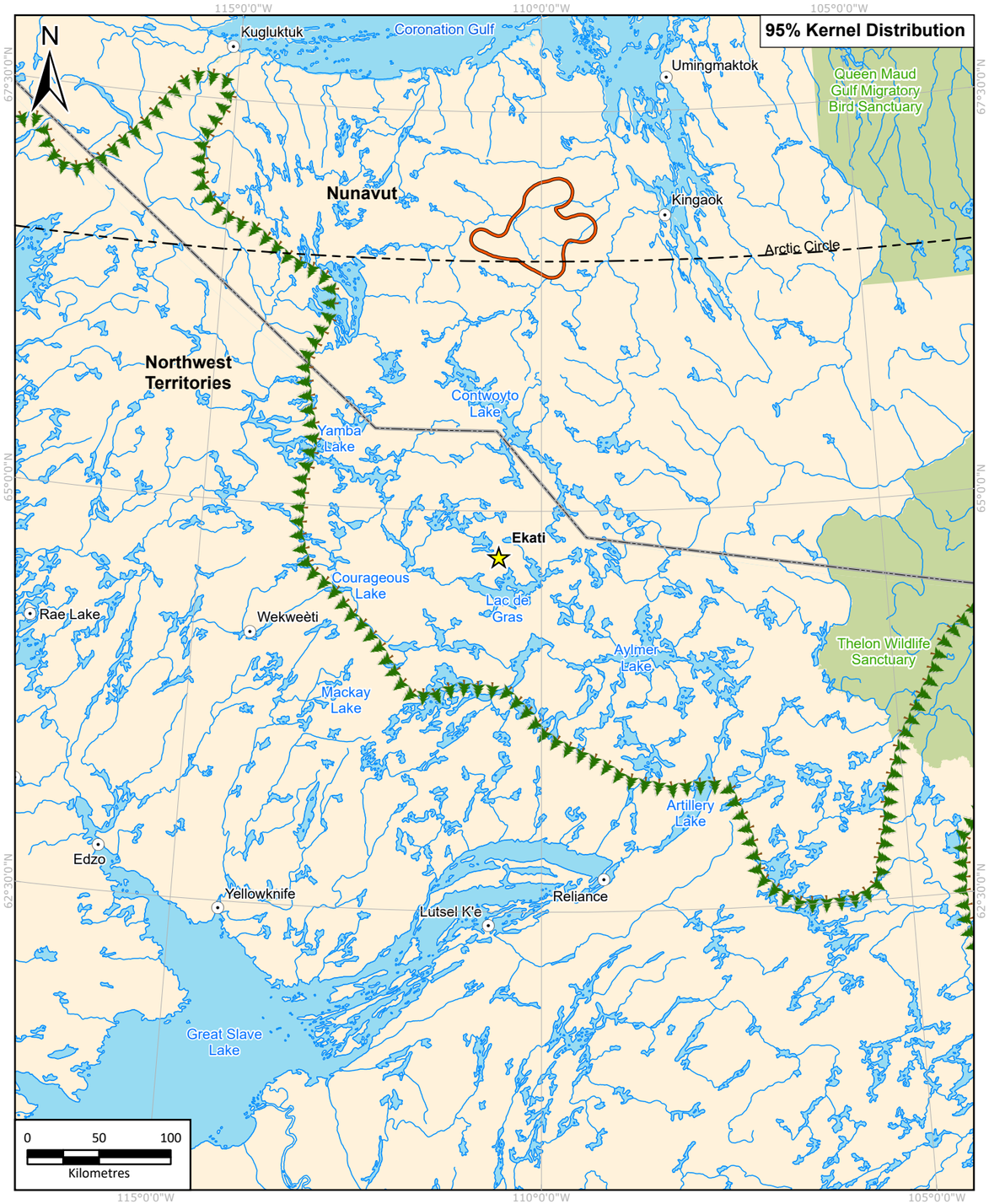
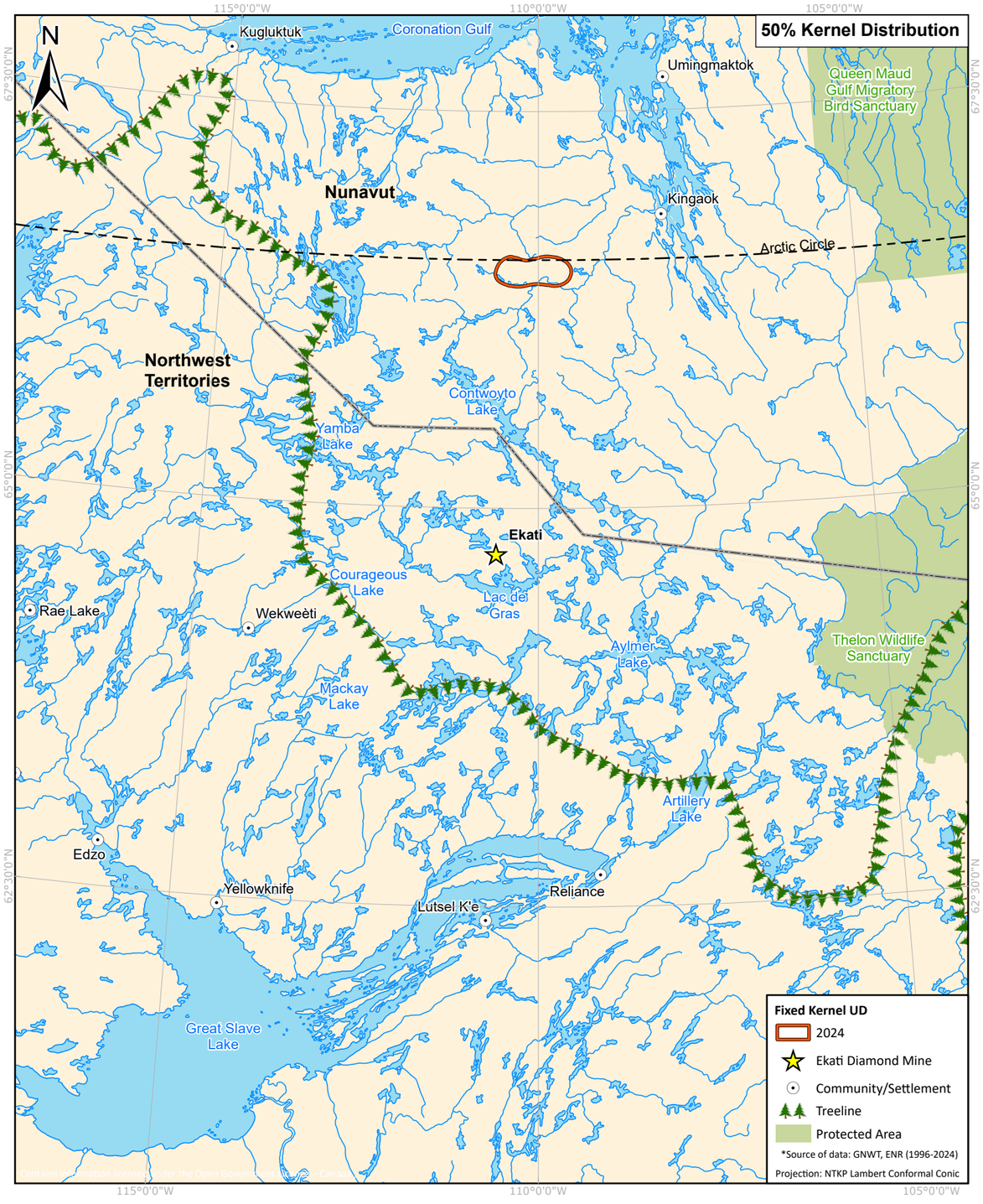


Figure 5.2-3 Distribution of Satellite-Collared Bathurst Caribou During Calving, 2024



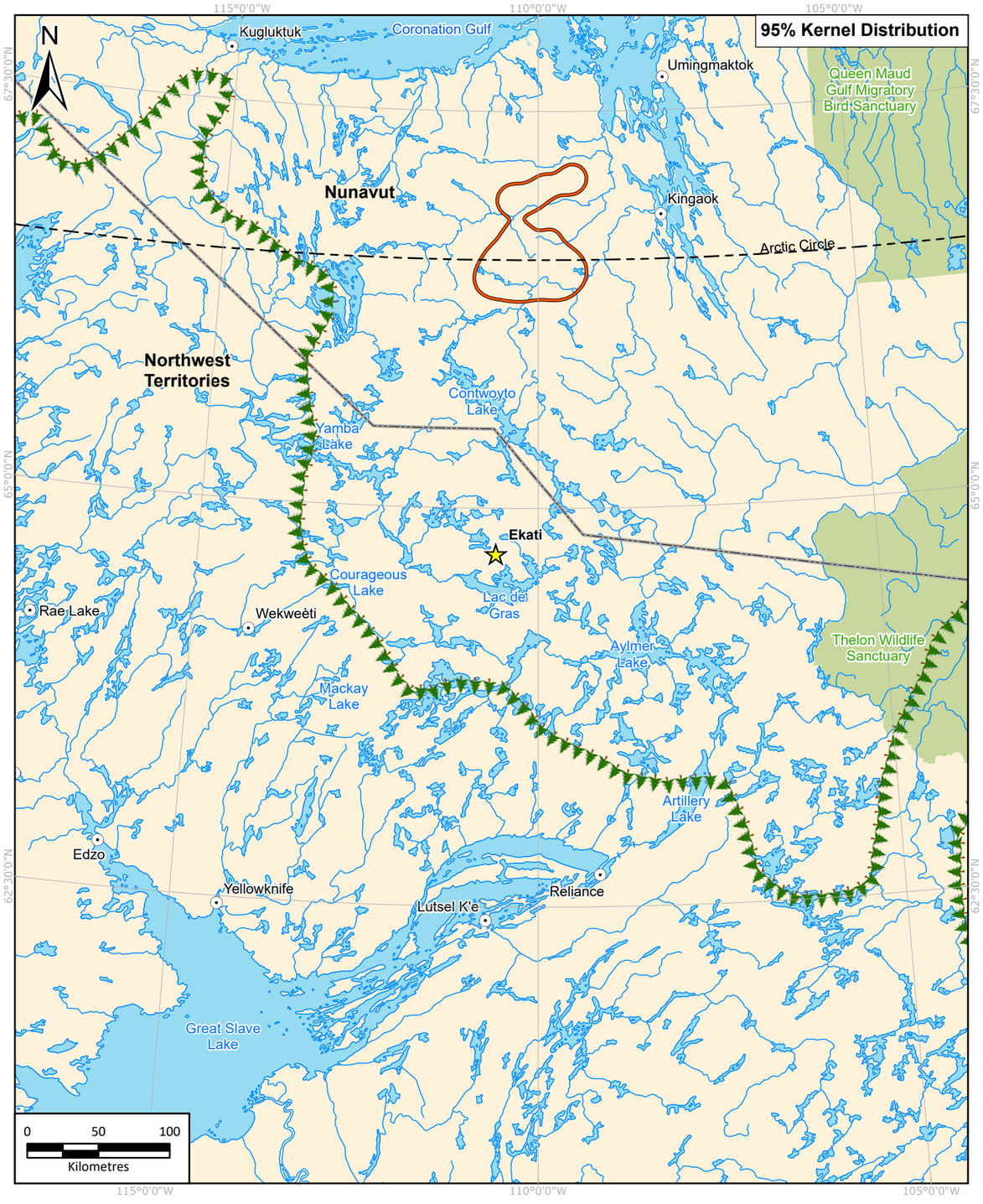
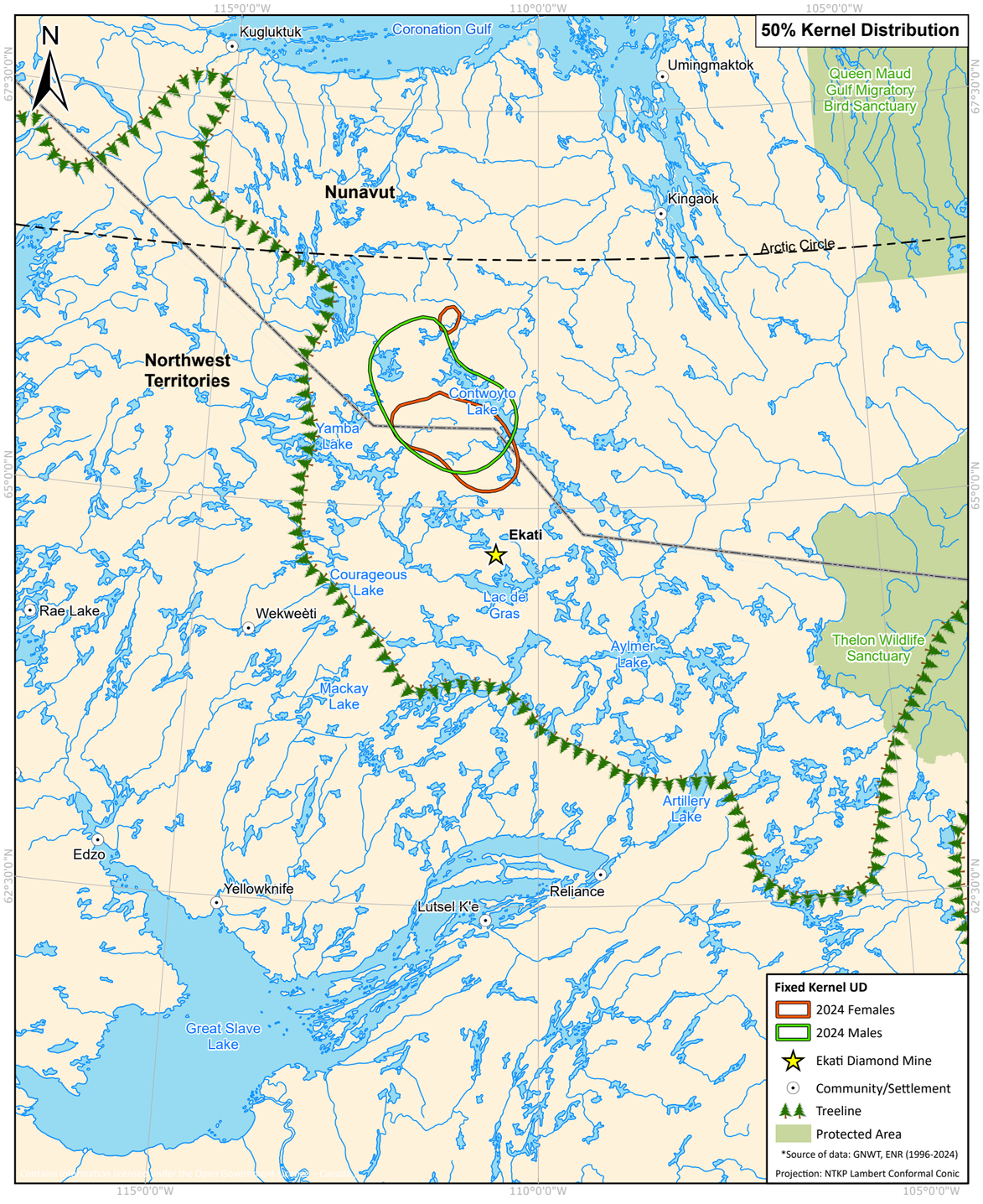


Figure 5.2-4 Distribution of Satellite-Collared Bathurst Caribou During Post-Calving, 2024



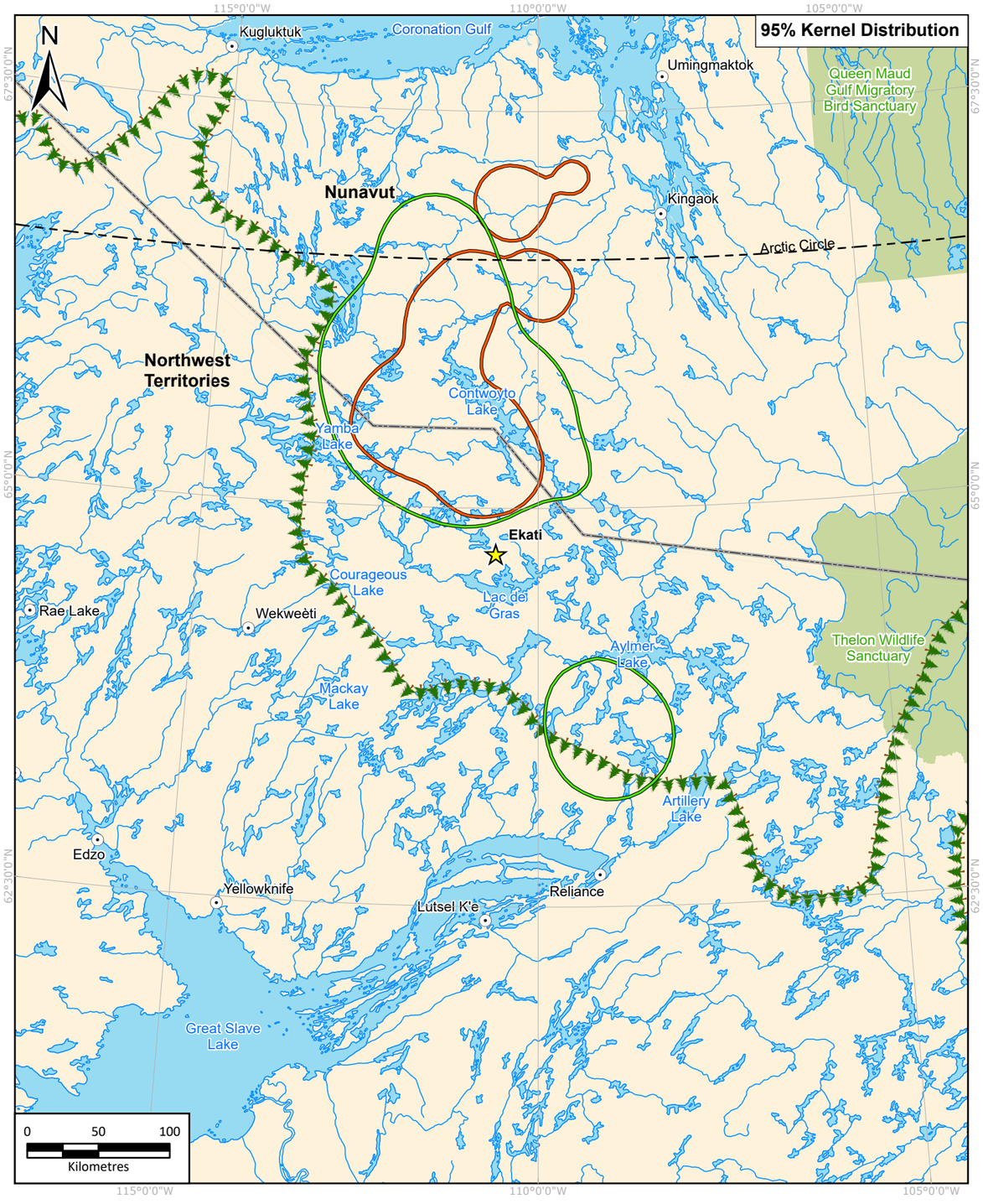
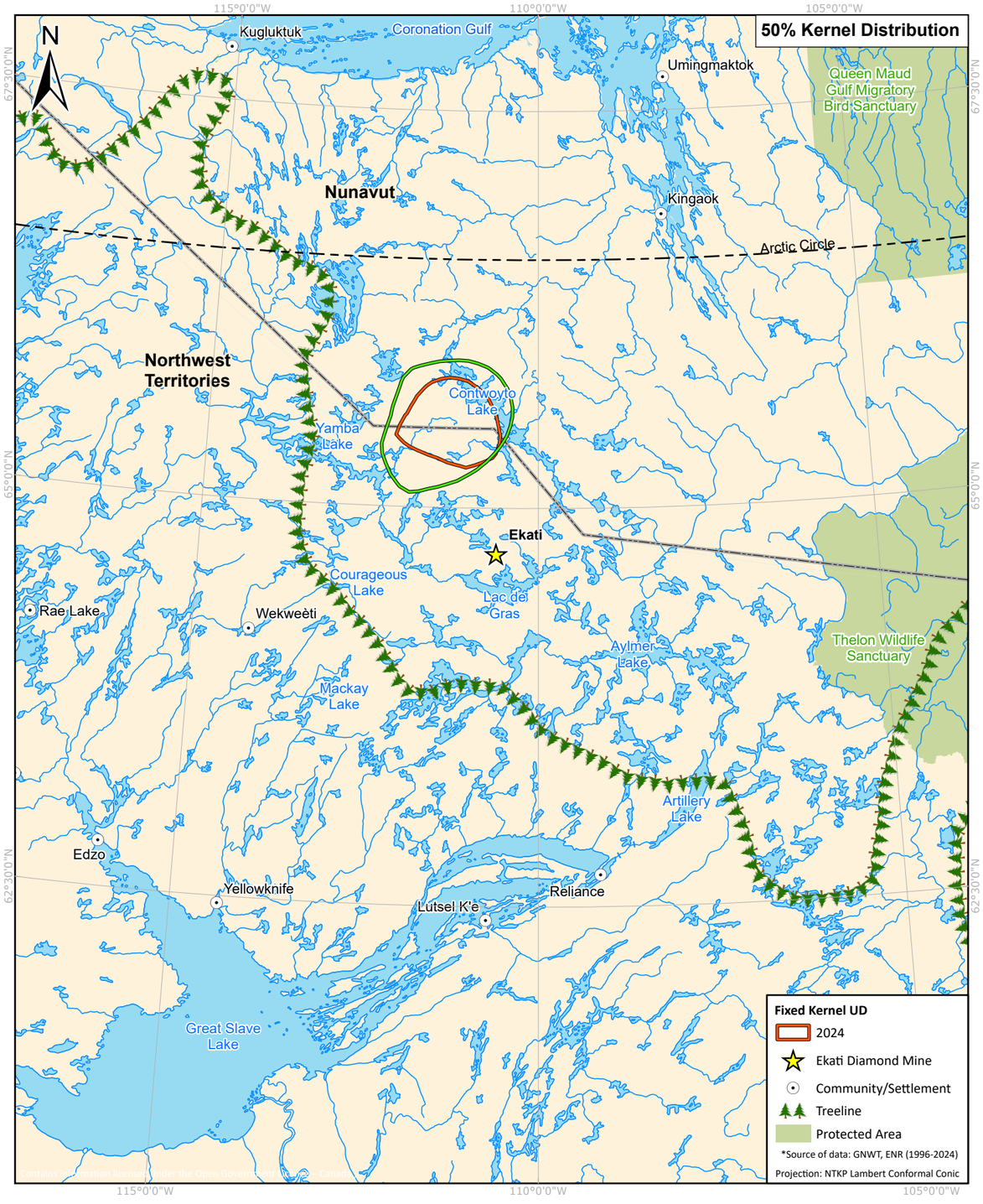


Figure 5.2-5 Distribution of Satellite-Collared Bathurst Caribou During Summer, 2024



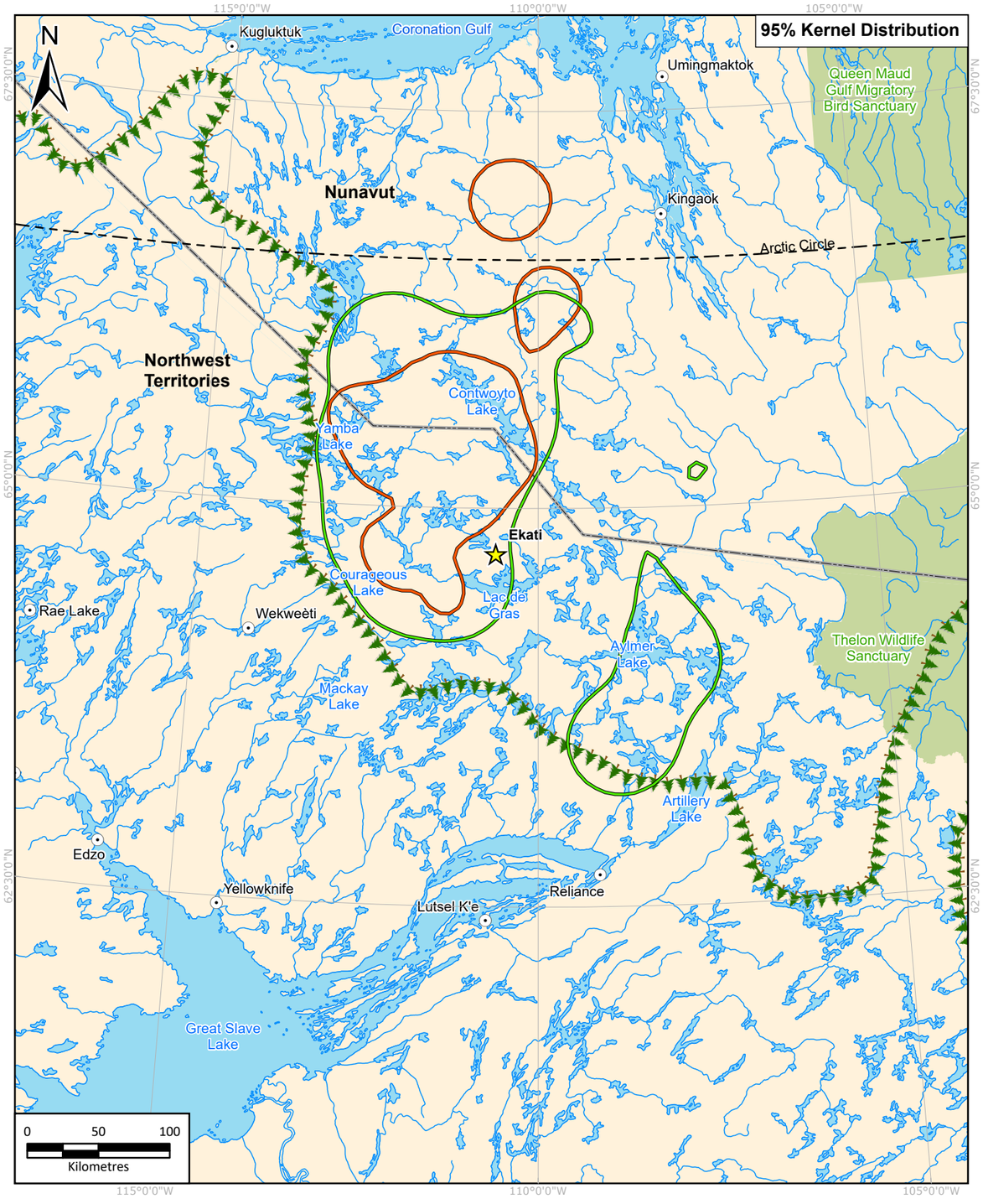


Figure 5.2-6 Distribution of Satellite-Collared Bathurst Caribou During Fall, 2024

The core use area (50% UD) for both male and female caribou, in 2024 was very similar to that of during the fall of 2023, (Figure 5.1-6; Figure 5.2-6). The fall range of collared Bathurst caribou has overlapped with the mine since 1996 except in 2013, 2018, 2019, and 2020; however, the core area (50% kernel UD) has not overlapped with the mine since 2012 (Figure 5.1-6).

5.2.3.7 Beverly/Ahiak Winter

Mapping of the Beverly/Ahiak herd during the winter of 2023/2024 indicated that the Ekati Mine was located in the northernmost area of the winter range (Figure 5.2-7). The core area (50% kernel UD) did not overlap with the mine, while the 95% kernel UD did overlap with the mine. Since 2018, and continued in 2024, the range continued to shift to the southwest of the mine (Figure 5.2-8).

The 2023/2024 winter ranges of the Bathurst herd (Figure 5.2-1) and the Beverly/Ahiak herd (Figure 5.2-7) had a high degree of overlap, with three collared caribou counted in the Beverly/Ahiak and Bathurst herds due to closeness in range. High degrees of overlap may explain the relatively large numbers of incidental observations of caribou during the winter of 2024 (2,544 caribou from 32 incidental observations).

