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DIAMOND MINES

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May 12, 2026

Greg Look
Wildlife Management and Monitoring Plan Coordinator
Wildlife Management Division
Department of Environment & Climate Change (ECC)
Government of the Northwest Territories

To Greg Look:

Re: Submission of the Ekati Diamond Mine Wildlife Management and Monitoring Plan

Burgundy Diamond Mines Ltd. (Burgundy) is pleased to provide the following updated Wildlife Management and Monitoring Plan (WMMP) for the Ekati Diamond Mine.

The Ekati Mine WMMP, originally submitted to GNWT on March 13, 2023, stated that the WMMP mitigation and monitoring programs were subject to change based on the findings of the caribou telemetry study, which was still ongoing at that time. This version of the WMMP incorporates refinements and updated mitigation and monitoring strategies based on findings from the Barren – ground caribou movement and habitat selection analyses from telemetry data – Ekati Diamond Mine Wildlife Effects Monitoring final report issued in August 2024, as well as findings from recent caribou research and monitoring program results since the original submission. Burgundy trusts that you will find this information to be clear and informative.

Please contact Alyce Straub at alyce.straub@burgundydiamonds.com if you have any comments or questions.

Alyce Straub
Environmental Advisor- Wildlife

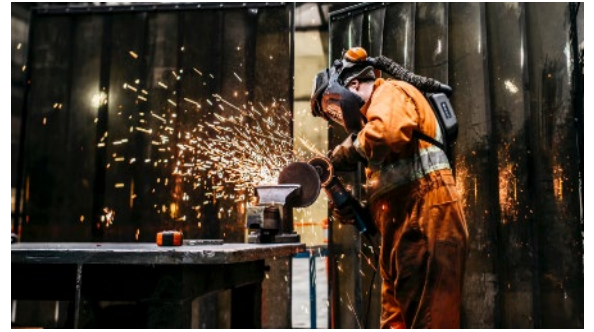
Cc: Lindsay Seier (lindsay.seier@burgundydiamonds.com)

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.

Ekati Diamond Mine

Wildlife Management and Monitoring Plan

May 2026



BURGUNDY
DIAMOND MINES

EXECUTIVE SUMMARY

The Ekati Mine is located in the Northwest Territories, approximately 200 kilometers (km) south of the Arctic Circle and 300 km northeast of Yellowknife. Construction of the Ekati Mine began in 1997 and the mine officially went into production in October 1998 as the first diamond mine in Canada. It has one underground mine (Misery Underground) in active mine development and production. Mining in eight open pits and three underground developments have been completed. Development at the Point Lake site began in late 2021, and includes the Point Lake Open Pit, a short access road and adjacent utility pad, a waste rock storage area (WRSA) and seepage collection sump, and an overburden stockpile. Mining in this area began in 2024 but has been suspended as of Q3 2025.

This document, the Ekati Mine Wildlife Management and Monitoring Plan (WMMP), replaces the previous Wildlife Effects Monitoring Plan (WEMP; Golder Associates 2017a), and incorporates revisions based on engagement and feedback from regulators, including the Government of the Northwest Territories Environment and Climate Change (GNWT ECC), the Independent Environmental Monitoring Agency (IEMA), and Indigenous Governments and Organizations (IGOs). It includes mitigation and monitoring previously contained separately within the Caribou Road Mitigation Plan (CRMP; Golder Associates 2017b), the Point Lake Road Modification Plan and the Wildlife Effects Monitoring Plan Point Lake Addendum – Post Dewatering Monitoring. The WMMP serves to meet Burgundy's obligations under the Environmental Agreement, and federal and territorial Acts and regulations.

Wildlife Valued Ecosystem Components (VECs) include barren-ground caribou (*Rangifer tarandus groenlandicus*), grizzly bear (*Ursus arctos*), wolf (*Canis lupus*), wolverine (*Gulo gulo*), raptors, and listed migratory birds present at Ekati. Non-VEC species include fox and non-listed migratory birds and are also included in mitigation and monitoring activities. Wildlife mitigation and monitoring has occurred at Ekati since the first WEMP was implemented in 1997 to address the potential impacts and key environmental risks for wildlife. These potential impacts and risks include: habitat alteration and loss; wildlife injury or mortality due to mine-wildlife interaction; attraction and increased human-wildlife interactions and increased predator numbers; disturbance to wildlife from noise, human presence, vehicles, and aircrafts; effects on wildlife health (toxins, metals etc.); changes in caribou migration routes and population decline; caribou interactions with linear features (roads and power lines); caribou interactions with mine activities and infrastructure (other than roads); habituation of carnivores; and migratory bird interactions with mine activities and infrastructure.

Mitigation is implemented following the mitigation hierarchy of avoid, minimize, reclaim, and offset at Ekati. Avoidance includes physically avoiding sensitive landscape features, such as eskers and caribou crossings, through infrastructure design and input from Traditional Knowledge (TK) holders, as well as temporal avoidance to avoid causing harm to wildlife during sensitive periods, such as conducting ground clearing/disturbance activities outside of the migratory bird nesting period. Many mitigation activities are implemented to minimize risks to wildlife, such as reduced vehicle speeds, giving wildlife the right-of-way on roads, constructing caribou crossings along roads and pipelines, managing waste to minimize attractants, deterring wildlife when needed to reduce mine-wildlife conflicts, and implementing other related management plans.

Monitoring includes determining habitat loss based on infrastructure footprint size; determining the effectiveness of waste management; documenting wildlife incidents and mortalities; monitoring caribou along linear features through road surveys, behavioural surveys, and analysis of data from wildlife cameras and satellite collars; pit wall monitoring for cliff-nesting raptors; and recording incidental observations of mammals and birds.

Table of Contents

Executive Summary	i
Table of Contents	ii
List of Tables	v
List of Figures	v
List of Photos	vi
Acronyms and Abbreviations.....	vii
Concordance Table.....	ix
1 Introduction	1
1.1 Background	1
1.2 Purpose and Objectives	3
2 Project Description.....	9
2.1 Ekati Diamond Mine	9
2.2 The Ekati Diamond Mine Wildlife Study Area	9
3 Plan Context and Engagement.....	13
3.1 Concordance.....	13
3.2 Engagement and Incorporation of Traditional Knowledge.....	15
3.2.1 Engagement and Traditional Knowledge for the Caribou Road Mitigation Plan	16
3.3 Related Documents	16
4 Potential Impacts.....	18
4.1 Focal Species and Habitats	18
4.1.1 Valued Ecosystem Components.....	18
4.1.2 Non-Value Ecosystem Component Wildlife Groups	36
4.2 Potential Impacts and Key Environmental Risks to Wildlife	37
4.2.1 Potential Impacts.....	37
4.2.2 Key Environmental Risks for Wildlife	38
5 Mitigation.....	39
5.1 Wildlife Habitat Alteration and Loss.....	40
5.2 Waste Management and Habituation of Carnivores.....	41
5.3 Mine-Wildlife Interaction	41
5.3.1 Deterring Wildlife	42
5.3.2 Wildlife Incidents and Mortalities	42
5.4 Linear Features and Traffic	44
5.4.1 Caribou Road Mitigation Plan (CRMP)	45

5.4.2	Open Pits.....	58
5.4.3	Dust	58
5.4.4	Toxic Substances and Contaminants	59
5.5	Education	59
6	Monitoring.....	60
6.1	Wildlife Habitat Alteration and Loss.....	60
6.1.1	Objectives	60
6.1.2	Methods	60
6.1.3	Frequency	61
6.1.4	Data Analyses	61
6.2	Waste Management	63
6.2.1	Objectives	63
6.2.2	Methods	63
6.2.3	Frequency	64
6.2.4	Data Analyses	64
6.3	Wildlife Incidents and Mortalities	64
6.3.1	Objectives	64
6.3.2	Methods	64
6.3.3	Frequency	66
6.3.4	Data Analyses	66
6.4	Caribou.....	66
6.4.1	Caribou Road Mitigation Plan (CRMP)	66
6.4.2	Incidental Caribou Observations	67
6.4.3	Caribou Road Monitoring Surveys	67
6.4.4	Caribou Telemetry Monitoring.....	68
6.4.5	Caribou Behavioural Monitoring: Activity Budgets and Response to Stressors.....	70
6.4.6	Camera Monitoring	71
6.5	Grizzly Bear.....	75
6.5.1	Incidental Observations	75
6.6	Wolf	76
6.6.1	Incidental Observations	76
6.7	Wolverine.....	77
6.7.1	Incidental Observations	77
6.8	Raptors.....	77
6.8.1	Incidental Observations	78
6.8.2	Pit Wall Nest Monitoring	78
6.9	Fox.....	79

6.9.1	Incidental Observations	79
6.10	Migratory Birds	80
6.10.1	Incidental Observations	80
6.11	Rare or Uncommon Species	81
6.11.1	Incidental Observations	81
7	Adaptive Management.....	82
8	Reporting Protocols.....	85
8.1	Data Processing	85
8.1.1	Quality Assurance/ Quality Control Procedures.....	85
8.2	Annual Report	85
8.2.1	Comprehensive Reporting	85
9	Roles and Responsibilities	87
10	References	88
Appendix A	Standard Operating Procedures	
Appendix B	Data Entry Forms	

List of Tables

Table 1.2-1: Specific Wildlife Monitoring Program Objectives	5
Table 3.1-1: Concordance of Legislation/Regulation Requirements and Wildlife Management and Monitoring Plan Contents.	13
Table 3.3-1: Relevant Management Plans to the WMMP	16
Table 4.1-1: Wildlife Valued Ecosystem Components.....	18
Table 4.1-2: General Seasonal Period Dates for Bathurst and Beverly/Ahiak Caribou in the NWT.....	21
Table 5.3-1: ECCC Recommended Setback Distances for Nests of Migratory Birds Species Groups	44
Table 5.4-1: Action Levels (Triggers) and Associated Caribou Road Mitigation and Monitoring	50
Table 5.4-2: Days Spent at Each CRMP Alert Level at Ekati, 2017-2025	51
Table 5.4-3: Summary of CRMP Alert Level Changes at Ekati, 2017-2025	51
Table 5.4-4: Caribou Distance Thresholds and Speed Limits ^{1,2}	54
Table 5.4-5: Road Closure Decision Matrix.....	56
Table 5.4-6: Summary of Road Closures at Ekati Due to Caribou, 2017-2025	57
Table 6.1-1: Description of Habitat Types within the Ekati Diamond Mine Study Area.....	60
Table 6.1-2 : Amount of Terrestrial Habitat in the Ekati Mine Study Area during Pre-Development, Predicted Loss, and Direct Loss of Habitat from Mine Development, 1997 to 2024	62
Table 6.3-1: Management Authority Contacts and Circumstances for Contact.....	65
Table 6.4-1: Caribou Photograph Coding Relevant to Analyses	74
Table 9-1: Ekati Mine Employee Caribou Road Mitigation Plan Roles and Responsibilities	87

List of Figures

Figure 1.1-1: Location of the Ekati Diamond Mine, Northwest Territories	2
Figure 2.2-1: Ekati Mine Site Map	10
Figure 2.2-2: Point Lake Project Infrastructure	11
Figure 2.2-3: Ekati Mine Wildlife Study Area	12
Figure 4.1-1: Annual Ranges of the Bathurst and Beverly/Ahiak Caribou Herds	20
Figure 4.1-2: Spring Migration Routes of Satellite-Collared Bathurst and Beverly/Ahiak Caribou, 2025	23
Figure 4.1-3: Historical and 2025 Distribution of Male and Female Satellite-collared Bathurst Caribou During Winter	24
Figure 4.1-4: Historical and 2025 Distribution of Male and Female Satellite-collared Bathurst Caribou During Calving	25
Figure 4.1-5: Historical and 2025 Distribution of Male and Female Satellite-collared Bathurst Caribou During Post-calving	26
Figure 4.1-6: Historical and 2025 Distribution of Male and Female Satellite-collared Bathurst Caribou During Summer	27
Figure 4.1-7: Historical and 2025 Distribution of Male and Female Satellite-collared Bathurst Caribou During Fall Migration ...	28
Figure 4.1-8: Historical and 2025 Distribution of Male and Female Satellite-collared Beverly/Ahiak Caribou During Winter....	29
Figure 4.1-9: Historical and 2025 Distribution of Male and Female Satellite-collared Beverly/Ahiak Caribou During Calving ...	30
Figure 4.1-10: Historical and 2025 Distribution of Male and Female Satellite-collared Beverly/Ahiak Caribou During Post-calving	31

Figure 4.1-11: Historical and 2025 Distribution of Male and Female Satellite-collared Beverly/Ahiak Caribou During Summer	32
Figure 4.1-12: Historical and 2025 Distribution of Male and Female Satellite-Collared Beverly/Ahiak Caribou During Fall Migration	33
Figure 5.4-1: Mitigation and Monitoring Intensity for Ekati Diamond Mine Roads	48
Figure 5.4-2: Decision Tree for Road Traffic Mitigation and Monitoring	49
Figure 7-1: Adaptive Management Decision Tree for the Ekati Diamond Mine	83

List of Photos

Photo 5.4-1: Example of an Inuksuit (traditional rock structures) that are placed at intervals around infrastructure to deter wildlife and minimize potential interactions between the mine and wildlife.	46
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ACRONYMS AND ABBREVIATIONS

AEMP	Aquatic Effects Monitoring Program
AQMMP	Air Quality Management and Monitoring Plan
Arctic Canadian	Arctic Canadian Diamond Company Ltd.
°C	degrees Celsius
cm	centimeter
CRMP	Caribou Road Mitigation Plan
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
CWS	Canadian Wildlife Service
DAR	Developer's Assessment Report
DDEC	Dominion Diamond Ekati Corporation
DDMI	Diavik Diamond Mines Inc.
Diavik Mine	Diavik Diamond Mine
DKFN	Deninu K'ue First Nation
DNA	deoxyribonucleic acid
EA	Environmental Assessment
ELC	Ecological Land Classification
EIR	Environmental Impact Review
EIS	Environmental Impact Statement
FRMC	Fort Resolution Métis Council
GIS	Geographical Information Service
GNWT ECC	Government of the Northwest Territories Environment and Climate Change
ICRP	Interim Closure and Reclamation Plan
IEMA	Independent Environmental Monitoring Agency
KIA	Kitikmeot Inuit Association
km	kilometre
km/h	kilometre per hour
km ²	square kilometre
LLCF	Long Lake Containment Facility
LKDFN	Łutselk'e Dene First Nation
m	metre
mm	millimetre
NABBS	North American Breeding Bird Survey
NSMA	North Slave Métis Alliance
NWT	Northwest Territories

PM	particulate matter
RSA	regional study area
QA	quality assurance
QC	quality control
s	second
SARA	<i>Species at Risk Act</i>
spp.	multiple species
TCWR	Tibbitt to Contwoyto Winter Road
TK	Traditional Knowledge
VEC	valued ecosystem component
WEMP	Wildlife Effects Monitoring Plan
WMMP	Wildlife Management and Monitoring Plan
WLWB	Wek'èezhìì Land and Water Board
WROMP	Waste Rock and Ore Storage Management Plan
WRRB	Wek'èezhìì Renewable Resources Board
WRSa	waste rock storage area
YKDFN	Yellowknives Dene First Nation
ZOI	Zone of Influence
%	percent
>	greater than
<	less than

CONCORDANCE TABLE

The following concordance table provides details and justification for changes implemented between the original 2023 Wildlife Management and Monitoring Plan and this updated version.

Section	Change	Reasoning
Table 1.2-1	a. Updated objectives for the camera monitoring program to be consistent with details provided in respective section. b. LLCF Monitoring removed as a formal part of the WMMP.	a. Provides clarification that caribou will be the primary focus, however other wildlife identified during photo processing for the camera monitoring program will also be documented. Updates to objectives of camera program required as traffic monitoring using cameras became a component of the WMMP in 2023. b. LLCF surveys have been conducted since 1999 and, to date, no caribou injuries or deaths have been attributed to the LLCF. As previous survey data does not indicate that the LLCF is negatively impacting caribou, Burgundy proposes to limit monitoring to incidental observations and incidents.
4.1.1.1- Caribou	a. Details for the Bathurst and Beverly caribou populations and ranges have been updated using the most recent calving ground surveys from the GNWT.	a. Updated to provide most recent data.
4.1.2.2 – Migratory Birds	a. Bank and barn swallows have been added to the list of species at risk with the potential to occur at the Ekati Mine.	a. Species added in response to comments received both in 2023 and 2025.
5.2 – Waste Management and Habituation of Carnivores	a. Removal of deployment of two wildlife cameras at the landfill as a mitigation	a. Burgundy has made the decision to remove the commitment to have cameras monitoring the landfill as Environment personnel complete surveys in the landfill twice a week to look for wildlife attractants. Based on the survey frequency, Burgundy feels that its landfill monitoring program is robust without the use of cameras. Frequent in-person monitoring allows for immediate mitigation when required.
5.3 – Mine-Wildlife Interaction	a. Changed section title from Deterring Wildlife and Wildlife Incidents and Mortalities.	a. It is clearer and more inclusive of following sections.

5.4 – Linear Features and Traffic	a. Removal of barrier fence around the airstrip as a mitigation.	a. Various types of fencing have been in place around the airstrip since early operations at Ekati, however, they were either harmful to wildlife (electric fence) or ineffective (rope fence, orange snow fence). The orange barrier fence was the latest fencing to be installed around the airstrip but is often damaged due to the snow load or by animals and is challenging to maintain. Burgundy determined that it would be more effective to complete regular monitoring of the airstrip rather than maintain fencing around the area. Monitoring of the airstrip occurs prior to all aircraft arrivals and departures. Environment staff responds to all wildlife located in the vicinity of the airstrip and deters wildlife as needed.
Table 5.4.1 – Action Levels (Triggers) and Associated Caribou Road Mitigation and Monitoring	a. Distances that caribou observations will trigger Alert Level 1 (Yellow) and Alert Level 2 (Orange) have been adjusted to 14 km and 7 km from the mine site respectively. b. The triggers for Alert Level 2 (Orange) have been reduced to only one trigger.	a. The telemetry study found that caribou are not affected by the mine at any distance and a new study from Boulanger et al. (2021) found an average ZOI of 7.2 km using caribou collar and aerial survey data from 1998 to 2017 and that there was not a significant ZOI in all years. Therefore, the trigger distance for the Alert Level 2 (Orange) has been changed to 7 km, and the trigger distance for the Alert Level 1 (Yellow) to double this distance (i.e., 14 km). b. Reducing the triggers to only one (One or more collared caribou or caribou observed by site personnel are within 7 km of the Ekati Mine) for Level 2 (Orange) encompasses the other triggers and will prompt an alert change to Level 2 any time caribou are within 7 km to the mine whether or not they are in proximity to roads. If caribou are observed closer to roads and meet the triggers for Level 3, this higher alert level will be implemented immediately.
5.4.1.7 – Mitigation for the Lac du Sauvage Road	a. Incorporation of pertinent details from the Point Lake Road Modification Plan and Point Lake Addendum Programs 2 to 5 documents.	a. Consolidates documents so everything is contained within this single WMMP.
6.4.6 – Camera Monitoring Program	a. Divided camera trapping section into two sections: Wildlife Camera Monitoring and Traffic Camera Monitoring	a. As traffic camera monitoring was incorporated in the WEMP in 2023 and the objectives, methods, frequency and data analyses are

		different for wildlife monitoring vs traffic monitoring they require separate sections in this iteration of the WMMP.
6.4.4 – Caribou Telemetry Monitoring	a. Data analysis details moved from methods section to data analysis section	a. Details are now provided in the correct section
6.5.4 – Fox	a. Relocated and is now Section 6.9	a. Improves alignment of the document with Table 1.2-1
6.7.2 – Rare or Uncommon Species	a. Rare or Uncommon Species relocated to own section and is now 6.11	a. Provides more information on what is done for rare or uncommon species and addresses concerns in GNWT comments
8.2.1 – Comprehensive Reporting	a. Comprehensive reporting section added. Comprehensive reporting will be completed every three years and replace that year's standard annual report	a. Incorporated based on suggestions received from 2025 GNWT comments. Will reduce reporting requirements while still providing accurate and complete program data. Will increase ability to compare results across years and determine trends.
Table 9.1	a. Roles and Responsibilities updated	a. Table updated to reflect organizational changes that have occurred since the original submission in 2023.