5.2.4 Discussion

5.2.4.1 Bathurst

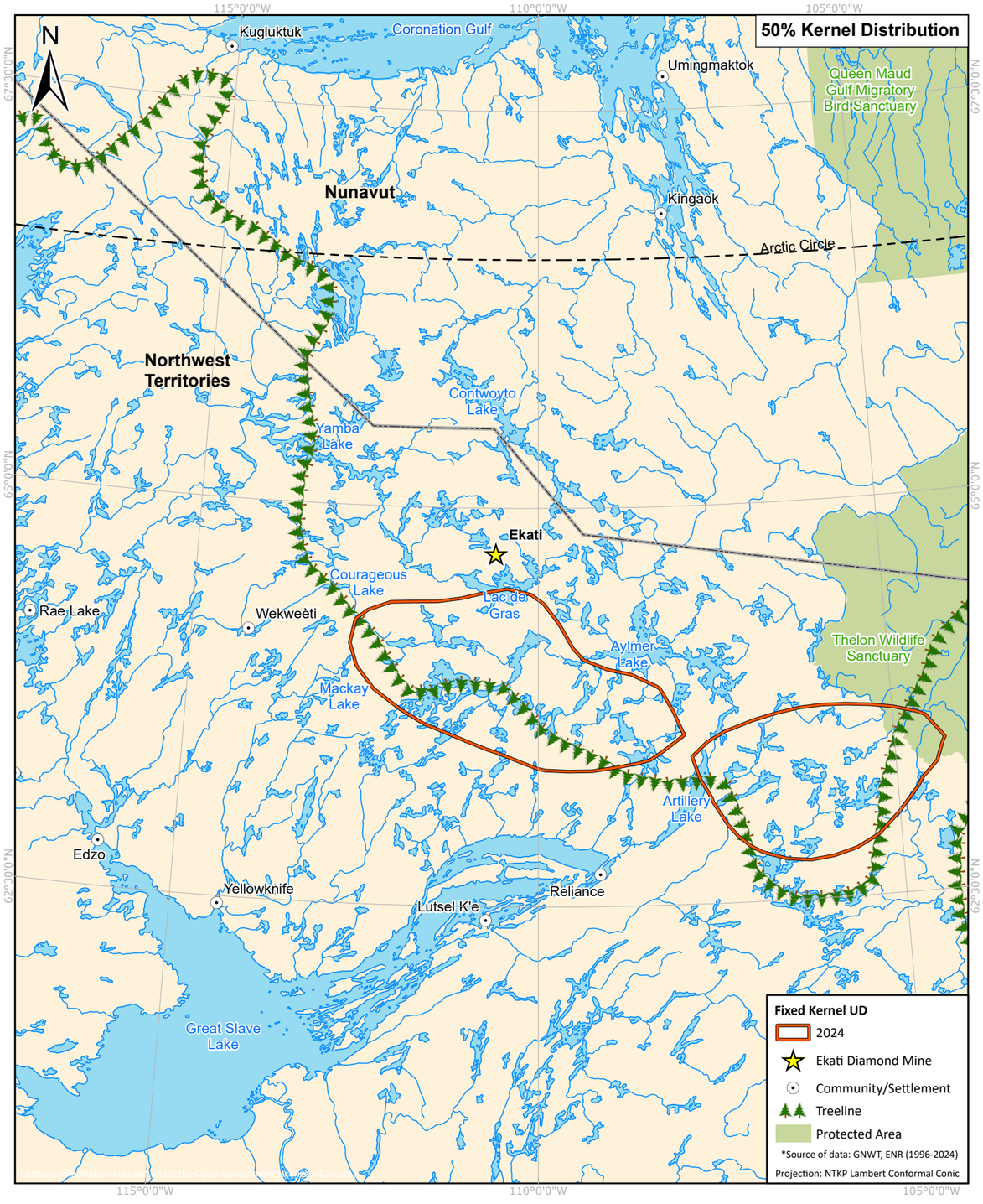
Analysis of collared female caribou indicates that the Bathurst herd has traditionally overlapped the mine in some seasons – particularly summer and fall. This pattern did not continue in 2024 with the core summer and fall areas shifting north of the mine. Analysis of male collared caribou resumed in 2024 after a gap since 2015. Additionally, their core summer and fall areas did not overlap with the mine. Male caribou ranges were generally more south than female caribou, except for winter. The northern ranges for female caribou are likely due to the northern calving grounds, with calving and post-calving ranges in northern NWT extending into Nunavut. During spring and fall, female caribou migrate towards these calving grounds, while males generally remained further south.

Some of the spring 2024 migration pathways for female and male caribou also intersected the Ekati Mine. Incidental caribou observations at the Ekati Mine in 2024 (Section 5.3) corroborate the kernel UD maps and spring migration pathways that indicate the majority of caribou were observed at the Ekati Mine during the spring and fall migration periods. There appears to be a reduction in the size of the fall migration area based on both the 50% and 95% kernel UDs.

Receiving radio-collared caribou locations in winter months assists the Environment Department in preparing for caribou arrival at the Ekati Mine and implementation of CRMP levels.

5.2.4.2 Beverly/Ahiak

The winter distribution of Beverly/Ahiak cows spans a large geographic area mostly to the east of the mine and overlaps the mine during winter. The overlap in rage with the mine is corroborated with incidental caribou observations that were recorded during the winter at the mine, although it can't be determined whether these were Bathurst or Beverly/Ahiak female caribou from ground observations.



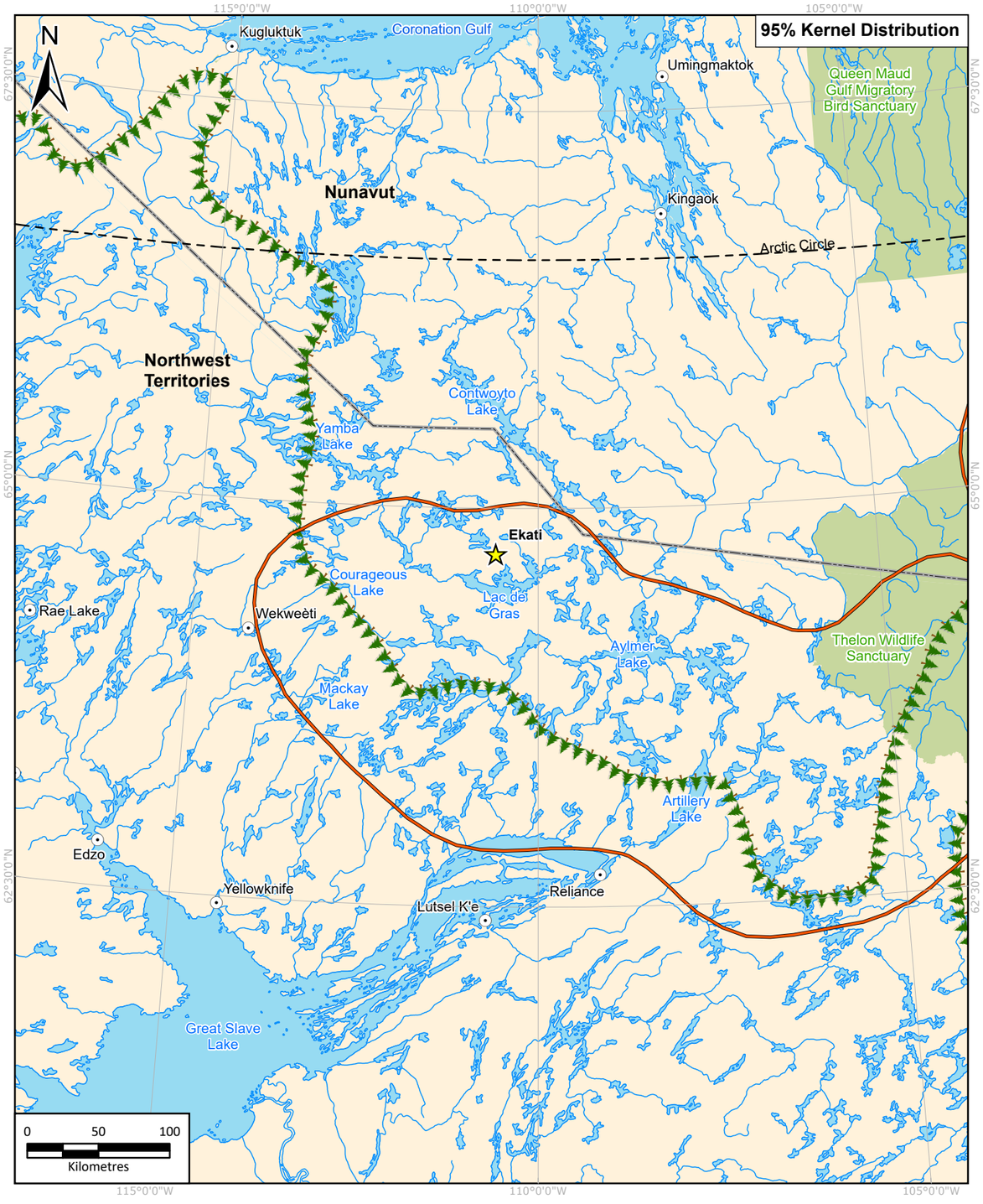
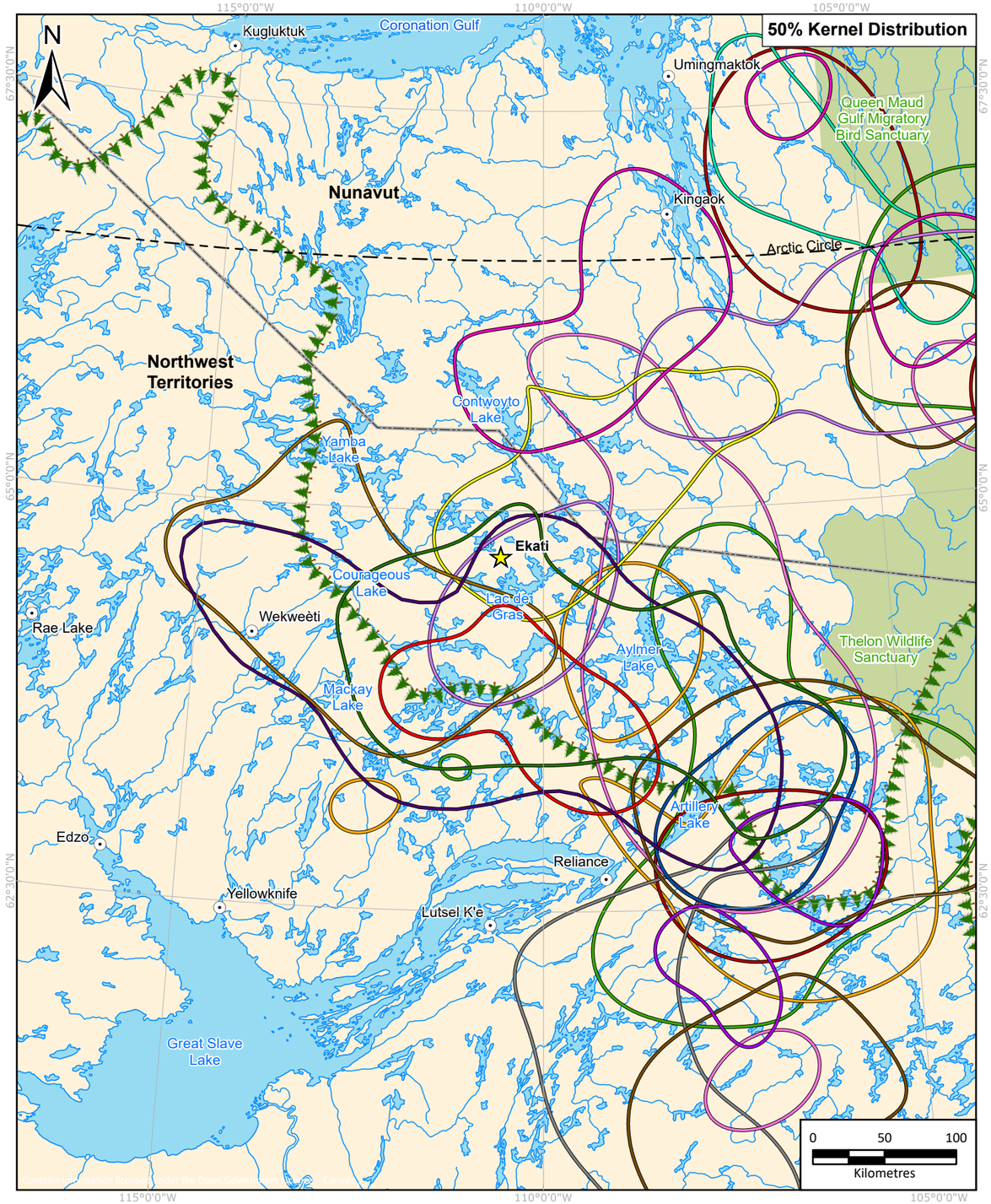


Figure 5.2-7 Distribution of Satellite-Collared Beverly/Ahiak Caribou During Winter, 2024



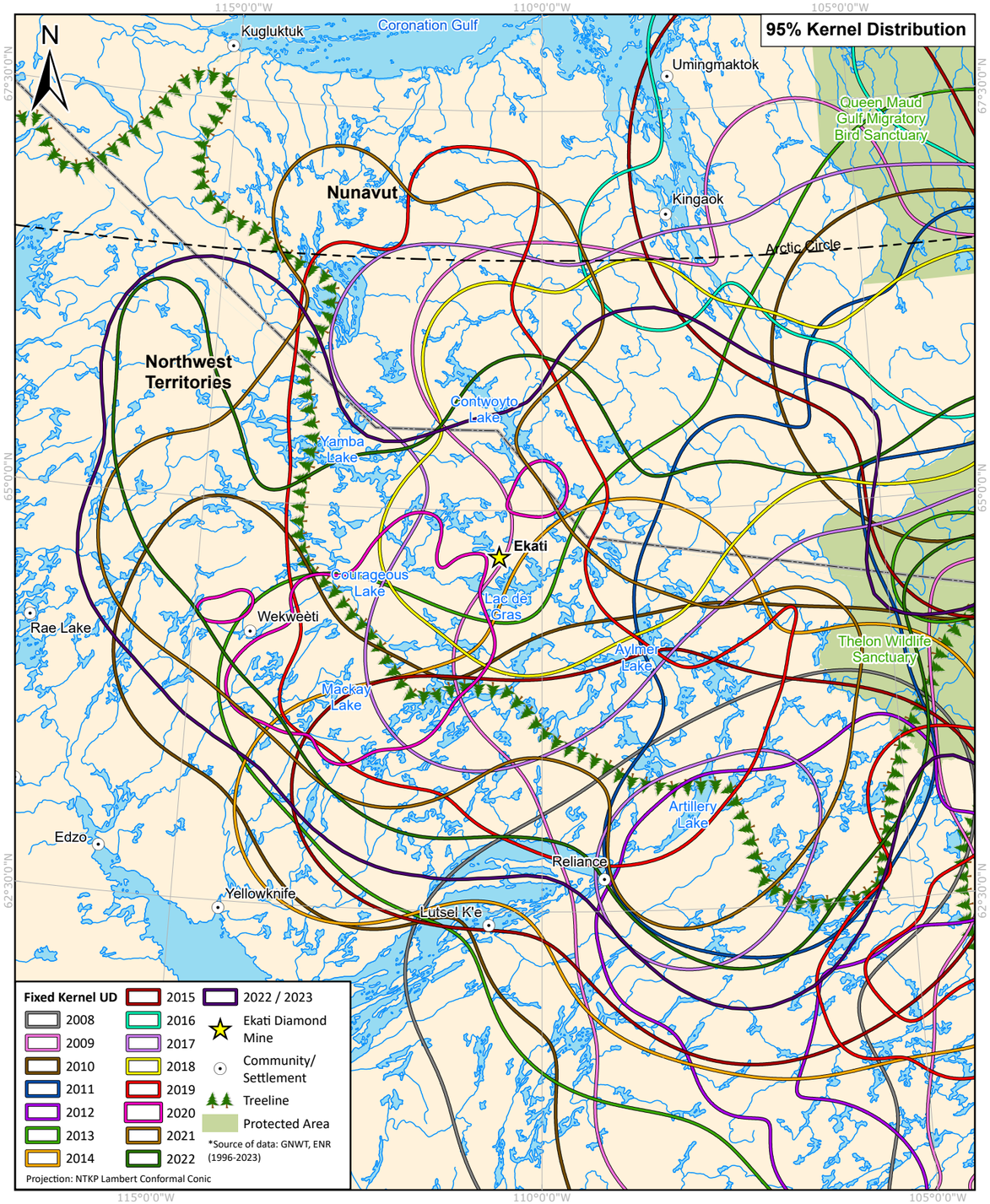


Figure 5.2-8 Distribution of Satellite-Collared Beverly/Ahiak Caribou During Winter, 2008 to 2023

5.3 Incidental Observations

5.3.1 Introduction

Incidental observations of caribou around the mine are recorded to evaluate and manage potential risks associated with human and wildlife interactions and to identify mine structures that might be acting as potential barriers to caribou movement. Incidental observations can also be used to supplement and support collar data to understand when caribou seasonal ranges overlap the mine.

5.3.2 Objectives

The objectives of incidental caribou observation monitoring of the WEMP are to:

- document the annual timing of caribou use of the Ekati Mine area to compare temporal trends in migration patterns;
- track any trends in the number of caribou moving through the Ekati Mine area over years; and
- identify the composition of caribou groups moving through the Ekati Mine area.

5.3.3 Methods

All mine staff are required to report any incidental observations of caribou to the Environment Department, with observations commonly coming from helicopter pilots, ground-based field workers, and other mine site staff. For each caribou observation, the date, number of individuals, and location (Universal Transverse Mercator [UTM] coordinates when possible) are recorded. Other information such as group composition, dominant behaviour, distance to mine infrastructure, and presence of a satellite-collared animal are recorded where possible.

Incidental observations of caribou are summarized by broad seasonal periods (discussed in Section 5.1 and outlined in Table 5.1-1), recognizing that these seasonal periods vary annually, particularly dates surrounding the calving and post-calving periods (Sutherland and Gunn 1996; Russell et al. 2002; Gunn et al. 2013).

In cases where the caribou group size was provided as an approximate number (e.g., greater than 70 individuals), group size was conservatively assumed to be the lower value (i.e., 70 individuals), whereas when group size was estimated as a range of values (e.g., 800 to 1,000 individuals), group size was assumed to be the average value (i.e., 900 individuals).

5.3.4 Results

There were 207 incidental observations of caribou reported on 84 separate days during the 2024 reporting period (Table 5.3-1). Visual observations of caribou with sufficient location information were plotted on a map of the study area (Figure 5.3-1).

Across all observations in 2024, 5,306 animals were counted; however, this count does not indicate that 5,306 different individuals were observed, many of these observations may have been the same caribou recorded on multiple occasions. Observations spanned from February 2 to December 26, 2024 (Table 5.3-1).

Table 5.3-1 Incidental Caribou Observations at Ekati Mine by Seasonal Period, 2024

Seasonal Period	Number of:			Total Caribou Observed		Number of:				
	Days in Seasonal Period [1]	Observations	Days with Observations	Number	Percent (%)	Bulls	Cows	Calves	Yearlings	Unknown
Spring migration	43	15	13	123	2.3	2	2	0	1	118
Calving	15	4	4	8	0	0	0	0	0	8
Post-calving	12	9	6	19	0	1	0	0	0	18
Summer	70	120	25	179	3.3	29	3	2	4	141
Fall migration	85	27	15	2,433	45.8	0	0	0	0	2,433
Winter	140	32	21	2,544	47.9	0	0	0	1	2,543
Annual Total	**365**	**207**	**84**	**5,306**	**100**	**32**	**5**	**2**	**6**	**5,261**

[1] Periods are as defined in Table 5.1-1.

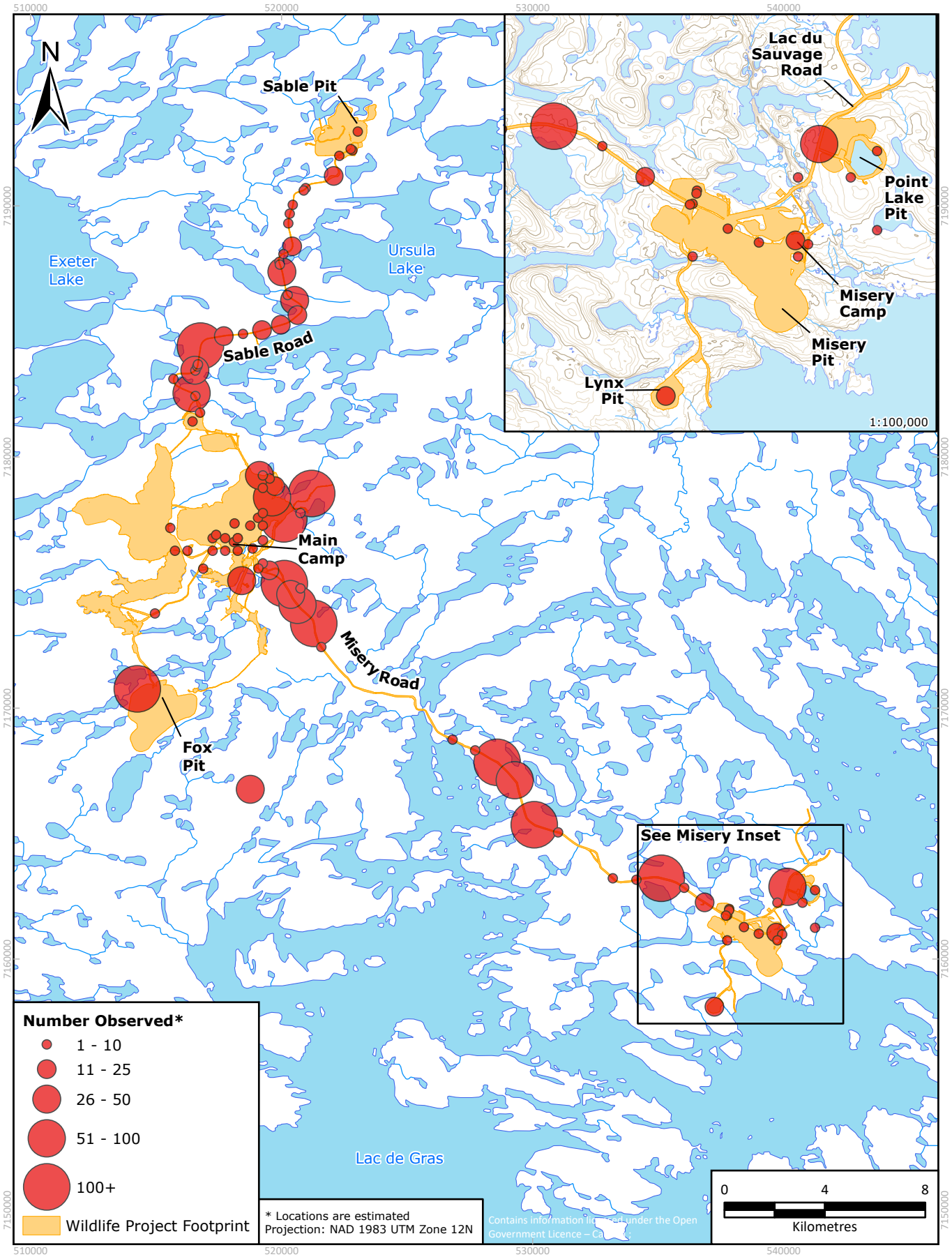


Figure 5.3-1 Incidental Caribou Observations at the Ekati Mine, 2024

In 2024, the highest number of individual caribou was observed in the winter and fall, with 48% of the total 5,306 caribou observed in the winter and 46% in the fall season (Table 5.3-1). In most years of monitoring, caribou have been observed during the winter, spring migration, and fall periods, consistent with the results in 2024 (Table 5.3-1). The highest number of incidental observations of caribou occurred during the summer period (n = 120; Table 5.3-1), however, they were mostly of smaller groups (1 to 7 individuals per observation). These observations accounted for only 3% of the total 5,306 caribou observed (Table 5.3-1). The seasons with the lowest recorded caribou observations were the spring migration (2%), calving and post-calving were both below 1%. Incident reports for caribou are included separately in Section 4.

5.3.4.1 Group Size

During spring migration (April 20 to June 1) all incidental observations of caribou were observed in groups of 50 or fewer. In the summer (June 29 to September 6), observations of caribou were observed in groups of five or less, with 71% (n = 85) of individual caribou. During fall migration caribou were primarily observed in groups of 10 or fewer, and eight observations recorded groups of 50 or more. Winter recorded the highest number of large caribou groups, with 12 observations of 40 to 1000 caribou. Groups of 100 or more caribou were observed from March 26 to April 13 2-24. Observations of larger groups in the winter coincided with the trigger of Alert Level 3 (Red) on February 29, 2024. Alert Level 3 was in effect until October 19, 2024.

In 2024, most observations included caribou in small groups of 10 or fewer animals, approximately 81% (168 of the total 207 observations; Table 5.3-2). An additional 9% of observations were of groups consisting of 11 to 50 caribou and 8% were of larger groups with more than 50 caribou. Groups greater than 100 caribou accounted for 3% of all observations and 66% of all individuals counted. The highest group number estimated at 1,500 caribou occurred on October 24, 2024.

Groups of more than 1,000 caribou were recorded commonly until 2011 and then intermittently in in 2016, 2017, 2019, 2020, and 2021 (Table 5.3-3). The largest group ever recorded incidentally was an estimated 7,000 caribou in a single group on July 25, 2007 (Table 5.3-3).

Table 5.3-2 Incidental Caribou Observations by Group Size, 2024

Group Size	Number of Observations
10 ≤ [1]	171
11–- 50	19
51–- 100	10
101–- 200	4
201–- 500	2
> 500 [2]	3

[1] ≤ denotes value is greater than or equal to 10.

[2] > denotes value is less than 500.

Table 5.3-3 Summary of Incidental Caribou Observations at the Ekati Mine, 2006 to 2024

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Number of caribou observed[1]	20,403	20,092	876	19,633	11,571	14,766	4,674	2,653	1,508	306
Number of observations[2]	57	193	66	106	87	191	199	136	53	74
Largest group size observed[3]	>5,000	~7,000	~300	~7,500	>3,000	>5,000	~400	~500	>200	30

	2016	2017	2018	2019	2020	2021	2022	2023	2024
Number of caribou observed[1]	25,225	52,583	3,347	9,507	5,604	5,203	1,362	11,555	5,306
Number of observations[2]	438	484	205	269	141	285	154	206	207
Largest group size observed[3]	2,000	2,500	300	>1,000	1,500	2,135	300	5,000	1,500

Notes:

[1] Numbers are approximate and likely include observations of the same animals recorded on multiple occasions.

[2] WEMP Reporting Periods from 2006 to 2010 were October to October. The reporting period for the 2011 WEMP included October 2010 to December 2011. Thereafter, WEMP reporting periods were January 1 to December 31.

[3] The exact count of individuals was not determined on a number of occasions through the years, and an approximate number or a range of individuals observed was provided. In the first case, the lower number was used as a conservative estimate of the numbers observed. When a range of numbers was given, the average number of caribou was used.

5.3.5 Discussion

In 2006, it was recognized that information regarding caribou presence and group size should be recorded on an ongoing basis at the Ekati Mine to better monitor caribou habitat use around the mine site. Incidental observations improve our understanding of caribou occurrence and numbers of individuals moving through the area.

In 2024, caribou observations were reported by Ekati Mine staff on 207 occasions at the mine. Caribou observations saw a slight increase from 206 observed in 2023 to 207 observed in 2024. However, the total number of recorded individuals declined from 11,555 in 2023 to 5,306 in 2024. Despite this decrease, the total number of individual caribou recorded remained higher than the 1362 individuals recorded in 2022. The observed decrease in caribou numbers from 2023 to 2024 may be due to smaller group sizes, with the largest group in 2024 being 1,500 individuals, compared to 5,000 in 2023 (Table 5.3-3).

Shifts in the Bathurst and Beverly/Ahiak winter ranges beginning in the winter of 2016 (Section 5.2) may help to explain the changes in observations during winter. The number of incidental observations were higher during 2016-2017 when the Bathurst herd wintered to the north of the tree line on the tundra and their winter range overlapped the mine. Since then, the Bathurst have wintered further south on the tree line and fewer incidental observations have been recorded in winter.

Recent (2016 to 2024) instruction to mine site staff has been to report sightings of caribou even if they suspect they were the same individuals, resulting in an increased number of incidental observations of caribou at the Ekati Mine from 2016 to 2024.

Calving is typically the period when the fewest caribou have been recorded incidentally at the Ekati Mine and there were four incidental observations of caribou during the calving season 2024. Peak calving is typically during early June, and for the Bathurst herd, occurs north of the Ekati Mine and west of Bathurst Inlet. It is most likely that the caribou reported during previous calving periods represent males, migrating north to their summer range which is consistent with the collared females (who are on the calving ground) and collared males (who are generally south, lagging behind the females).

In most reporting years, the migration periods have been when most animals are observed around the Ekati Mine. Caribou were recorded during the fall migrations in 2024 (a total of 46%), consistent with the collar data (Section 5.2.3).

5.4 Behavioural Surveys

5.4.1 Introduction

Caribou behaviour can be influenced by industrial development (Bradshaw et al. 1997). Adult female caribou with calves are more sensitive to disturbances than other caribou (Miller 2001). Roads and traffic may affect caribou behaviour, as roads can act as visual barriers or breaks in habitat. In response to traffic, caribou may run, move away, and/or increase vigilance behaviour (Wolfe et al. 2000). In some situations, mine infrastructure and mine-related activities can inhibit normal caribou behaviours (i.e., feeding and resting) (Nellemann and Cameron 1996). Caribou behavioural responses tend to increase in proportion to the sound intensity of overhead aircraft, and helicopters induce stronger responses than fixed wing aircraft (Larkin 1996).

To determine what potential mine effects are on caribou, behaviour surveys are conducted to evaluate their typical behavioural responses to stressors such as vehicle traffic, aircraft activity, the presence of mine staff, and blasting.

5.4.2 Objectives

The objective of caribou behavioural studies is to:

- determine if caribou behaviour changes with distance from the mines or in response to various potential stressors.

5.4.3 Methods

To record behaviours of caribou, two approaches, focal watches and scan surveys (Altmann 1974), were used in the wildlife study area. Focal observations of a single animal are ideal for obtaining information on activity budgets (i.e., the proportion of time an animal is engaged in different behaviours), the temporal sequence of behaviours relative to stressors or other stimuli, and the length of time it takes the animal to return to a non-stressed state following a stressor event (Martin and Bateson 1993). Scan samples of a group of animals are more useful for quantifying the frequencies of dominant behaviours in a group over time (Altmann 1974), which can be thought of as an activity budget at the group level.

In previous years, this program was completed in collaboration with Diavik Diamond Mines Inc. (Diavik). Survey of caribou adjacent to mine infrastructure is prioritized at the Ekati Mine, whereas surveys away from mine sites are prioritized at Diavik. No caribou behaviour monitoring data were received from Diavik in 2022, 2023, or 2024.

Behaviour surveys were conducted by Environment staff following an Ekati standard operating procedure. For both focal and scan sampling, when first arriving on site, the observers waited five minutes before commencing the surveys. During that time, distance from mine infrastructure, information on group location and insect harassment was recorded, and a composition count conducted. If caribou remained on site for sufficient periods of time, or additional staff were not available, priority was given to focal sampling over scan sampling.

For focal surveys, an individual caribou was randomly selected from a group, and in the case where focal observations were conducted on multiple individuals from a group, the sex of the individual selected for observation would alternate. The location of each group from which an individual was randomly sampled was recorded, and group composition was tallied (males, females, calves, yearlings, unknowns). There was no distinction made between nursery and non-nursery groups for analysis. Observations were conducted on either females with calves, lone females, males, or juveniles. An attempt was made to monitor the behaviour of individuals for a minimum of 20 minutes; however, survey length was reduced in cases where caribou moved out of the observer's sight line. Depending on the size of the group, observations on several individuals may occur, time permitting. Surveys were recorded as completed if the survey took place for the full 20 minutes or if it was under 20 minutes and stressors were recorded.

For scan surveys, a caribou group was selected for monitoring. For groups of 10 to 30 animals, all animals were included in the scan. For larger groups, a subsample of 20 to 30 animals was observed. Priority was placed on surveying nursery groups (groups with calves). The group composition (males, females, calves, yearlings, unknowns) and group size was recorded for the total group present, or the subsample group surveyed.

An attempt was made to monitor groups for a minimum of 32 minutes at 4-minute intervals; however, survey length was reduced in cases where caribou moved out of the observer's sight line, and the duration between surveys differed between surveyors. Surveys were recorded as completed if the survey took place for the full 32 minutes or if it was under this time and stressors were recorded. Incomplete focal and scan surveys were excluded in the analysis.

The following behaviours were recorded: bedding (e.g., sitting with all four legs tucked under body, lying down, sleeping on the ground), feeding (i.e., actively grazing, ruminating, chewing cud), standing, alert (e.g., quickly raising the head and orienting it toward a stimulus, pricking the ears and rotating them towards a stimulus, remaining motionless in an alarm posture), walking, trotting, running, and sparring.

In the event that a stressor occurred during a focal or scan observation, the observers recorded the immediate response in terms of a change in behaviour from one state to another. Estimated distance from the stressor was also recorded. Categories of potential stressors recorded during focal surveys included aircraft (e.g., helicopter and airplane), three categories of vehicles (light [e.g., pick-up truck], medium [e.g., water truck], and heavy truck [e.g., haul truck]), blasts from pits, and humans on foot. Observers would, where possible, watch the animal for at least 15 minutes following a stressor event to record the time it took to return to a non-alert behaviour.

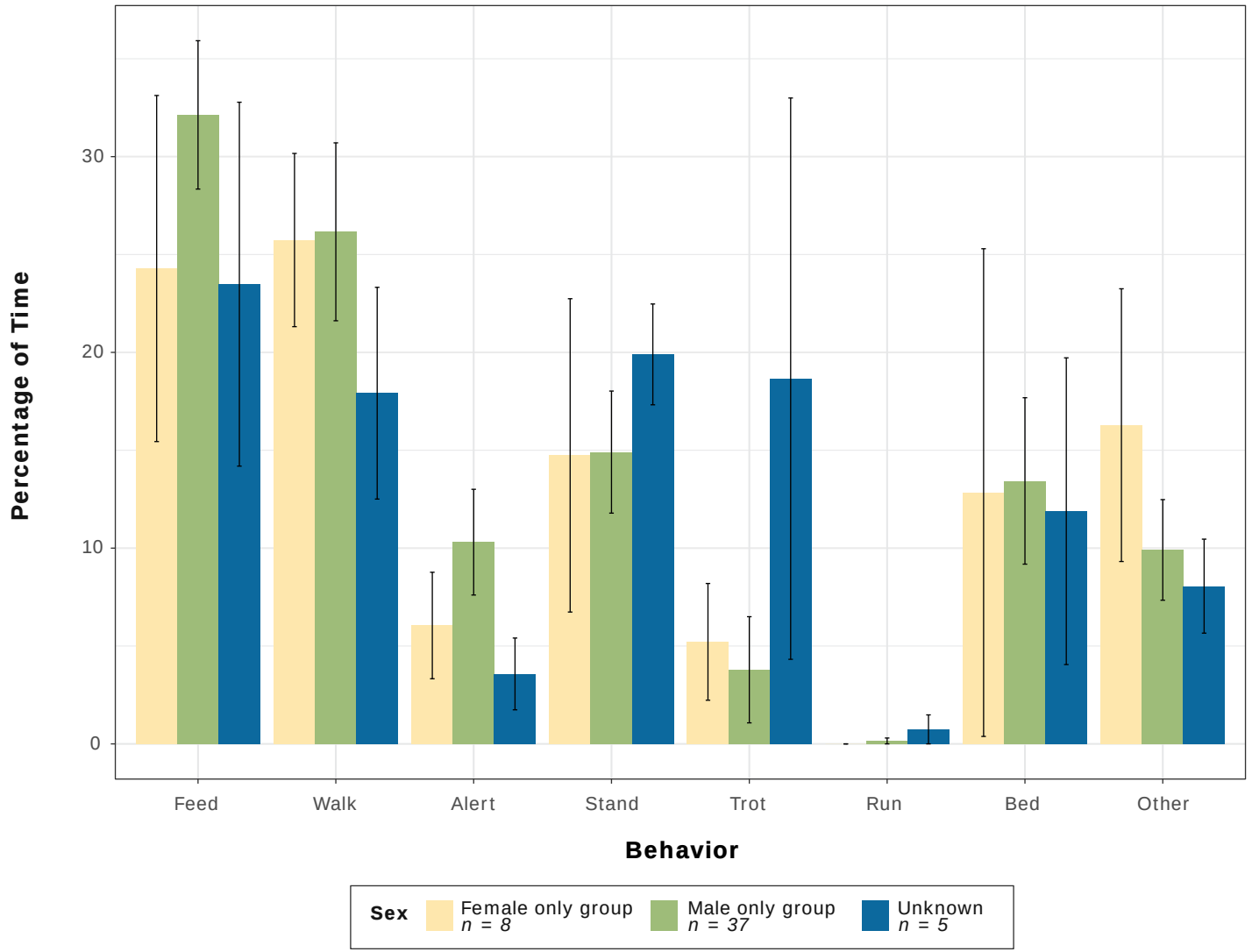
5.4.4 Results

5.4.4.1 Focal Surveys

In 2024, 53 focal surveys were completed over 26 days, between March 5 to December 11, 2024. Of the 53 surveys, separate focal surveys were completed at the Reclaim Yard, LDS Crusher, and Grizzly Road, one was completed at Misery haul road at 2 KM, and one was completed at Misery haul road at an unknown KM. The remaining 48 surveys were completed at Sable Haul Road (n = 25) and unspecified roads (n = 23). Survey location distance to the mine ranged from zero to 480 m from infrastructure.

Focal surveys in 2024, were completed on a total of 50 caribou: 37 male, eight female, and five of unknown sexes. Surveys were completed for a combined total of 20 hours and 32 minutes, with an average survey time of 24 minutes. Caribou surveyed were primarily observed in solitary groups, with one mixed group of 12, two pairs of males, two female-yearling pairs, and one male-yearling pair. On average male caribou spent most of their time feeding (35%) or walking (27%) and female caribou spent most time walking (26%), feedings (24%), or other (14%; Figure 5.4-1). Activity budgets included in the "other" category included scratching, shaking, and pawing.

Among the 53 focal surveys, there were 77 potential stressor events, with multiple stressors recorded during surveys (one to seven stressors per survey). Stressors included light vehicles (e.g., pick-up trucks) and heavy vehicles (e.g., haul trucks and water trucks). Stressor events occurred between zero and 300 m from caribou. Alert behaviour (head raising) occurred 18 times; however, only one stressor event was recorded, and the alert behaviour did not coincide with the stressor event. It was generally noted that caribou did not react to stressor events. There was one observation of juvenile caribou trotting in response to a stressor event of a passing water truck.



Note: Error bars represent standard error

Figure 5.4-1 Percentage of Time Spent by Caribou Engaged in Observed Behaviours during Focal Surveys at the Ekati Mine, 2024.

5.4.4.2 Scan Surveys

During 2024, eight scan surveys were completed over six days, between March 5 to November 14, 2024. The majority of scan surveys were conducted near mine infrastructure, including Misery Haul Road (n = 2), Sable Haul Road (n = 5) an unknown road (n = 1). Survey distances ranged from 0 to 180 m to mine infrastructure.

Scan surveys were summarized by group composition, including female/male mixed groups with young (n = 1), mixed groups with only adults (n = 2), male only (n = 1), and female only (n = 1). The remaining groups were of two groups of unknown ages and sexes. Survey time interval was 4 minutes; however, in some cases behaviours immediately after a stressor event were recorded prior to the 4-minute interval. On average, surveys were completed for a duration of 12 minutes, mixed groups with young were observed for a duration of 28 minutes, the female group with young for 32 minutes, and the male only groups for 10 minutes. The mixed female/male adult groups were observed for an average duration of 13 minutes.

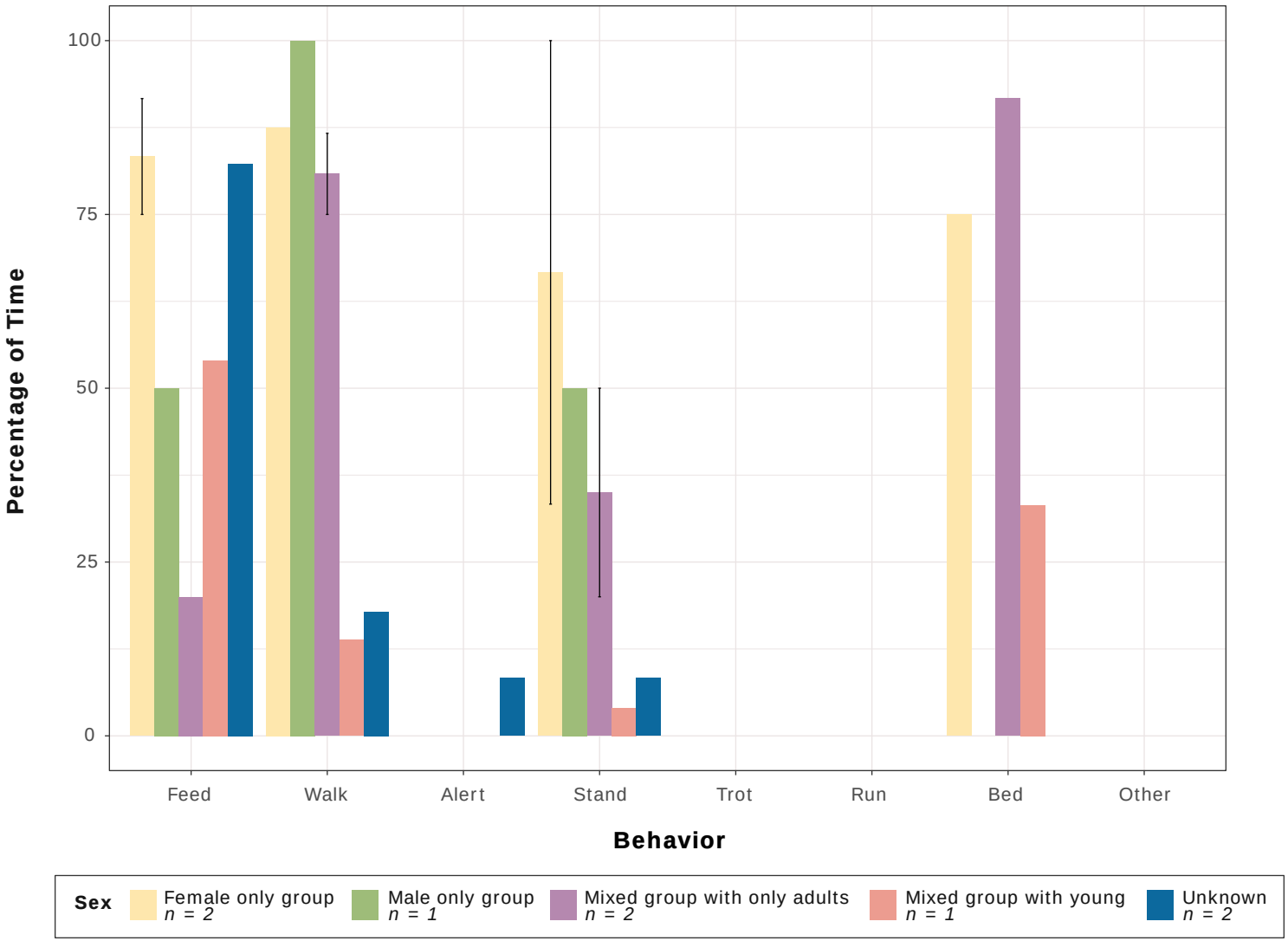
The most common behaviour was walking, with 17% of observed time for mixed adult groups with young, 80% for mixed groups with adults only, 100% for male only groups, and 88% for female only groups (Figure 5.4-2). Feeding was the second most common behaviour, with 54% of observed time spent for mixed adult groups with young, 20% for mixed groups with adults only, 50% for male only groups, and 75% for female only groups (Figure 5.4-2). Percentages of each behaviour often exceeded 100% due to overlapping behaviours being recorded during surveys. In 2024, no caribou were observed trotting, running, or other behaviours. Only “unknown” caribou groups spent a small percentage their time engaged in alert behaviour (8%; Figure 5.4-2).

Potential stressor events occurred on seven occasions, with multiple stressors recorded during one survey (one to three stressors per survey). Stressor distance from caribou ranged from 50 to 175 m and included one event with a light vehicle, and six events with heavy vehicles . Alert behaviour (head raising) coincided with stressor events in two of the seven cases, but it was generally noted that caribou did not react to stressor events.

5.4.5 Discussion

Focal surveys are appropriate for examining caribou behaviours in response to mine activity. Overall, in 2024, focal surveys that included 37 individual adult male caribou and eight female caribou, indicated that caribou spend much of their time; feeding (35% for male caribou and 24% for female caribou) and walking (27% for male caribou and 26% for female caribou). This suggests tolerance for areas close to the mine (<1 km from infrastructure).

This is similar to compiled results of focal surveys conducted in 2010 to 2013 at the Ekati Mine that demonstrated the majority of caribou activity budget was spent feeding (50% for males and 75% for females) and walking (100% for males and 88% for females). Caribou herds with young also exhibited the same activity budgets with predominant behaviours including feeding and walking (54% feeding and 17% of their time spent). Trotting and running behaviours were rarely observed during surveys. Similar to previous years, focal surveys conducted on adult males and females indicated that caribou spend the majority of their time either feeding or bedded.



Note: Error bars represent standard error

Figure 5.4-2 Percentage of Time Spent by Caribou Engaged in Observed Behaviours during Scan Surveys at the Ekati Mine, 2024.

Among the 53 focal surveys and the eight scan surveys, alert behaviour (head raising) coincided with stressor events in 19 of the total 84 stressor events recorded for both surveys. Stressor events during both surveys occurred at a range of distances from the caribou (between 0 m and 180 m).

This alert response to stressful stimuli has been predicted from other studies (Pruitt 1960; Horejsi 1981: Tyler 1991). An analysis of data collected at the mine indicated that female and male caribou remained in a stressed state for an average of 16 to 35 seconds following all stressor events, and the occurrence of stressors dropped to very low rates outside of a 2 km zone around mining infrastructure (ERM Rescan 2014).

The relatively short duration of stress responses in both focal and scan samples suggests that caribou are robust to low levels of disturbance at the mine and suggests that management measures in the CRMP to reduce disturbance by giving caribou the right-of-way are appropriate.

5.5 Long Lake Containment Facility (LLCF) Monitoring

5.5.1 Introduction

Wildlife use of the LLCF is monitored as part of the WEMP. The LLCF consists of five cells (A to E) with processed kimberlite currently stored in three of the cells. Cells A and C, receive fine processed kimberlite (sand sized and smaller, <5 mm) from the Process Plant as a slurry (i.e., suspended in water). The fine processed kimberlite settles out and dries, taking on the consistency of hard, fine sand. At Cell B, progressive reclamation and reclamation research is in progress with plantings of grasses along the western edge of the Cell conducted in 2014 and continued re-vegetation work from 2015 to 2021 (Arctic Canadian 2021c). Cells D and E remain open water and there are no plans to deposit processed kimberlite into these two cells.

WEMP Report reviewers requested that monitoring be conducted to determine whether caribou are ingesting processed kimberlite and if there is a potential for injury or entrapment in the LLCF. An important consideration is that the processed kimberlite at the Ekati Mine does not contain the same metals, nor does it require processing with chemicals typical of gold and other metal mines. Environmental studies have shown that the processed kimberlite is salty and may attract wildlife but the risk to caribou from ingesting processed kimberlite is very low (BHP Billiton 2005; Rescan 2006).

5.5.2 Objectives

The objectives of the LLCF monitoring are to:

- determine if any caribou injuries can be attributed to the LLCF;
- determine the frequency that caribou use the LLCF; and
- determine the group size, group composition, and dominant group behaviours of caribou observed within the LLCF.

5.5.3 Methods

The surveys involved a visual scan of the LLCF to observe and record caribou presence. Surveys of the LLCF were conducted via vehicle along the Long Lake Road and dykes to monitor all LLCF cells (A, B, C, D, and E; Figure 5.5-1). Cells A, B, and C were the primary focus and surveyed on a weekly schedule during most months. Weekly surveys of Cells D and E were conducted during the open water season. Incidental sightings of caribou in the LLCF outside of the formal survey are reported to the Environment Department and recorded as incidental observations (Section 5.3).

When caribou were observed during surveys, the group size, composition, dominant behaviour, and signs of caribou stress were recorded. Though caribou may exhibit a wide variety of behaviours, for the purposes of the LLCF surveys, behaviour data were grouped into four categories: bedding (included bedded alert), feeding, standing (included standing alert), and travel (included walking, trotting, and running). Observations of wildlife and wildlife signs within the LLCF were also recorded during each survey, particularly the presence, abundance, and nesting activity of waterfowl.

5.5.4 Results

5.5.4.1 Caribou Observations at the LLCF

In 2024 the LLCF was surveyed on 83 occasions between January 2 and December 30, 2024. Over 13 days, 13 caribou observations were made, totaling 1,041 individuals. Caribou observations occurred between April 10 and November 6, 2024. Observations of caribou in 2024 were recorded at four cell locations, Cell B (three observations), Cell C (one observation), Cell D (five observations), and Cell E (four observations). Evidence of caribou was also recorded on two occasions in 2024, with one sign of tracks recorded on April 16, 2024, and caribou antlers recorded on July 3, 2024.

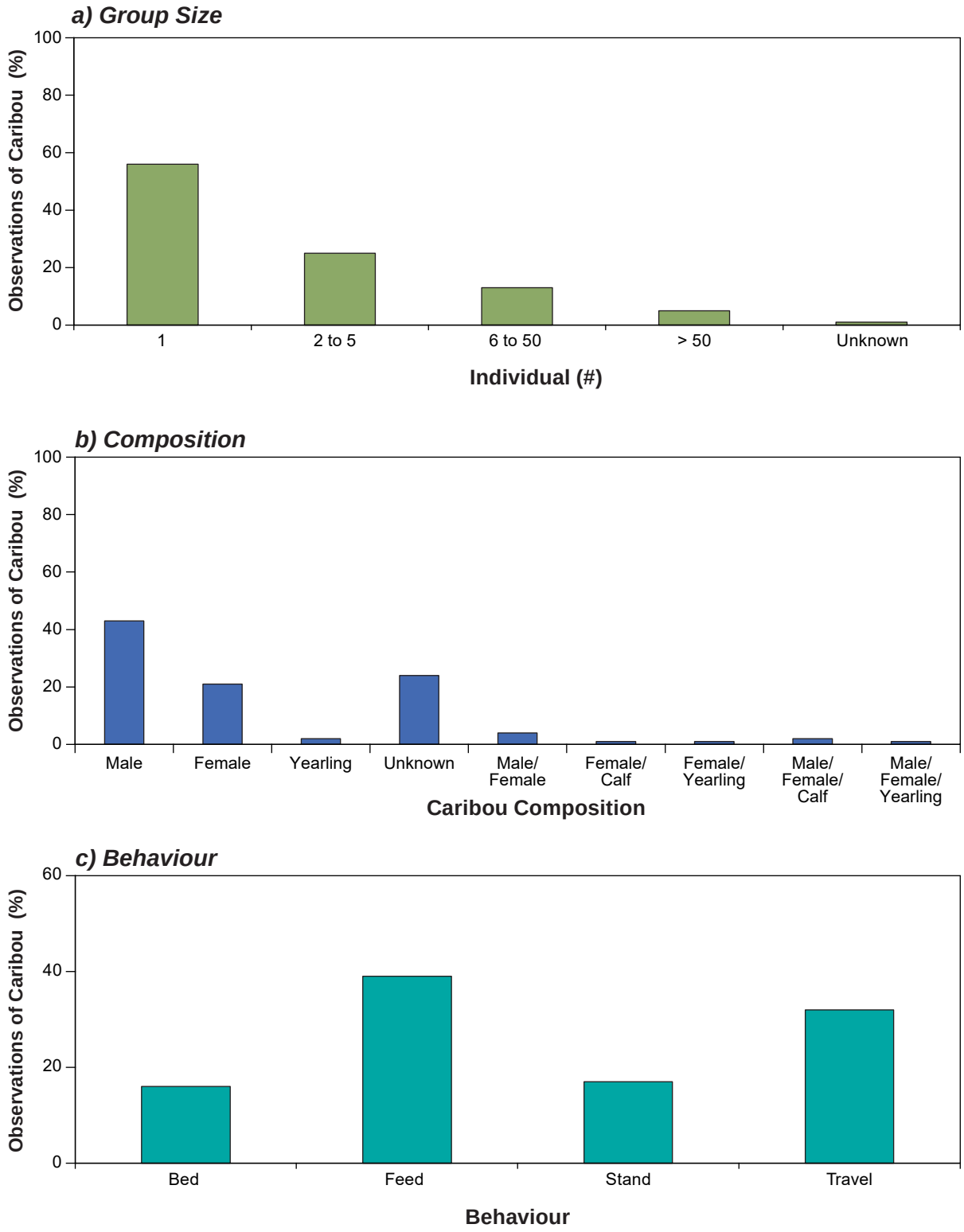
In total, 1,400 surveys of the LLCF have been conducted from 1999 to 2024. The number of surveys range annually from 10 to 190 with higher numbers of surveys per year in the last 10 years (Table 5.5-1). In 2024, a total of 1,041 caribou were observed in the vicinity of the LLCF in 16% of surveys. From 1999 to 2024, caribou have also been observed in the LLCF in 16% (n = 220) of the surveys and a total of 3,937 caribou individuals were reported during formal surveys (Table 5.5-1).

No incidental caribou were recorded during LLCF surveys in 2024.

5.5.4.2 Group Size

The 13 observations in 2024 included mostly groups less than 25 caribou. One observation of 1,000 caribou occurred on October 28, 2024, which accounts for 96% of the total caribou observed in 2024. The 1,000 caribou were observed in Cell B, where they were observed on the tundra feeding, walking, and bedding. The remaining observations consisted of one group from one to 25 individuals, seven observations of single caribou, four observations of groups of two to three individuals, and one observation of 25 caribou.

Occurrences in 2019 involved the largest groups of caribou at the LLCF; four of the eight observations in 2019 included groups of 100 or more caribou. The highest numbers of caribou recorded in or near the LLCF occurred in 2019 (1,721 individuals; 44% of all caribou observed from 1999 to 2024).



Notes: No caribou were observed during LLCF surveys in 2007 or 2015. Caribou observations can include multiple behaviours. Bed includes bed alert, stand includes stand alert, and travel includes trot, walk, and run.

Figure 5.5-1 Summary of Caribou Observed at the Long Lake Containment Facility, 2000 to 2024

Table 5.5-1 Summary of Caribou Frequency within the Long Lake Containment Facility, 2000 to 2024

Caribou	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Surveys (#)	64	27	22	10	60	25	43	17	18	58	22	16	65	100
# Surveys with caribou occurrences	27	3	15	6	2	8	14	3	0	3	1	4	5	13
% of Surveys with caribou occurrences	42	27	68	60	3	32	33	18	0	5	5	25	8	13
Total caribou individuals observed in LLCF (#)	-	3	48	7	3	40	66	402	0	16	2	30	5	23

Caribou	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Total
Surveys (#)	91	78	76	62	53	38	38	41	190	94	84	83	**1,400**
# Surveys with caribou occurrences	12	1	0	1	2	2	8	3	41	22	11	13	**220**
% of Surveys with caribou occurrences	13	1	0	2	4	5	21	7	22	23	13	16	**16**
Total caribou individuals observed in LLCF (#)	27	2	0	10	3	7	1,721	4	237	189	51	1,041	**3,937**

5.5.4.3 Composition

The compositions of caribou observed in 2024 was recorded on four of the 13 observations. Total composition of caribou observed in 2024 consisted of five males and one juvenile. The juvenile was observed in a group of approximately 1,000 caribou; however, it could not be confirmed whether males or females were present in the group.

From 2000 to 2024, 43% of caribou observations in or near the LLCF were detections of male only groups and 21% of female only groups (Figure 5.5-2). Groups of females and males comprised of 4% of observations and cales were observed during 3% of observations. From 2000 to 2024, individual yearlings were observed on three occasions (2%). The remaining occurrences with caribou were detections of animals of unknown age and sex (24%).

5.5.4.4 Dominant Behaviour

In 2024, most observations contained single behaviours, including caribou feeding, standing, walking, or bedded, with one observation recording multiple behaviours due to the size of the caribou group observed. Observations of caribou primarily recorded feeding behaviour (n = 6), other behaviours observed included standing (n = 3), walking (n = 1), and bedded (n = 1). Behaviours were only recorded for 11 of the 13 observations, with unknown behaviour for the two other observations. From 2000 to 2024 most caribou were observed feeding, walking, bedded, or standing.

From 2000 to 2024, caribou were observed feeding in the LLCF basin on 28 occasions, on the dykes on two occasions, on the road on five occasions, and on the tundra adjacent to the LLCF on 41 occasions, with one occasion including feeding on both the basin and the tundra.

5.5.4.5 Wildlife Observations

In addition to caribou, there were 30 observations of 35 mammals and two observations of mammal signs at the LLCF in 2024. Mammal species included arctic hare (15 observations of 16 individuals), grizzly bear (four observations of four individuals), wolf (one observation of one individual), sik sik (three observations of six individuals), red fox (seven observations of seven individuals), and arctic fox (three observations of three individuals). Observations of mammal signs included one observation of grizzly bear scat and one observation of unknown fox tracks.

Behaviours of mammals included travelling through the area (either walking or running), bedding, and standing. Mammal observations were recorded in all Cells but primarily recorded in Cells B (n = 24), A (n = 4), and C (n = 4). One sign of distress was observed in 2024, when a red fox was reported standing on alert in the Basin in Cell E.

In 2024, LLCF also recorded 129 observations of 5,855 birds. These bird species recorded included five upland bird species (114 individuals), four raptor species (nine individuals), five shorebird species (463 individuals) and 22 waterbird species (5,269 individuals). Most bird species observed at the LLCF included Great White-fronted Goose *(Anser albifrons)* (n = 2276), Snow Goose (*Anser caerulescens*) (n = 532), Lesser Yellowlegs (n = 408), Canada Goose (*Branta canadensis*) (n = 397), Northern Pintail (n = 236), Sandhill Crane (*Antigone canadensis*) (n = 173) and American Wigeon (*Mareca americana*) (n = 120). An additional 29 species representing 459 individuals were also recorded during surveys. There were 1,254 individuals of unidentified bird species,

which included unknown species and flocks. No species at risk were observed during LLCF surveys in 2024, however peregrine falcon, a VEC species was observed on one occasion of one individual, flying, on May 7, 2024.