1 INTRODUCTION

The Ekati Diamond Mine (Ekati) 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 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). Ekati is located 100 km north of the tree line on the Arctic tundra in a semi-arid environment. Construction began in 1997 and Ekati officially went into production in October 1998 as the first diamond mine in Canada.

Burgundy Diamond Mines Ltd. (Burgundy) is the sole owner and operator of Ekati, having purchased the asset from the previous owner, Arctic Canadian Diamond Company Ltd. (Arctic Canadian), 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. Prior to Arctic Canadian ownership, Dominion Diamond Ekati Corporation (DDEC) was the owner and operator of the Ekati Mine in Northwest Territories.

As of 2024, Government of the Northwest Territories Environment and Natural Resources (GNWT ENR) became the Government of the Northwest Territories Environment and Climate Change (GNWT ECC) and is hereafter referred to as such.

1.1 Background

In 1994, baseline wildlife studies were first undertaken as part of an Environmental Impact Assessment for the proposed Ekati Mine (BHP 1995a). Additional baseline wildlife data were collected in 1995 (BHP 1995b, BHP 1995c, BHP 1995d, BHP 1995e, BHP 1995f).

In 1997, a Wildlife Effects Monitoring Plan (WEMP) was established as a result of the Environmental Agreement signed on January 6, 1997, by BHP Diamonds Inc., the Government of the Northwest Territories (GNWT), and the Government of Canada (Government of Canada, GNWT, BHP 1997). A modified WEMP was developed in 2000 (BHP 2000a) and updated in 2017 with mitigation for the Jay Project, including the Caribou Road Mitigation Plan (CRMP; Golder Associates 2017b). Through adaptive management and input from Indigenous communities, the Independent Environmental Monitoring Agency (IEMA) and government these plans have evolved into the Wildlife Management and Monitoring Plan (WMMP) presented in this document.

The Environmental Agreement focused on environmental matters that are supplementary to the statutory terms and conditions addressed under legislation, regulations, leases, and permits. Article VI of the Environmental Agreement identified the preparation of both a Construction Phase and an Operating Phase Environmental Management Plan. The Construction Phase Plan was in place until the fall of 1998 and addressed issues and environmental matters that were specific to that phase of development. The Operation Phase Plan began in October 1998 and is currently in place.

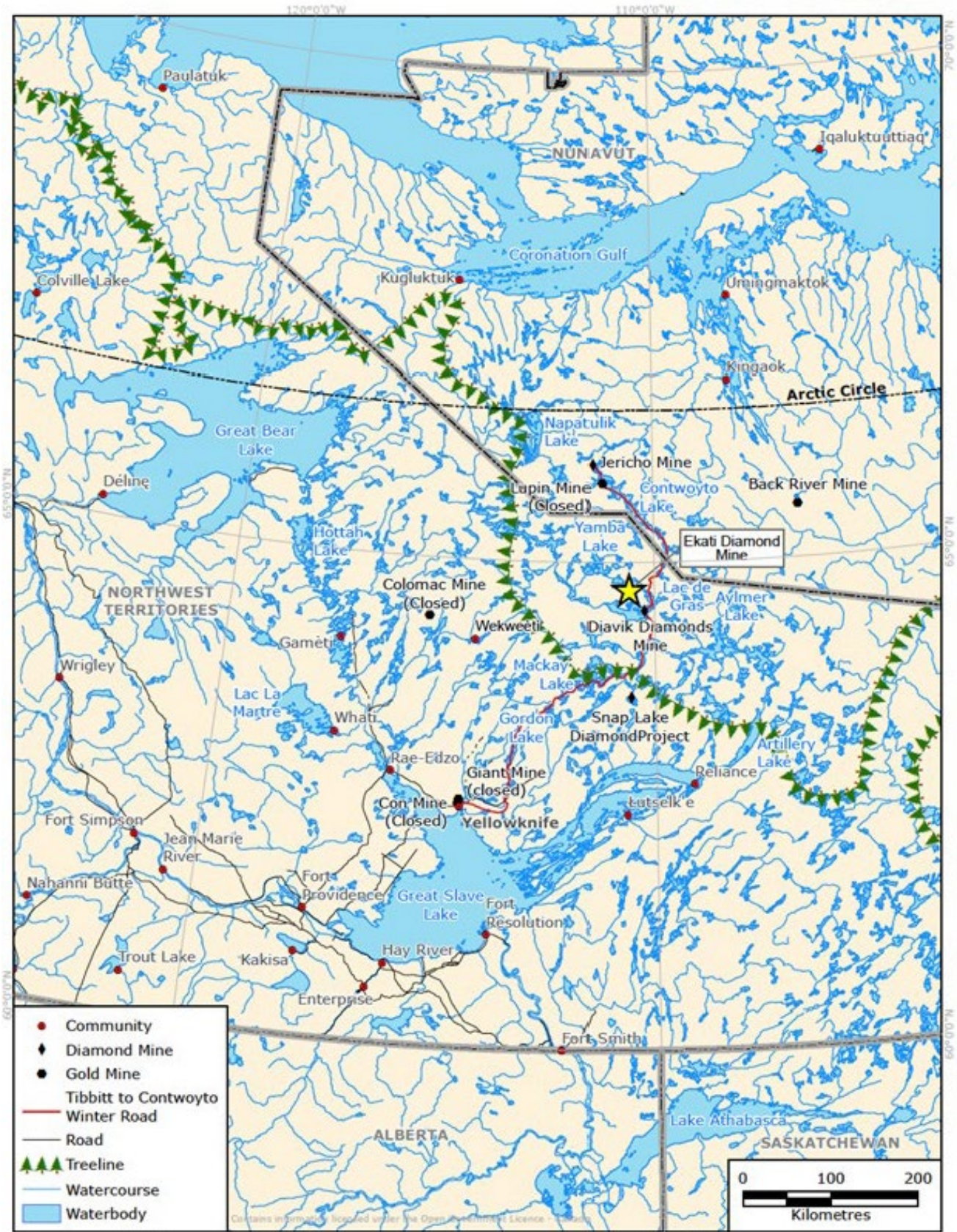


FIGURE 1.1-1: LOCATION OF THE EKATI DIAMOND MINE, NORTHWEST TERRITORIES

Article VII of the Environmental Agreement called for the preparation of Environmental Monitoring Programs as part of the Environmental Management Plans. The overall goal of the Environmental Management Plans is to develop, implement, and monitor mitigation strategies so that the Ekati Mine does not significantly adversely affect the receiving and surrounding environment. The Environmental Agreement states that monitoring programs contained within the management plans shall include activities designed to:

- Measure compliance with regulatory requirements;
- Determine the environmental effects of the mine;
- Test impact predictions; and
- Measure the performance of operations and effectiveness of impact mitigation.

The Wildlife Effects Monitoring Program (WEMP) is a requirement of the Environmental Agreement (Articles V and VII) and the *Wildlife Act* (Subsection 95, 2013) for the Ekati Mine. The WEMP is guided by the WMMP. The WMMP is based on the predicted effects to wildlife identified in the initial Environmental Impact Statement (EIS; BHP 1995a), 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 canceled, the wildlife monitoring and mitigation initiatives for the area (i.e., the CRMP) have been adopted and implemented site wide.

The WMMP is a living document that is reviewed every five years and updated as needed. On June 1st, 2017 DDEC received conditional approval for the Wildlife Effects Monitoring Plan, including the CRMP (GNWT 2017). Final approval was received in July 2018. Through a stakeholder workshop in December 2021 and subsequent comment and response cycles, the Point Lake WEMP Addendums (Arctic Canadian 2021a) were finalized in 2022, with post-dewatering monitoring and mitigations integrated into this WMMP.

The updated Ekati Mine WMMP, submitted to GNWT on March 13, 2023, stated that the WMMP mitigation and monitoring programs were subject to change based on the findings of the telemetry study, which was still ongoing at that time. As a result, this updated version of the 2023 WMMP submission incorporates findings from the telemetry study where required and includes refinements to the monitoring and mitigation outlined in the previous submission based on program results that have occurred between submissions.

1.2 Purpose and Objectives

The WEMP has been conducted since 1997. This document, now referred to as the Wildlife Management and Monitoring Plan (WMMP) is an update to the 2017 Wildlife Effects Monitoring Plan (Golder Associates 2017a). There are seven main components of the WMMP intended to evaluate the environmental impact predictions and potential effects on Valued Ecosystem Components (VECs), and to address key residual environmental risks to wildlife as identified in the Environmental Impact Report (EIR; Arctic Canadian 2023; Arctic Canadian 2025), the pathways identified in the Jay Project DAR (DDEC 2014), and potential impacts of the Point Lake Project (Arctic Canadian 2021b):

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 Ekati's Main Camp and Misery Camp for evidence of interaction with or disturbance by wildlife; and

Knowledge of the effects of mining on wildlife from the monitoring undertaken to date at the Ekati Mine and other diamond mines in the NWT is considered in the WMMP, as are the requirements of the Wildlife Management and Monitoring Plan: Process and Guidelines (GNWT 2021) and the Annotated Table of Contents: Wildlife Management and Monitoring Plans (GNWT 2019a). This document is also intended to engage interested parties and solicit feedback on these changes, including updates to monitoring programs requested by the GNWT ECC.

The specific wildlife monitoring program objectives of the WMMP are summarized below in Table 1.2-1. All objectives for the WMMP are linked to adaptive management. The WMMP has been developed with input from community representatives and government and will remain a living document that Burgundy will adjust based on adaptive management (Section 8).

TABLE 1.2-1: SPECIFIC WILDLIFE MONITORING PROGRAM OBJECTIVES

Monitoring Program		Objectives
Direct wildlife habitat alteration and loss		Determine the amount of direct habitat loss due to ongoing development and operations of the Ekati Mine.
Waste management	Landfill and waste bin monitoring	- Monitor the misdirection of wildlife attractants and hazardous wastes at the landfill to avoid and minimize possible wildlife incidents at this location; - Evaluate the effectiveness of waste management protocols for reducing misdirected waste at the landfill; - Identify problem areas where improvements may be required; and - Manage potential wildlife attractants, wildlife activity, and habituation to the landfill.
All Wildlife	Wildlife incidents and mortalities	- Document and mitigate potential effects of mine activities on wildlife; - Reduce risk to both wildlife and humas; - Document, minimize, and mitigate potential effects of mine activities and infrastructure on wildlife; - Monitor if any wildlife is killed or injured as a result of vehicle and/or aircraft interactions; and - Evaluate whether preventative measures are sufficient to minimize risks of wildlife injury and mortality.
Barren-ground Caribou	Incidental observations	- Identify the composition of caribou groups moving through the Ekati Diamond Mine area; - Document the annual timing of caribou use of the Ekati Mine area to compare temporal trends in migration patterns; and - Track any trends in the number of caribou moving through the Ekati Mine area over years.
	Road surveys	Determine the location, numbers, and proximity of caribou relative to the mine site roads.
	Telemetry monitoring	- Provide advance warning of caribou approaching the study area to inform monitoring and mitigation; - Identify potential effects, investigate drivers, and evaluate effectiveness of mitigations; - Document the presence and annual timing of caribou movements (during specific sensitive seasons) relative to the Ekati Mine; and - Compare temporal trends and spatial variability in migration patterns relative to the Ekati Mine.
	Historical Zone of Influence monitoring	In 2021, Arctic Canadian produced a technical report that used an innovative analytical approach to test the theory that caribou occurrence is strongly determined by the distribution of higher quality habitat (ERM 2021a). 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. The models produced in the study predict that the area north and within approximately 8 km of Lac de Gras should have very low caribou abundance because the survey cells had low percent cover of heath tundra and high percent cover of rocky terrain such as heath boulder and heath bedrock. A 2024 telemetry-based study (Rettie et al. 2024) was completed to further assess caribou habitat use and selection around the Ekati Mine. This study was completed using GPS collar data from 2015 to 2022 and examined questions around potential impacts to caribou from exposure to mining infrastructure at the Ekati and Diavik Mines. No consistent avoidance of mining infrastructure was observed across the dataset, including when investigated by sex, season, and caribou herd. Broadly, habitat

		selection was found to be driven by underlying habitat quality, with distance to mines not significantly shifting natural patterns of selection. Across the eight years of data tested, caribou who interacted with the Ekati and Diavik Mine area (within 30 km) were not delayed in their arrival at the next seasonal range, supporting limited impact from these operations on caribou movement at broad scales in addition to findings of no consistent shifts in finer scale movements closer to mines.	
	Behavioural monitoring	Determine if caribou behaviour changes with distance from roads or in response to various potential stressors.	
	Camera monitoring	Wildlife monitoring	- Determine the level of caribou activity along active haul roads and along potential migration routes; - Determine caribou response to roads (i.e., crossing or deflecting); and - Determine caribou activity at other mine infrastructure.
		Traffic monitoring	- Determine hourly traffic volumes; - Analyze traffic volumes associated with caribou crossings identified from wildlife cameras and caribou collar data; and - Attempt to determine impact of traffic levels on road response behaviour of caribou.
	Historical Long Lake Containment Facility (LLCF) Surveys	Beginning in 1999, surveys of caribou were conducted in the LLCF to observe and record caribou presence and absence. When caribou were present, group size, composition, dominant behaviour, and signs of stress were recorded. Observations of other wildlife and wildlife signs were also recorded during the survey. In total, 1,387 surveys of the LLCF were conducted between 1999 and2023, with the number of surveys ranging annually from 10 to190 with higher numbers of surveys per year in the last 10 years. From 1999 to2023, caribou were observed within the vicinity of the LLCF during 207 (15%) of the surveys for a total of 2,896 caribou. Evidence from track and observed caribou behaviour during surveys suggests that processed kimberlite (PK) does not inhibit caribou movement. To date, no caribou injuries or deaths have been attributed to the LLCF. Between 2000 and 2023, observations of caribou in or near the LLCF mostly involved caribou travelling through the area or feeding. The LLCF may provide refuge habitat from insect harassment during the summer months as the LLCF basin is large and flat, with large non-vegetated areas and wind-exposed habitat not associated with mosquito and botfly activity. Based on these findings, LLCF monitoring is no longer an active component of the WMMP. LLCF wildlife monitoring is specific to incidental observations and incidents, as previous surveys did not indicate impacts were attributed to the LLCF (Arctic Canadian 2023).	
Grizzly bear	Incidental observations	- 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.	
	Historic hair snagging study	From 2012 to2017, Ekati and Diavik Diamond Mines Inc (Diavik; DDMI) collaborated on a Regional Grizzly Bear DNA study as part of their wildlife monitoring programs (ERM 2018). The regional DNA study suggested that the central barrens of the NWT are productive for grizzly bears. 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 and Messier 2002), although direct comparison of the two studies is somewhat limited as the method used to achieve each population estimate varied. McLoughlin and Messier (2001) predicted, however, that the grizzly bear population in the area will remain stable if the annual removal rate does not increase from 13.4 bears/year. Only four grizzly bear mortalities have occurred at Ekati from 1997 to 2024, indicating that the mine has had negligible impacts to the annual removal rate of grizzly bears per year that would affect the regional population. This study is now completed and based on the results of the research and mortality data, grizzly bear monitoring now is specific to incidental observations and documenting incidents, as there was no evidence of regional impacts from the mine.	

Wolf	Incidental observations	• Avoid and minimize wolf-human interactions; • Identify the presence and 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.
	Historic den occupancy and productivity	Regional wolf monitoring, including den occupancy and productivity surveys, were coordinated by the GNWT ECC and, over the years, operators of the Ekati mine have collaborated in support of the wolf monitoring initiatives. Den monitoring is no longer an active component of the WMMP. Wolf monitoring is specific to incidental observations and incidents, as previous studies did not indicate impacts were occurring on a regional scale.
Wolverine	Incidental observations	• 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.
	Historic hair snagging study	In 2015, Ekati participated in the wolverine DNA program conducted by GNWT ECC. Nineteen individual wolverines were identified from the samples collected in the Ekati Mine study area in 2015 (Efford and Boulanger 2018). The 2015 density was calculated as 3.88 wolverines per 1,000 km ² (95% confidence interval: 2.60–5.79); the overall population trend in the Ekati Mine study area from 2005–2015 was $\lambda = 0.982$ (95% confidence interval: 0.931–1.035). Efford and Boulanger (2018) assessed the finding as providing no evidence for population decline in the Ekati Mine study area. This study is now complete, and wolverine monitoring is specific to incidental observations and documenting incidents, as the previous research did not indicate regional impacts.
Raptors	Incidental observations	• 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.
	Pit wall nest monitoring	• Determine if pit walls or other mine infrastructure are utilized as nesting sites for raptors; • Determine nest success in areas of development and document effectiveness of deterrent efforts that may be employed; and • Document and determine the cause of direct mine-related mortalities of raptors should they occur.
	Historical regional falcon surveys	Regional GNWT ECC falcon surveys were conducted from 1998 to 2010 every year (except for 1999), however surveys were not conducted between 2011 and 2014, as per recommendations received from technical and community workshops held on June 28, 2010, and October 5 and 6, 2010, respectively. The surveys were continued in 2015, and a comparison of results indicated the Ekati Mine was not impacting falcons at a regional scale (ERM 2016). As such, regional falcon surveys are no longer an active component of the WMMP, and monitoring is specific to incidental observations and pit wall nest monitoring and deterrence when needed. Burgundy continues to contribute where possible to GNWT ECC facilitated raptor surveys on a five-year schedule.
Fox	Incidental observations	• Avoid and minimize fox-human interactions; • Identify the presence and composition of incidental fox observations in the study area;

Ekati Wildlife Management and Monitoring Plan		- 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.
Migratory birds	Incidental observations	- Document the presence of migratory birds at the Ekati Diamond 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.
	Historic North American breeding bird surveys	A previous study conducted at the Ekati Mine suggests that migratory bird species that prefer open-disturbed habitat may be attracted to mine infrastructure, while other species may avoid developments (Smith et al. 2005). However, since changes in behaviour identified in the study were localized and similar to predicted effects, this the North American Breeding Bird survey is no longer an active component of the WMMP. As such, monitoring is specific to incidental observations and documenting incidents.
Rare or uncommon species	Incidental observations	Document presence of rare or uncommon species at the Ekati Mine.