Birds were recorded in Cells A (19%), B (38%), C (32%), and D (10%). Breeding activity was recorded on eight occasions during 2024 LLCF surveys, with most observations being recorded in June, and one observation in August. Birds with broods were recorded on four occasions, recorded between June 1 and July 9, 2024, for a total of 25 young.

5.5.5 Discussion

To date, no caribou injuries or deaths have been attributed to the LLCF. In 2024, there were 13 caribou observations including 1,041. No caribou were stuck in the LLCF or reported injured, which suggests that the processed kimberlite does not hinder caribou movement.

Between 2000 and 2024, the observations of caribou in or near the LLCF mostly involved caribou travelling through the area (32%) or feeding (39%). The LLCF may provide refuge habitat from insect harassment during the summer months. The LLCF basin is large and flat, with large non-vegetated areas and wind-exposed habitat not associated with mosquito and botfly activity.

Industrial structures, such as roads and oil fields, have been found to provide insect-relief habitat for caribou (Cronin et al. 1998). However, the majority of caribou groups observed since 2000 were travelling through the LLCF area, which may indicate that it is primarily being used as a travel corridor. In previous years like 2019 where caribou were primarily observed feeding and bedded down, surveys indicated caribou had departed the area within a period of between two days and two weeks.

Burgundy is currently in the process of finalizing an updated WMMP Plan, which will be implemented upon final approval expected in 2026. The updated WMMP Plan does not include LLCF monitoring component as a separate component from incidental observations of caribou and bird monitoring. LLCF monitoring surveys have not indicated impacts attributed to the LLCF (DDEC 2022). As such it is anticipated that this section will be removed once the updated WMMP Plan is approved.

5.6 Road and Powerline Surveys

5.6.1 Introduction

Road surveys are completed by vehicle along the Lac du Sauvage, Misery, Sable, and Lynx roads to determine the location and number of caribou as they approach the Ekati Mine and to inform the CRMP. Environment Department staff surveying the roads implement additional mitigation, such as deploying signs to notify staff to the presence of caribou or the need for road closures. The road surveys proposed as part of the Jay Project represented a new type of monitoring. During the Jay Project EA, stakeholders raised concerns regarding how caribou would detect approaching roads at night and in poor visibility. A Forward Looking Infrared T640 thermal imaging camera was used on site in 2017 as a preliminary test for its ability to detect caribou. Initial testing at short range (200 m) produced inconclusive results. Natural insulation of arctic species meant that wildlife was not visible using the thermal imaging technology during winter months. This testing was further complicated as weather severe enough to limit visibility of caribou resulted in roads at the Ekati Mine being closed to anything

except emergency travel. Fortunately, this means that when caribou cannot be easily detected by the human eye there is no traffic to threaten their safety.

5.6.2 Objectives

The objective of this component of the WEMP is to:

- determine the location, numbers, and proximity of caribou relative to the mine site roads.

5.6.3 Methods

One to two observers travelled by light vehicle along Sable, Misery, and Lac du Sauvage roads to record the location, number, and proximity of caribou adjacent to roads. When caribou were observed, information on group size, composition, dominant behaviour, and signs of caribou stress were recorded. Though caribou may exhibit a wide variety of behaviours, for the purposes of the road survey, behaviour data were grouped into four categories (see definitions in Section 5.4.3): bedding, feeding, standing and travel (i.e., walking, trotting, and running). Signs of distress (i.e., deflection, hesitation, and alert) were also noted (see additional information in Section 5.4.3 regarding stressors). Observations of wildlife and evidence of wildlife activity (i.e., tracks, scat), were also recorded during each survey. In cases where caribou tracks were identified, surveyors noted the direction of movement. In cases where the caribou group size was provided as an approximate number (e.g., greater than 70 individuals), group size was conservatively assumed to be the lower value (i.e., 70 individuals).

In previous years, the Misery power line survey results were reported in this section and also reported separately as results for the Misery power line survey in Section 5.6. As per GNWT ECC's request in 2020, power line and road surveys along Misery haul road were combined for reporting in 2022 and will continue to be integrated in future years.

5.6.4 Results

5.6.4.1 Caribou Frequency

During the 2024 reporting period, road surveys were completed on Misery haul road/power line, Sable haul road, and Lac du Sauvage Road. Surveys on Misery haul road/power line were completed over 293 days, with caribou observed on 95 days, Sable haul road surveys were completed over 293 days, with caribou observed on 67 days, and Lac du Sauvage Road surveys were completed over 279 days, with caribou observed on 18 days (Table 5.6-1).

Caribou observations occurred throughout the year, between January 1 and December 31, 2024. In total along all roads, there were 390 observations of 12,646 caribou. It's important to note that observations likely included the same caribou individuals or groups on multiple occasions, rather than representing 12,646 different individuals. There were 533 caribou observed along Lac du Sauvage Road, 5,774 caribou on Misery haul road/power line, and 6,339 caribou on Sable haul road.

Table 5.6-1 Summary of Caribou Observations during Road Monitoring Surveys, 2024

	Misery Haul Road	Sable Haul Road	Lac du Sauvage Road
Number of Survey Days	293	293	279
Number of Days with Observations	95	67	18
Number of Observations	160	207	23
Number of Caribou Observed	5,774	6,339	533
Largest Group Size Observed	1,000	1,500	358

The number of caribou observations, individuals, and largest group size for each road is presented in Table 5.6-1. Sable haul road had the largest number of observations (207; 53% of all observations), the highest number of individuals (6,339) and largest single group (1,500).

5.6.4.2 Group Size

Of the 390 groups observed, there were 188 (48%) observations that were of groups of one to three animals. There were 68 observations with groups of four to 10 caribou (17%), 93 observations with groups between 11 and 50 (24%), 18 observations with groups between 50 and 100 caribou (5%), 10 observations of between 100 and 500 caribou (3%), and three larger groups estimated at 800, 1,000, and 1,500 animals (0.5%). Groups with 100 or more caribou, including the 800 and 1,500 groups, were primarily observed in fall migration (September 17 to November 30) and winter (December 1 to April 19) 2024 (88%), with only three observations observed in May, July, and August.

5.6.4.3 Composition

Sex and age composition was confirmed for 2% of the caribou observed. Of the 139 groups with animals classified, 85 (61%) contained at least one male, 31 groups (22%) contained at least one female, 23 groups (17%) contained at least one calf, and no groups contained at least one yearling. Of the 139 groups, seventeen (12%) were mixed groups including at least one male and one female. Of the 198 individuals that were classified, 129 were males, 44 were females, and 25 were calves. Eighty-two groups with 35 or more caribou did not include classified individuals.

5.6.4.4 Dominant Behaviour

Caribou near the three roads recorded behaviour for 299 of the total 390 groups observed. Behaviours included groups with individuals that were feeding (52%, n = 154), standing (13%, n = 39), standing alert (3%, n = 9), travelling through the area (19%, n = 56), bedded (11%, n = 33; Photo 5.6-1), bedded alert (3%, n = 8). Caribou were observed feeding within 0 to 1,200 m from Misery haul road/power line, Lac du Sauvage Road, or Sable haul road. The bedded individuals were observed within 20 to 800 m from the Misery haul road, Lac du Sauvage Road or Sable haul road. The bedded alert individuals were 30 to 500 m from Misery and Sable haul roads.

Photo 5.6-1 Example of caribou observed bedded, November 23, 2024.

5.6.4.5 Semi-Permeable Barrier Effects

Of the caribou recorded as travelling through the area (n = 1,419), 21 were recorded walking along or near all three roads. The other 1,399 observations of caribou travelling through the area were recorded on the tundra, or as “other”. However, 46% (n = 650) of all observations of caribou travelling through the area included caribou that were within 500 m of the road or power line. Eighteen observations included caribou that were travelling on the road or standing on Misery, Lac du Sauvage or Sable roads or under the power line.

Signs of distress were only recorded for 2% observations (78 caribou on 10 occasions), involving three adult females, five adult males, and two juveniles (Table 5.6-2). Two occasions involved herds larger than 30 with adults of unknown sex. One event on December 12, 2024, involved four caribou of unknown sexes walking on Sable haul road showing signs of distress on multiple instances during the survey. The event recorded caribou showing signs of distress when trucks would drive by on Sable haul road, by trotting away from the road. An additional survey on February 28, 2024, observed a female caribou on Sable haul road with an injured leg. The cause of the injury was unknown.

Table 5.6-2 Summary of Caribou Recorded Showing Signs of Distress During Road/Power line Surveys, 2024

Season	Date	Road	Number of Caribou	Juveniles Present?	Comments Associated with Observation
Winter	28-Feb-24	Misery haul road	1	Yes	-
Calving	9-Jun-24	Misery haul road	2	No	Caribou stopped on the road for approximately six minutes
	10-Jun-24	Lac du Sauvage Road	30	No	-
	12-Jun-24	Sable haul road	2	No	Caribou stopped at 1 km
Summer	9-Aug-24	Misery haul road	30	No	-
Fall Migration	16-Sep-24	Sable haul road	4	No	-
	30-Sep-24	Lac du Sauvage Road	4	No	Caribou near road. When haul trucks passed by, caribou would show signs of distress by walking or trotting in the opposite direction.
Winter	8-Dec-24	Sable haul road	1	No	1 caribou (female) 222 meters off the road. Caribou was limping when walking (back left leg observed to be injured).
	18-Dec-24	Sable haul road	3	Yes	-
	Unknown date	Sable haul road	1	No	-

5.6.5 Discussion

Road/power line surveys were completed over 279 to 293 days for each road and power line in 2024. In the 2024 reporting year, caribou were observed on 390 occasions, with a total of 12,646 caribou reported. The largest groups observed in 2024 contained approximately 1,500 caribou and was observed along Sable haul road. Misery haul road/powerline and Sable haul road also had the most recorded observations and most of the total caribou observed. These numbers are similar to the overall numbers observed in 2023 (n = 12,193).

In 2024, one caribou was observed with an injury during road surveys, however the cause of the injury was unknown. To date, no caribou injuries or deaths have been attributed to the power line. Observations of caribou near the power line and crossing beneath the power line suggest that the power line does not impede caribou movement or change caribou behaviour.

In 2024, the most common behaviour observed feeding (52%; n = 154), followed by travelling through the area (19%; n = 56). The most common behaviours recorded in 2024 followed the most common behaviours recorded in 2023. Signs of distress were recorded on 10 occasions, mostly in groups of caribou larger smaller than four. Two observations were of groups of caribou of more than 30 and three events of distressed behaviour occurred with a single individual.

In 2024, 46% of all observations included caribou that were within 500 m of the road with 2% of observations involving distressed caribou. All observations of signs of distress recorded caribou within 500 m from roadways. This is a lower percentage of distressed caribou than the 5% observed in 2023; however, it is similar to the 2% of distressed caribou observed in 2022. Observations of caribou near and crossing all roads/power line suggest that

the roads and power line do not impede caribou movement at the local scale. Data on the location, number, group composition, and behaviour of caribou on or near the roads/power line provides feedback for mitigation and adaptive management. Caribou proximity to roads/power line, number of caribou, and caribou group composition informs the mitigation and monitoring intensity through the CRMP framework. Documentation of road/power line survey results will continue to be refined in future years to provide ongoing evaluation of the program to determine their effectiveness in mitigating caribou interactions with roads/power line.

5.7 Traffic Monitoring

5.7.1 Introduction

One of the objectives of the WEMP is to monitor "interactions between wildlife and traffic" and "assess the success of mitigation efforts" (Section 1.5). Burgundy employs several methods for monitoring caribou at site and in proximity to roads including use of systematic road surveys, camera trapping, behaviour monitoring, and collared caribou data. The WEMP contains several detailed mitigations to facilitate passage of caribou across roads and through the site, particularly those outlined in the CRMP (Section 4.1.2).

These monitoring methods have demonstrated that caribou occur on site, occupy areas near the road and cross it; however, as of 2021 these findings had not been linked directly to traffic data. Traffic data were recorded in previous WEMP reports from traffic logs and daily trip summaries and were specific to haul trucks and road trains. It was determined that additional traffic monitoring would be required to monitor the volume of all traffic along Misery, Sable Haul and Lac du Sauvage Roads. This would be done to investigate whether there is a relationship between caribou presence and passage through site, with traffic levels and mitigation measures.

Per discussion with ENR on November 12, 2021, Arctic Canadian agreed to explore ENRs recommendation for deploying TRAFx traffic counters at the Misery and Sable Haul Road entries to log vehicular traffic activity. A pilot project using traffic counters was launched in early 2022; however, the project was not completed as traffic counters were not able to reliably capture vehicle passage across the entire span of the wide haul roads. A secondary pilot project with remote cameras was launched in July 2022 with greater success. Due to success of the 2022 pilot projects, remote cameras were deployed in January 2023 through to December 2024 to count traffic on mine roads.

5.7.2 Methods

Beginning January 2024, three Reconyx Hyperfire 2 Covert IR remote cameras were deployed on the Misery haul road, (one camera), Sable haul road (one camera), and at Point Lake (one camera) to monitor vehicle passage. The cameras were programmed to take pictures when triggered by motion infrared sensor (motion triggered photos). The date and time of each digital image was recorded.

Cameras were checked monthly for battery levels, available memory on the SD memory card, and whether the camera was still operating as programmed and had not been disturbed by wildlife or weather. Memory cards and batteries were exchanged when necessary to prevent data loss. Data from memory cards were retrieved for processing and analysis at regular intervals throughout the year.

Detailed analyses of camera data are conducted every three years, and the next comprehensive report will be available in 2026.

5.7.3 Results

From December 7, 2023, to December 13, 2024, the three traffic cameras recorded for a combined 564 active days. The Sable traffic camera was most active recording for a total of 257 days, notable gaps in effort were observed between December 7 – December 29, 2023, January 26 – February 5, 2024, July 6 – August 5, 2024, and November 16 - December 13, 2024. The Misery traffic camera was active for 172 days with notable gaps in effort between May 6 –July 5,2024 and September 6 – December 13,2024. The Point Lake traffic camera was active a total of 135 days with notable gaps between December 7, 2023 – July 1, 2024 and October 18 – November 5, 2024. There is no recorded traffic data available during the gaps in camera effort.

There was a total of 15,448 vehicles recorded on the Misery haul road which included traffic travelling in both directions (Table 5.7-1 and Figure 5.7-1). The traffic camera recorded vehicles from January to September 2024 and December 2024, however, no data was collected in October or November. The month with the highest traffic recorded was March (4,652 vehicles) and the month with the lowest traffic and at least seven days of traffic data was in May (91 vehicles). Average daily counts were highest in March (150 vehicles per day) and July (124 vehicles per day) and lowest in May (18 vehicles per day; Table 5.7-1).

Table 5.7-1 Number of Vehicles Counted on Misery Haul Road, January 1, 2024, to December 13, 2024

Month	Average Daily Count	Days Recording	Total Count
January	16	7	**114**
February	86	29	**2,499**
March	150	31	**4,652**
April	46	24	**1,096**
May	18	5	**91**
June [1,2]	-	0	**5**
July	124	26	**3,212**
August	87	31	**2,691**
September	97	5	**484**
October[1]	-	0	**-**
November[1]	-	0	**-**
December	43	14	**604**
Average (All months other than February, April, and June)	72	19.11	**-**
Total count	**-**	**172**	**15,448**

[1] Camera data was unavailable in October and November due to camera mount failure, and these months are excluded from the total monthly average.

[2] Days recording captures full active days and therefore partial active days may still occur during the month.

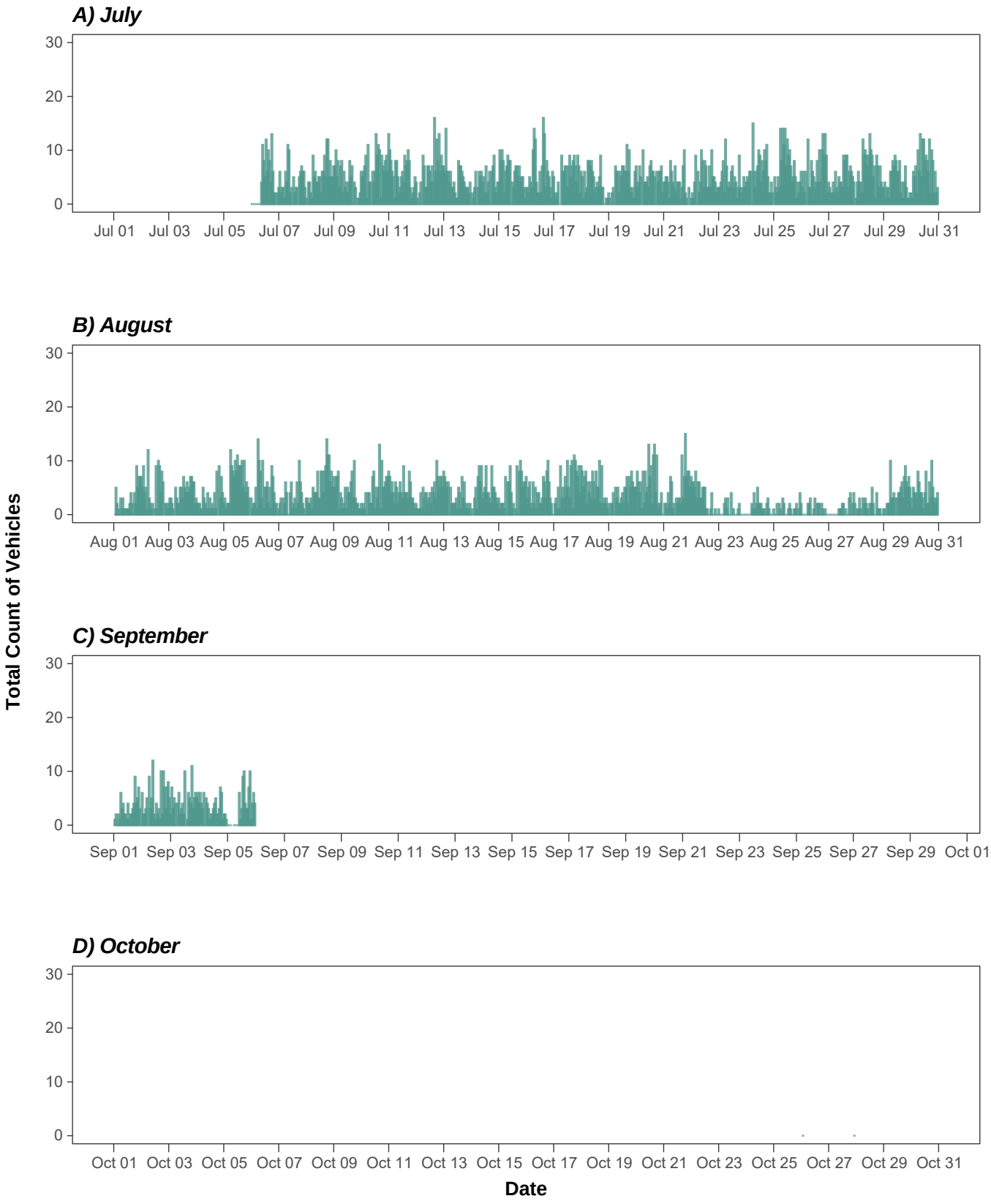


Figure 5.7-1 Total Number Vehicles Detected per Hour, Misery Haul Road, 2024

There was a total of 36,291 vehicles recorded on the Sable Haul Road which included traffic travelling in both directions (Table 5.7-2 and Figure 5.7-2). The traffic camera recorded traffic from January to December 2024. The month with the highest traffic was recorded in March (6,566 vehicles) and the month with the lowest traffic and at least seven days of traffic data was November (177 vehicles). Average daily counts were highest in July (285 vehicles per day) and June (217 vehicles per day) and lowest in November (11 vehicles per day; Table 5.7-2).

Table 5.7-2 Number of Vehicles Counted on Sable Haul Road, January 2024, to December 2024

Month	Average Daily Count	Days Recording	Total Count
January	92.55	11	**1,018**
February[1]	163.21	24	**3,917**
March	211.81	31	**6,566**
April	192.63	30	**5,779**
May	210.84	31	**6,536**
June	216.80	30	**6,504**
July	284.60	5	**1,423**
August	117.42	26	**3,053**
September	24.32	25	**608**
October	24.93	28	**698**
November	11.06	16	**177**
December[1]	-	-	**12**
Average (All months other than December)	140.92	23.36	**-**
Total count	**-**	**257**	**36,291**

[1] Camera data was limited due to snow cover in February and due to battery failure in December, and these months are excluded from the total monthly average.

[2] Days Recording captures full active days and therefore partial active days may still occur during the month

There was a total of 36,213 vehicles recorded on the Point Lake traffic camera which included traffic travelling in both directions (Table 5.7-3 and Figure 5.7-3). The Point Lake traffic camera was available for six months, from July to December 2024. The month with the highest traffic occurred in July (13,079 vehicles) and the lowest traffic occurred in December (Table 5.7-3). The average daily counts were highest in July (436 vehicles per day) and lowest in November (46 vehicles per day).

5.7.4 Discussion

The traffic monitoring methods in 2024 were successful to identify vehicles travelling on Misery haul road, Sable haul road and Point Lake. Improved methods from the end of 2022 for traffic detection along the roads have carried over into full years of monitoring in 2023 and 2024. Although data was not recorded for all months on all roads in 2024, a total of 87,952 vehicles were detected over a combined 564 active camera days compared to 2023 where a total of 45,916 vehicles recorded over a combined 511 days of camera effort across Misery haul road and Sable haul road. Compared to 2023, 2024 observed a higher number of vehicles recorded, a higher camera effort and the addition of traffic monitoring at Point Lake.

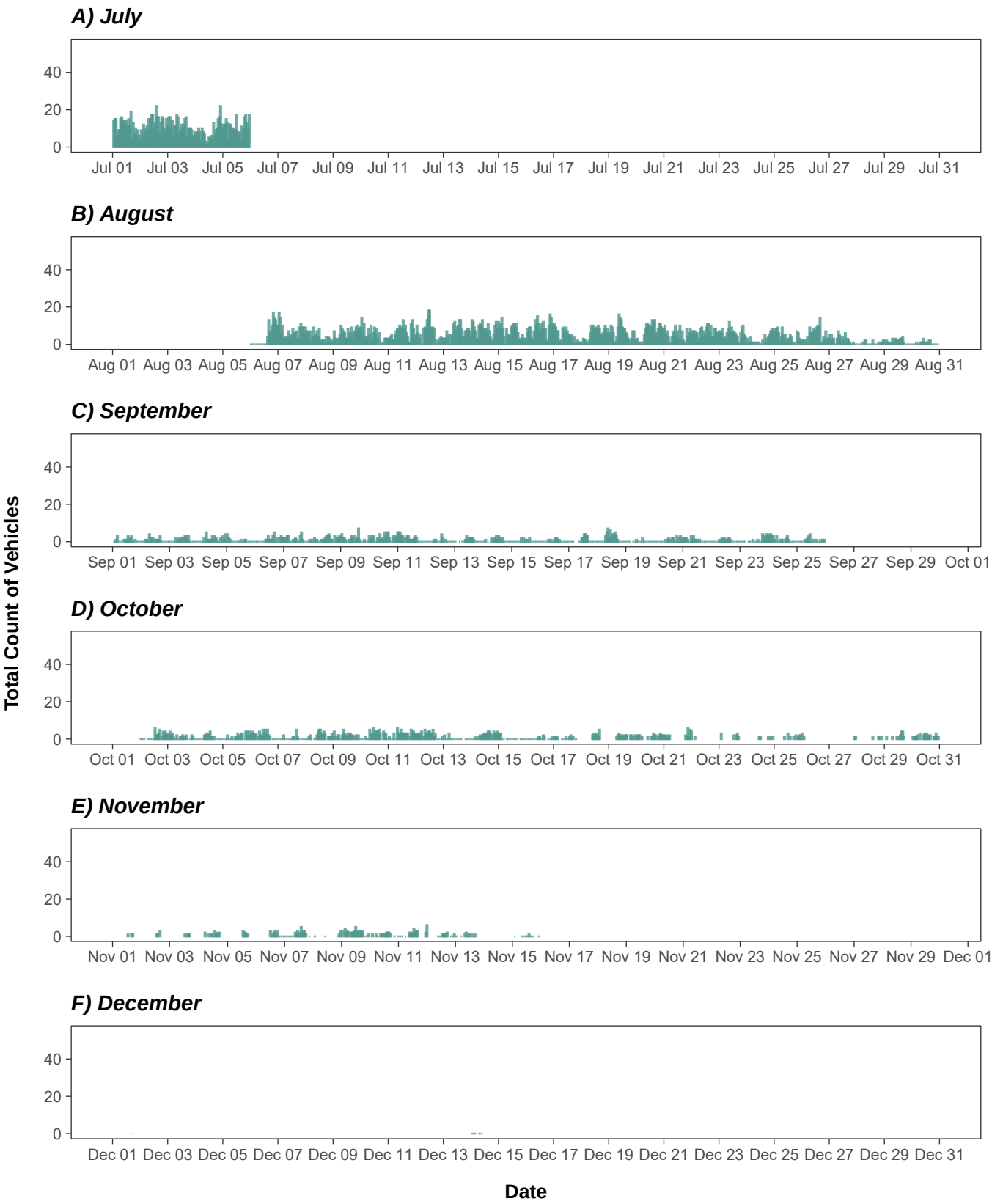


Figure 5.7-2 Total Number Vehicles Detected per Hour, Sable Haul Road, 2024

Table 5.7-3 Number of Vehicles Counted on Point Lake, July 2024, to December 2024

Month	Average Daily Count	Days Recording	Total Count
January - June[1]	-	-	-
July	435.97	30	**13,079**
August	335.11	27	**9,048**
September	330.37	30	**9,911**
October	155.94	17	**2,651**
November	46.26	23	**1,064**
December	57.13	8	**457**
Average (July to December)	226.80	22.5	**-**
Total count	**-**	**135**	**36,213**

[1] Camera was deployed in July and therefore no prior data exists.

The number of vehicles recorded on Misery haul road in 2024 (15,448 vehicles) was similar to 2023 (13,623 vehicles), with a smaller number of days of camera effort in 2024 than in 2023 (2024: 172, 2023: 248). Similarly, Misery haul road had the highest average daily count in March of both 2024 (150vehicles) and 2023 (83vehicles), although higher average daily count in 2024. The average daily count across all months was higher in 2024 (72vehicles) than in 2023 (52 vehicles), suggesting that there was more traffic recorded in 2024 compared to 2023. The average daily count on Misery haul road varies monthly. In 2024, higher average daily counts were recorded in February, March, July, August and September. This pattern differed from 2023, when peak counts occurred in March, May, July, September and October.

Sable haul road had a higher number of vehicles recorded in 2024 (36,291 vehicles) than in 2023 (32,293 vehicles) despite the camera effort being similar between the two years (2024: 257 days, 2023: 263 days). The average daily count was highest in July of both 2024 (285 vehicles) and 2023 (167 vehicles), however, noticeably higher in 2024 compared to 2023. The average daily count across all months differed between 2024 (141 vehicles) and 2023 (127 vehicles), which may be a result of more traffic recorded in 2024. At Sable haul road in 2024, the higher average daily counts were observed between February and August, compared to 2023, where the highest average daily counts were recorded between April to November. From traffic monitoring data at Sable haul road, there seems to be a consistent trend that once average daily counts are high (over 100 vehicles), it seems to stay high or consistently high for a matter of months.

With 2024 being the first year of Point Lake traffic monitoring data, there are no historical records to compare to, however, similar to Sable haul road, July recorded the highest average daily count (436 vehicles) of months in 2024 with traffic data. The average daily counts across months of available data (July to December), was 227 vehicles, which is the highest of all three traffic monitoring locations. Of the months with traffic monitoring in 2024, the average daily count was highest in July, August and September, which may have been due to construction activities.