2 PROJECT DESCRIPTION

2.1 Ekati Diamond Mine

The Ekati Mine started production in October 1998. The mine site crosses several Watersheds including the Koala, King Cujo, Carrie Pond, Pigeon-Fay, Upper Exeter, Horseshoe and Point Lake Watersheds. The main site is within the Koala Watershed and includes the process plant, LLCF, three waste rock storage areas (WRSA), main employee camp (Main Camp), airstrip, and several haul roads. The King Cujo Watershed includes the Misery Pit, Lynx Pit, WRSAs, King Pond Settling Facility, a crusher pad, Lac du Sauvage Road, and a small employee camp (Misery Camp). The area is linked to the Main Camp by the Misery Road (Figure 2.2-1). The Carrie Pond Watershed includes a portion of Misery Pit, a WRSA, and Desperation Sump. The Pigeon-Fay and Upper Exeter Watersheds contain the Pigeon Pit and Pigeon Stream Diversion Channel. The Horseshoe Watershed contains the Sable Pit, WRSAs, and Two Rock Sedimentation Ponds. The Point Lake Watershed contains the Point Lake Pit and associated infrastructure (Figure 2.2-2).

The Point Lake development involves the construction and operation of the Point Lake Pit in close proximity to the existing Misery site. The Point Lake development required the dewatering and fish-out of Point Lake, and requires an associated WRSA with seepage collection sump, and an overburden stockpile. A short access road to the Point Lake Pit and a utility pad were constructed in late 2021. The dewatering of Point Lake began in July 2022, and mining of Point Lake began in 2024, however as of Q3 2025 operations of the Point Lake Pit have been temporarily suspended.

The Ekati Mine currently has one underground mine (Misery Underground) in active mine development and production (Figure 2.2-1). Mining production was concluded in Pigeon Pit in April 2022. Active operations at Sable Pit were paused in early 2025 and Burgundy is awaiting approval to resume operations to complete mining production. Seven open pits (Panda, Koala, Misery, Koala North, Beartooth, Fox, and Pigeon) have completed development and production and are now closed, except for areas of the Misery Pit that are used to access underground operations. Three underground operations (Koala, Koala North, and Panda) have also completed development and production and are now closed. Beartooth, Panda, and Koala pits become containment facilities for fine processed kimberlite.

During normal operation, the site is accessible by charter plane from Calgary and Yellowknife. A winter road provides truck access for materials and supplies at certain times of year. The current life of mine is anticipated to be 2028 however mine life could be extended if innovative technologies and economic conditions allow for further extraction of resources from Fox and Point Lake kimberlites.

2.2 The Ekati Diamond Mine Wildlife Study Area

Wildlife monitoring around the Ekati Mine is conducted in a study area of 2,800 square kilometres (km²; Figure 2.2-3). 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 wetland areas provide food for grizzly bears in the spring, and breeding habitat for migrating shorebirds, waterfowl, and some songbirds. 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 wolverine (*Gulo gulo*), Arctic ground squirrel (*Spermophilus parryii*), Arctic fox (*Vulpes lagopus*), red fox (*Vulpes vulpes*), multiple lemming species, Arctic hare (*Lepus arcticus*), ptarmigan (*Lagopus* spp.), and occasionally muskox (*Ovibos moschatus*) and moose (*Alces alces*).

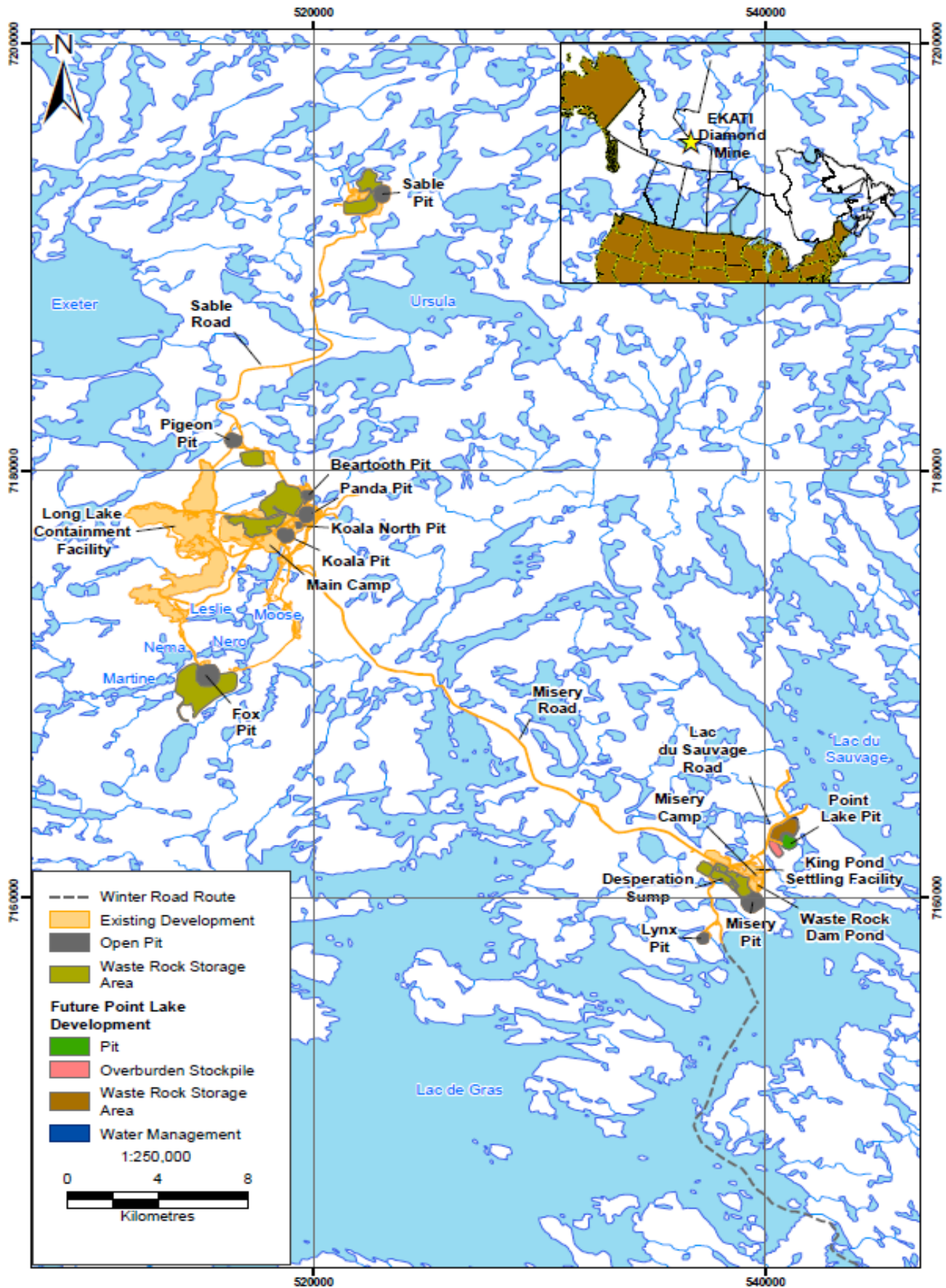


FIGURE 2.2-1: EKATI MINE SITE MAP

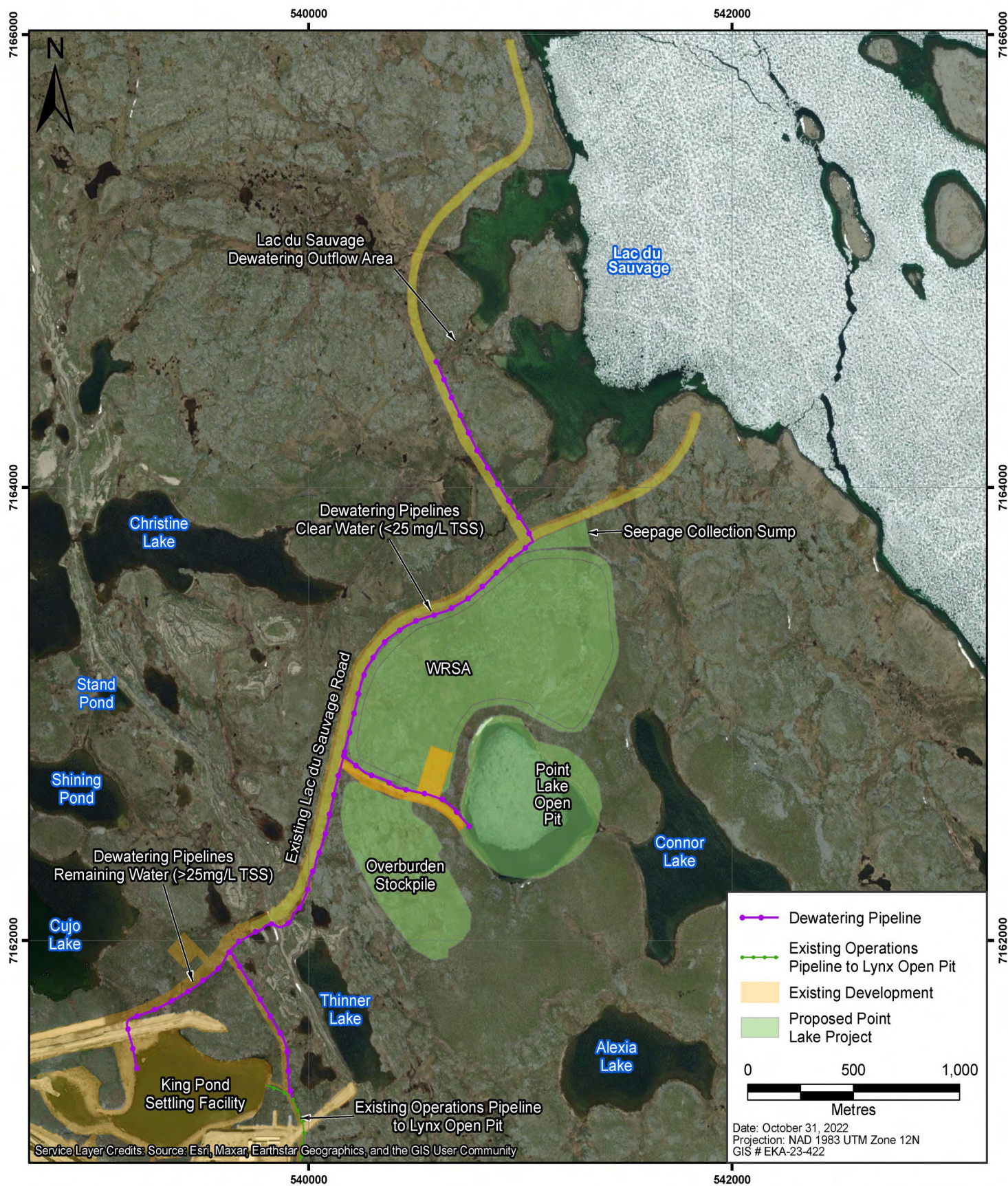


FIGURE 2.2-2: POINT LAKE PROJECT INFRASTRUCTURE

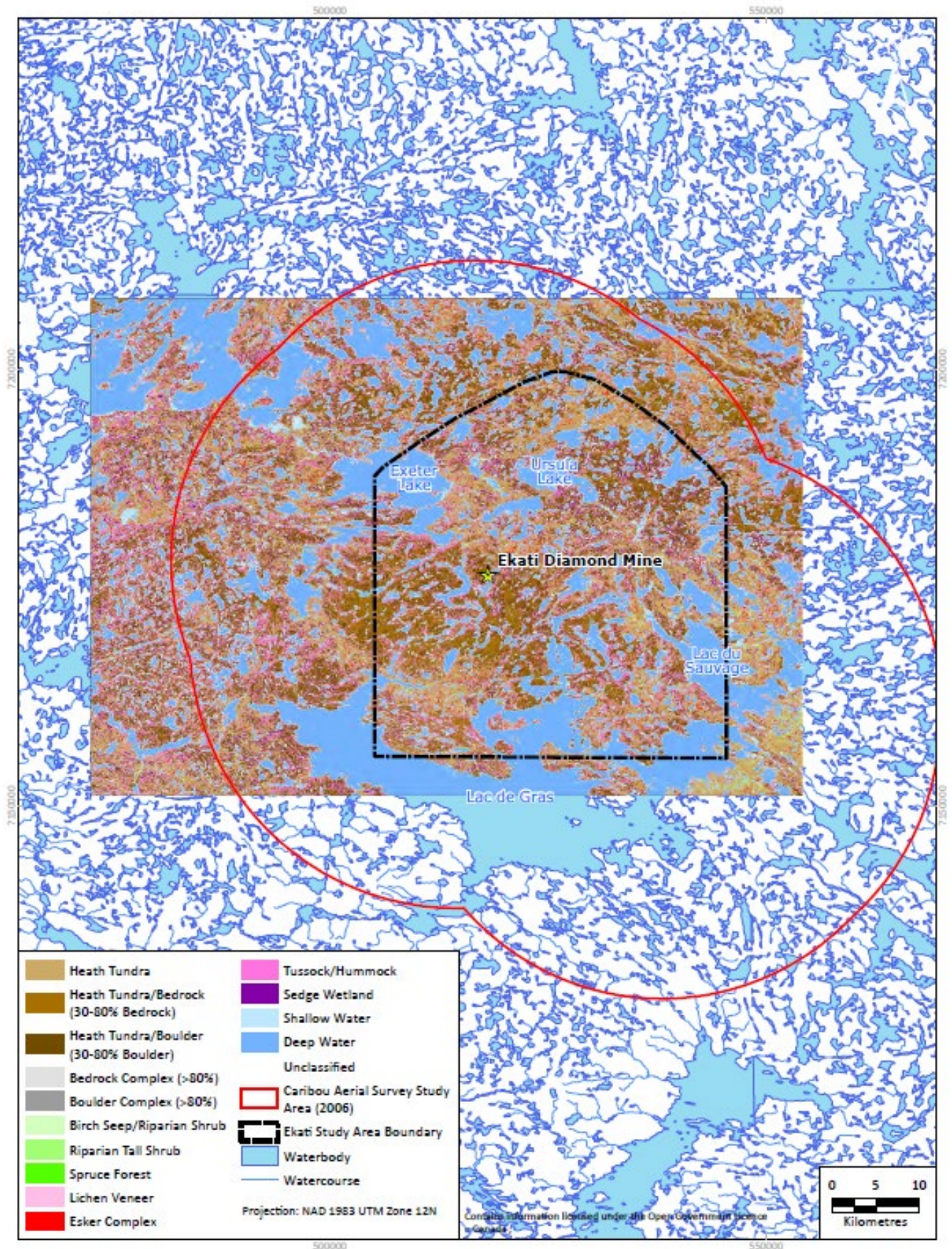


FIGURE 2.2-3: EKATI MINE WILDLIFE STUDY AREA

3 PLAN CONTEXT AND ENGAGEMENT

3.1 Concordance

The WMMP serves to meet Burgundy's obligations under Acts and regulations relevant to wildlife in the NWT and Canada (Table 3.1-1). The WMMP also serves to meet the requirements of the Wildlife Management and Monitoring Plan: Process and Guidelines (GNWT 2021) and the Annotated Table of Contents: Wildlife Management and Monitoring Plans (GNWT 2019b). The sections of the WMMP that pertain to the relevant Acts and regulations, and the guidelines for wildlife and wildlife habitat protection and monitoring have been identified in Table 3.1-1.

TABLE 3.1-1: CONCORDANCE OF LEGISLATION/REGULATION REQUIREMENTS AND WILDLIFE MANAGEMENT AND MONITORING PLAN CONTENTS

Legislation/ Regulation/ Agreement	Requirement	Corresponding Section in WMMP	Responsible Regulatory Agency
Environmental Agreement	- Measure compliance with regulatory requirements; - Determine the environmental effects of the mine; - Test impact predictions; and - Measure the performance of operations and effectiveness of impact mitigation.	Entire document	GNWT
<i>Migratory Birds Convention Act</i> (1994), Migratory Bird Regulations (2022)	The <i>Migratory Bird Convention Act</i>: - Protects migratory birds, their nests and eggs anywhere they are found in Canada, including ocean waters; and - Prohibits the dumping of substances harmful to birds in waters or areas frequented by them. The Migratory Bird Regulations prohibit activities which: - Capture, kill, take, injure, or harass a migratory bird or attempt to do so; - Destroy, take, or disturb an egg; - Damage, destroy, remove, or disturb a nest, nest shelter, eider duck shelter or duck box, unless the following exceptions apply: - The nest does not contain a live migratory bird or viable egg; and - The nest was not built by a species that is listed in Schedule 1 of MBR 2022.	Section 4.1.2, Section 5.1, Section 6.3.2.2	Canadian Wildlife Services (CWS)
<i>NWT Wildlife Act</i> (2013)	A wildlife management and monitoring plan must include: - A description of potential disturbance to big game and other prescribed wildlife, potential harm to wildlife and potential impacts on habitat; - A description of measures to be implemented for the mitigation of potential impacts; - The process for monitoring impacts and assessing whether mitigative measures are effective; and	Entire document	GNWT

	Other prescribed requirements.		
<i>Species at Risk Act</i> (2002); <i>Species at Risk (NWT) Act</i> (2009)	Burgundy will adhere to requirements of all applicable Regulations or Recovery Plans that may be developed over the duration of the mine.	Section 4.1	CWS; GNWT
<i>NWT Wildlife Act</i> (2013)	Wildlife Management and Monitoring Plan: Process and Guidelines (GNWT 2021)		GNWT
	b. A description of the impacts of the development on wildlife and wildlife habitat;	Section 4	
	c. A description of how those impacts will be mitigated;	Section 5	
	d. A description of mitigation monitoring	Section 6	
	e. A description of project-specific wildlife effects monitoring; and	Section 6	
	f. A description of how the WMMP will contribute to regional-scale wildlife monitoring and/or cumulative effects research and assessment of management.	Throughout document	
	Annotated Table of Contents: Wildlife Management and Monitoring Plans (GNWT 2019a)		
	Introduction	Section 1 and Section 3	
	Project Description	Section 2	
	Potential Impacts	Section 4	
	Wildlife and Wildlife Habitat Mitigation	Section 5	
	Monitoring	Section 6	
	Support for Research or Cumulative Effects Assessment, Monitoring or Management Initiatives	Section 4 and Section 7	
	Adaptive Management	Section 5 and Section 7	
	Reporting Protocols	Section 8	
	Roles and Responsibilities	Section 9	
	Literature Cited	Section 10	
	Glossary	Acronyms and Abbreviations	
	Appendices	Section 11	

3.2 Engagement and Incorporation of Traditional Knowledge

As part of their commitment to the environment, Burgundy is mandated under their Environmental Agreement to incorporate available TK in environmental monitoring programs. Wildlife monitoring uses scientific methods and is informed by TK regarding local wildlife and ecology.

The WMMP focuses on wildlife species and habitats identified as being of social or economic importance, or of particular ecological or conservation concern (i.e., VECs). Each year, the monitoring program is refined based on previous information collected, and input from government and non-government agencies, Indigenous groups, and IEMA. With the assistance of community experts, land users, and/or TK holders during wildlife and habitat surveys, TK has been used to help understand monitoring results and provide ways of preventing or reducing impacts to wildlife. The WMMP will continue to evolve as Burgundy explores further options to improve the program through community and regulatory workshops, community assistant participation, and site visits.

Burgundy is responsible for engagement with Indigenous people and in taking ownership of the Ekati Mine, Burgundy is responsible for respecting existing Impact-Benefit Agreements and abiding by the Environmental Agreement. As well, Burgundy has committed to working with communities so that TK is incorporated into the day-to-day operation of the Ekati Mine where appropriate. Burgundy is committed to engaging with communities to explain changes to the WMMP, to listen to comments, respond to questions, and consider suggestions to improve the wildlife monitoring programs. Burgundy continues to seek recommendations for improvements from the technical and community workshops to incorporate into future versions of the WMMP.

After the implementation of the Wildlife Effects Monitoring Plan and CRMP in 2017, the Yellowknives Dene First Nation (YKDFN), Kitikmeot Inuit Association (KIA), Łutselk'e Dene First Nation (LKDFN), Deninu K'ue First Nation (DKFN), Fort Resolution Métis Council (FRMC), North Slave Métis Alliance (NSMA), and Tłı̨chǫ Government were invited to a workshop at the Ekati Mine as part of the Ekati Mine Community Caribou Engagement Program. Representatives from FRMC, DKFN, Hamlet of Kugluktuk, KIA, LKDFN, IEMA, and Tłı̨chǫ Government were present for the two-day workshop held in September 2018. Day One of the workshop discussed caribou crossings in detail and included a site visit to view the existing Sable and Lac du Sauvage (formerly Jay Road) caribou crossings, while Day Two focused on TK research into the zone of influence (ZOI).

To expand on caribou monitoring programs in 2019, a site-tour with the KIA occurred in October 2019, and was focused on the Sable Road caribou crossings, from which Ekati received feedback and recommendations for the crossings. In 2019, Ekati also supported TK Community Based Projects including the Tłı̨chǫ Boots on the Ground Caribou Monitoring, LKDFN Moccasins on the Ground Caribou Monitoring, and YDFN Dene on-the-land Caribou Monitoring programs.

Members of the YKDFN, KIA, LKDFN, DKFN, FRMC, NSMA, and Tłı̨chǫ Government had a site tour of the Point Lake area during the summer of 2022. Information about the Point Lake development was shared, including the status of the project with an emphasis on caribou mitigation and monitoring, to obtain TK and community feedback. Information requests and feedback regarding wildlife mitigation and monitoring received from intervenors during the Wek'eezhii Land and Water Board's Point Lake permitting process, and through Ekati's engagement process, included a caribou-focused workshop hosted by Ekati in winter 2022, and the findings are reflected in the Point Lake WEMP Addendums.

Ekati conducted two engagement sessions in the summer of 2024 with YKDFN, LKDFN, NSMA, Tłı̨chǫ Government, and Hamlet of Kugluktuk, and one session in the fall of 2024 with the Tłı̨chǫ Government on the topic of the Point Lake Road Modification Plan, as well as current caribou crossing design and placement on Sable and Misery roads.

3.2.1 Engagement and Traditional Knowledge for the Caribou Road Mitigation Plan

Burgundy's community engagement program has indicated that the Lac du Sauvage Road area is important for caribou movement. Increased traffic along the Misery, Sable and Lac du Sauvage roads that may result in barriers to the movement of caribou and other wildlife at the Ekati Mine site is a key concern for Burgundy and communities.

The Caribou Road Mitigation Plan (CRMP) applies to all roads at the Ekati Mine and provides an effective framework to guide additional mitigation actions to address any barrier effects. The CRMP actions included the incorporation of TK, monitoring of mitigation effectiveness, and adaptive management to refine mitigation actions through time. During the development of the CRMP, Ekati completed a series of community engagement activities specific to the Jay Project, including site visits to the Lac du Sauvage esker to determine where the Jay Road (now the Lac du Sauvage Road) should cross the esker, as part of the Jay Road design process. Community engagement for the Jay Project facilitated the design and location of caribou crossings for other Ekati Mine roads.

3.3 Related Documents

As Ekati has been in operation since 1998, multiple environmental monitoring programs and management plans are in place and have been effectively improved over time through adaptive management. Relevant monitoring programs and management plans to the WMMP are briefly described below (Table 3.3-1).

TABLE 3.3-1: RELEVANT MANAGEMENT PLANS TO THE WMMP

Management Plan	Description
Aquatic Effects Monitoring Program Design Plan, Version 8.1	The Aquatic Effects Monitoring Program (AEMP) Design Plan describes the monitoring that is carried out in the aquatic Receiving Environment with a focus on detecting change and assessing its magnitude and extent to determine whether observed changes may be mine-related.
Spill Contingency Plan, Version 16.1	The Spill Contingency Plan ensures immediate and effective handling of a major environmental emergency, and minimizes danger to personnel, property and the environment.
Waste Management Plan, Version 9.0	The objective of the Waste Management Plan is to maintain a safe and healthy workplace at the Ekati Diamond Mine and ensure that potential adverse effects to the environment and wildlife are minimized through sound waste management practices. Burgundy staff, contractors and stakeholders are provided clear direction on how waste from the Ekati Mine is managed through each of the waste streams to final disposal.
Waste Rock and Ore Storage Management Plan, Version 13.1	The Waste Rock and Ore Storage Management Plan (WROMP) describes the environmental characteristics of waste rock and kimberlite, and the design approach that is used at the Ekati Mine to mitigate environmental risks from waste rock and kimberlite ore.
Wastewater and Processed Kimberlite Management Plan, Version 10.1	The objective of the wastewater and processed kimberlite management systems is to prevent significant adverse environmental effects from occurring in the downstream Receiving Environment as a result of Minewater Discharge, and to ensure the disposal of processed kimberlite does not result in significant adverse environmental effects.

Interim Closure and Reclamation Plan, Version 3.1	Reclamation of the Ekati Mine site is described in the Interim Closure and Reclamation Plan (ICRP). This plan is an integrated and all-inclusive plan as required under the Water Licence and Environmental Agreement. The ICRP considers each area of the mine separately: open pits, underground mines, waste rock storage areas, processed kimberlite containment areas, water management infrastructure, and buildings and infrastructure. It includes a reclamation objective of focusing on local native vegetation communities which will allow reestablishment of wildlife habitat.
Air Quality Monitoring and Management Plan	The Air Quality Management and Monitoring Plan includes monitoring methodologies and monitoring locations and addresses air quality monitoring and management using an adaptive approach to managing air quality.
Engagement Plan, Version 5.1	This plan is used as a basis for engagement for ongoing operations and for projects conducted at the Ekati Mine site.

4 POTENTIAL IMPACTS

4.1 Focal Species and Habitats

4.1.1 Valued Ecosystem Components

VECs include wildlife species and habitats identified as being of social or economic importance or of particular ecological or conservation concern. For the purpose of this WMMP, wildlife species may be considered of 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 by the Committee on the Status of the Endangered Wildlife in Canada (COSEWIC). Territorial status includes those listed on the NWT SARA (2009) or by the Canada Wild Species Working Group. Wildlife VECs selected for the WMMP and the rationale for their selection are provided in Table 4.1-1. Following the principles of adaptive management, the VECs and monitoring objectives may be periodically reviewed and changed if deemed beneficial to the monitoring program.

TABLE 4.1-1: WILDLIFE VALUED ECOSYSTEM COMPONENTS

VEC	Rationale
Barren-ground 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. They are federally designated as “ <i>Threatened</i> ” by COSEWIC, are under consideration for listing on Schedule 1 of the SARA (Government of Canada 2025) and listed as “ <i>Threatened</i> ” under the NWT SARA (GNWT 2024). The general status rank in NWT is “ <i>At Risk</i> ”.
Grizzly Bear	The grizzly bear (western population) is federally designated as “ <i>Special Concern</i> ” by COSEWIC, listed as “ <i>Special Concern</i> ” on SARA Schedule 1 (Government of Canada 2025) and is listed as “ <i>No Status</i> ” under the NWT SARA (GNWT 2024). The general status rank in NWT is “ <i>Sensitive</i> ”.
Wolf	The wolf is assessed as “ <i>Secure</i> ” in the NWT (GNWT 2024) and is not listed federally but is monitored as it is an important species in the Arctic and interacts with the mine on a regular basis.
Wolverine	Wolverine (<i>Gulo gulo</i>) is a species of conservation concern. It is federally designated as “ <i>Special Concern</i> ” by COSEWIC, listed as “ <i>Special Concern</i> ” on Schedule 1 of the SARA (Government of Canada 2025), and is listed as “ <i>No Status</i> ” under the NWT SARA (GNWT 2024). The general status rank is “ <i>Sensitive</i> ” in NWT.
Raptors	Peregrine falcon (<i>Falco peregrinus anatum/tundrius</i>) is federally designated as “ <i>Not at Risk</i> ” by COSEWIC (ECCC 2023). It has been de-listed from Schedule 1 of the SARA (ECCC 2024) and is not listed under the NWT SARA (GNWT 2024). However, it remains a VEC as it is an important species in the Arctic and continues to interact with the mine on a regular basis. Short-eared owl (<i>Asio flammeus</i>) is federally designated as “ <i>Threatened</i> ” by COSEWIC, listed as “ <i>Special Concern</i> ” on SARA Schedule 1 (Government of Canada 2025) and is listed as “ <i>No Status</i> ” under the NWT SARA (GNWT 2025). The general status rank in NWT is “ <i>At Risk</i> ”. Snowy owl (<i>Bubo scandiacus</i>) was assessed as “ <i>Threatened</i> ” by COSEWIC in May 2025 (COSEWIC 2025), is under consideration for Schedule 1 of SARA and is listed as “ <i>No Status</i> ” under the NWT SARA (GNWT 2024) The general status rank in NWT is “ <i>Secure</i> ”.

The red-necked phalarope (*Phalaropus lobatus*) and Harris’s sparrow (*Zonotrichia querula*) are listed as “*Special Concern*” by COSEWIC, listed as “*Special Concern*” on SARA Schedule 1 (Government of Canada 2025) and listed as “*Not Applicable*” under the NWT SARA with a general status ranking of “*Sensitive*” in NWT (GNWT 2024). The rusty blackbird (*Euphagus carolinus*) is listed as “*Special Concern*” by COSEWIC, listed as “*Special Concern*” on SARA Schedule 1 and listed as “*No Status*” under the NWT SARA with a general status ranking of “*Sensitive*” in NWT. Lesser yellowlegs (*Tringa flavipes*) is listed as “*Threatened*” by

COSEWIC and is under consideration for addition to SARA Schedule 1 and listed as “*Not Applicable*” under the NWT SARA with a general status ranking of “*Sensitive*” in NWT.

While less likely to be present but with the potential to occur due to shifting ranges, barn swallow (*Hirundo rustica*) is listed as “*Special Concern*” by COSEWIC, listed as “*Threatened*” on Schedule 1 of SARA (Government of Canada 2025) and listed as “*Not Applicable*” under the NWT SARA with a general status ranking of “*Sensitive*” in NWT while bank swallow (*Riparia riparia*) is listed as “*Threatened*” by COSEWIC, listed as “*Threatened*” on Schedule 1 of SARA, and listed as “*Not Applicable*” under the NWT SARA with a general status ranking of “*At Risk*” in NWT. Based on the sensitive rankings, these migratory bird species are considered species of concern and monitored at the Ekati Mine as part of the WMMP.

4.1.1.1 Caribou

Barren-ground caribou are a biologically and culturally important species in the Arctic. Caribou not only sustain wild predator populations, such as wolves, grizzly bear, and wolverine, but also provide a critical resource for human populations living in the north, particularly Indigenous communities. Hunting, disease, predation, industrial activities, and environmental variability can affect caribou numbers. Potential effects from industrial activities occurring within the species range have been monitored for management of caribou for more than 20 years. To date, the effects of industrial activities on caribou population declines have not been conclusively determined. As a result of recent population declines, barren-ground caribou are federally designated as “*Threatened*” by COSEWIC, are under consideration for listing on Schedule 1 of the SARA (Government of Canada 2025) and listed as “*Threatened*” under the NWT SARA (GNWT 2024). The general status rank in NWT is “*At Risk*”.

Annual aerial surveys of the caribou calving-ground surveys have indicated the Bathurst caribou herd declined from approximately 472,000 animals in 1986 (GNWT ENR 2013) to 31,982 animals in 2009 (Nishi et al. 2010). A population survey conducted in June 2012 indicated the herd had stabilized between 2009 and 2012 at an estimated 34,690 animals (GNWT ENR 2013). In 2015, the Bathurst population was estimated to have declined further to 19,769 individuals and by 2018, the herd had further declined to 8,207 animals (Boulanger et al. 2019). In 2021, 2022 and 2023, the herd size was estimated at 6,243, 6,851 and 4,241 respectively. (Adamczewski et al. 2023). The June 2023 composition survey estimated 83.1% cows breeding and 67.1 calves per 100 cows of breeding status (Boulanger et al. 2024). Population modelling suggests annual growth rates of 0.80 to 1.0 from 2020 to 2023, however movement of collared Bathurst females in June 2023 to Beverly calving grounds was observed, suggesting emigration is playing a role in the population of the Bathurst herd making the growth rate more likely to be 0.80. The most recent population survey results from 2025 estimate the Bathurst herd consists of 3,609 cows and bulls (GNWT 2025).

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. While the Bathurst herd is showing population declines, the Beverly herd population has been increasing in recent years from 103,400 in 2018 to 152,000 in 2023 (GNWT 2025) although populations remain well below the previous population estimate of 276,000, in 1994 (BQCMB 2023).

Information from both male and female satellite-collared caribou collected by GNWT ECC and TK indicates that two barren-ground caribou herds, the Bathurst herd and the Beverly/Ahiak herd (formerly known as the Ahiak herd), overlap the area of the Ekati Mine wildlife study area. The historical distribution of these herds in Figure 4.1-1 represents the more substantial ranges occupied when populations were larger.

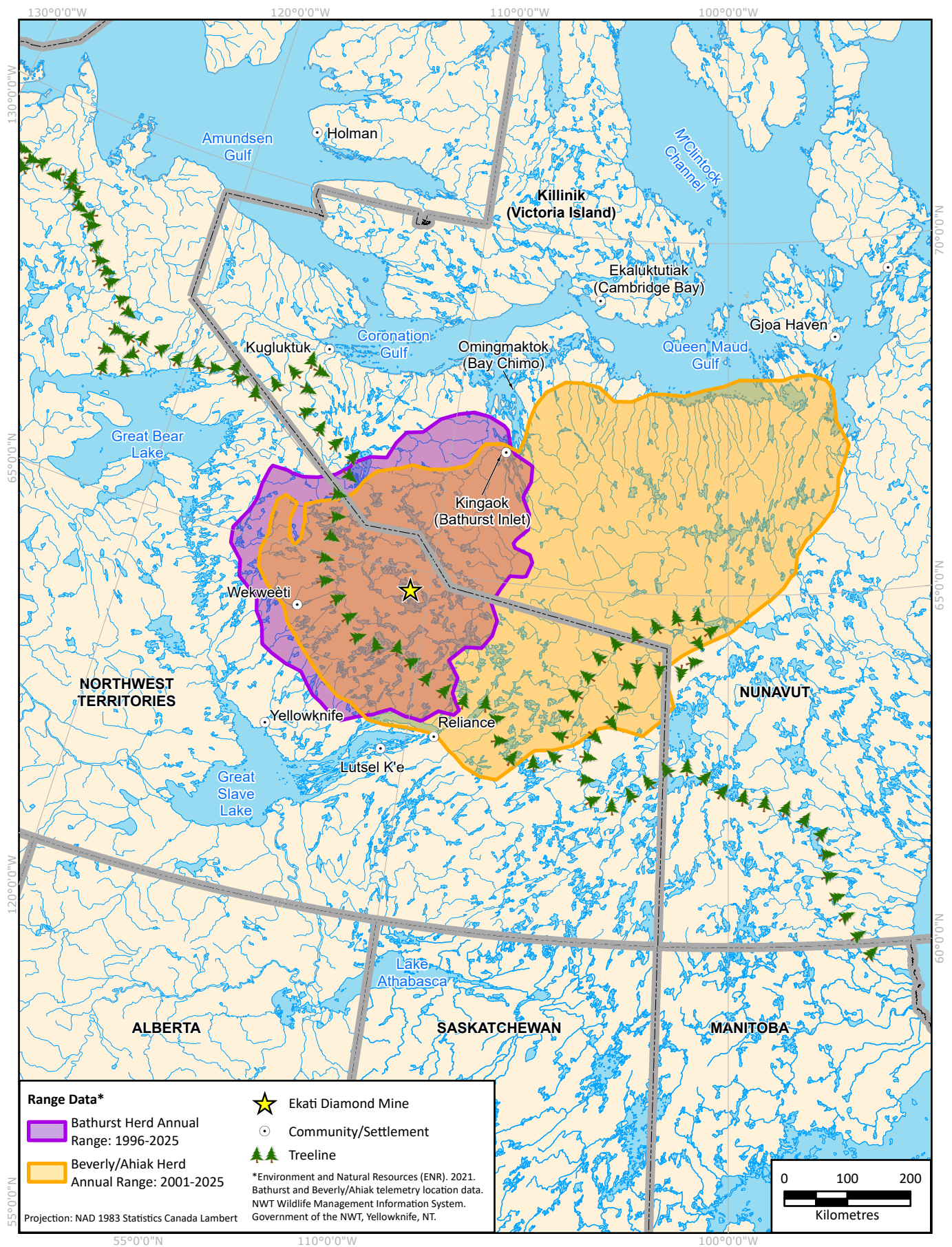


FIGURE 4.1-1 Annual Ranges of the Bathurst and Beverly/Ahiak Caribou Herds

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 4.1-2).

TABLE 4.1-2: GENERAL SEASONAL PERIOD DATES FOR BATHURST AND BEVERLY/AHIAK CARIBOU IN THE NWT

Seasonal Period	Dates
Winter	December 01 – April 19
Spring Migration	April 20 – June 01
Calving	June 02- June 16
Post-Calving	June 17 – June 28
Summer	June 29 – September 06
Fall Migration	September 07 – November 30

Source: GNWT 2019b

Bathurst caribou remain on the wintering grounds until mid-April when they begin their migration north to the calving grounds (Figure 4.1-2). 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 4.1-3). In most years, the Bathurst winter range did not overlap the Ekati Mine, though the 95% kernel UD in 2017/2018, 2018/2019, 2021/2022, 2022/2023 and for females in 2023/2024 and 2024/2025 overlapped. The 50% kernel UD only overlapped Ekati in the winter of 2017/2018 when the range was shifted significantly to the northeast from the typical winter range.

During the spring migration, Bathurst caribou migrate over a large area (275,000 km²) from their wintering range (Figure 4.1-3) to the calving grounds in a relatively short period of time. Spring migration routes of collared caribou have frequently passed through or near the Ekati Mine site, although in most years migration tracks primarily occur to the west of Ekati, as the calving grounds are situated north of the mine. However, movement corridors can vary annually depending on the distribution of caribou on the wintering grounds. In 2025, spring migration routes were largely northwest of Ekati, with few routes passing through the mine site (Figure 4.1-4).

Bathurst cows usually arrive in late May on their calving grounds, which are currently concentrated between the James and Burnside Rivers, west of Bathurst Inlet (Figure 4.1-4), but may arrive as early as April, with calving beginning in early June (Table 4.1-2; KIA 2015). Non-parturient (non-pregnant) cows migrate more slowly than pregnant cows and may or may not reach the calving grounds. Bulls 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 meet females with calves in late June and early July on the post-calving range (Figure 4.1-5). The post-calving range is to the south and larger than the calving grounds (Gunn and D'Hont 2002). The post-calving range overlapped the Ekati Mine in earlier years (1996 to 2007) but has not overlapped since 2007. However, male collar data analyzed in 2025 suggests that the male 95% kernel UD overlaps the mine during both the calving and post-calving periods (Figure 4.1-5).