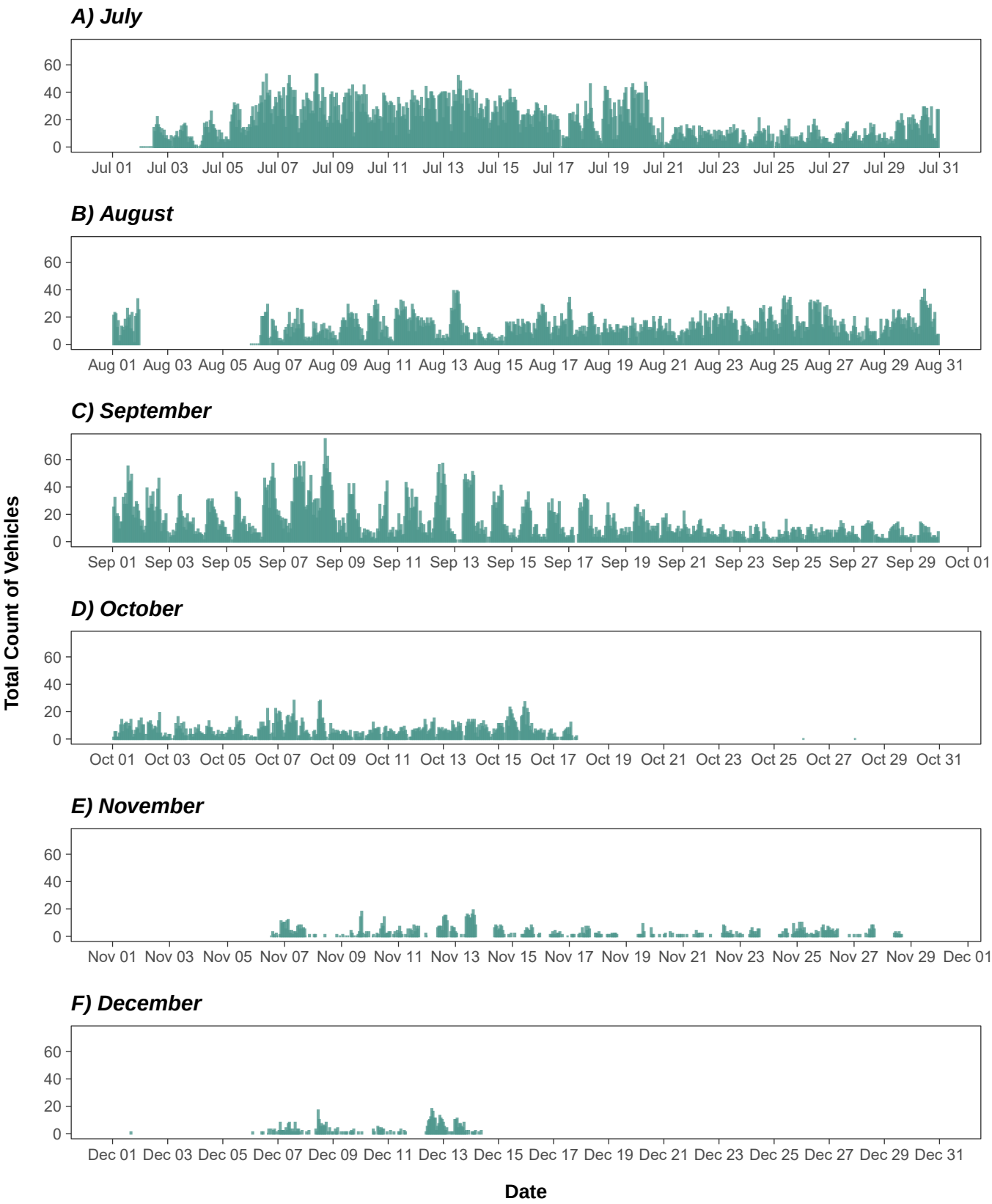


Figure 5.7-3 Total Number Vehicles Detected per Hour, Point Lake, 2024

6. Grizzly Bear

6.1 Background

Barren-ground grizzly bears are a wildlife VEC for the Mine. The grizzly bear was assessed as Special Concern by COSEWIC (2012) and also on Schedule 1 of the *SARA* (2002). In the NWT, grizzly bear is listed as Special Concern (GNWT 2022) and ranked as Sensitive (GNWT 2024).

At a regional scale, from 2012 to 2017, Ekati Mine and Diavik Diamond Mine collaborated on a Regional Grizzly Bear DNA study as part of their wildlife monitoring programs (ERM 2018). This regional study suggested that the central barrens of the NWT are relatively productive for grizzly bears, with the Lac de Gras region supporting a large number of grizzly bears, potentially because of the prevalence of esker habitats for secure denning, seasonal access to caribou, fish resources in the abundant lakes and streams in the area, productive forage in riparian zones, and the relatively low level of hunting in this area. In the regional DNA study, grizzly bear densities ranged from 2.0 to 3.0/1,000 km^2 for males and 3.6 to 4.7/1,000 km^2 for females. The density of barren-ground grizzly bears was estimated to be 3.5 grizzly bears per 1,000 km^2 for the central barrens of mainland Nunavut and the NWT (McLoughlin and Messier 2001), and up to seven bears per 1,000 km^2 in the Kitikmeot region of western Nunavut (Dumond et al. 2015).

The results of this regional study over the period of 2012 to 2017 suggest that grizzly bear numbers appear to be stable to increasing since estimates for the Slave Geological Province were last obtained in the late 1990s (3.5/1,000 km^2; McLoughlin at el. 2002). These results provide evidence in support of the conclusion that the Ekati and Diavik Diamond Mines, which have been constructed since the last grizzly bear survey in the late 1990s, have not had a negative impact on the regional population of grizzly bears in the Slave Geological Province.

At a local scale, grizzly bears can be attracted to industrial sites for food, shelter or out of curiosity and may result in habituated bears, damage and risk to mine staff. As such, it is important to manage mine buildings to exclude bears, manage waste to limit attractions and monitor and manage bears to deter them when they approach the site. Grizzly bears are monitored annually through incidental observations to track their number over time, trigger incident response (e.g., stopping work and/or deterring bears) and trigger adaptive management of the site (e.g., waste management).

6.2 Incidental Observations

6.2.1 Introduction

Incidental observations of grizzly bears provide information on grizzly bear activity, which can help minimize human/bear interactions and locate and eliminate bear attractants. Once a bear is observed in or near the mine site, Burgundy staff are notified, and work activities are adjusted to avoid encounters.

As a follow-up to any wildlife incident, the areas are scanned for any possible wildlife attractants. Incidental observations can also be used to monitor changes in bear activity near the mine over time, and to assess incidents by mine location or by differences in activity by population demographic (e.g., age, sex groups). Camp monitoring for attractants and wildlife ingress is described in Section 4.1.

6.2.2 Objectives

The objectives of the grizzly bear monitoring are to:

- avoid and minimize bear-human interactions;
- identify the presence and composition of incidental bear observations in the study area; and
- document and determine the cause of direct mine-related mortality of bears should they occur.

6.2.3 Methods

Incidental observations of grizzly bears near the mine are reported by mine staff to the Environment Department. This includes staff such as helicopter pilots, field workers, and any other working staff on all shifts. For each bear observation, the date, number of individuals, sex and age (when possible), condition, behaviour, presence of a collar or ear tag, and UTM coordinates (when possible) or a description of the location were recorded.

Any observations of grizzly bears reported near roads, staff, and mine structures at the Ekati Mine were investigated, as these are of particular concern with regards to human and wildlife safety. Where necessary, grizzly bears were deterred from these areas using vehicles, air horns, screamers, bear bangers, and/or bean bags (Section 4.2.4.2).

6.2.4 Results

During the 2024 reporting period, there were 94 incidental observations of grizzly, totaling 136 grizzly bears on 65 days near the mine (Table 6.2-1; Photo 6.2-1). Observations spanned the period from January 6 to October 8, 2024. Grizzly bear observations with sufficient location information were plotted on a map of the study area (Figure 6.2-1). Multiple animals were observed on 14 occasions in 2024. The most observed family group composition included one adult female with three cubs, which was observed on four occasions. Other family groups included three sightings of a female with one cub, two sightings of a female with two cubs, one sighting of a female and three cubs with one large adult male in the vicinity, one sighting of an adult male with one cub, and one sighting of an unknown adult with three cubs. One potentially active grizzly bear den was reported on January 5, 2024. The den was located approximately 100 m from a road, with active haul trucks driving by.

Five incidental grizzly bear sightings were reported on five separate days during LLCF surveys. The earliest sighting was on January 6, 2024, and the last sighting was on September 7, 2024. No family groups were observed during LLCF surveys.

6.2.5 Discussion

The 94 grizzly bear sightings in 2024 fall was within the recorded range at the mine, which spans from 36 sightings in 2001 to 170. However, this number is above the annual average of 83 sightings per year. The 14 family groups observed in 2024 was also within the recorded range of observations at the mine and suggests a healthy population near the mine.

Table 6.2-1 Summary of Incidental Grizzly Bear Observations at the Ekati Mine, 2001 to 2024

Grizzly Bear	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Incidental observations (over separate days)	36 (18)	37 (30)	42 (n/a)	60 (43)	76 (54)	63 (48)	47 (35)	62 (45)	69 (48)	46 (36)	70 (45)	72 (53)
Family group observations	11	13	15	9	9	4	8	10	24	13	32	26

Grizzly Bear	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Incidental observations (over separate days)	52 (44)	60 (52)	60 (60)	147 (94)	128 (84)	145 (80)	161 (74)	68 (51)	170 (80)	109 (54)	132 (80)	94 (65)
Family group observations	4	11	33	54	16	37	48	14	16	27	30	19

Notes:
Family groups include all sightings of multiple bears.
n/a = not reported.

Photo 6.2-1 Grizzly bear sow and three cubs observed on Misery haul road at KM10, May 28, 2024

The number of incidental observations is likely a product of the observation rate (how many people are looking), the number of bears, and the proportion of those bears that are resident/tolerant of the mine. The increase in reports since 2015 may be linked to increased awareness and reporting of grizzly bears by mine staff and the decentralization of mining activity spreading the observers across a wider area. In contrast, observations were very low in 2020 due to the mine being in Care and Maintenance with few staff on site.

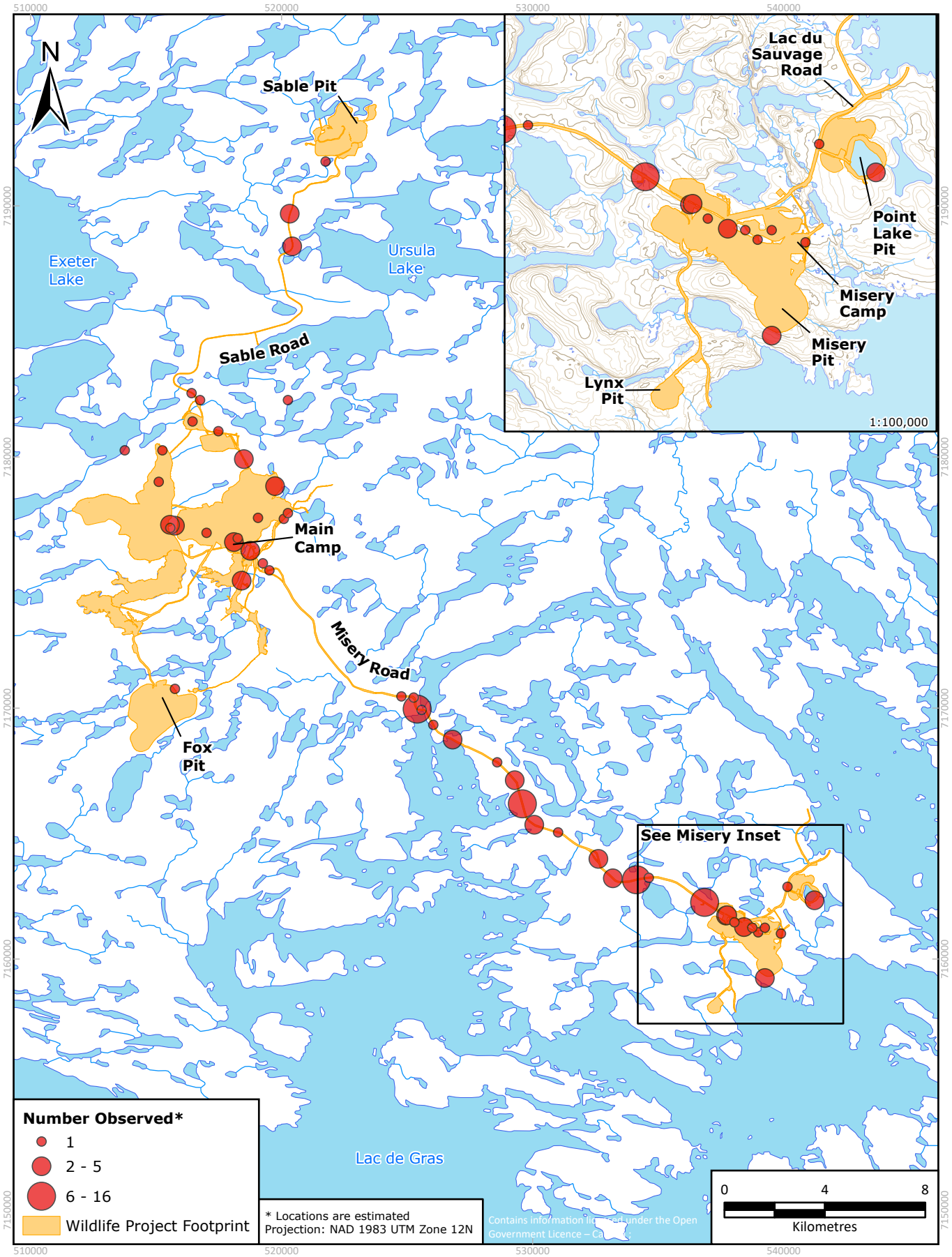


Figure 6.2-1 Incidental Grizzly Bear Observations at the Ekati Mine, 2024

The remaining 81 grizzly bear observations in 2024 were of solitary animals, with 36 unknown of age, 30 adults, and seven cubs. Most observations were of undetermined sex, with five confirmed male adults, and one confirmed female adult. Many of these observations were likely the same bears on multiple occasions. Grizzly bear observations that resulted in incidents are discussed in Section 4.3.2.

Continued improvements in wildlife management in recent years have been reflected in a departure from aggressive pre-emptive measures to an emphasis on monitoring behaviour and assessing risk. Burgundy's ongoing effort toward on site bear awareness education, reporting bear sightings, and monitoring bears within the mine site vicinity continually minimizes the risk of major human/bear interactions. Site-wide notifications that alert staff about grizzly bear presence and annual Bear Aware training sessions have also increased communication and awareness of grizzly bears.

7. Wolf

7.1 Background

Grey wolves are considered a wildlife VEC for the mine. Wolves are listed as Secure in the NWT (GNWT 2024) and are considered Not at Risk by COSEWIC and are not listed on Schedule 1 of the *SARA* (2002). In Canada, grey wolf populations are estimated between 50,000 and 60,000 animals (Government of Canada 2017). Populations are stable or increasing, however some areas with local populations may be decreasing due to prey availability (Government of Canada 2017).

Wolves in this area depend on barren ground caribou as their main source of prey (Kuyt 1972; Walton et al. 2001). During the spring, wolves follow the caribou north of the tree line and choose den sites on the post-calving and summer ranges to the south of the calving grounds. This strategy likely optimizes the availability of food resources for rearing pups (Heard and Williams 1992).

Wolf pups usually leave the natal den in early August, but do not leave the caribou summer range until October. As predators of migratory caribou, wolves in the central barrens have larger home ranges and exhibit less territorial behaviour than wolves in other parts of North America (Walton et al. 2001). Food availability for wolves has been reduced by barren-ground caribou population declines. As a result, resource availability may decrease adult fitness and pup survival, both of which could have implications for population growth (Klaczek et al. 2015).

Human development can result in wolves avoiding certain areas (Johnson et al. 2005). Conversely, certain features of human development (i.e., landfills and infrastructure) can act as wildlife attractants, increasing the likelihood of wildlife attraction and habituation.

On a regional scale, Burgundy supports regional wolf monitoring initiatives coordinated by GNWT ECC. At a local scale, wolves have been monitored at the Ekati Mine through incidental observations. The following section describes the methods and results of incidental monitoring for wolves at the mine.

7.2 Incidental Observations

7.2.1 Introduction

Incidental wolf sightings are reported at the Ekati Mine as part of the wildlife monitoring program conducted by Burgundy. Potential risks associated with human and wildlife interactions may be avoided by monitoring incidental wolf observations in the study area. Once a wolf is observed within the mine site, Burgundy staff at risk of encountering the wolf are notified and work actions are adjusted accordingly. In addition, incidental wolf observations help determine the timing and family composition of wolf packs moving through the study area.

7.2.2 Objectives

The objectives of incidental wolf monitoring are to:

- avoid and minimize wolf-human interactions;
- identify the presence and group composition of incidental wolf observations in the study area; and
- document and determine the cause of direct mine-related mortality of wolves should they occur.

7.2.3 Methods

Incidental observations of wolves near the mine are reported to the Environment Department with most observations reported by helicopter pilots, ground-based field work, drivers and other on site staff. For each observation data are recorded, including the date, location, number of individuals sighted, the sex and age of individuals (when possible), dominant behaviour, condition of the animal, and the presence or absence of a radio collar.

7.2.4 Results

During the 2024 reporting period, there were 45 incidental wolf sightings, totaling 63 wolves on 39 separate days near the Ekati Mine (Table 7.2-1; Photo 7.2-1). This does not indicate that 63 different individual wolves were observed, because the same wolf or wolf family group were potentially recorded on multiple occasions. Observations with sufficient location information were plotted on a map of the study area (Figure 7.2-1). Most observations occurred at Sable and Misery haul roads.

Table 7.2-1 Summary of Incidental Wolf Observations near the Ekati Mine, 2001 to 2024

Wolf	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Incidental observations (over separate days)	38 (n/r)	59 (42)	54 (27)	58 (46)	58 (40)	47 (43)	34 (30)	55 (45)	58 (45)	25 (23)	38 (n/r)	80 (55)
Family group observations	n/r	n/r	n/a	22	20	13	21	16	20	10	n/r	20

Wolf	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Incidental observations (over separate days)	55 (47)	82 (66)	69 (52)	95 (68)	93 (78)	79 (59)	117 (77)	23 (21)	93 (63)	53 (42)	22 (41)	45 (39)
Family group observations	13	23	19	32	41	20	38	12	36	13	5	12

Notes:
Family groups include all sightings of multiple wolves.
n/r = not reported.

Twelve of the 45 incidental wolf observations were of multiple wolves (Table 7.2-1). Groups including more than one adult wolf were mainly observed along the roads, with one group being observed between Sable haul road and the Main Camp (Figure 7.2-1). Groups of wolves observed in 2024 included:

- three observations of two wolves;
- two observations of three wolves;
- two observations of four wolves;
- one observation of six wolves; and
- two observations of a pack of wolves.

Photo 7.2-1 Wolf near Misery Haul Road, November 2024.

The remaining incidental wolf observations included 33 observations of solitary individuals (three adult males, one adult female, 15 adults of unknown sex, and 13 wolves of unknown sex and age). For wolf observations that resulted in incidents, see Section 4.3.2.

One incidental wolf was reported during LLCF surveys on February 16, 2024.

7.2.5 Discussion

Overall, wolf occurrences near the mine have remained relatively consistent across years, from a low of 23 observations in 2009 to a high of 77 observations in 2019. In 2024, wolf observations (45) were below the average (n = 59) from 2001 to 2024.

Family groups of two or more adult wolves were observed on 12 occasions in 2024 in several locations including near Misery and Sable haul roads. However, no pups were observed in 2024. Pups have been observed each year since 2014, except for 2016, 2023, and 2024. Most wolf observations were made by drivers near haul roads.

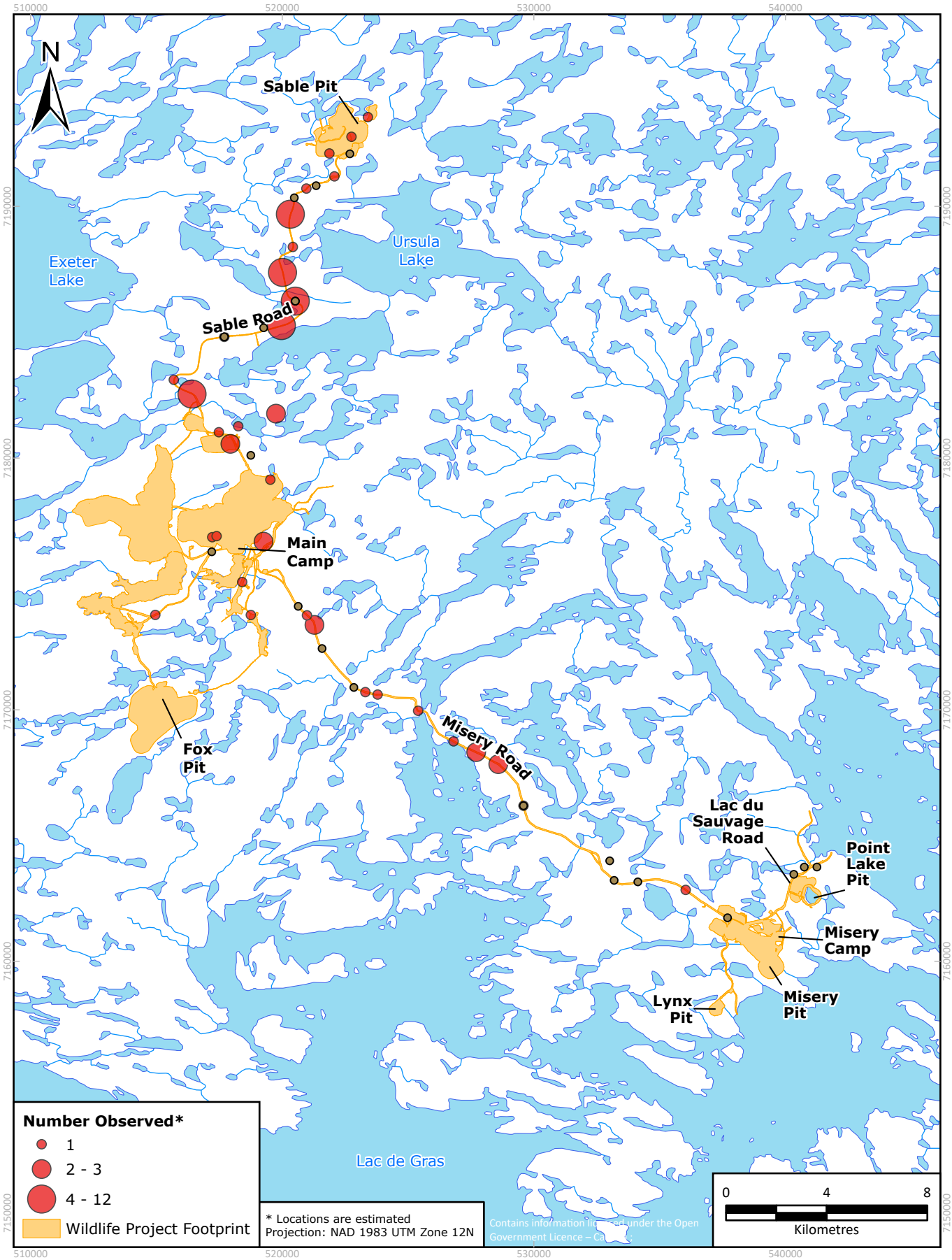


Figure 7.2-1 Incidental Wolf Observations at the Ekati Mine, 2024

8. Wolverine

8.1 Background

Wolverine is a wildlife VEC for the mine. Wolverines, the largest member of the weasel family, has a circumpolar distribution in the tundra, taiga plains, and boreal forests of North America (Weir 2004). Wolverine (eastern and western population designations) was assessed as a species of Special Concern by COSEWIC (2014b) and is similarly listed on Schedule 1 of the *SARA* (2002). In the NWT, wolverine is ranked as Sensitive (GNWT 2024).

Wolverines are curious animals and will investigate human-made structures and food caches when humans are not present (COSEWIC 2014b). They prefer undisturbed areas, but home ranges may overlap with human-caused disturbances such as trap lines and logging roads. They opportunistically travel on snowmobile trails and scavenge along trap lines and at hunter kills. Wolverine home ranges are typically 400 km^2 for females and 1,580 km^2 for males (Rowland et al. 2003; COSEWIC 2014b). Human activity, including mining, hunting, trapping, and major transportation routes, may displace or alter wolverine travel routes and lead to increased human-caused mortalities.

Wolverines moving through human occupied areas are a potential cause for concern with regards to wildlife and human safety. Food and food waste may potentially act as wildlife attractants, increasing the possibility of wildlife habituation. In response to these concerns, Burgundy monitors for wolverine interactions on an annual basis and adaptively manages based on results (i.e., stopping work in an area with a wolverine or repairing wildlife gates at the incinerator). The following section describes the methods and results of monitoring activities on wolverines in the Ekati Mine study area.

8.2 Incidental Observations

8.2.1 Introduction

Monitoring incidental wolverine observations near the mine site helps to avoid the potential risks associated with human – wolverine interactions. Once a wolverine is sighted within the mine site area, Burgundy staff that are at risk of encountering the wolverine are notified and work activities are adjusted accordingly.

8.2.2 Objectives

The objectives of incidental observations of wolverines are to:

- avoid and minimize wolverine-human interactions;
- identify the presence and composition of incidental wolverine observations in the study area; and
- document and determine the cause of direct mine-related mortality of wolverines should they occur.

8.2.3 Methods

Incidental observations of wolverines are reported to the Environment Department. This includes all wolverine observations made by helicopter operators, field workers, and other on site staff. Each wolverine observation includes the date, number of individuals, sex, age, location, behaviour, and condition of the animal.

8.2.4 Results

During the 2024 reporting period, there were 10 incidental observations of wolverines recorded on nine days near the Ekati Mine (Table 8.2-1). Observations with sufficient location information were plotted on a map of the study area (Figure 8.2-1).

In 2024, one observation of wolverine was recorded at Main Camp and one observation was recorded at Misery Camp. Two individuals were classified as adults, with the remainder recorded as unknown sex and age. No confirmed young were recorded in 2024. For wolverine observations that resulted in incidents, please see Section 4.3.2.

Table 8.2-1 Summary of Incidental Wolverine Observations near the Ekati Mine, 2003 to 2024

Wolverine	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Incidental observations (over separate days)	14 (12)	32 (25)	128 (86)	23 (23)	9 (8)	40 (35)	12 (11)	18 (18)	12 (11)	29 (25)	18 (17)

Wolverine	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Incidental observations (over separate days)	21 (20)	26 (22)	39 (36)	33 (29)	23 (22)	23 (18)	13 (13)	14 (12)	9 (9)	6 (6)	10 (9)

8.2.5 Discussion

In 2024, there were 10 incidental observations of wolverines recorded on nine separate days near the Ekati Mine, which falls below the average number of observations (n = 25) recorded since 2003. The number of incidental wolverine observations have varied among years, ranging from a high of 128 wolverines observed in 2005, to a low of six wolverines observed in 2023. However, the number of wolverine observations has been decreasing consistently since 2016, with 2023 being the lowest number of observations. No confirmed young or dens were recorded in 2024. For wolverine observations that resulted in incidents, see Section 4.3.2.

Five wolverines were removed (one mortality, and four were relocated 200 km away) from the area in 2005. In 2024, a vehicle related wolverine mortality was recorded for the first time since the start of the monitoring program. It was the only wolverine mortality recorded since 2005. Since then, Burgundy has implemented adaptive mitigation measures to reduce wolverine occurrences on site. The reduction in observations likely indicates that mitigation is working. These measures include a proactive waste management program, increased educational awareness, improvements and regular examination and maintenance to the accommodation structures that inhibit possible access to buildings by wolverines, and proactive management activities that include site-wide notifications about wolverine and other wildlife sightings near infrastructure.

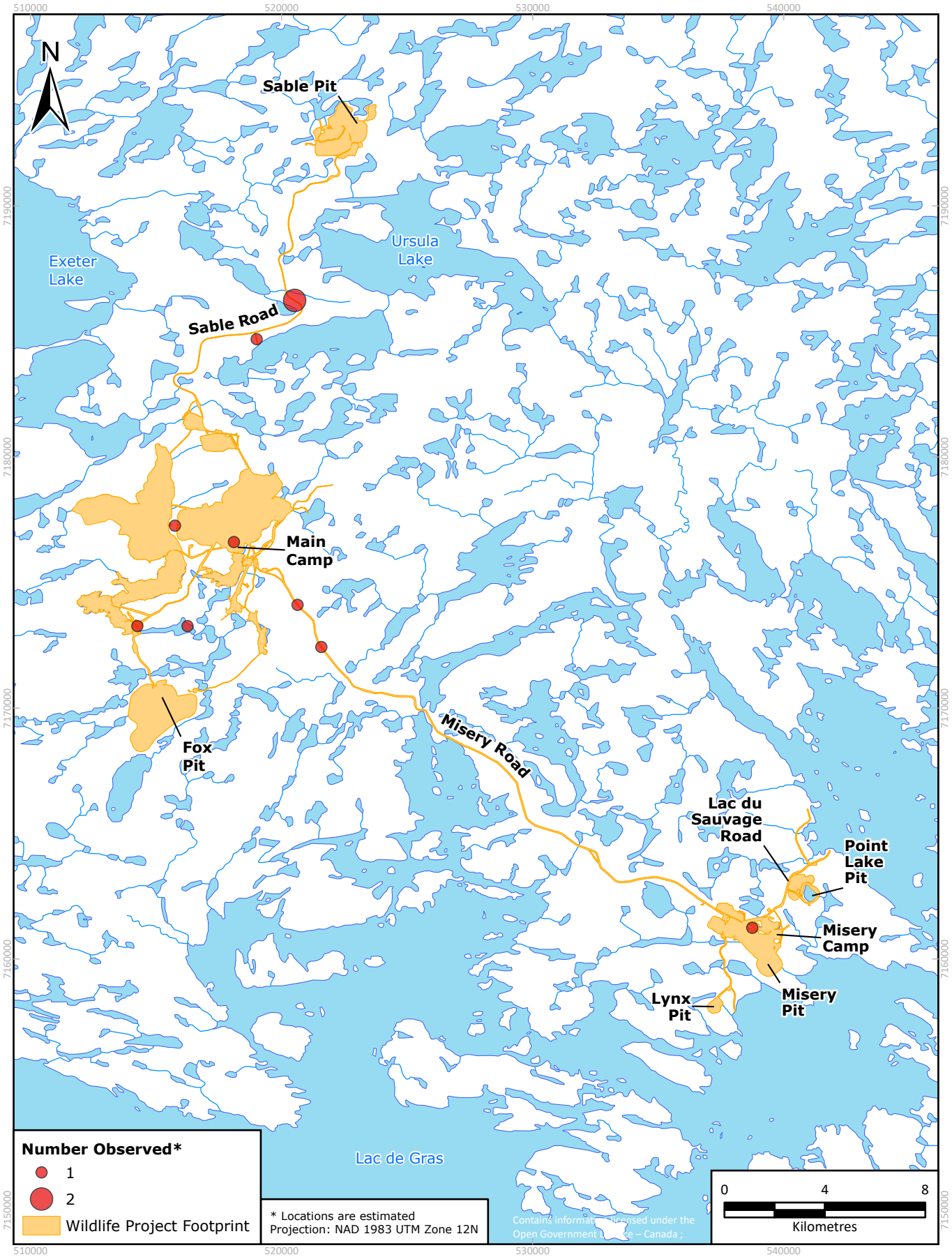


Figure 8.2-1 Incidental Wolverine Observations at the Ekati Mine, 2024

9. Fox

9.1 Background

Two species of fox inhabit the Slave Geological Province of the Northwest Territories: the red (or “coloured” or “cross”) fox and the arctic fox. Population estimates based on surveys from 2007 are >10,000 for both species combined in the NWT (GNWT ENR 2016). Both species are considered Secure in the NWT and are not federally listed in Canada (GNWT 2024). Arctic fox and red fox were not identified as a VEC during the Environmental Assessment Review Process; however, foxes (especially arctic fox) are considered important furbearers in the north for fur trade and so are included in the WEMP.

Foxes are opportunistic foragers, and they are attracted to communities, industrial sites, landfills and other anthropogenic food sources. Foxes are the primary animal vector of rabies in the NWT (Walker and Elkin 2005) and can transmit this disease to people. In response to these concerns, Burgundy monitors incidental fox occurrences at the Ekati Mine. The following section describes the methods and results of monitoring activities for fox in the Ekati Mine study area.

9.2 Incidental Observations

9.2.1 Introduction

Monitoring incidental fox observations near the mine site may help to avoid and minimize potential risks associated with human and wildlife interactions. Once a fox is observed within the mine site area, staff that are at risk of encountering the fox are notified, and work activities are adjusted accordingly.

9.2.2 Objectives

The objectives for incidental observation monitoring of fox are to:

- avoid and minimize fox-human interactions;
- identify the presence and demographic composition of incidental fox observations in the study area;
- document and determine the cause of direct mine-related mortality of foxes should they occur; and
- document abnormal behaviour in foxes to identify possible cases of rabies.

9.2.3 Methods

Incidental observations of foxes are reported to the Environment Department. These observations included those made by helicopter operators or by field workers and other on site staff. Each fox observation included the number of animals, sex, age, location, dominant behaviour, and condition of the animal.

All observations of persistent foxes reported near roads, staff, and buildings and potential sources of attractants were investigated, as these are of particular concern with regards to human and wildlife safety.
Where necessary, foxes were deterred from these areas by using vehicles, air horns, screamers, and bear bangers.

9.2.4 Results

During the 2024 reporting period, there were 58 incidental sightings of 65 foxes over 57 days near the mine (Table 9.2-1). This does not indicate that 65 different individual foxes were observed, because many of these observations could have been the same fox recorded on multiple occasions.

Table 9.2-1 Summary of Incidental Fox Observations near the Ekati Mine, 2024

	Red Fox[1]	Arctic Fox	Unknown Fox	Total
By Sex				
Male	0	0	0	0
Female	0	0	0	0
Unknown	53	3	9	65
Total	53	3	9	65
By age				
Adult	8	0	0	8
Kit	6	0	0	6
Unknown age	39	3	9	51
Total	53	3	9	65

Notes:
[1] Red fox includes fox classified as “silver fox” and “cross fox”.

The majority of observations (53 individuals) were red fox and unknown fox (nine individuals) species. Five red foxes, three arctic foxes, two cross foxes and one unknown fox species were observed during LLCF surveys. Observations with sufficient location information were plotted on a map of the study area (Figure 9.2-1).

Fox sightings were distributed mainly along roads, and potential sources of attractants (i.e., the Main Camp, the incinerator building, and the landfill area) (Figure 9.2-1). Most sightings occurred relatively close to mine infrastructure (<500 m; Figure 9.2-1), which is also where staff are located and thus recording incidental sightings.

The majority of observations were of solitary foxes (53 observations), however, there were five observations of multiple foxes (Table 9.2-1). Groups of foxes observed in 2024 included: three observations of two red fox, unknown sex and age; and two observations of three fox kits.

The number of incidental reports has been relatively low in recent years (2021 to 2024); below the average of 132 per year for the period 2007-2024 (Table 9.2-2).

Unless specified, the age and sex of the foxes was unknown. For fox observations that resulted in incidents, see Section 4.3.2. There were no suspected cases of rabies in 2024.

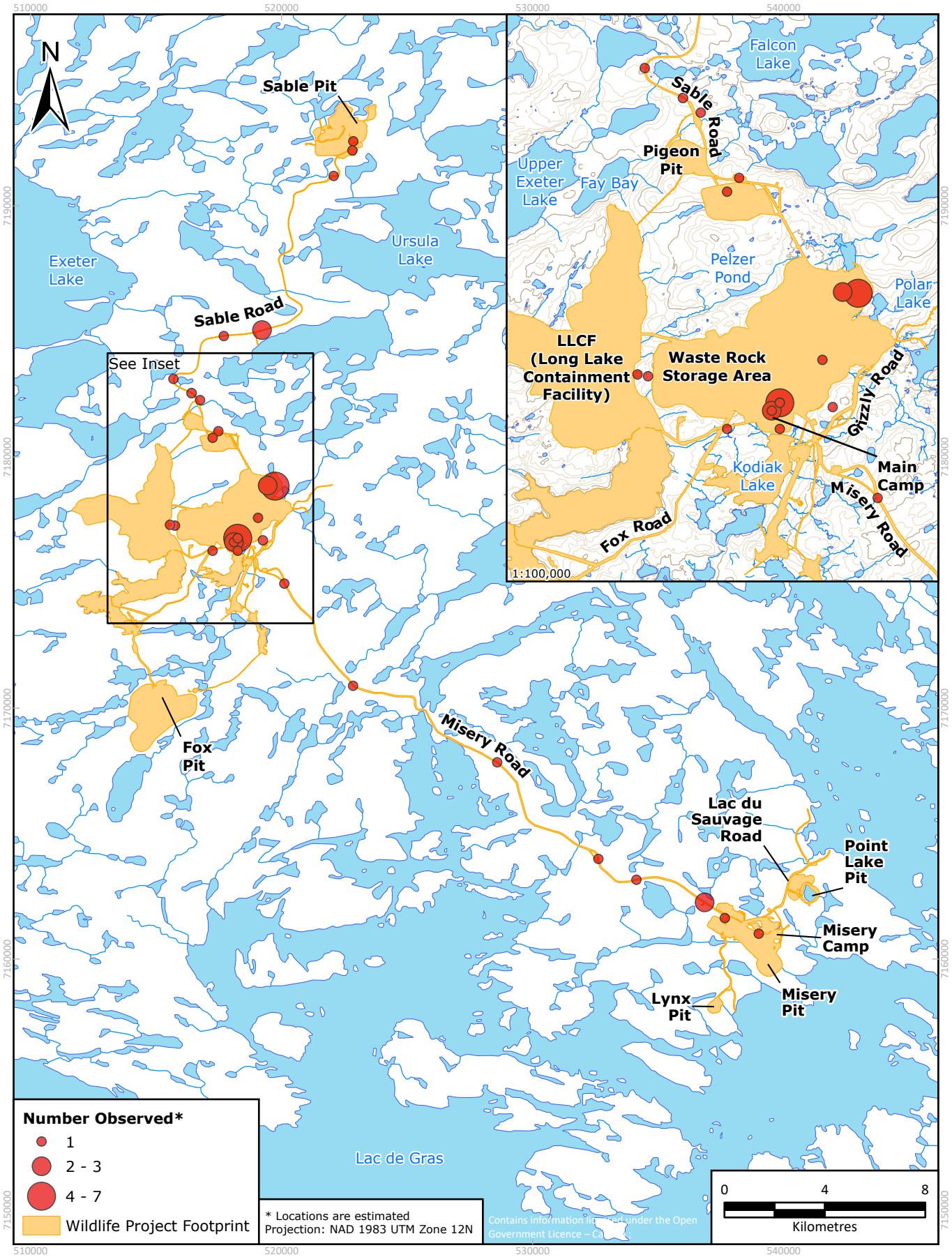


Figure 9.2-1 Incidental Fox Observations at the Ekati Mine, 2024

Table 9.2-2 Summary of Incidental Fox Observations near the Ekati Mine, 2007 to 2024

Fox	2007	2008	2009	2010	2011	2012	2013	2014	2015
Incidental observations (over separate days)	162 (n/a)	174 (124)	126 (90)	174 (120)	61 (55)	170 (124)	189 (114)	135 (99)	182 (132)
Sightings of multiple animals	n/a	14%	11%	7%	5%	6%	6%	12%	5%

Fox	2016	2017	2018	2019	2020	2021	2022	2023	2024
Incidental observations (over separate days)	255 (153)	147 (102)	138 (99)	113 (80)	69 (51)	52 (40)	44 (40)	50 (43)	65 (57)
Sightings of multiple animals	7%	5%	4%	23%	12%	12%	0%	18%	9%

Note:
n/a = not reported.

9.2.5 Discussion

Arctic fox and red fox were not identified as VECs during the initial Environmental Impact Statement. However, fox occurrence at the Ekati Mine is an ongoing concern and a decision was made to monitor foxes in 2007. Continued monitoring of fox near the site provides information on potential changes in occurrence, frequency, or composition on an annual basis.

Fox observations are typically close to mine infrastructure, where their relatively small size is easier to observe and where they are likely to be attracted.

Active dens were established adjacent to the Ekati Mine airstrip annually between 1994 and 2011 but have not been observed there since 2012. In past years, fox dens have been observed near (<500 m) of Misery haul road. In 2015 there were two active dens observed at 5 KM and 17 KM on Misery haul road; however, these dens were not confirmed to be active from 2016 to 2019. One active fox den was confirmed at the Ekati Mine in 2018 and 2019 at Lynx Road. A second active den was confirmed in 2019 near the G wing of the Main Accommodation Building at the Ekati Mine. No active dens were recorded in 2020, 2021, or 2022. Two active fox dens were reported in 2023: one by the Sable primary explosive magazine storage facility and one by the main accommodations. No active fox dens were reported in 2024.

9.2.5.1 Arctic and Red Fox Trends

During baseline studies at the Ekati Mine, arctic foxes were more commonly reported than red foxes in the study area (BHP and Dia Met 1995). In 1994, nine fox dens were identified in the study area, seven of which were arctic fox dens, and the remaining two were red fox dens. However, from 2009 to 2024, the red fox has become more common near the Ekati Mine. Three arctic foxes were observed in 2024 and previously had not been reported since 2021.

This apparent increase in the red fox may be due to the difficulty in separating the two species during spring and summer. Arctic foxes are predominantly reported in the winter when their white coat makes them easy to tell apart from red foxes. However, during summer, most reports are of red foxes.

Alternatively, the northern extent of the red fox range is limited by cold weather (Bartoń and Zalewski 2007) and may be moving north with climate change (Hersteinsson and MacDonald 1992), displacing the arctic fox (Tannerfeldt et al. 2002).

9.2.5.2 Rabies in Foxes

In NWT, the most prevalent rabies strain is the Arctic strain, named after the arctic fox, accounting for 83% of reported cases of the disease 1998 to 2004 (Walker and Elkin 2005). Rabies has also been documented in other wildlife in NWT, such as wolf, caribou, and polar bear but is less common (*Ursus maritimus*; Walker and Elkin 2005).

Concerns about potentially rabid foxes have been reported at the Ekati Mine since 2002. In 2007, there were six confirmed cases of rabid foxes at the mine, five cases of rabies in red foxes and one in an unknown fox species. In 2014, there were two suspected cases of rabies that resulted in the potentially infected animals being dispatched, as directed by GNWT ECC. Results of two red fox necropsies suspected of rabies in 2014 were provided to Ekati and rabies was confirmed in both cases. There was one unconfirmed case in 2015, but this fox was not located for dispatching. There were no suspected cases of rabies observed in foxes during the 2016 to 2024 reporting periods.

10. Raptors and Corvids

10.1 Background

Raptors (i.e., eagles, falcons, hawks, and owls) and corvids (i.e., ravens and crows) are a wildlife VEC for the Ekati Mine. Raptors can serve as indicators ecosystem health because they are predators in the upper levels of the food chain and have large home range sizes. These life requisite characteristics render them more sensitive to environmental alterations and disturbances (Steenhof et al. 1999). Legislation for the protection of raptor species prevents destruction and/or disturbance to the individuals and their nests (eggs and nestlings) under the *Northwest Territories Wildlife Act*, Section 38 (1998). At the mine, there are cliff-nesting and ground-nesting raptors.

Three species of cliff-nesting raptors are observed frequently nesting in the mine study area. These include peregrine falcon (*Falco peregrinus*), gyrfalcon (*Falco rusticolus*), and rough-legged hawk (*Buteo lagopus*). Common ravens (*Corvus corax*) are considered to be functional raptors as they use similar food and breeding resources as cliff-nesting raptors, and construct stick nests that are used by falcon species for nesting (Poole 2011; Poole and Bromley 1988). The peregrine falcon is no longer a listed species of conservation concern and is federally designated as Not at Risk by COSEWIC and Schedule 1 of SARA (2002). In the NWT, the peregrine falcon was assessed as not at risk (GNWT 2024).

Three species of ground-nesting raptors have been observed in the study area: snowy owl (*Bubo scandiacus*), short-eared owl (*Asio flammeus*), and northern harrier (*Circus cyaneus*). The snowy owl is ranked as Secure in NWT (GNWT 2024) and was assessed by COSEWIC as Not at Risk (Government of Canada 2024). The short-eared owl is listed by COSEWIC as Threatened (2021) and Special Concern on Schedule 1 of the *SARA* (2002). In NWT, the short-eared owl is listed as Vulnerable (GNWT 2022) and ranked as Sensitive (GNWT 2024).

All other cliff-nesting and ground-nesting raptor species likely to be found at the Ekati Mine are listed as Secure or Apparently Secure in the NWT and were assessed by COSEWIC (Government of Canada 2024) as Not at Risk or were not assessed (e.g., common raven).

The monitoring of raptors is a priority at the Ekati Mine, particularly for birds that have a conservation status based on federal listings on Schedule 1 of SARA (2002) and COSEWIC assessments (Government of Canada 2024). Burgundy monitors raptors near mine infrastructure and supports regional falcon monitoring initiatives coordinated by GNWT ECC. Between regional raptor monitoring study periods, raptors have been monitored at the Ekati Mine through incidental observations and pit wall nest monitoring surveys.

The following section describes the methods and results of monitoring activities on raptors In the Ekati Mine study area.

10.2 Incidental Raptor Observations

10.2.1 Introduction

Incidental raptor observations at the mine are recorded to understand where raptors may interact with the mine and manage potential risks associated with human and wildlife interactions, identify mine structures that are used by raptors as nesting locations, and identify any species of conservation concern in mine site area.

10.2.2 Objectives

The objectives of incidental raptor monitoring are to:

- avoid and minimize raptor-human interactions;
- document the presence of breeding raptors at the Ekati Mine;
- document sightings of uncommon raptors or species of conservation concern in the area; and
- document and determine the cause of direct mine-related mortality of raptors should they occur.

10.2.3 Methods

Helicopter operators, ground-based field workers, and other on- site staff report incidental raptor observations of cliff-nesting and ground-nesting raptors in the Ekati Mine study area to the Environment Department. Each raptor observation includes the date, the species, the number of individuals, the location and habitat type, the behaviour, and any breeding evidence.

10.2.4 Results

During the 2024 reporting period, there were a total of 20 incidental sightings of 33 raptors over 24 days near the Ekati Mine, including incidentals from LLCF surveys (Table 10.2-1). Five species of cliff-nesting raptors and corvids and one ground nesting raptor species were observed. Of the total incidental sightings of raptors and corvids, four common ravens, three bald eagles, three northern harrier, two rough-legged hawks and one peregrine falcon were observed during LLCF surveys.

Table 10.2-1 Summary of Incidental Raptor Observations, 2024

Raptor Species	Scientific Name	# of individuals
Cliff-nesting		
Bald eagle	*Haliaeetus leucocephalus*	5
Common raven	*Corvus corax*	9
Gyrfalcon	*Falco rusticolus*	7
Peregrine falcon	*Falco peregrinus*	5
Rough-legged hawk	*Buteo lagopus*	4
Ground-Nesting		
Northern harrier	*Circus hudsonius*	3
Total		**33**

Raptor observations with sufficient location information were plotted on a map of the study area (Figure 10.2-1). Raptor sightings were mainly located near pits and roads. The majority of sightings occurred relatively close to mine infrastructure (<500 m; Figure 10.2-1).

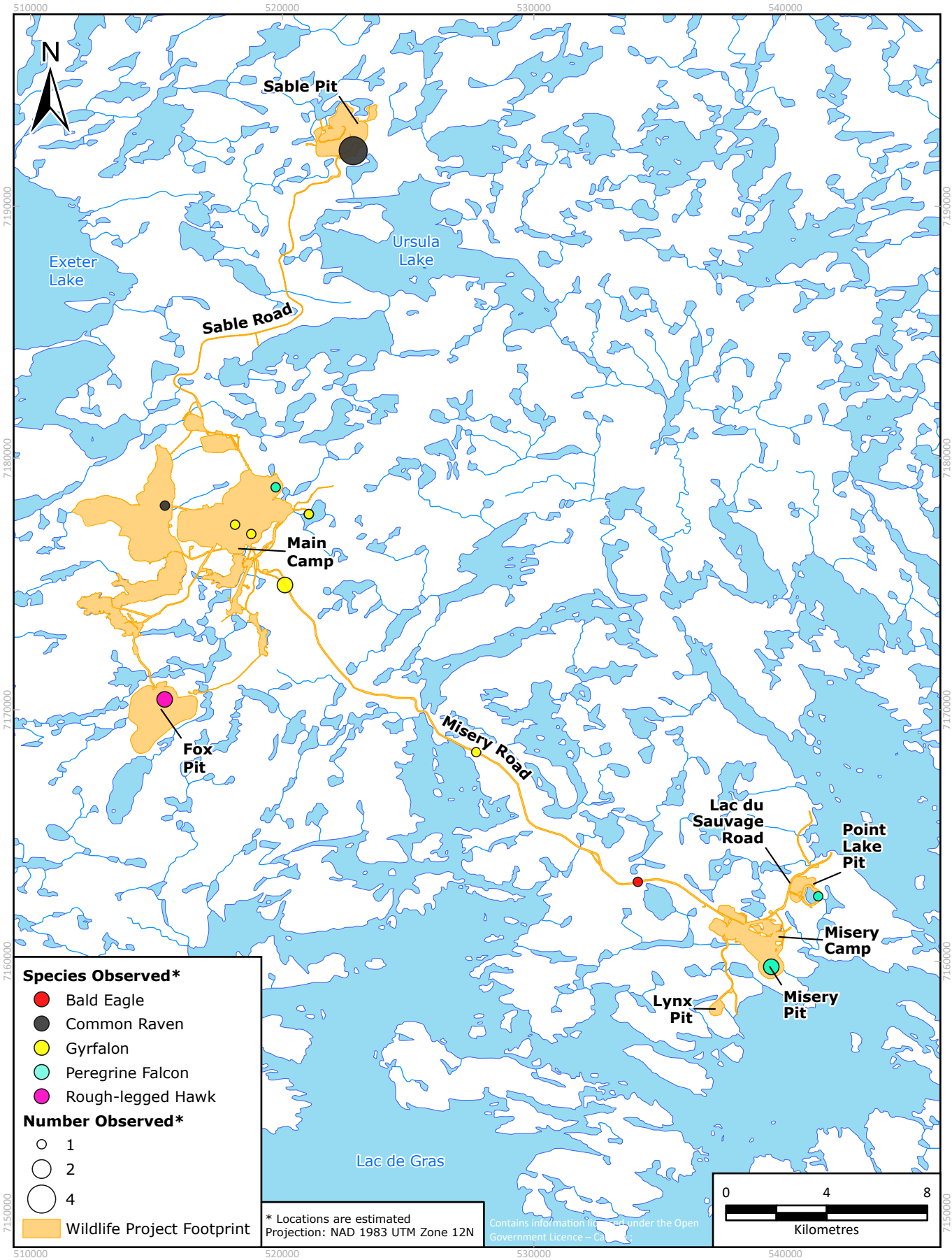


Figure 10.2-1 Incidental Raptor Observations at the Ekati Mine, 2024

In 2024, 50% of observations occurred during the breeding season for raptors (May to August). The other 50% of observations occurred during the non-breeding seasons for raptors (September to April). No breeding raptor species were observed in 2024. Incidents and mortalities for raptor species and corvids are described in Sections 4.2, 4.3.1, and 4.3.2.

10.2.5 Discussion

In 2024, there were 20 incidental sightings of 33 individual raptors, representing six species, over 24 separate days near the Ekati Mine. One peregrine falcon was observed injured and relocated off the mine site in 2024 (see Section 4.3.2 Wildlife Incidents). All raptor observations were of cliff-nesting raptor species. No confirmed breeding raptor species were observed in 2024.

Overall, similar raptor species are observed within the mine site each year. Species observed in 2024 are similar to the previous four years.

10.3 Pit Wall Nest Monitoring

10.3.1 Introduction

In northern environments, cliff-nesting raptors such as peregrine falcons (Photo 10.3-1), rough-legged hawks, gyrfalcons and common ravens will nest on human-made structures including cairns, buildings, towers, mining dredges, and bridges (Kessel 1989). Open pit walls at the Ekati Mine resemble steep-sided ledges and offer attractive nesting locations for falcons and other cliff-nesting birds.

Photo 10.3-1 Example peregrine falcon at Sable Pit in 2021.

Monitoring cliff-nesting birds on pit walls is a priority at the Ekati Mine, particularly for birds that have a conservation status based on federal listings on Schedule 1 of SARA (2002), COSEWIC (Government of Canada 2024), and the listings under the Northwest Territories General Status Ranking Program (GNWT 2022). The eggs, nests, and individuals of gyrfalcon, peregrine falcon, and other raptor species (e.g., rough-legged hawk, golden eagle [*Aquila chrysaetos*]) are legally protected under the Northwest Territories *Wildlife Act*, Section 38 (1998).

The use of active pits for nesting could pose a risk to raptors and their young. Raptor deterrence methods are used to minimize the number of raptors that are impacted by mining operations and prevent raptors from nesting and raising young in high-risk areas. Intensive monitoring and a bird deterrent program at active pits ensure that nests are not established in potentially unsafe areas for the raptors and to also prevent temporary cessation of mining activities, which would be required for the duration of the nesting period in cases where nests are located close to blasting areas.

10.3.2 Objectives

The objectives for pit wall nest monitoring are to:

- determine if pit walls or other mine infrastructure are utilized as nesting sites for raptors;
- determine nest success (occupancy and productivity) of raptor nests; and
- document effectiveness of nest deterrent efforts that may be employed.

10.3.3 Methods, Results, and Discussion

Bird monitoring staff actively scanned the Sable Pit for bird presence and signs of nesting activity. In the event nesting activity was observed, deterrents were initiated including bear bangers, screamers, mesh netting and nest removal. During the 2024 reporting period, a total of 264 pit wall nest surveys over 82 days were conducted at Sable Pit between March 27, 2024 and June 25, 2024.

10.4 Regional Falcon Surveys

Gyrfalcon and peregrine falcon breeding activity is monitored as part of the WEMP because they are considered valuable indicators of environmental change (Holroyd and Banasch 2003). Because falcons are top predators, their population dynamics coincide with changes in prey populations. The population trends and breeding success of peregrine falcon have also been used as indicators of the effects of human activities on ecosystem health because of the recognized effects of pesticides and contaminants on eggshell thinning in falcons (White et al. 2002; Wegner et al. 2005).

Regional GNWT ECC falcon surveys (last conducted by GNWT ECC in 2010 on an annual cycle) were not conducted between 2012 and 2014, as per recommendations received from technical and community workshops held on June 28, 2010, and October 5 – 6, 2010, respectively. The surveys were repeated in 2015, and results were presented in the 2015 WEMP Report (ERM 2016). No regional ENR/GNWT ECC falcon surveys were conducted from 2016 to 2024.

Burgundy is currently in the process of finalizing an updated WMMP Plan, which will be implemented upon final approval expected in 2026. The updated WMMP Plan does not include regional falcon surveys as active monitoring component, and as such this section will be removed once the updated WMMP Plan is approved.

11. Migratory Birds

11.1 Background

The period in which upland birds lay eggs in the Ekati Mine study area typically begins the first week of June and extends until the end of July (ECCC 2023; BHP Billiton 1998). Small perching birds and shorebirds are the most common breeders in the Ekati Mine study area, including the American tree sparrow (*Spizella arborea*), Harris's sparrow (assessed as species of Special Concern by COSEWIC [2017] and also on Schedule 1 of *SARA* [2002]; ranked Sensitive in the NWT [GNWT 2024]), Lapland longspur (*Calcarius lapponicus*), least sandpiper (*Calidris minutilla*), and Savannah sparrow (*Passerculus sandwichensis*). Some other species that are present but less common in the study area include lesser yellowlegs (listed as Threatened by COSEWIC [2020] and under consideration under Schedule 1 of *SARA* [2002]; ranked Sensitive in the NWT [GNWT 2024]), pectoral sandpiper (*Calidris melanotos*), and yellow-rumped warbler (*Setophaga coronate*). The rusty blackbird (*Euphagus carolinus*) and red-necked phalarope (*Phalaropus lobatus*) have also been observed in the Ekati Mine study area and are assessed as species of Special Concern by COSEWIC (2006; 2014a) and also on Schedule 1 of *SARA* (2002), and are ranked as Sensitive in the NWT (GNWT 2024).

Natural and human-induced disturbances that occur during the breeding period can correlate with changes in breeding bird density, species richness, and diversity (Rottenborn 1999; Debinski and Holt 2000; Hennings and Edge 2003; Jokimaki and Kaisanlahti-Jokimaki 2003; Thorington and Bowman 2003). Consequently, upland migratory birds within the Ekati Mine study area were monitored annually until 2019. Avian species are often selected for use in monitoring programs because they represent an abundant and diverse group that can be surveyed with relative ease.

Formal breeding bird survey was terminated in 2009 in consultation with ENR and other stakeholders. The decision was made following a review of 13 years of bird monitoring data that indicated no long-term consistent trends for overall species density near the Ekati Mine. Burgundy monitored upland breeding birds through the North American Breeding Bird Surveys (NABBS) from 2003 to 2019 (Section 11.3) and through incidental observations. Incidental observations of breeding birds in the study area are monitored and recorded to document any signs of breeding activity and to identify mine structures that provide potential nesting platforms. Bird species of conservation concern or uncommon species in the region are also documented when observed. The following section describes the methods and results of monitoring activities on migratory birds in the Ekati Mine study area.

11.2 Incidental Bird Observations

11.2.1 Introduction

Recording incidental bird sightings at the Ekati Mine is one component of the migratory bird monitoring program conducted by Burgundy. The information has been reported in the WEMP since 2013. Incidental bird observations around the mine site are monitored and recorded to minimize potential risks associated with human and wildlife interactions, to identify mine structures that are used by migratory birds as nesting locations, and to identify any species of conservation concern in mine site area.

11.2.2 Objectives

The objectives of incidental bird observation monitoring are to:

- document the presence of breeding birds at the Ekati Mine;
- document sightings of uncommon birds or species of conservation concern in the area; and
- document and determine the cause of direct mine-related mortality of migratory birds should they occur.