During the summer (June 29th to September 6th), most Bathurst caribou have traditionally passed the southern end of Contwoyto Lake when moving south before turning and travelling northwest in a clockwise direction across the summer range (Figure 4.1-6; Gunn et al. 2008a; Gunn et al. 2008b). The 95% kernel UD Bathurst caribou summer range frequently overlaps the Ekati Mine, though it did not overlap the mine in 2018, 2020 or 2024. During the fall (September 7th to November 30th), Bathurst caribou migrate towards the winter range (Figure 4.1-3). A portion of the Bathurst caribou range has frequently overlapped with the Ekati Mine during the fall migration period and continued to do so in 2025 (Figure 4.1-7).

The 95% kernel UD winter range of the Beverly/Ahiak herd range has overlapped with the Ekati Mine intermittently since 2008, with an expanding wintering range, with collar data indicating an overlap of female caribou in 2024/2025 (Figure 4.1-8).

Based on updated caribou range maps found in the Beverly and Qamanirijuaq Caribou Management Plan 2023-2032 (BQCMB 2023), and recent mapping of ranges through all periods, caribou from the Beverly herd may also overlap the Ekati Mine during additional periods. Collar data indicates that there was a significant overlap of migration routes during the spring migration with Ekati in 2025 (Figure 4.1-2), while both males and females overlapped the mine during the fall (Figure 4.1-12). There was a slight overlap of the 95% kernel UD of female caribou during the summer season (Figure 4.1-9), as the mine is located on the southern edge of the herd's range during spring and summer. No overlap occurred for either sex during the calving or post-calving seasons in 2025 (Figure 4.1-10, Figure 4.1-11)

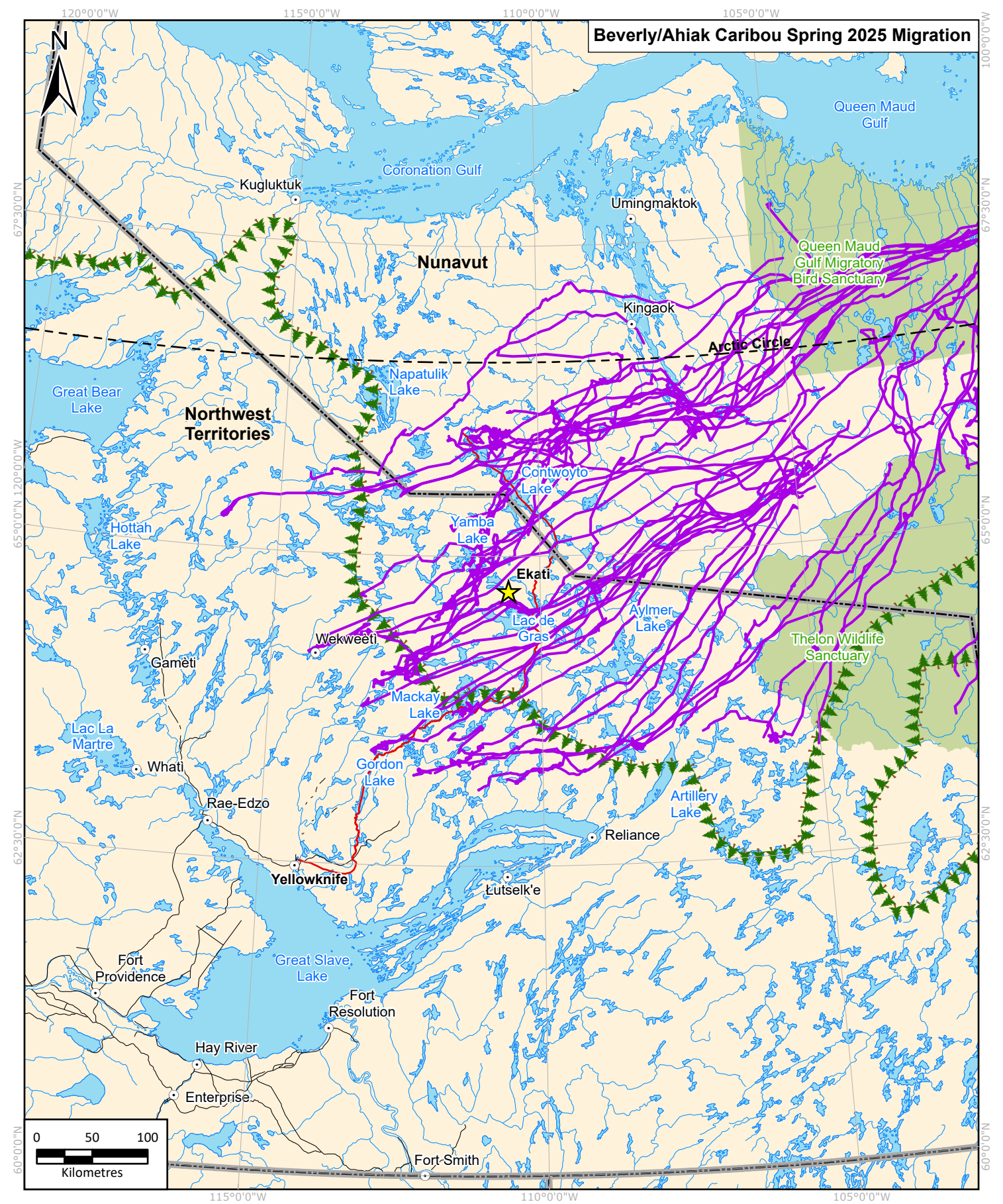
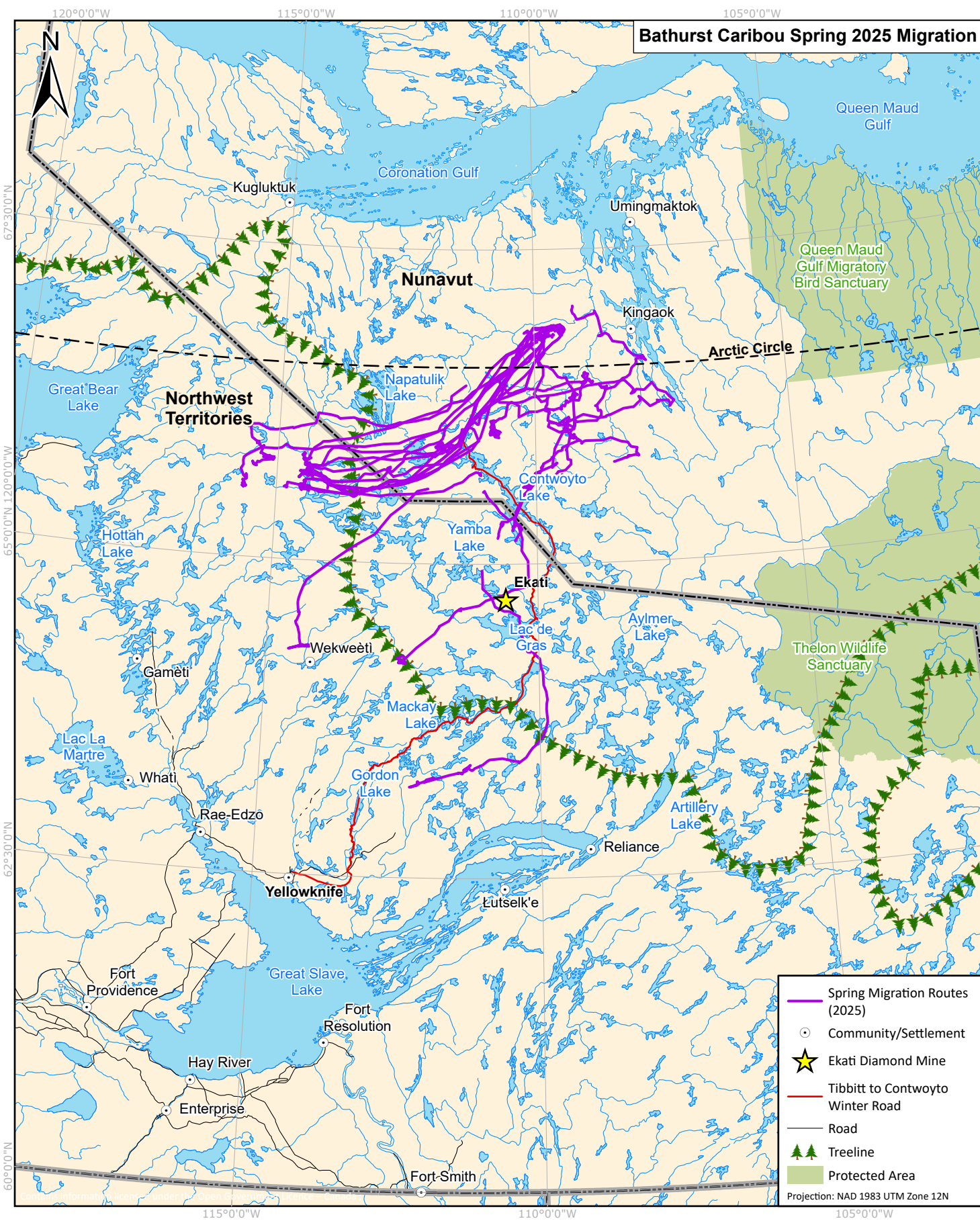


Figure 4.1-2 Spring Migration Routes of Satellite Collared Bathurst and Beverly/Ahiak Caribou, 2025

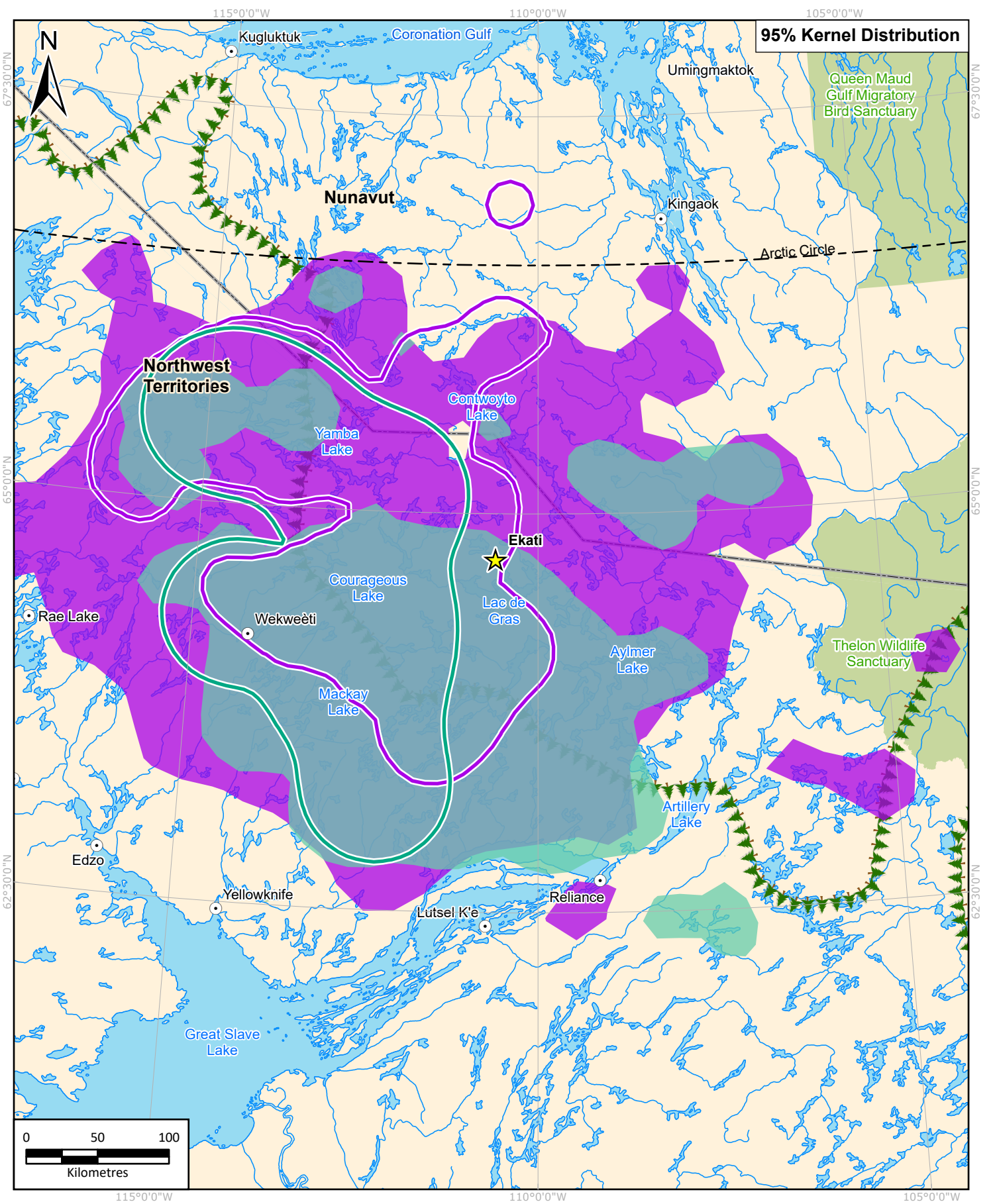
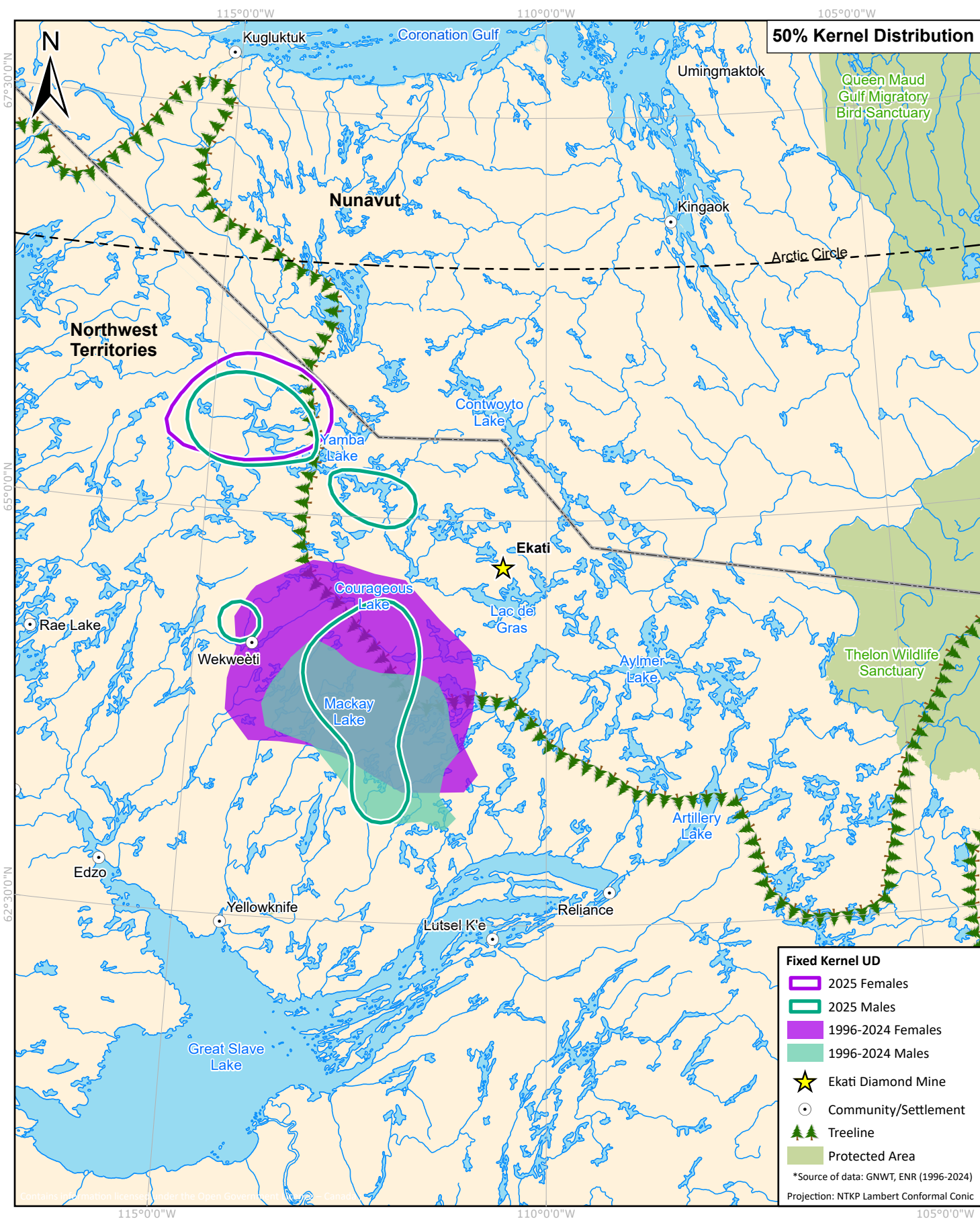


Figure 4.1-3 Historical and 2025 Distribution of Male and Female Satellite-Collared Bathurst Caribou During Winter

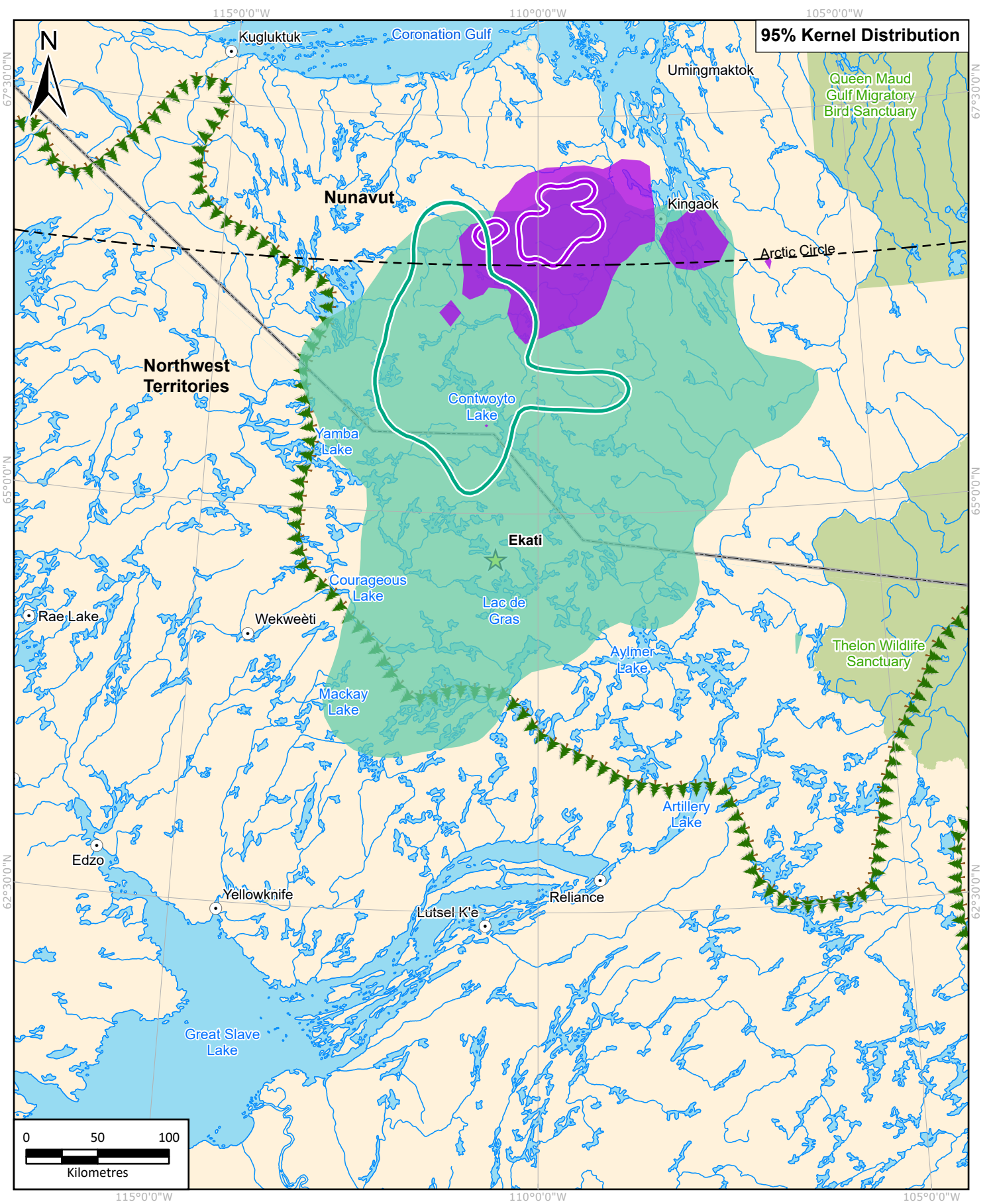
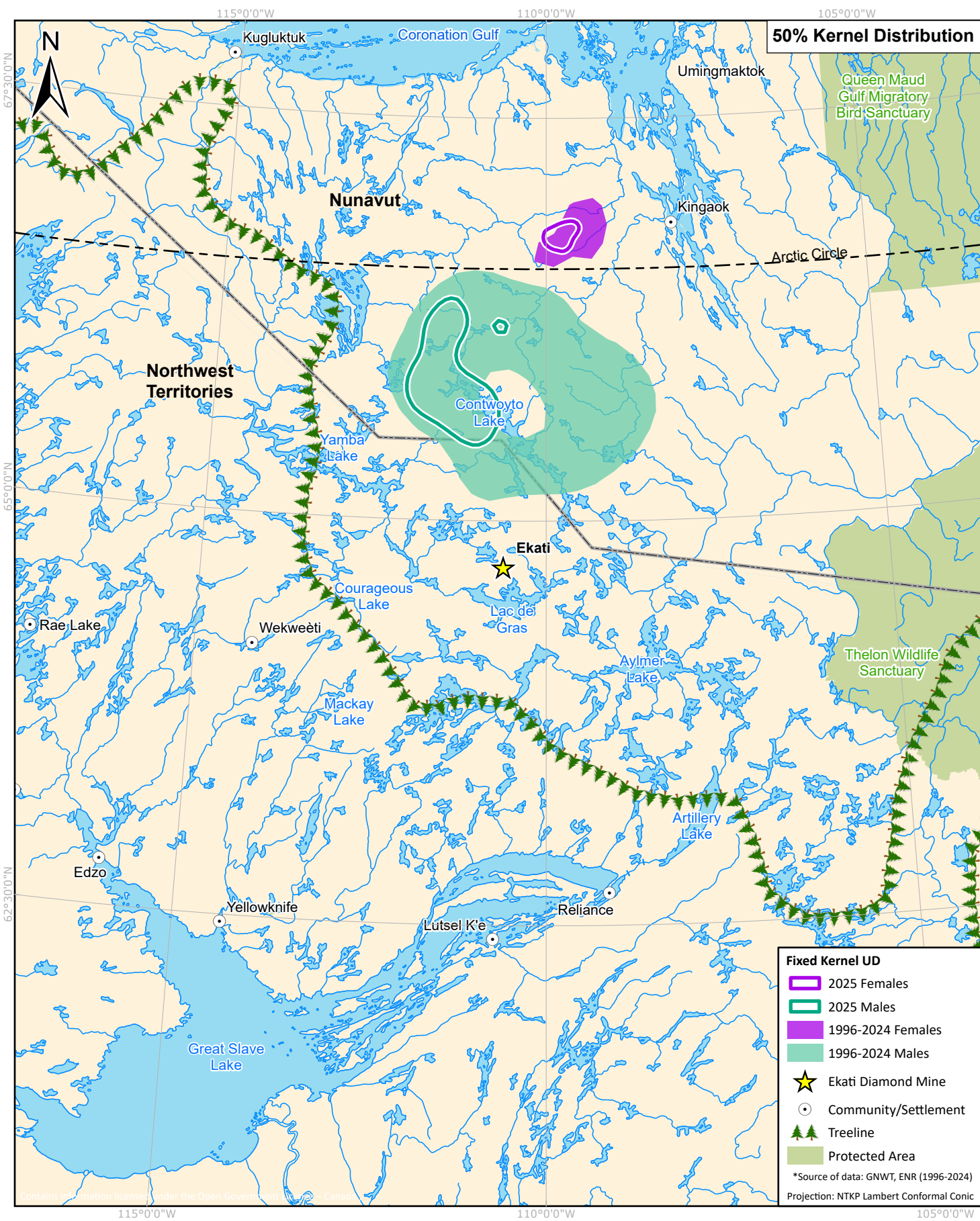


Figure 4.1-4 Historical and 2025 Distribution of Male and Female Satellite-Collared Bathurst Caribou During Calving

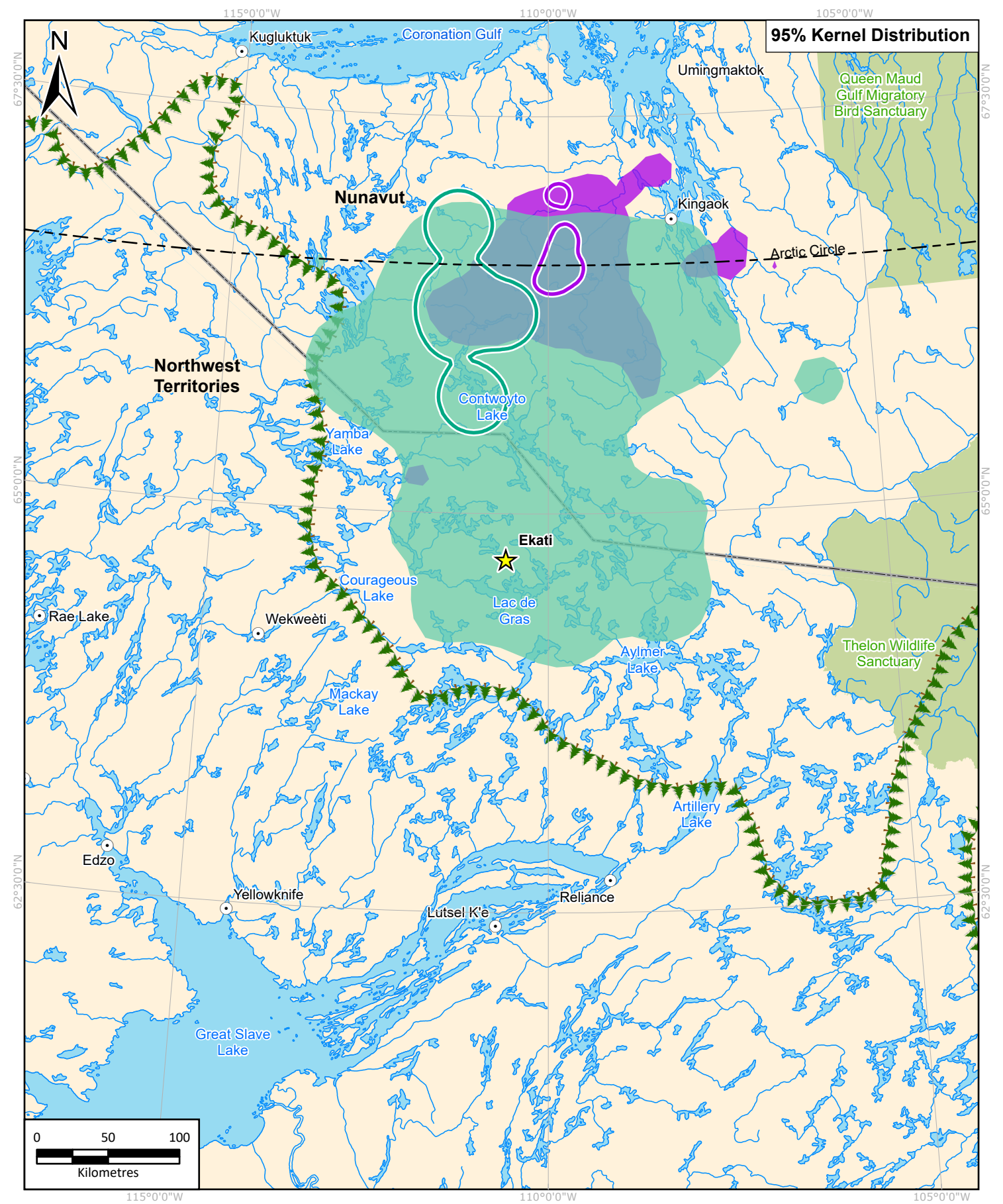
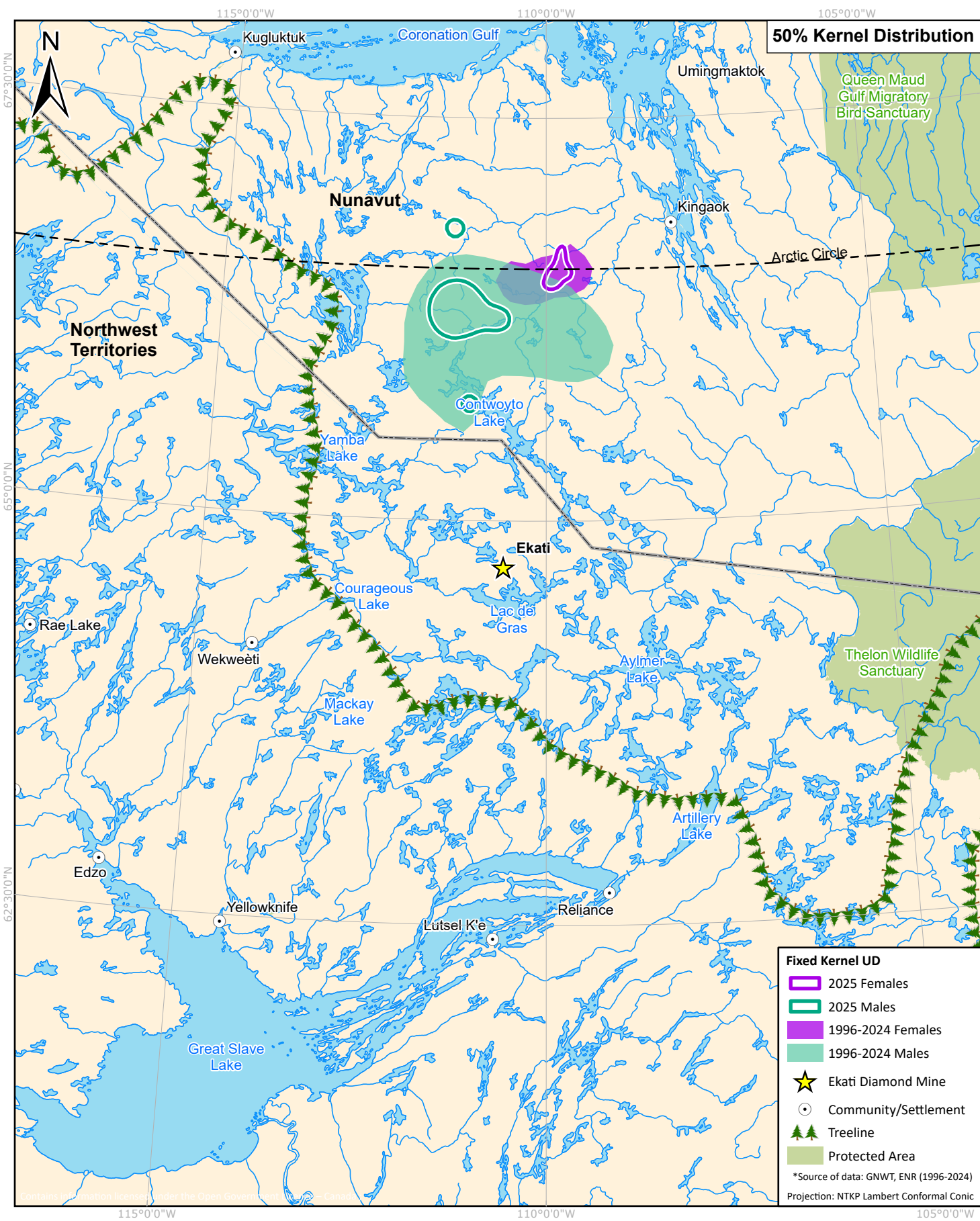


Figure 4.1-5 Historical and 2025 Distribution of Male and Female Satellite-Collared Bathurst Caribou During Post-Calving

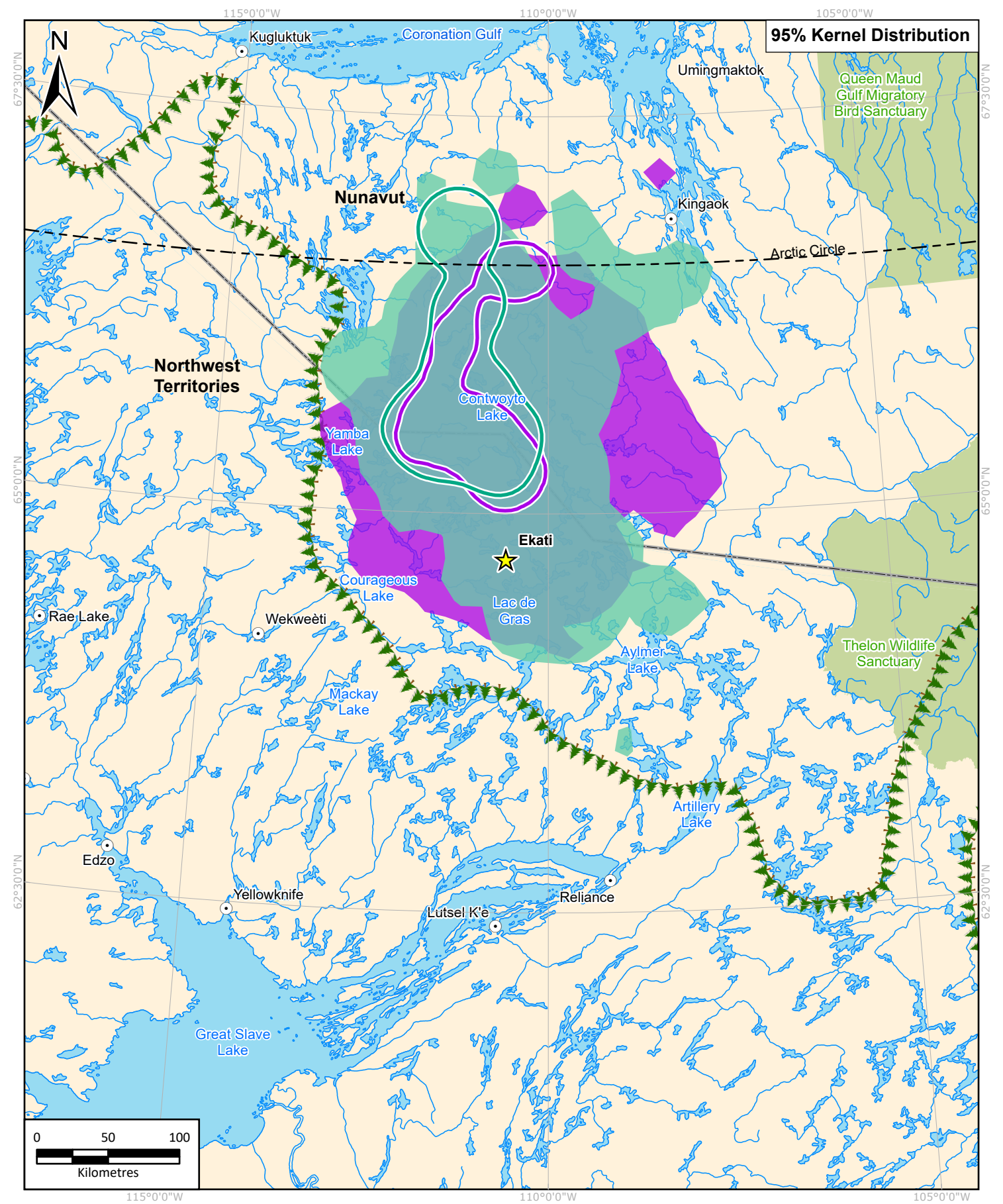
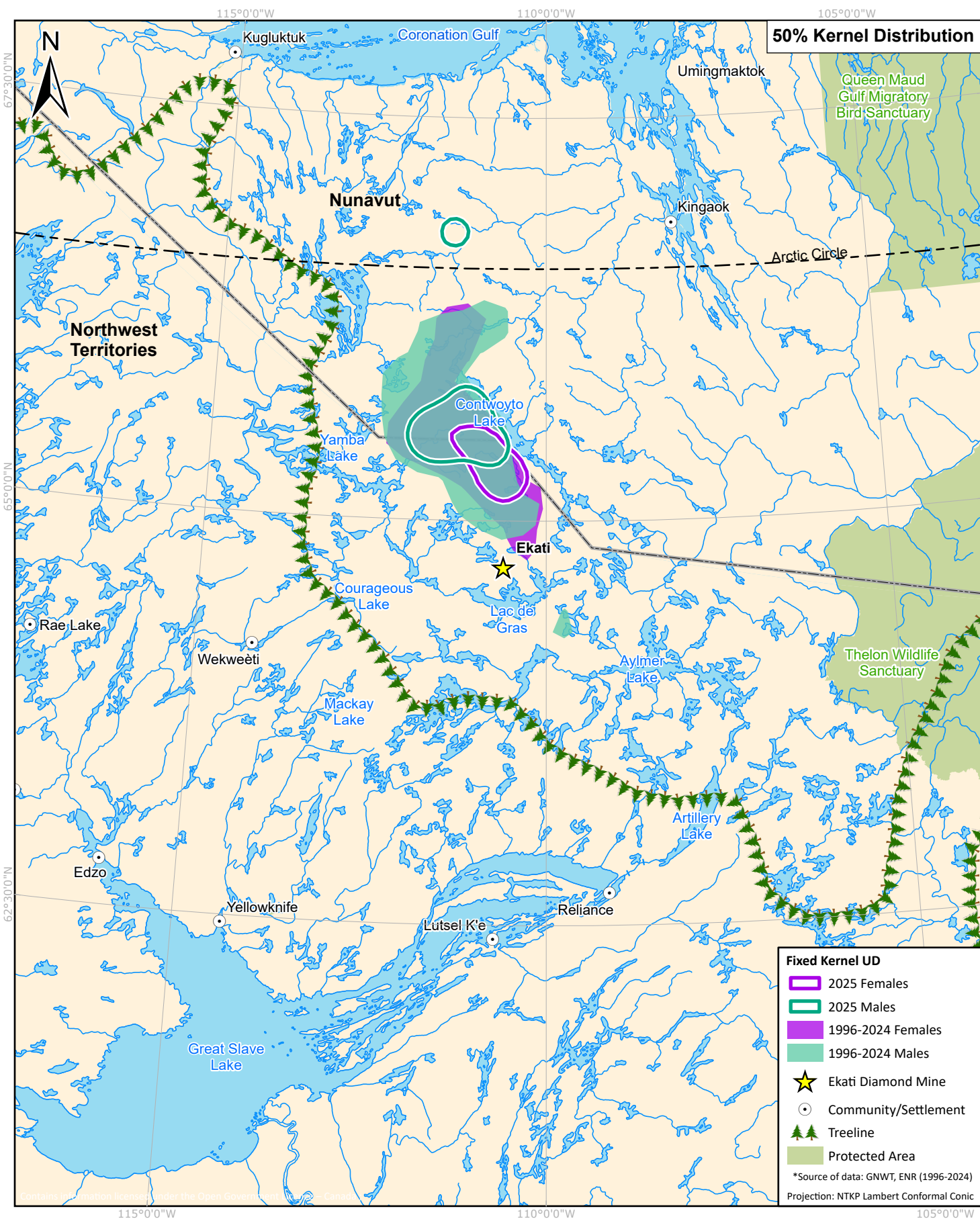