11.2.3 Methods

Incidental migratory bird observations around the Ekati Mine were recorded by the Environment Department staff. For each bird observation, the species, number of individuals, date, location (UTM coordinates, where possible), habitat, breeding evidence, and behaviour were recorded.

11.2.4 Results

During the 2024 reporting period, there were 13 incidental bird sightings, including approximately 274 individuals from five species (Table 11.2-1). One observed species is ranked as Sensitive in the NWT (GNWT 2024); northern pintail (*Anas acuta*). Two common raven nests were found incidentally and reported in Section 4.3.2. All the incidental observations were recorded near the mine infrastructure. Greater white-fronted goose (*Anser albifrons*), Canada goose (*Branta canadensis)*, snow goose (*Anser caerulescens*), and northern pintail accounted for 90% of all individuals (n = 247).

Table 11.2-1 Summary of Incidental Migratory Bird Observations, 2024

Common Name	Scientific Name	# of individuals
Canada goose	*Branta canadensis*	60
Greater white-fronted goose	*Anser albifrons*	110
Northern pintail*	*Anas acuta*	37
Rock ptarmigan	*Lagopus muta*	2
Snow goose	*Anser caerulescens*	40
Unknown ptarmigan	*Lagopus* spp.	24
Unknown	Unknown	1
Total		**274**

*Species of Conservation Concern.

An additional 5,842 migratory birds representing 32 unique species over 58 separate days were recorded during LLCF surveys in 2024.

All migratory bird species recorded incidentally in 2024 have been previously recorded in the study area, either during bird surveys conducted between 1996 and 2008 (Rescan 2010), incidentally, or during the NABBS from 2003 to 2019.

11.2.5 Discussion

During the 2024 reporting period, there were 11 incidental bird sightings, including approximately 274 individuals from five species. All species observed incidentally in 2024 have been recorded at the Ekati Mine in past years. In 2024, one species of conservation concern ranked as Sensitive in the NWT (GNWT 2024) was recorded; northern pintail. Breeding wasn't confirmed for any incidental species in 2024. The ability to adapt and habituate to disturbance is likely species-specific (Scott et al. 1996; Conomy et al. 1998; Fitzpatrick and Bouchez 1998). Studies suggest upland migratory bird species that prefer open-disturbed habitat may be attracted to mine infrastructure, while other species may avoid developments.

11.3 North American Breeding Bird Survey (NABBS)

The NABBS is designed to collect long-term data on the population status and trends of breeding birds throughout North America. Previous operators of the Ekati Mine also monitored migratory birds through the NABBS from 2003 to 2019. However, due to evidence that effects to migratory birds are localized (Smith et al. 2005) these regional studies are no longer conducted. Currently, incidental observations of migratory birds in the study area are recorded to document any signs of breeding activity and to identify mine structures that provide potential nesting platforms. Bird species of conservation concern or uncommon species in the region are also documented when observed (Section 11.2).

Burgundy is currently in the process of finalizing an updated WMMP Plan, which will be implemented upon final approval expected in 2026. The updated WMMP Plan does not include NABBS and as such it is anticipated that this section will be removed once the updated WMMP Plan is approved.

12. Other Wildlife Observations

12.1 Moose

During the 2024 reporting period, there were two incidental sightings of moose. There was a total of two moose of unknown sex and age across the two observations (though as with all incidental observations, individual animals may be recorded multiple times) over two separate days near the Ekati Mine (Table 12.1-1). Observations of moose have become more common in recent years at the Ekati Mine, with a total of 106 individual moose sightings recorded from 2013 to 2024 (Table 12.1-1). Moose observations in 2024 are below the average (n = 9) but are similar to observations made in 2013 and 2014. Moose is considered Secure in the NWT (GNWT 2024).

Observations with sufficient location information were plotted on a map of the study area (Figure 12.1-1). One moose was observed near Misery haul road, and one was observed 400 m away from Sable haul road. No incident reports were filed for incidental moose observations in 2024.

Table 12.1-1 Summary of Incidental Moose Observations near the Ekati Mine, 2013 to 2024

Moose	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Incidental observations (over separate days)	1 (1)	2 (2)	23 (9)	6 (5)	5 (4)	8 (6)	23 (18)	8 (8)	9 (9)	13 (12)	6 (5)	2 (2)

12.2 Muskox

Incidental observations of muskox were recorded for the first time in 2024 since 2017. Muskox are reported infrequently at Ekati Mine. Muskoxen are distributed throughout the NWT, with their range overlapping the Ekati Mine. The mine is situated within the 'presence expected area' of the muskox range (GNWT n.d.). During the 2024 reporting period, there were two incidental sightings of muskox. There was a total of 22 muskoxen across the two observations; one adult male, one adult female, two calves of unknown sex, and 18 muskoxen of unknown sex and age (though as with all incidental observations, individual animals may be recorded multiple times). No observations of muskox were recorded at the mine in 2022 or 2023. Groups of muskoxen observed in 2024 included: one observation of seven muskox, one observation of 15 muskoxen. Observations are plotted on a map of the study area (Figure 12.2-1).

12.3 Arctic Ground Squirrel

During the 2024 reporting period, there were six incidental sightings of arctic ground squirrel (*Urocitellus parryii)*. There was a total of six arctic ground squirrels of unknown sex and age observed over two separate days during LLCF surveys in 2024 (though as with all incidental observations, individual animals may be recorded multiple times).

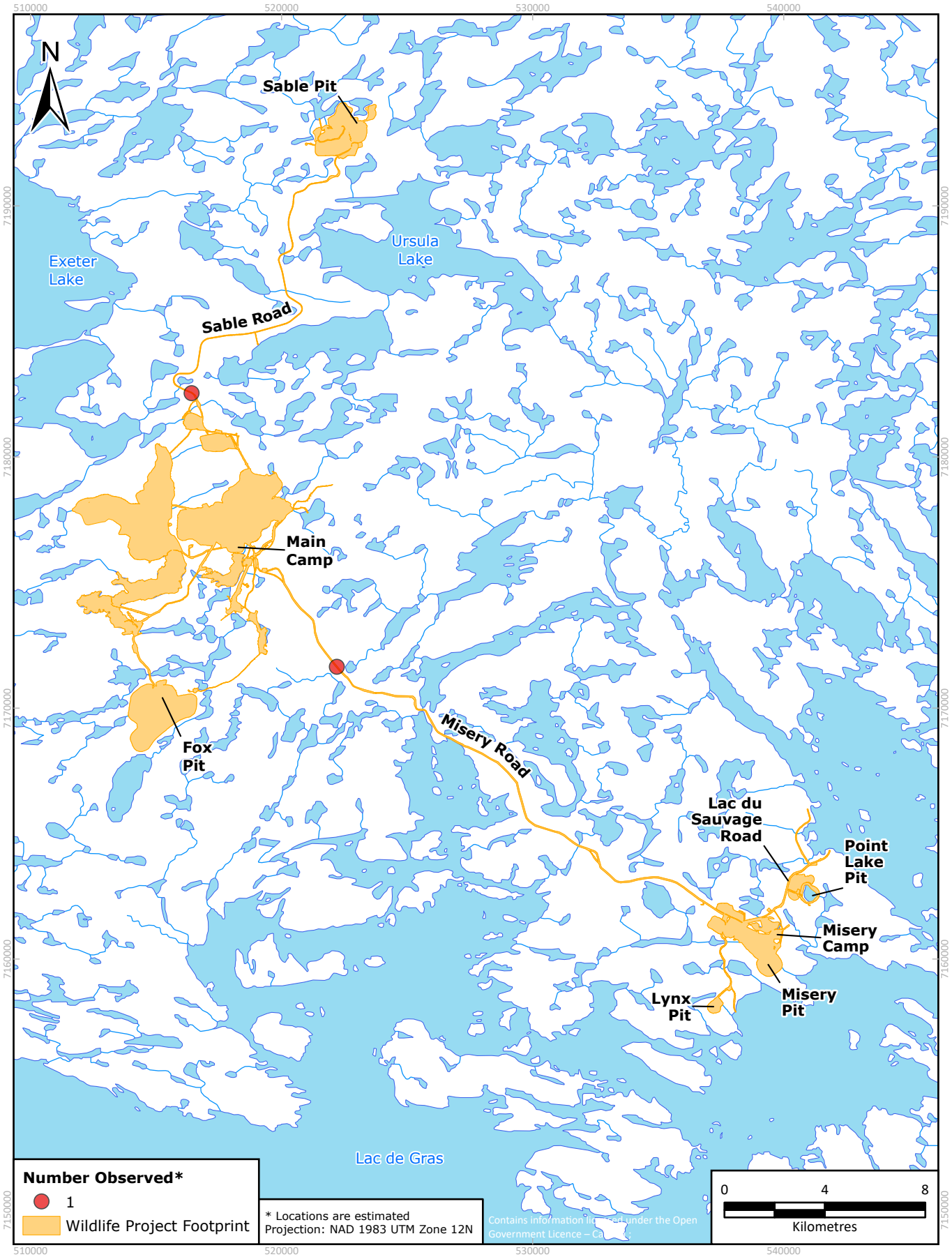


Figure 12.1-1 Incidental Moose Observations at the Ekati Mine, 2024

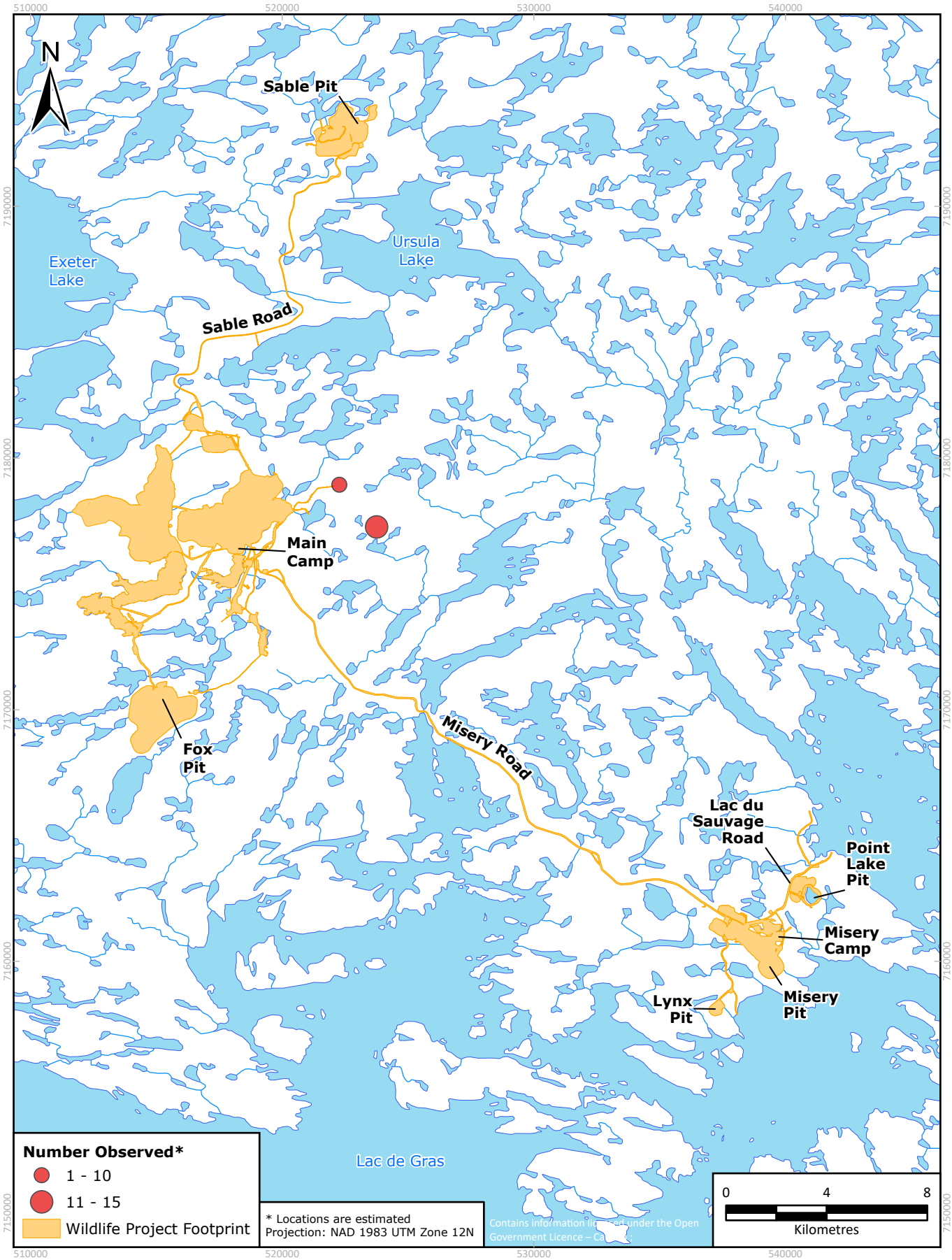


Figure 12.2-1 Incidental Muskox Observations at the Ekati Mine, 2024

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Appendix A Ekati Detailed Work Stoppages and Short-Term Road Closures Due to Wildlife, 2024

Appendix A Ekati Detailed Work Stoppages and Short-Term Road Closures Due to Wildlife

Date	Location	Trigger	Duration of Closure (min)	Mitigation Implemented	Outcome
29-Jun-25	Sable Haul Road,KM10	Caribou	60	Short-term road closure	Unknown
30-Jun-25	Sable Haul Road,KM7	Caribou	15	Short-term road closure	Unknown
30-Jun-25	Sable Haul Road,	Caribou	15	Short-term road closure	Unknown
30-Jun-25	Sable Haul Road,KM6	Caribou	60	Short-term road closure	Unknown
30-Jun-25	Sable Haul Road,KM6	Caribou	50	Short-term road closure	Unknown
2-Jul-25	Sable Haul Road,KM7	Caribou	65	Short-term road closure	Unknown
5-Jul-25	Sable Haul Road,KM8	Caribou	60	Short-term road closure	Unknown
7-Jul-25	Sable Haul Road,KM9	Caribou	45	Short-term road closure	Unknown
8-Jul-25	Sable Haul Road,	Caribou	45	Short-term road closure	Unknown
11-Jul-25	Sable Haul Road,	Caribou	57	Short-term road closure	Unknown
11-Jul-25	Sable Haul Road,KM10	Caribou	35	Short-term road closure	Unknown
11-Jul-25	Sable Haul Road,	Caribou	120	Short-term road closure	Unknown
12-Jul-25	Sable Haul Road,	Caribou	20	Short-term road closure	Unknown
12-Jul-25	Sable Haul Road,	Caribou	49	Short-term road closure	Unknown
12-Jul-25	Sable Haul Road,KM5	Caribou	39	Short-term road closure	Unknown
12-Jul-25	Sable Haul Road,KM2.5	Caribou	36	Short-term road closure	Unknown
12-Jul-25	Sable Haul Road,KM2	Caribou	17	Short-term road closure	Unknown
12-Jul-25	Sable Haul Road,KM1.5	Caribou	35	Short-term road closure	Unknown
12-Jul-25	Sable Haul Road,KM2.5	Caribou	63	Short-term road closure	Unknown
13-Jul-25	Sable Haul Road,KM10	Caribou	185	Short-term road closure	Unknown
13-Jul-25	Sable Haul Road,KM5	Caribou	29	Short-term road closure	Unknown
14-Jul-25	Sable Haul Road,KM14	Caribou	79	Short-term road closure	Unknown
14-Jul-25	Sable Haul Road,KM13	Caribou	130	Short-term road closure	Unknown
14-Jul-25	Sable Haul Road,KM14.5	Caribou	142	Short-term road closure	Unknown
14-Jul-25	Unknown,	Caribou	180	Short-term road closure	Unknown
15-Jul-25	Sable Haul Road,KM1	Caribou	127	Short-term road closure	Unknown
16-Jul-25	Sable Haul Road,KM15	Caribou	25	Short-term road closure	Unknown
16-Jul-25	Sable Haul Road,KM1	Caribou	157	Short-term road closure	Unknown
16-Jul-25	Sable Haul Road,KM11.5	Caribou	69	Short-term road closure	Unknown
16-Jul-25	Sable Haul Road,	Caribou	52	Short-term road closure	Unknown
16-Jul-25	Unknown,	Caribou	300	Short-term road closure	Unknown
17-Jul-25	Sable Haul Road,KM1	Caribou	26	Short-term road closure	Unknown
17-Jul-25	Sable Haul Road,KM1	Caribou	112	Short-term road closure	Unknown
17-Jul-25	Sable Haul Road,KM15.5	Caribou	20	Short-term road closure	Unknown
17-Jul-25	Sable Haul Road,KM15	Caribou	51	Short-term road closure	Unknown
17-Jul-25	Unknown,	Caribou	360	Short-term road closure	Unknown
18-Jul-25	Sable Haul Road,KM2	Caribou	96	Short-term road closure	Unknown
18-Jul-25	Sable Haul Road,KM15	Caribou	44	Short-term road closure	Unknown

Appendix A Ekati Detailed Work Stoppages and Short-Term Road Closures Due to Wildlife

Date	Location	Trigger	Duration of Closure (min)	Mitigation Implemented	Outcome
18-Jul-25	Sable Haul Road,KM1.5	Caribou	52	Short-term road closure	Unknown
18-Jul-25	Sable Haul Road,KM10.5	Caribou	185	Short-term road closure	Unknown
18-Jul-25	Unknown,	Caribou	255	Short-term road closure	Unknown
19-Jul-25	Sable Haul Road,KM2	Caribou	67	Short-term road closure	Unknown
19-Jul-25	Unknown,	Caribou	360	Short-term road closure	Unknown
20-Jul-25	Unknown,	Caribou	502	Short-term road closure	Unknown
20-Jul-25	Unknown,	Caribou	300	Short-term road closure	Unknown
21-Jul-25	Sable Haul Road,	Caribou	463	Short-term road closure	Unknown
22-Jul-25	Sable Haul Road,	Caribou	588	Short-term road closure	Unknown
22-Jul-25	Unknown,	Caribou	120	Short-term road closure	Unknown
25-Jul-25	Sable Haul Road,KM1.5	Caribou	90	Short-term road closure	Unknown
27-Jul-25	Sable Haul Road,KM12	Caribou	120	Short-term road closure	Unknown
27-Jul-25	Sable Haul Road,KM13	Caribou	40	Short-term road closure	Unknown
11-May-24	KM 5 Misery Haul Road	Caribou on the road	15	Vehicles stopped and traffic delayed	
29-Jun-24	Sable Haul Road	Caribou on the road	75	Vehicles stopped and traffic delayed	
24-Aug-24	Misery Haul Road KM 22 to 23	Caribou on the road	30	Vehicles stopped and traffic delayed	
9-Jul-24	Beartooth corner	Caribou on the road	70	Work stoppage	
9-Jul-24	Sable Haul Rd KM 9	Caribou on the road	45	Work stoppage	
9-Jul-24	Beartooth Corner	Caribou on the road	134	Work stoppage	
11-Jul-24	Beartooth Corner	Caribou on the road	61	Work stoppage	
12-Jul-24	KM Sable Road	Caribou on the road	120	Vehicles stopped and one person got out of vehicles to move the caribou away from the road	The caribou moved off the road and traffic continued
12-Jul-24	Sable KM 2	Caribou on the road	45	Production haulted while CB on road: Work stoppage. Due to shift change employee went out and gently moved caribou because of position between berms.	The caribou moved off the road and traffic continued
13-Jul-24	Sable KM10	Caribou on the road	196	Work stoppage while caribou were on the road	Caribou moved off road and work continued
13-Jul-24	Beartooth Corner	Caribou on the road	25	Work stoppage while caribou were on the road	Caribou moved off road and work continued
13-Jul-24	Sable KM 6	Caribou on the road	20	Work stoppage while caribou were on the road	Caribou moved off road and work continued
13-Jul-24	Sable Road KM10.5	Caribou bedded on the road	90	Vehicles stopped while one person walked over to the caribou to dter it off the road.	Caribou was deterred off the road and one person stayed outside of their truck to direct traffic to pass
24-Aug-24	Misery Haul Road KM 22 to 23	Caribou on the road	80	Vehicles stopped and traffic delayed	
14-Jul-24	Sable road KM13	Caribou on the road	63	Vehicles stopped and one person got out of vehicles to move the caribou away from the road	The caribou moved off the road and traffic continued
14-Jul-24	Sable road KM13	Caribou on the road	140	Vehicles stopped and one person got out of vehicles to move the caribou away from the road	The caribou moved off the road and traffic continued
15-Jul-24	Sable road KM2	Caribou on the road	Unknown	Vehicles stopped and one person got out of vehicles to move the caribou away from the road	The caribou moved off the road and traffic continued
15-Jul-24	Sable	Caribou on the road	90	Traffic stopped.	Crews that were undergoing shift change found alternative rides back to camp to avoid the caribou on the road
17-Jul-24	KM 11,1 Sable Hr	Two caribou on either side of the road	120	Vehicles stopped. Environment team escorted crew along the road	Vehicles passed by caribou without distress
20-Jul-24	KM10 Sable haul Rd	Caribou on the road	34	Work stoppage	Traffic waited for caribou to move off the road
20-Jul-24	KM2 Sable HR	Fox lying on the road	45	Traffic stopped. Environment team deterred fox from the road with a truck horn	The fox was deterred off the road past the berm and traffic continued
20-Jul-24	KM 1.5 Sable haul road	Caribou on the road	48	Work stoppage	Traffic waited for caribou to move off the road
20-Jul-24	KM 1.5 Sable haul road	Caribou on the road	34	Work stoppage	Traffic waited for caribou to move off the road

Appendix A Ekati Detailed Work Stoppages and Short-Term Road Closures Due to Wildlife

Date	Location	Trigger	Duration of Closure (min)	Mitigation Implemented	Outcome
20-Jul-24	KM 1.5 Sable haul road	Caribou on the road	209	Work stoppage	Traffic waited for caribou to move off the road
20-Jul-24	KM 2 Sable haul road	Caribou on the road	105	Work stoppage	Traffic waited for caribou to move off the road
27-Jul-24	Misery Crusher	Caribou beside the Misery crrusher	20	Work stoppage	Caribou moved away from the crusher and work continues
27-Jul-24	Sable Road KM 13	Caribou walking under DRPT trailers	30	Work stoppage. Deterred off road by personnel	Caribou walked off road, showed no signs of distress.
3-Aug-24	Misery Crusher	Caribou beside the Misery crrusher	87	Work stoppage	Caribou left the work area and work started again
13-Aug-24	Sable haul road KM 10	Six wolves obsered walking on the road.	10	Vehicles stopped and radio called in to alert other drivers	Wolves walked off road and traffic started again
16-Aug-24	KM 15 Sable Ahul Road	Caribou on the road	30	Vehicles stopped	Caribou walked off the road and vehicles were able to drive
17-Aug-24	KM 24 Misery Haul road	Caribou on the road	40	Vehicles stopped	Caribou walked off the road and vehicles were able to drive
19-Aug-24	Desperation Pond	Injured peregrine falcon in the dig face at Point Lake	240	Work stoppage, peregrine falcon was relocated	The peregrine falcon was reloctaed to the Misery WRSA
26-Sep-24	Misery Camp	Grizzly bear sow and three cubs crawled under the Misery Camp fence	60	Work stoppage.	Grizzly bears crawled back over the fence and left the mine area. Enviornment team inspected fencing for damages
26-Sep-24	Misery Camp	Grizzly bear crawled under the Misery Camp fence into an area near working personnel. The bear left the area after first deterrence and came back to Thinner Lake	180	Work stopped. Grizzly bear was deterred from the camp using a light vehicle and then a helicopter	Bear left and the nevironment team repaired fencing
25-Oct-24	Sable HR KM 12	Grizzly bear feeding on the remains of an arctic hare near the road	20	Traffic stopped, bear deterred from the road using a light vehicle	Bear was deterred off the road and traffic continued

Appendix B Ekati Detailed Wildlife Incidents 2024

Appendix B Ekati Detailed Wildlife Incidents, 2024

Date	Species	Number of Indivduals	Condition (**H**=healthy, **P**=poor condition, **W**=wounded, **U**=Unknown, **X**= No Data)	Sex (**M**=male, **F**=female, **MF**=male and female, **FF**=female and female, **U**=unknown, **UUU** = 3 unknown, etc., X=no data)	Dominant Behavior	Deterrent Used? (Y/N)	Type of Incident (**INT**=interaction with field crew, **V**=vehicle, **A**= aircraft, **MIF**=mine infrastructure, **M**=Wildlife Mortality, **X**=No Incident)	Type of Deterrent	Location (name of location or grid cell)	Description of Incident
6-Jan-24	Grizzly bear		X	X	X	X	Other	X	AC4	On 5-Jan-24, TL was notified of a potential bear den on the east side of the Sable east dump. LM and EO went out to take an initial look. Area is active with haul trucks passing by less than 100m from the suspected den site. there are three vent holes spanning about 4-5m, with one larger more prominent ont. On 06-Jan-24 FLIR photos were taken and the drone was used to see if we could get a better look into the hole. Still inconclusive. Adam to follow up with the potential to use a snake camera (the ones the put down pipes) to confirm.
26-Jan-24	Red fox	1	U	U	Scavenging	N	MIF	X	M14	Fox entered empty 1000L tote in the Waste Management Yard and initially could not get out (tote did not have a lid on it). Employee contacted environment about issue and Environment requested employee use a loader to tip the tote on its side allowing the fox to easily get out. When worker moved in to the area of the tote the activity increased the effort from the fox to free itself and it was able to get out without tipping the tote.
3-Feb-24	Common raven	1	U	U	Scavenging	N	MIF	X	V31	Raven observed feeding on food waste near the lineup room entrance.
16-Feb-24	Common raven	1	U	U	Flying	N	MIF	X	Misery Procon Light duty vehicle bay (where light duty vehicle mine trucks are parked)	Raven observed trying to enter Procon light duty vehicle bay. Told Procon Superintendent to remind the crew to secure food when opening and closing the fuel bay, he acknowledged and said he would remind the crew at the morning meeting.
18-Feb-24	Wolf	1	H	U	Walk	N	MIF	X	Sable Haul Road KM 13 - Fiber optic cable	Sable office and Sable pit have lost all network services and this includes internet, phones, Wenco and simplex at approximately at 9:15 AM MST due to 2 fiber breaks from a wolf bite. This is break located at km 13 on Sable Haul Road. On Monday Feb, 17-2024 Sable office and Sable pit network services have been restored and this includes internet, phones, Wenco and simplex at approximately at 1:30 PM MST.
25-Feb-24	Common raven	1	H	U	Scavenging	N	MIF	X	MUG light duty truck shop	A raven has been frequenting inside the light duty truck shop when the bay doors are open to remove vehicles. FPE (DDEEV24020401) entered by MUG. MUG Super emailed and indicated "There is a raven reported to be going in the light duty truck shop here at Misery when people are opening the bay doors to remove vehicles from the building, I have asked to have the food waste removed and brought it up at our pre shift meeting to not have any food waste placed in the garbage cans in the building so hopefully that will help."
22-Apr-24	Common raven	2+	H	MF	Nesting	N	MIF	X	R29	Ravens nest was obsserved at Misery Crusher power substation. Confirmed wth Elctrical that the nest can stay.
8-May-24	Grizzly bear	1	H	U	Walk	Y	MIF	bear banger	O15	Grizzly bear spotted at airport intersection. Crew responded and fired 3 bear bangers to deter the bear South. Lost sight of the bear in low tundra area West of the Misery HR narrows.
11-May-24	Caribou	5	U	U	Standing	N	V	X	Km 5 Misery Haul Road	Truck left waiting for caribou to clear haul road- no deterrents used
19-May-24	Grizzly bear	1	H	U	Walk	Y	MIF	bear banger	Airport to Q13 and back to P18	at approximately 14:50 a lone adult (assume to be male) grizzly bear was observed heading from the airport area towards the Koala ring road. The bear was observed by Environment staff at approximately 15:20 on the tundra crossing the Misery haul road to the koala Ring Road. the bear made it way towards the Koala UG / Koala North Pit area. It veered back in toward the Koala UG truck shop / office building. using a pick-up and honking the horn, it was prevented from getting to the building area and headed back east towards the Grizzly road. One bear banger was fired to try to push the bear further towards the Grizzly road, but had no effect. The bear bedded down a short time later at the NW corner of Q13. the bear remained at the location for approximately an hour. The bear again began to walk south west towards the koala ring road and another whistle banger was used to try to push it towards the grizzly road. This also had little effect, but the bear change direction slightly and began to slowly walk south on the tundra between the Grizzly road and the Koala ring road (SW corner of Q13). Two more banger were fired to keep the bear from moving back towards camp at O13 and P15. at approximately 17:50 the bear left the east side of the Grizzly Road and headed towards the core shack. I t cross the Misery road and began to walk south along the side of the Old Camp Road where it was last observed at P18 (SE corner) heading southwards away from camp.
20-May-24	Grizzly bear	1	H	U	Walk	Y	MIF	bear banger	O15 to R13	The same bear from the previous day came back into camp. The bear was observed walking on Misery Haul Road towards camp from the PDC Misery culvert (O15). The bear crossed over to the Airport Road heading for the main camp. One bear banger was deployed to push bear back to the east across the misery haul road and it continued to the tundra between the grizzly road and the Koala Ring Road. It was last observed on the tundra at 19:00 hrs. at R13. Security called again at 20:35 hrs. and notified that the bear had been spotted at the DPRT Truck shop. Responded with hard deterrent, but the bear was not located. Scanned areas around DPRT, Koala UG, Koala Ring Road. Retuned to camp at 21:30 hrs. No further sighting that day.
21-May-24	Common raven	2+	H	MF	Nesting	N	MIF	N/A	I13	Waste Management Tech notified Enviroenmtn that a nest had been found inside one of vetilation hoods of the incinerator building. A follow-up email confirmed the prences of chick in the nest already. Tenative plan would be to mesh off the ven in the fall after the birds have flow.
25-May-24	Common raven	1	U	U	Scavenging	N	MIF	N/A	Reovery Garage in the Process Plant	25 May 2024, Technician in Recovery, placed the bag of garbage on top of the incinerator bin at 1644hrs and left the area. It was also observed that the animal gates were in place but the Overhead door was open to the top. At 2041hrs a raven landed on top of the incinerator bin and started picking apart the garbage bag creating a large mess of garbage on top of the bin and on the floor.
18-Jun-24	Grizzly bear	2	H	MF	Walking	Y	INT	Whistle, Banger and scare cartridge	N13	At approximately 09:20 on 18JUNE, 2 adult grizzly bears were reported to be moving from the airport /Old camp area towards Misery Road at the north end of the airport. Environment staff responded to find the bears eventually bedded down near a small pond just off the Misery Road (P15) 11:30. At approximately 12:50 the bears moved from the location off Grizzly Road to the east perimeter road of Koala Pit. The bears moved towards the FARS on the north side of Koala pit and then descended on to one of the benches at approximately 13:00 where they spent time grazing in the willows on the bench. Environment Dept. monitored the bears intermittently from this point to approximately 16:30 when the bears moved towards the Central Balance Tanks (CBT) located across from the DPRT Truck shop (N13). The bears were bedded down next to a small mechanic shack by the CBT and when Environment arrived two employees inside the shack were alerted to the presence of the bears (DDEEV24060330). The initial Environment crew fired one bear banger to try to move the bears away from the shack. There was little response from the bears. A second Environment employee arrived and fired a whistle, and the bears moved a short distance north. Two shell crackers were fired from the shotgun (the initial cracker detonated at the shotgun) and the second moved the bears northward and eventually across Sable Haul Road from the Koala UG offices (17:00). Three more bear bangers were used to try to push the bears north towards Panda pit area with hopes to have the bears move beyond Panda pit or towards the Grizzly Road again. The bears moved thought the laydown behind the Koala UG Truck shop to the Koala North pit where they were observed mating (17:47). The bears were monitored up to approximately 18:40hrs. The bears were last observed lower down in Koala North pit where there was a grassy location with water. The bears were reported back near the DPRT shop (02:43hrs) and by the Koala Ring Road 05:29 hrs. Neither observation was reported to the on-call Environment personnel. At 07:00 hrs. one Environment employee drove all the locations the bears were previously observed on the 18JUN, but the bears were not relocated. At no time was there a reasonable chance of striking the bears with hard deterrent from the shotgun without potentially exposing the shooter to the risk an interaction with the bears. Photos filed in SharePoint.
29-Jun-24	Caribou	1	U	U	U	N	V	N/A	Sable Haul Road	Caribou was sitting on Sable Haul road blocking traffic