Figure 4.1-6 Historical and 2025 Distribution of Male and Female Satellite-Collared Bathurst Caribou During Summer

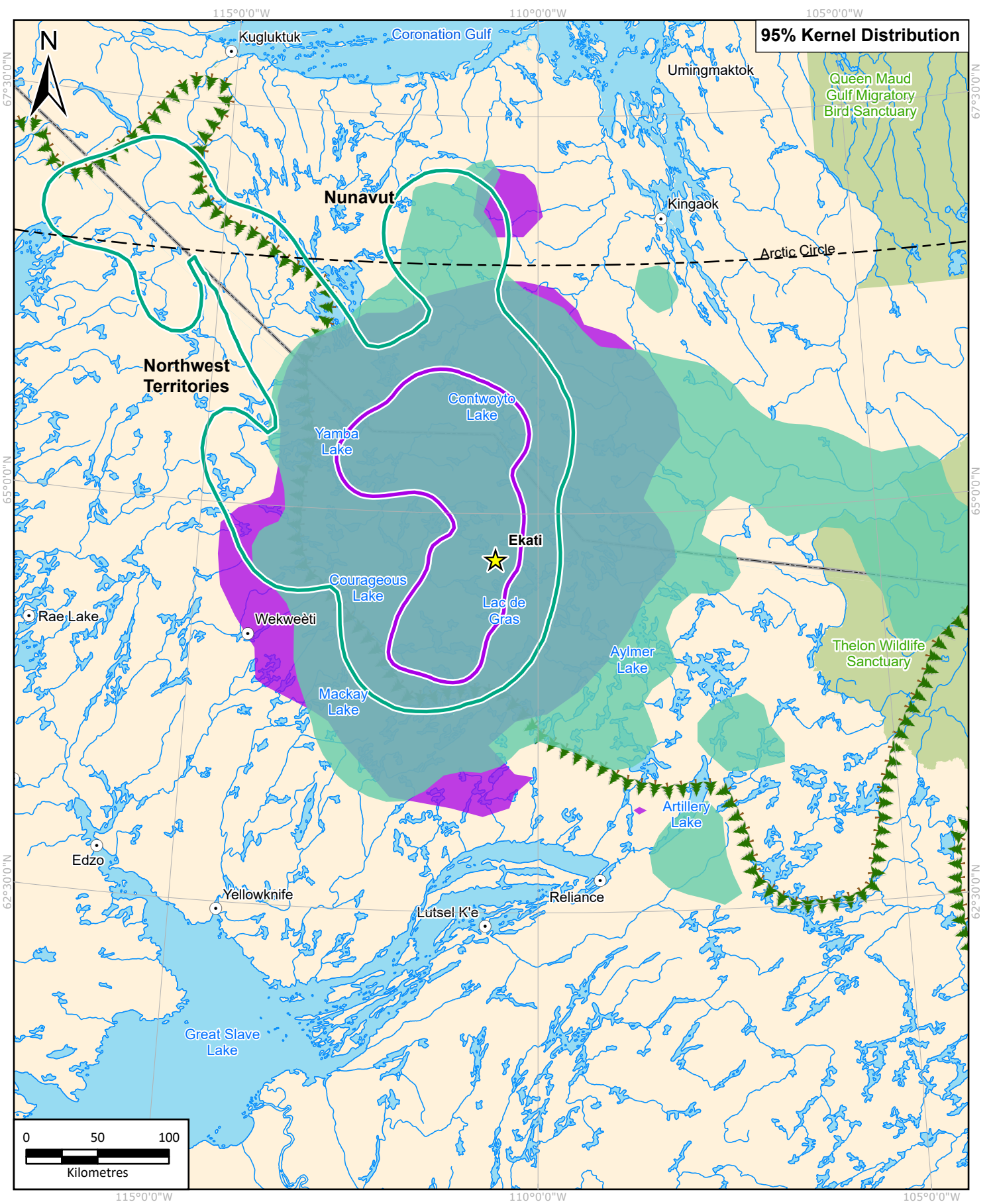
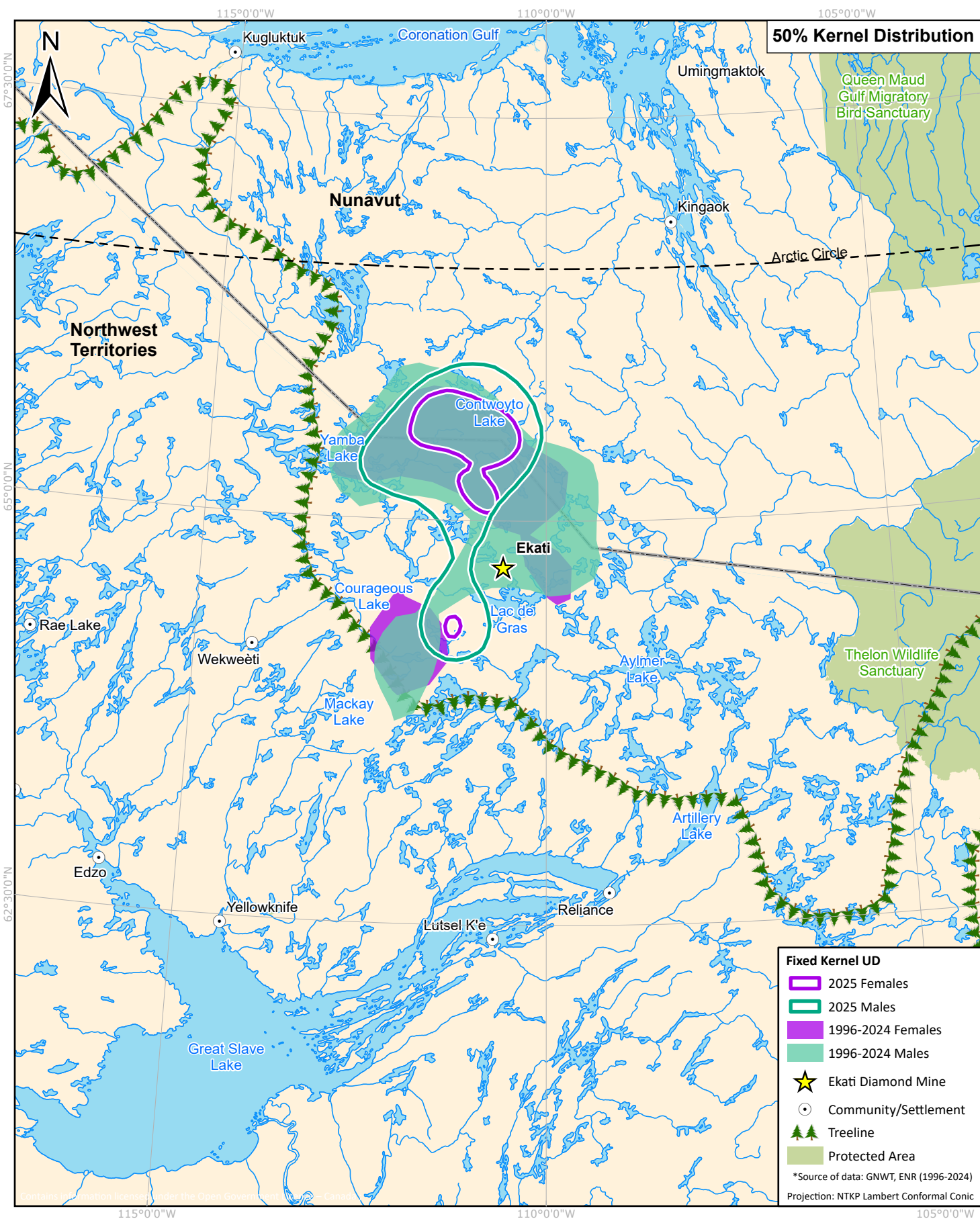


Figure 4.1-7 Historical and 2025 Distribution of Male and Female Satellite-Collared Bathurst Caribou During Fall Migration

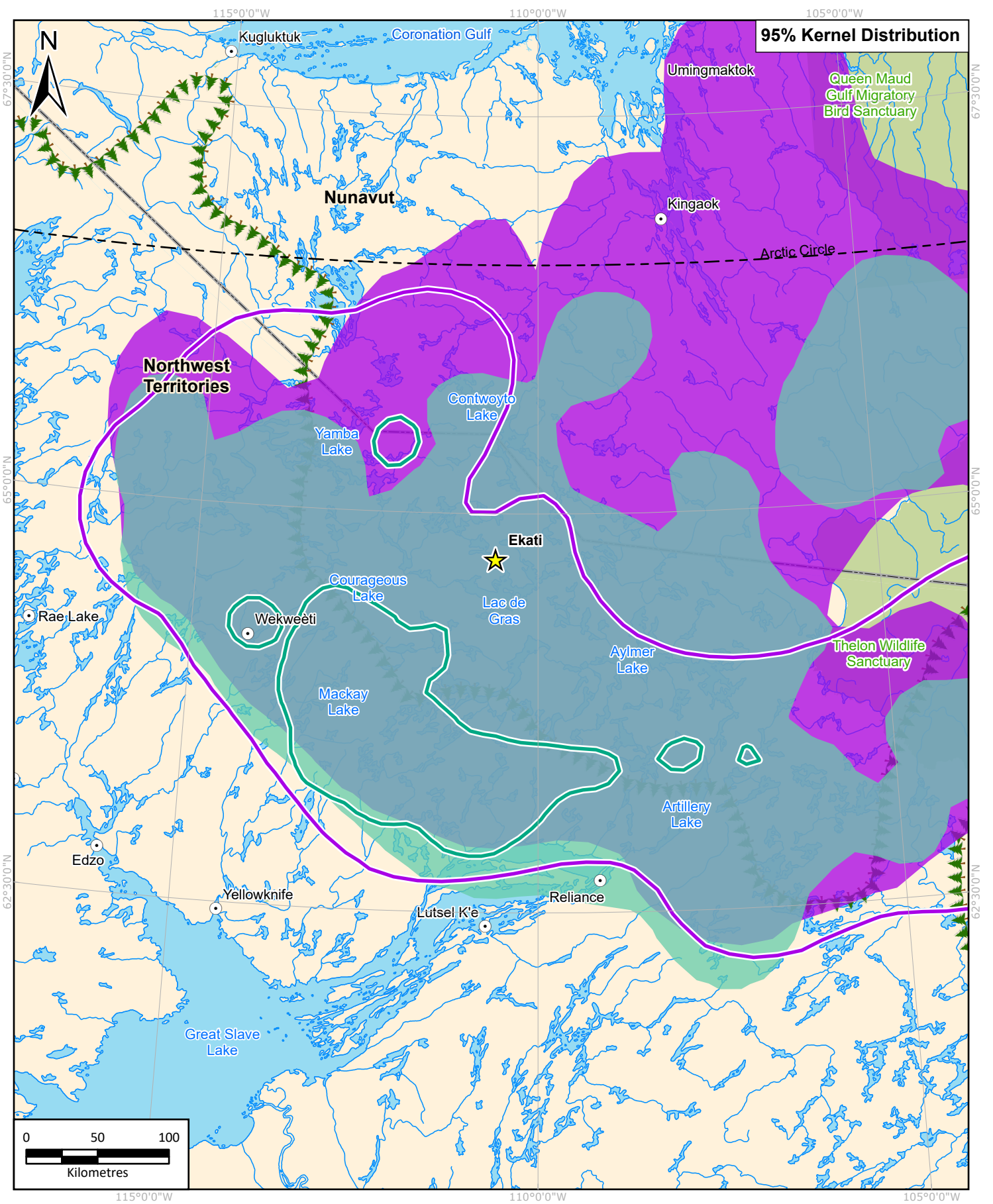
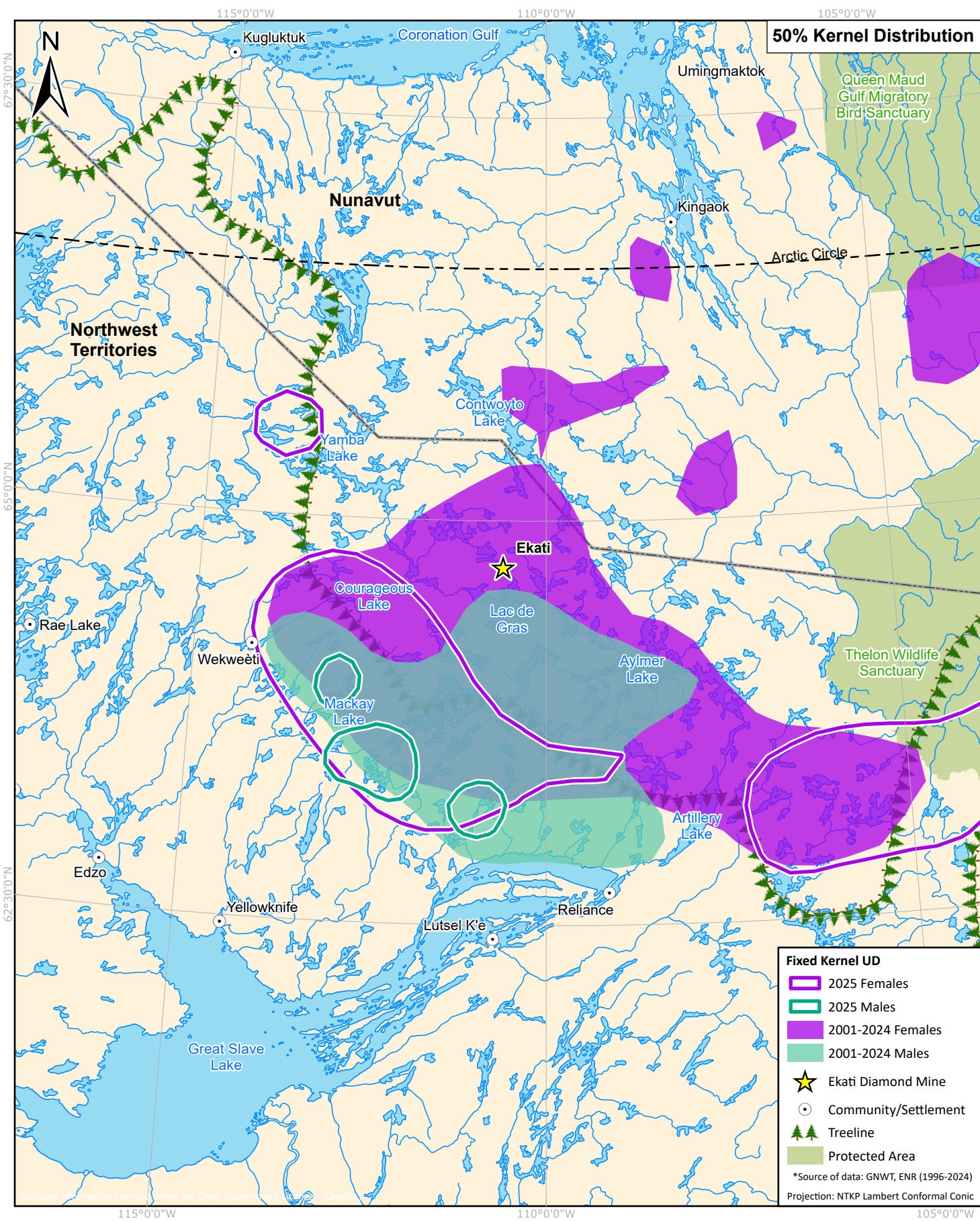


Figure 4.1-8 Historical and 2025 Distribution of Male and Female Satellite-Collared Beverly/Ahiak Caribou During Winter

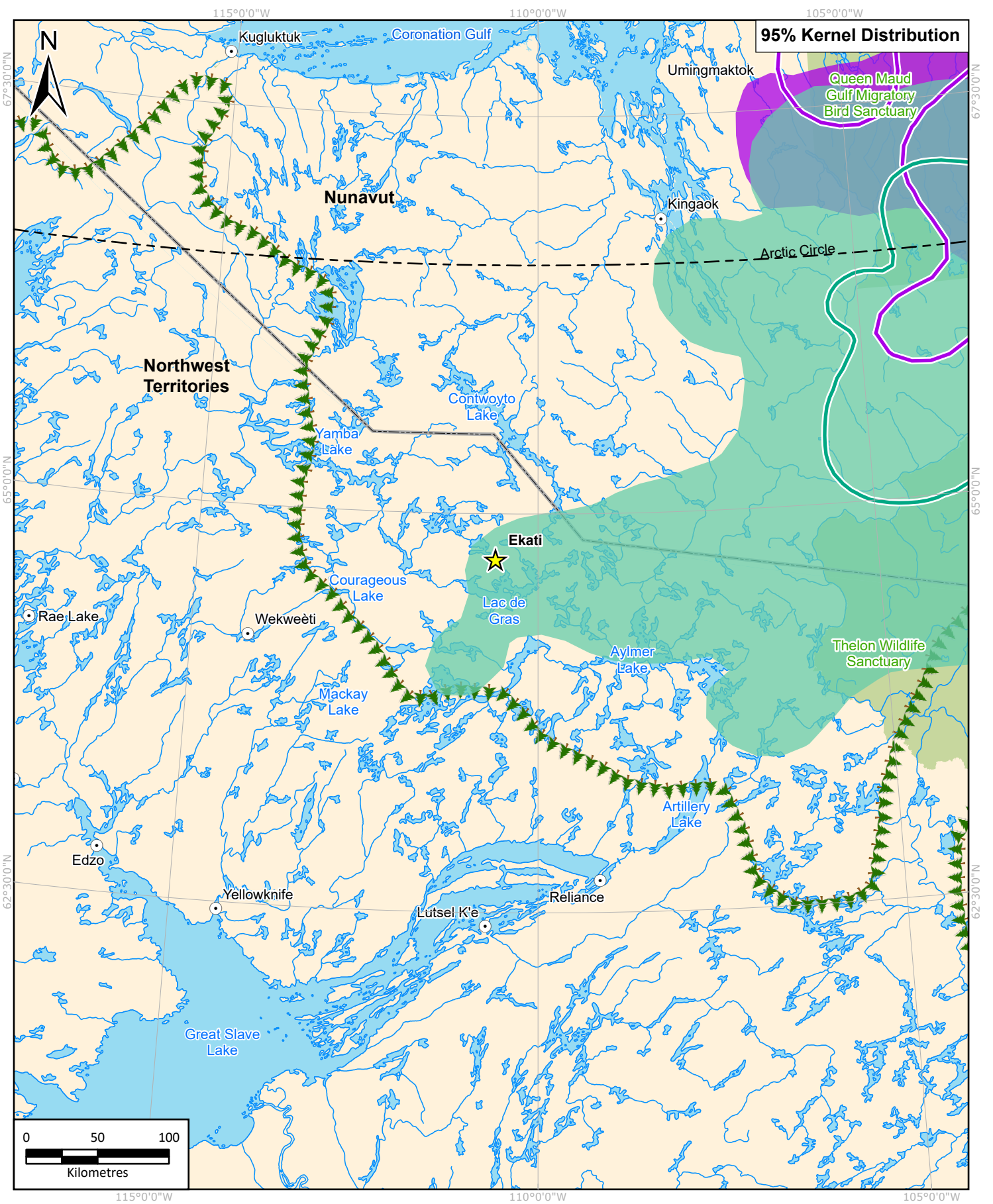


Figure 4.1-9 Historical and 2025 Distribution of Male and Female Satellite-Collared Beverly/Ahiak Caribou During Calving