Appendix B Ekati Detailed Wildlife Incidents, 2024

Date	Species	Number of Indivduals	Condition (**H**=healthy, **P**=poor condition, **W**=wounded, **U**=Unknown, **X**= No Data)	Sex (**M**=male, **F**=female, **MF**=male and female, **FF**=female and female, **U**=unknown, **UUU** = 3 unknown, etc., X=no data)	Dominant Behavior	Deterrent Used? (Y/N)	Type of Incident (**INT**=interaction with field crew, **V**=vehicle, **A**= aircraft, **MIF**=mine infrastructure, **M**=Wildlife Mortality, **X**=No Incident)	Type of Deterrent	Location (name of location or grid cell)	Description of Incident
13-Jul-24	Caribou	3	U	U	Walking	n/a	V	N/A	Misery Road km 25	Electrical Tl reported that one of the electricians observed the concrete truck on Misery road near km 25. They reported that “We were on the Misery Haul road, just past km 25 south. We saw a Cement truck stopped, facing towards Misery, on the opposite side of the road near 3 Cariboo. The lead animal went ahead of the others and the Cement truck pulled in between them and tried To go on the right side of the animal. The animal went that way and the truck turned to go the other way Around it. The animal eventually walked to the right side of the road and the truck passed it on the left side.”
24-Aug-24	Caribou	1	W	U	Walking	N	V	N/A	Misery Haul Road km 22 to 23	One caribou on Misery Haul Road between km 22 and km 23 - called in by Trainer in light vehicle.
30-Jun-24	Grizzly bear	1	H	U	Walking	Y	INT	Banger, Helicopter	Upper Exeter	At approximately 10:00 a crew working at Upper Exeter Lake observed an adult grizzly bear approching from the South. The GB was approximately 200 meters away and heading directly towards the crew. The crew was working approximately 300 meters south from the helicopter which was with another crew working in the area. A bear banger was deployed deflecting the path of the GB to the east. As the crew was isolated it was decided to use the helicopter to push the bear to ensure crew safety. The GB was pushed approximately 2km east. Work was completed and no further bear interaction occured.
4-Jul-24	Grizzly bear	1	H	U	SA/R	Y	MIF	Truck, banger	Waste Management Yard	Bear called in, drove to reported area. Saw on grease container in waste management yard, scared off by honking and driving towards. Was near airport and main camp road, used bangers to move further from airport since a plane was landing and had to make sure bear did not go on runway or back to camp. Watched as it was on the East side of the airport to make sure it would not go onto the runway while plane was taking off. Once plane left and it was clear the bear was walking away from camp we left.
7-Jul-24	Caribou	1	U	U	Walking	Y	MIF	Truck	Sable Pit Ramp	Environment TL was contacted and gave permission for driver to position vehicle as to gently deter caribou from going further down the ramp
9-Jul-24	Caribou	U	U	U	Bedding	N	x	n/a	Beartooth corner	Production haulted while CB on road: Work stoppage
9-Jul-24	Caribou	3	U	U	Walking	N	x	n/a	Sable Haul Rd KM 9	Production haulted while CB on road: Work stoppage
9-Jul-24	Caribou	U	U	U	Bedding	N	x	n/a	Beartooth Corner	Production haulted while CB on road: Work stoppage
11-Jul-24	Caribou	1	H	U	Standing	n/a	MIF	n/a	Beartooth Corner	Production haulted while CB on road: Work stoppage
12-Jul-24	Caribou	2	U	U	Standing	n/a	MIF	n/a	km Sable Road	Team lead for Surface minein slowly walked caribou off road to accommodate the shift change for workers returning to camp.
12-Jul-24	Caribou	1	H	M	Bedding	n/a	MIF	n/a	Sable KM 2	Production haulted while CB on road: Work stoppage. Due to shift change employee went out and gently moved caribou because of position between berms.
13-Jul-24	Caribou	2	H	U	Bedding	n/a	MIF	n/a	Sable km 10	Production haulted while CB on road: Work stoppage
13-Jul-24	Caribou	1	H	M	Walking	N	MIF	N/A	Beartooth Corner	Brief work stoppage while caribou was on road.
13-Jul-24	Caribou	2	H	U	Walking/Bedding	N	MIF	N/A	Sable km 6	Production haulted while CB on road: Work stoppage
13-Jul-24	Caribou	1	U	U	Bedding	n/a	MIF	N/A	Sable Road km 10.5	Surface Minning Team Leader wrote : "On July 13 around 7:30 pm heading to work there was a caribou at 10 .5 laying on the road I had over heard on the radio the there was a crew heading south for shift change had been there for 1.5 hours that is when I got a hold of you so when getting there I had the driver heading south I ask the the driver to turn around go back about 200 meters I got out of truck walk up towards the caribou with my truck following me and slowly walked the caribou off the road then I stood I side of road a let all traffic north and south go by"
24-Aug-24	Caribou	1	W	U	Bedding	N	V	N/A	Misery Haul Road km 22 to 23	One caribou on Misery Haul Road between km 22 and km 23 - called in by Road Train Operator
14-Jul-24	Caribou	1	U	U	Unknown	n/a	MIF	N/A	km 13 Sable road	Surface Minning Team Leader wrote : "Again 5:05 AM road trian crew heading home after shift KM 13 same thing got out truck and walked them off the road with pock 20 to 30 feet behind me following"
14-Jul-24	Caribou	1	U	U	Bedding	n/a	MIF	N/A	km 13 Sable road	Work stoppage while caribou was bedded on rd- called in. Had to gentl move caibou off of road due to shift change. 3 road trains, 2 haul trucks, 9 light vehicles
14-Jul-24	Caribou	1	H	M	Unknown	n/a	V/ M	N/A	km 7 Sable haul Road	A light vehicle with a single occupant was driving south at Km7 on the Sable Haul Road at 9:30pm on July 14, 2024. The vehicle was travelling approximately 40km/h. An interaction between a young caribou and the light vehicle occurred which resulted in the death of the caribou, no injury to the worker (single occupant of the vehicle) and no damage to the light vehicle.
15-Jul-24	Caribou	2	U	U	Standing	n/a	MIF	N/A	km 2 sable road	Surface Minning Team Leader wrote : "July 15 6:30 AM 2 km 2 caribou were walked off road By Ray Muzyka as crew was coming home after shift"
15-Jul-24	Caribou	1	H	U	Standing	N	MIF	N/A	Sable	Called out to a caribou blocking the road with haul truck stuck behind at south dump extention at Sable. It was shift change so haul truck driver was picked up by light vehicle, caribou slowly made its way over to two rock.
17-Jul-24	Caribou	2	H	M	Bedding	N	MIF	N/A	Km 11,1 Sable Hr	Envrionment employee went out to Sable and escorted the crew back at the end of the day through two caribou on the road at Km 11 and 1. Both caribou were directed off the road that safely allowed all members to pass by.
20-Jul-24	Caribou	1	H	U	Standing	N	MIF	NA	Km 10 Sable haul Rd	Reported from dispatch that a work stoppage occurred on Sable Haul Road at km 10
20-Jul-24	Unknown fox	1	H	U	Bedding	N	MIF	NA	Km 2 Sable HR	Fox was called in by rd train operator at km 2 on sable- fox was laying on the rd. Fox moved to under the trailer and operator could no longer see it. Traffic along Sable was asked to stop until Enviro went out to assess. Enviro arrived on scene around 8:30, a south bound light vehicle saw the fox had moved out from under the trailer and fox was observed laying down in the middle of the rd once arrived. Enviro crew honked at the fox, fox stood up then layed back down. Crew got out of the truck and walked towards it, making noise which deterred the fox off the rd to the top of the berm where it layed down after which sable traffic was given the ok to continue
20-Jul-24	Caribou	1	U	U	Standing	N	MIF	N/A	Km 1.5 Sable haul road	Reported from dispatch that a work stoppage occurred on Sable Haul Road at km 1.5
20-Jul-24	Caribou	1	U	U	Standing	N	MIF	N/A	Km 1.5 Sable haul road	Reported from dispatch that a work stoppage occurred on Sable Haul Road at km 1.5
20-Jul-24	Caribou	1	U	U	Standing	N	MIF	N/A	Km 1.5 Sable haul road	Reported from dispatch that a work stoppage occurred on Sable Haul Road at km 1.5
20-Jul-24	Caribou	1	U	U	Standing	N	MIF	N/A	Km 2 Sable haul road	Reported from dispatch that a work stoppage occurred on Sable Haul Road at km 2

Appendix B Ekati Detailed Wildlife Incidents, 2024

Date	Species	Number of Indivduals	Condition (**H**=healthy, **P**=poor condition, **W**=wounded, **U**=Unknown, **X**= No Data)	Sex (**M**=male, **F**=female, **MF**=male and female, **FF**=female and female, **U**=unknown, **UUU** = 3 unknown, etc., X=no data)	Dominant Behavior	Deterrent Used? (Y/N)	Type of Incident (**INT**=interaction with field crew, **V**=vehicle, **A**= aircraft, **MIF**=mine infrastructure, **M**=Wildlife Mortality, **X**=No Incident)	Type of Deterrent	Location (name of location or grid cell)	Description of Incident
23-Jul-24	Grizzly bear	1	H	U	scavenging	Y	MIF	Truck Horn	Waste Management Yard	Called out to a grizzly bear on top of CAT transmission & drive train oil tote (Lid screwd off and to the side) in WM yard (3:30) arrived on site and GB went over birm towards airport. Truck and Truck horn was used to deter and bear ran over to airport, followed GB to airstrip and honked as it went over into tundra, towards and over old camp road to the East. The toe was confirmed to be a tote of kitchen grease and water that was delivered to the WM yard without notice. FPe DDEEV24070370 was entred
27-Jul-24	Caribou	1	U	U	Walking	N	MIF	N/A	Misery Crusher	The Misery Crusher Operator observed a caribou beside the conveyor belt and noticed significant dust, so they decided to shut down the conveyor belt to not harm the caribou. Once the dust settled, they saw that the caribou had moved away from the conveyor belt. The operator then drove around the area to confirm that the caribou had left and restarted the conveyor belt. The operator called in this interaction over the radio. The Misery Crusher conveyor belt was shut down for 20 minutes.
27-Jul-24	Caribou	1	H	F	Standing	N	INT	N/A	Sable Road Km 13	Work stoppage - 30 mins. CB was walking/standing under the DPRT trailers. Team Leader made call to push early.
3-Aug-24	Caribou	1	H	U	Standing	N	MIF	N/A	Misery Crusher	The Misery Crusher operator reported a caribou was located right beside the crusher. To avoid disturbing or frightening the animal, the operator turned off the crusher until the caribou left the area. The noise and dust from the crusher could cause undue stress to the animal
21-Jun-24	Grizzly bear	1	H	U	Walking	Y	V	Vehicle	N9	Found GB around 13:30 along sable haul road north of DPRT shop. Bear was pushed up the waste rock pile using truck as deterrent. Bear was found again in zone S and left zone S on its own when crew followed it north. Bear ultimately went NW out of the main camp wasterock pile where it could no longer be followed or seen.
13-Aug-24	Grizzly bear	1	H	U	Walking	N	MIF	Truck	Sable waste rock pile	Grizzly bear sighting was called in for a bear heading up sable waste rock ramp. All call was sent out to warn workers in the vicinity. Bear was observed approximately 80m up the ramp and was followed by environment. Bear was observed climbing to top of waste rock pile on the north side and then heading down the SE side of the pile. Spotted bear again at base of waste rock pile between sable office and wasterock mound. use truck to push bear to the southwest away from sable office/workers. Bear moved off into tundra to the southwest of sable entrance and eventually crossed the road over to the east near km 15 on sable haul road. Bear was last observed in the tundra approximatley 2km south of sable heading south before moving out of eyesight.
13-Aug-24	Wolf	6	H	MF	Walking	N	MIF	N/A	Sable haul road km 10	Observed 6 wolves (2 adults, 4 pups) walking on sable haul road near km 10 on Sable haul road. Stopped vehicle and alerted others of Wolves on road. Made sure wolves were off the road and into the tundra before giving other traffic the go ahead to continue operations. After traffic went through the wolves crossed the road to the west side of sable haul road and were observed heading west into the tundra.
16-Aug-24	Caribou	1	H	M	Walking	N	MIF	N/A	Km 15 Sable Ahul Road	Siongle Bull aribou stoped traffic on Sable Roda for approximately 30 mins at km 15 on Sable Haul Road. Bull eventually left road and beagan tyo ffeed on side of road 15 meters out.
17-Aug-24	Caribou	1	H	U	Walking	N	MIF	N/A	Km 24 Misery Haul road	Single caribou stopped traffic on Misery Haul road for approximately 40 minutes just north of km 25. Caribou eventually left road to the east and was approximatley 20m off the road into the tundra.
19-Aug-24	Peregrine falcon	1	W	U	Perched	N	X	N/A	Desperation Pond	Environment acting TL was contacted by Point Lake Pit crew that there was an injured Peregrine Falcon at the dig face in Point Lake Pit. Envrionment Wildlife Advisor was contacted and an attempt to notify the GNWT through the wildlife hotline was notified but there was no urgent resonse from them. Environment field crews dispatched with nessecary supplies and were able to safely catch handle and relocate the Bird to the toe of the Misery WRSA by desperation pond.
23-Jun-24	Grizzly bear	2	H	MF	Walking	Y	V	Vehicle	I11 to G21	While completing site inspection noticed two GB's west of intersection at I11. Bears proceeded SW into LLCF near H12. Bears split up at this point with one moving toward LLCF dyke B and the other heading SE towards incinerator building. Proceeded to follow bear heading towards incinerator building. Bear moved south of incinerator and continued on towards polar building. Crossed road moving south at J15 and lost site. Drove down fox road heading south and made contact again around I19. Last siting of bear was at G21 with bear continuing to head south towards Fox pit.
12-Aug-24	Grizzly bear	1	H	U	Running	N	A	N/A	Km 3 Sable	I would like to inform you of an interaction yesterday involving the helicopter and a Grizzly Bear. While doing our helicopter scan for wildlife we discovered a bear in the tundra opposite of Falcon Lake turnoff about 100m, Geoff turned around for a better look and the bear reacted by running off. This was not a push.
1-Sep-24	Wolverine	1	W	U	N/A	N	V	N/A	Sable km1.5	wolverine was hit by unknown vehicle on the haul road. Driver called in dead wolverine on Saable haul road.
9-Sep-24	Grizzly bear	1	H	U	Walking	N	V	N/A	Point Lake WRSA Sump	Bear was seen walking past the Point Lake WRSA collection sump down the Jay spurr road when a light vehicle was seen turning the corner behind the bear and it started the bear and sent him running down the road.
26-Sep-24	Grizzly bear	4	H	U	Walking	N	MIF	N/A	Misery Camp	Sow and 3 cubs were able to crawl under Misery Camp fence and was noticed by personnel working in the area. Security was called to stop work in the area. All 4 bears then crawled back under the fence and fled the area. Environment team was sent to investigate.
26-Sep-24	Grizzly bear	1	H	U	Running	Y	MIF	Helicopter, truck	Misery Camp	Bear was able crawl under Misery Camp fence and was noticed by personnel working in the area. Security was called to stop work in the area. 2 Light vehicles approached the bear and it crawled under the fence again, leaving the camp. The bear wandered South and circled back to Thinner Lake. It was then decided to push the bear using the helicopter. The bear was pushed South of Misery pit until the helicopter was forced to turn back to refuel. Environment team working on the ground worked with Fixed Plant Maintenance to patrol Misery Camp perimeter and fix all holes in the fencing.
29-Sep-24	Grizzly bear	1	H	U	Walking	Y	MIF	bear bangers	O15	Bear was spotted between main camp and airport. All call was given. Environment team responded and fired 3 bear bangers to push bear south. Bear slowly walked South, crossed the airport road and circled back to the airstrip. 1 more deterrent was fired and the bear slowly walked along the Old Camp Road.
2-Oct-24	Grizzly bear	1	H	M	Walking	Y	MIF	Bear bangers	Misery Camp	Bear observed walking towards fencning on the backside of Misery camp. All call given, fired 2 bangers and pushed bear towards Misery ore pad area. Cut bear off near the west side gate, shot 1 more banger. Bear walked off heading south from camp towards the WRD dyke. One final push with vehicle/horn and final banger (1) fired. Observed GB for 15 mins until it was 200m from camp. 03OCT24 udpate: Checked with Misery Camp and asked if someone could complete a daily fence check to ensure no further disturbance, check was completed .
7-Oct-24	Grizzly bear	1	H	U	Walking	Y	MIF	Bear Bangers	Lanfill to ERT training grounds through L11	Bear was spotted walking through process plant rea and into primary, all call was given and loader operator kept eye on bear untill environment arrived. Bear went up zone 15 road and crossed into landfill. Bear was followed up road to boneyard and dettered with horn to cross over ERT Training. 3 Bear bangers were fired to keep pushing bear North on tundra towrads pigeon.
25-Oct-24	Grizzly bear	1	H	U	Feeding	Y	V	Truck	Sable HR km 12	Bear was spotted on sable haul road km 12 eating the remains of a hare that was hit by road traffic. Traffic on the road was stopped for about 20 minutes unitl Environment arrived at the scene. Environment light vehicle was used to push bear off the road and it headed north about 100m, wandered around, hunted a red fox for a while and fell asleep on the tundra.

Appendix B Ekati Detailed Wildlife Incidents, 2024

Date	Species	ENR, Wildlife Advisor or Team Leader's Direction?	Outcome?
6-Jan-24	Grizzly bear	-	-
26-Jan-24	Red fox	N/A	When worker moved in to the area of the tote the activity increased the effort from the fox to free itself and it was able to get out without tipping the tote.
3-Feb-24	Common raven	Wildlfe aAdvisor was ccd on email from MUG	Reported in Fpe.Crew at MUG discussed diring safety meeting
16-Feb-24	Common raven	Wildlife Advisor sent email	No more reports of CORA trying to enter bay since 16-Feb-2024
18-Feb-24	Wolf	Wildlife Advisor sent email	Communications team had to fix cable. Signficant amount of effort and time dedicated to fixing this damage from the wolf chewing into the cable
25-Feb-24	Common raven	Wildlife Advisor sent email	MUG Superintendent is going to have food waste removed and brought it up at our pre shift meeting to not have any food waste placed in the garbage cans in the building.
22-Apr-24	Common raven	Wildlife Advisor sent email	Nest was not removed.
8-May-24	Grizzly bear	approved by team lead	bear was successfully deterred from main camp area.
11-May-24	Caribou	X	Caribou moved, truck proceeded
19-May-24	Grizzly bear	Wildlife Advisor sent email	Bear moved off and was not encountered again the the same day
20-May-24	Grizzly bear	Wildlife Advisor sent email	Bear moved off and was not encountered again the the same day
21-May-24	Common raven	Wildlife Advisor included in email string	Nest was not disturbed
25-May-24	Common raven	Wildlife Advisor sent email	Door was closed over wildlife gate and waste was cleaned up
18-Jun-24	Grizzly bear	Sent email to Wildlife Advisor	Bears were moved north away drom DPRT and the mechncal shack by the CBT.
29-Jun-24	Caribou	Environment TL was contacted and drivers were reminded caribou have the right of way	Caribou eventually moved, traffic proceeded

Appendix B Ekati Detailed Wildlife Incidents, 2024

Date	Species	ENR, Wildlife Advisor or Team Leader's Direction?	Outcome?
13-Jul-24	Caribou	Wildleife adciser was cc'd on the email back to the Electrical TL. Once entered into Fpe will follow-up with department.	DDEEV24070208 entered for this
24-Aug-24	Caribou	Team Leader	Caribou walked past truck, still on road but walked past parked light vehicle. No CB in front on light vehicle so in proceeded.
30-Jun-24	Grizzly bear	Wildlife Advisor sent email	Bear pushed east away from groups working in the area.
4-Jul-24	Grizzly bear	Was communicating on radio with security, airport tech, and mine services.	Bear pushed away from main camp and airport
7-Jul-24	Caribou	No	Caribou left the pit. Specialists were sent out to deter it, however caller reported back that the caribou had crossed the berm and they had lost sight of it
9-Jul-24	Caribou	N/A	CB left the road, were on road from 9:51 am to 11:03 am
9-Jul-24	Caribou	N/A	CB on road. Haul trucks stopped from 11:37 am to 12:17 pm waiting for CB to leave road
9-Jul-24	Caribou	N/A	CB on road. Haul trucks stopped from 12:48 pm to 3:02 pm waiting for CB to leave road
11-Jul-24	Caribou	N/A	CB on road. Haul trucks and ligh vehicles stopped from 11:40 to 12:41 waiting for caribou to leave road
12-Jul-24	Caribou	N/A	Caribou walked slowy off the road on to the tundra
12-Jul-24	Caribou	N/A	CB on road. Haul trucks and light vehicles stopped from ~17:30 to 18:20 waiting for Environment to help Caribou leave road
13-Jul-24	Caribou	N/A	CB on road. Haul trucks and light vehicles stopped from ~7:15-10:31 until CB went into tundra.
13-Jul-24	Caribou	N/A	CB on road. Haul truck and light vehicle stopped from ~11:19-11:36 until CB exited onto tundra.
13-Jul-24	Caribou	N/A	CB on road. LV's, HT, RT stopped from 14:21
13-Jul-24	Caribou	N/A	Caribou left the road and walked out to the tundra
24-Aug-24	Caribou	Team Leader	After caribou walked past light vehicle (see cell above) it then bedded on the road in front of three DPRTs and service vehicles.
14-Jul-24	Caribou	N/A	
14-Jul-24	Caribou	N/A	Caribou left the road and walked out to the tundra
14-Jul-24	Caribou	Yes, ENR was contaed at 20:01 hrs to advise of the event	Caribou was recovered and return to camp. It was shipped out to ENR in YK the following day. Fpe DDEEV24070240 was entered for the event. A taproot investigation was scheduled for 24JUL2024.
15-Jul-24	Caribou	N/A	CB moved off road
15-Jul-24	Caribou	N/A	Caribou made its way to Two rock
17-Jul-24	Caribou	N/A	Employees returned to camp
20-Jul-24	Caribou	N/A	Traffic waited for caribou to move off the road
20-Jul-24	Unknown fox	Yes, used Team Leads direction for fox deterrent strategy.	Traffic waited for fox to move off the road and receive OK from Enviro
20-Jul-24	Caribou	N/A	Traffic waited for caribou to move off the road
20-Jul-24	Caribou	N/A	Traffic waited for caribou to move off the road
20-Jul-24	Caribou	N/A	Traffic waited for caribou to move off the road
20-Jul-24	Caribou	N/A	Traffic waited for caribou to move off the road

Appendix B Ekati Detailed Wildlife Incidents, 2024

Date	Species	ENR, Wildlife Advisor or Team Leader's Direction?	Outcome?
23-Jul-24	Grizzly bear	no direction at this time other than the Fpe was assigned to the responsible department (Site Services)	GB continued East past Old Camp Road, Lid was screwed back on tote. FpeDDEEV24070370 entered.
27-Jul-24	Caribou	The TL received the radio call and commended the Operator for turning off the conveyor belt. They instructed the Operator to call in if the conveyor belt needs to be shut down again due to caribou in the area.	Caribou left the dusty area.
27-Jul-24	Caribou	Team Leader	CB Pushed off-road. Work stoppage ended. CB Immediately went non-alert & fed after push.
3-Aug-24	Caribou	The TL received the radio call at 12:43 PM and instructed the operator to call back once the animal had left the immediate work area. The Operator called back at 2:10 PM	Caribou left the crusher area.
21-Jun-24	Grizzly bear	Wildlife Advisor and team lead were notified of situation and bears final observed position.	Bear was pushed north over Koala wasterock pile away from main camp.
13-Aug-24	Grizzly bear	Spoke with team lead and was instructed to keep an eye on the bear as it was still in close proximity to sable office.	Grizzly bear headed south away from sable office
13-Aug-24	Wolf	Spoke with TL and alerted people and sable haul road channel of situation and stayed to observe wolves until they left the road.	Wolves headed west into tundra
16-Aug-24	Caribou	N/A	Caribou left the road to graze and traffic moved past slowly at 20km or less
17-Aug-24	Caribou	Alerted team lead to caribou on the road and monitored/waited for caribou to move.	Caribou left road to graze in tundra, traffic slowly moved past.
19-Aug-24	Peregrine falcon	Wildlife Advisor Directed	Bird was relocated sucessfully but was still injured upon replacement.
23-Jun-24	Grizzly bear	Environment Team Lead was contacted and notified of bears position.	Bear was followed towards fox road and pushed south along fox road.
12-Aug-24	Grizzly bear	N/A	Grizzly bear ran off
1-Sep-24	Wolverine	Reported to TL and Wildlife Advisor.	Called in after incident. Body intact, appears to have went underneath middle of vehicle
9-Sep-24	Grizzly bear	Team Leader	Notification was sent out to site highlighiting the priority all wildlife has on roads.
26-Sep-24	Grizzly bear	Team Leader	Immediate repair of Misery Camp fencing
26-Sep-24	Grizzly bear	Team Leader	Immediate repair of Misery Camp fencing
29-Sep-24	Grizzly bear	Team Leader	bear was left heading in a good direction, away from mine infrastructure
2-Oct-24	Grizzly bear	Team Leader	GB deterred away from Misery Camp
7-Oct-24	Grizzly bear	Team Leader	Bear deterred towards pigeon pit
25-Oct-24	Grizzly bear	Team Leader	GB deterred from sable HR. Ensured no remaining roadkill on road.