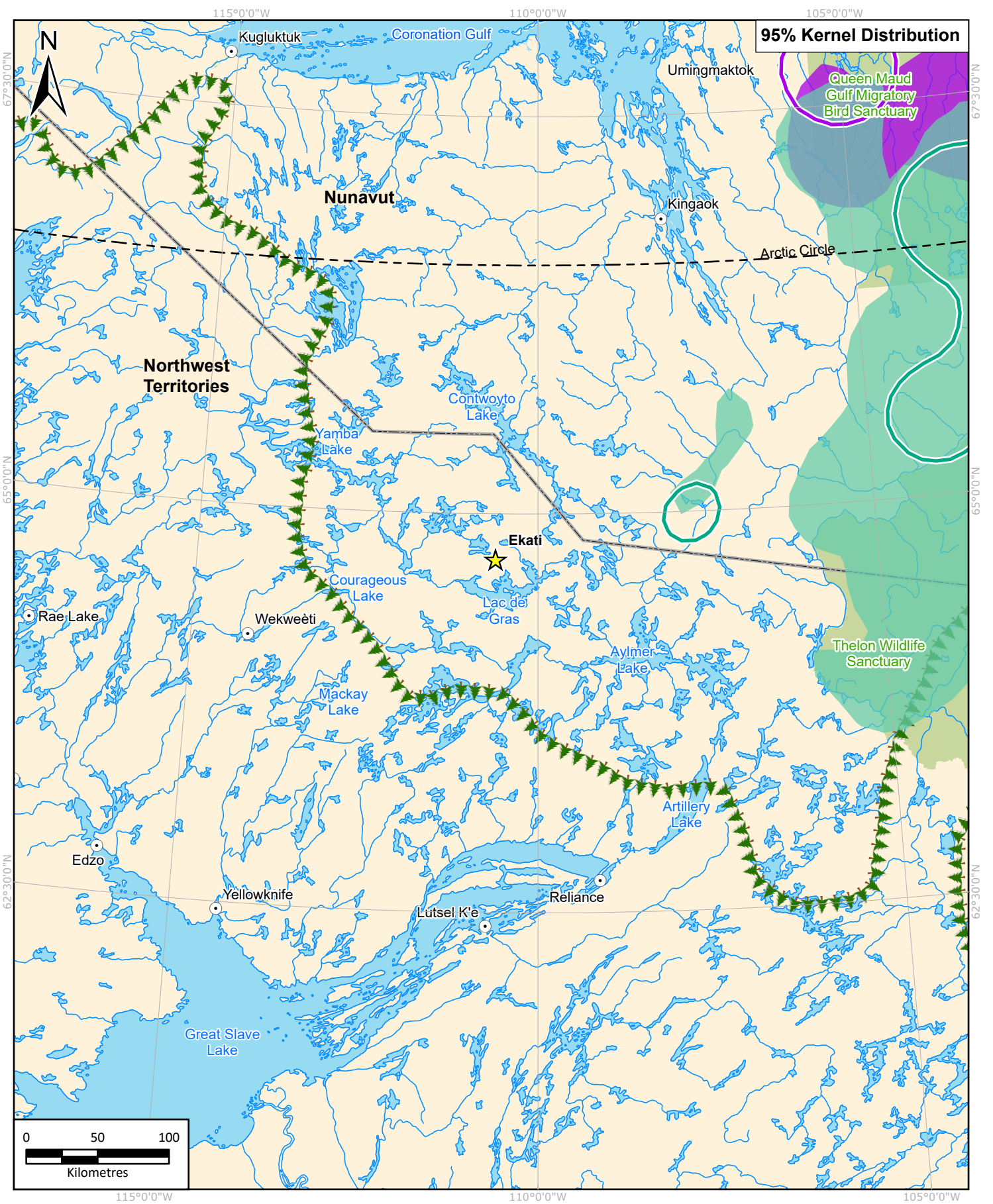
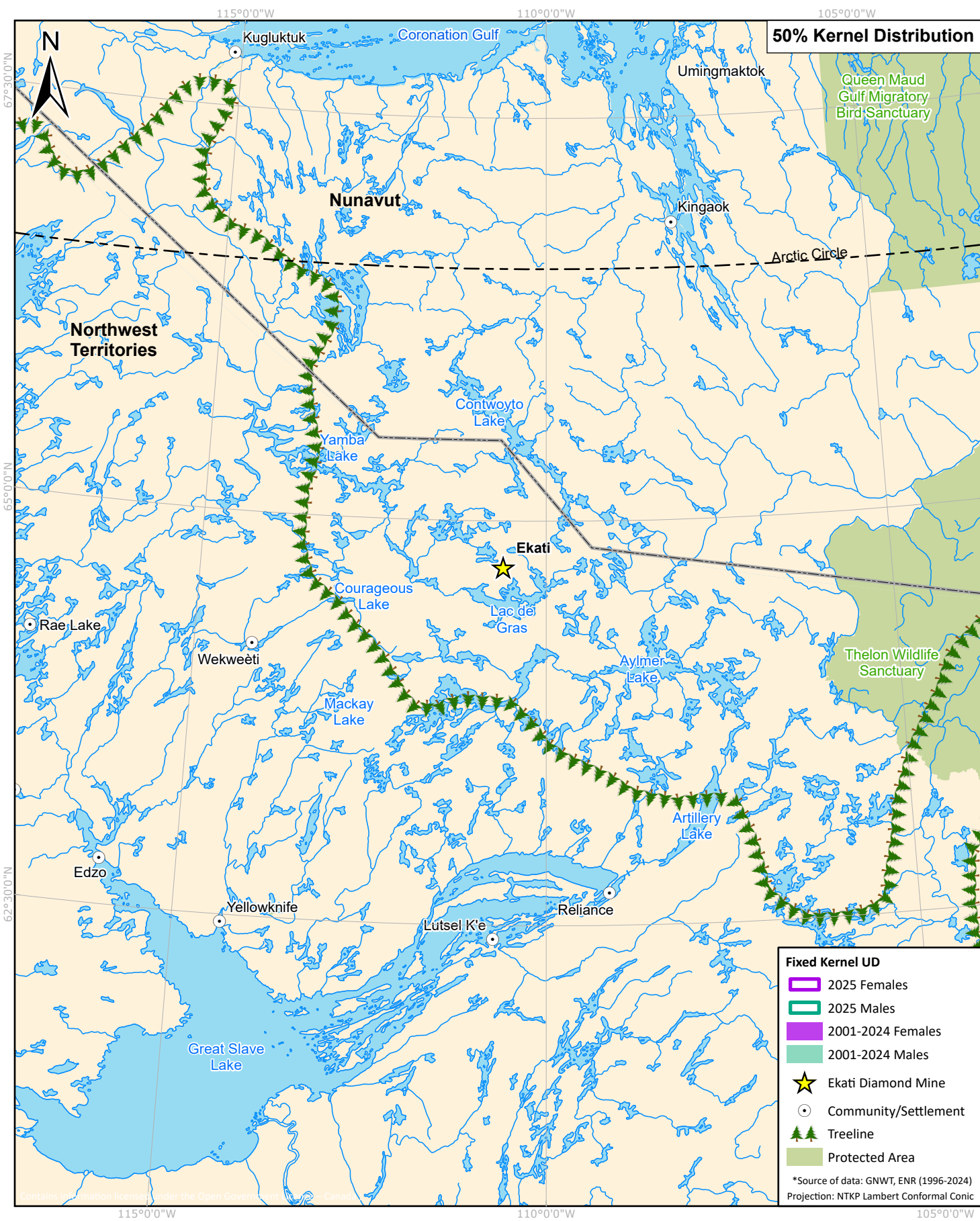


Figure 4.1-10 Historical and 2025 Distribution of Male and Female Satellite-Collared Beverly/Ahiak Caribou During Post-Calving

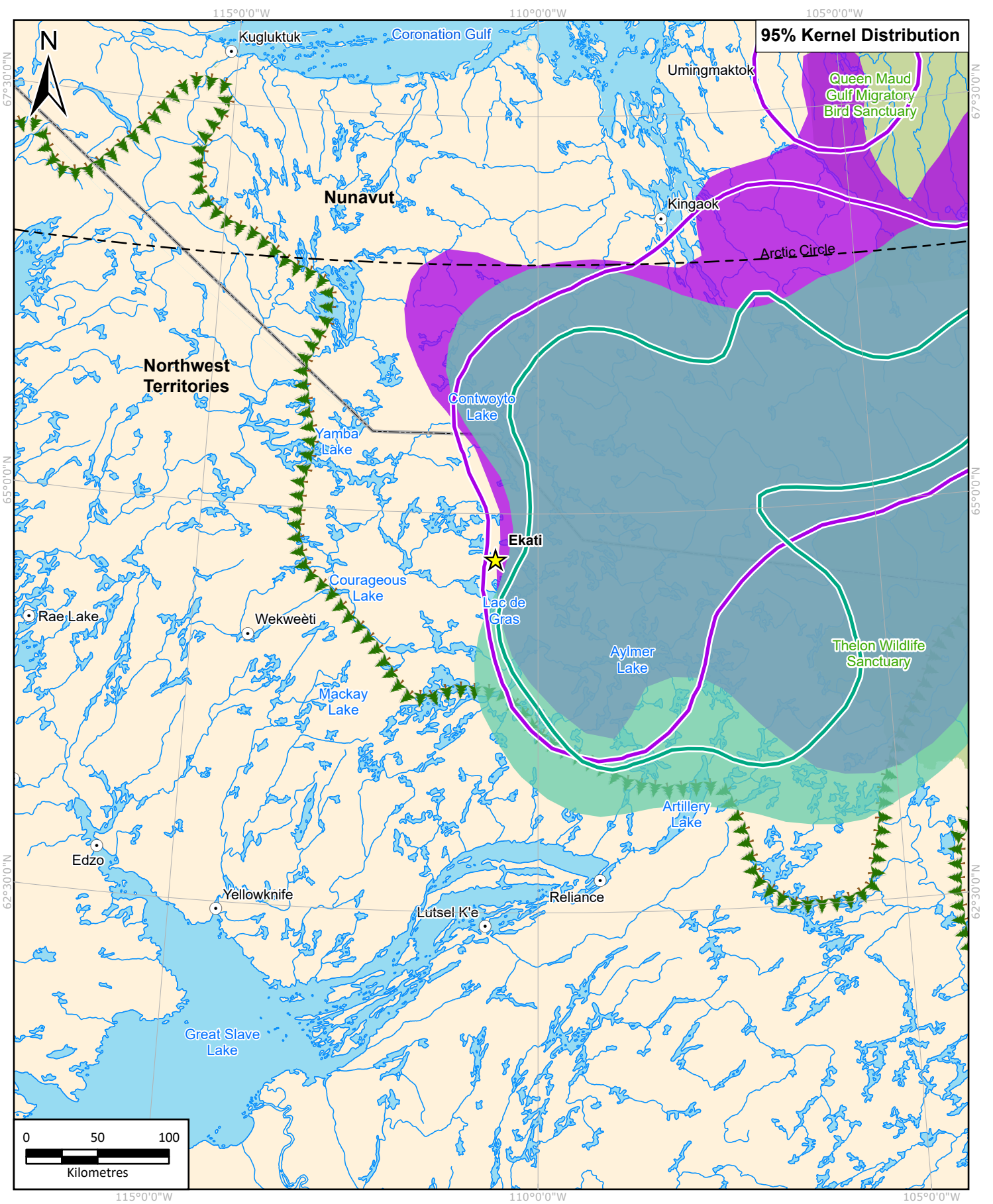
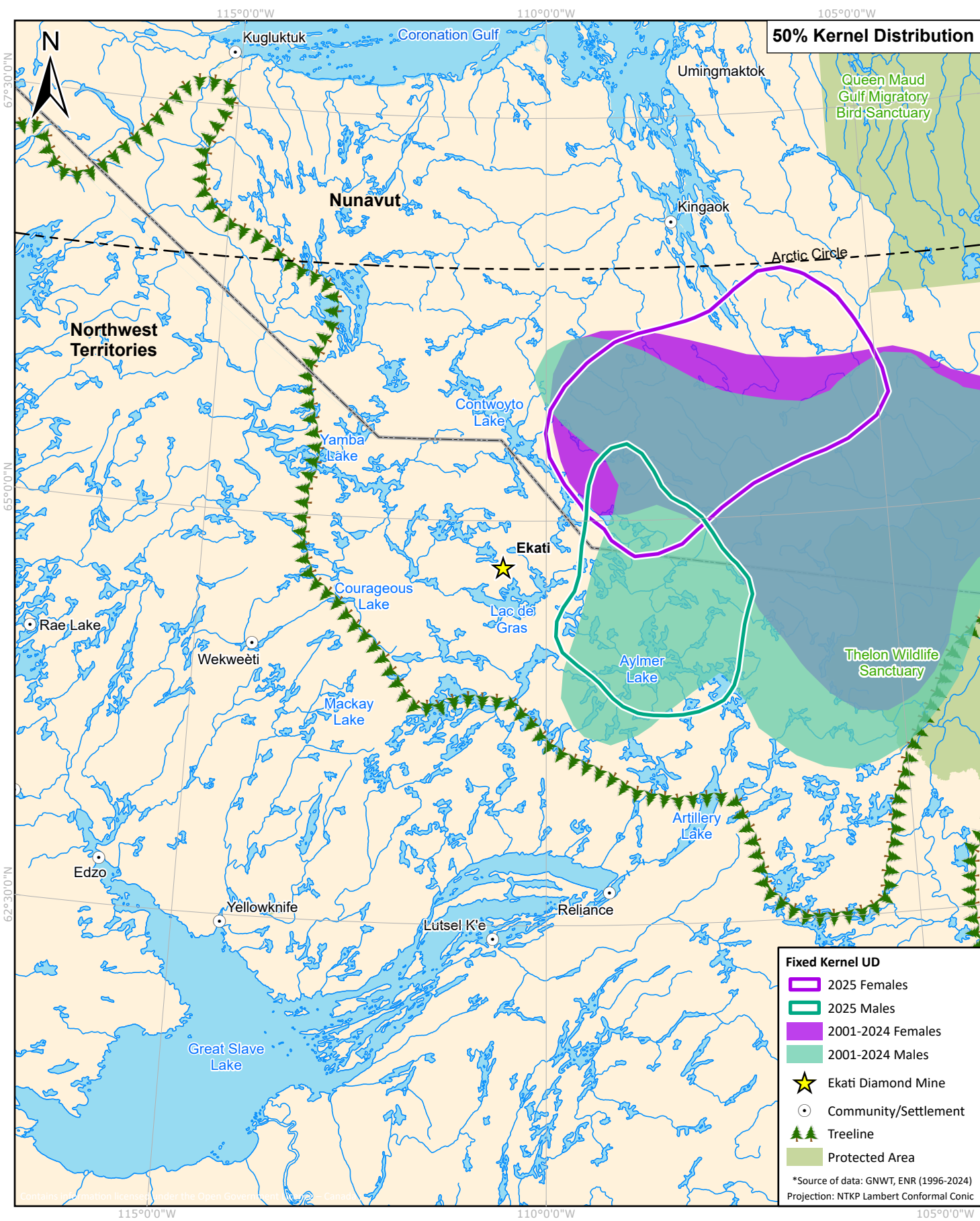


Figure 4.1-11 Historical and 2025 Distribution of Male and Female Satellite-Collared Beverly/Ahiak Caribou During Summer

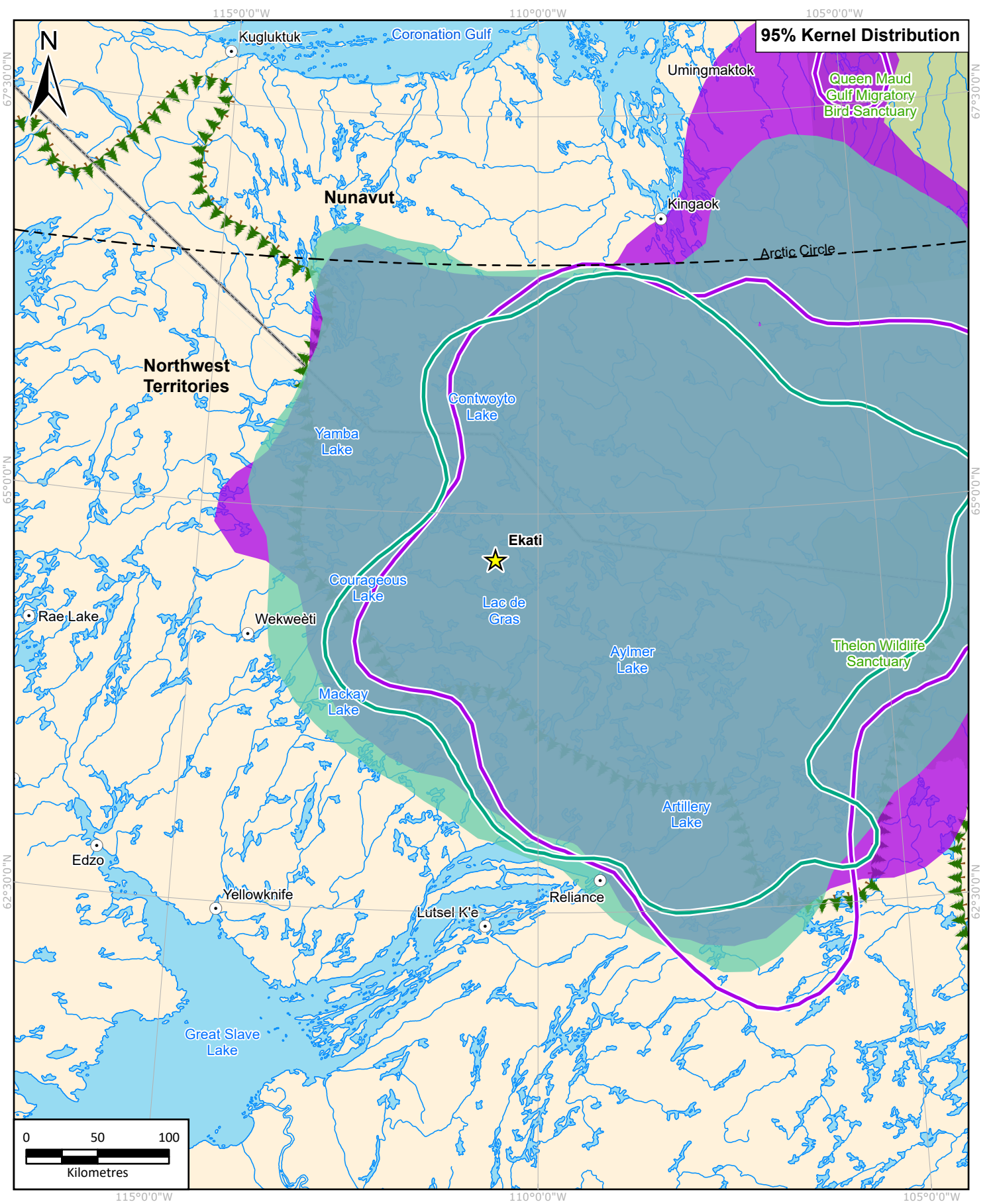
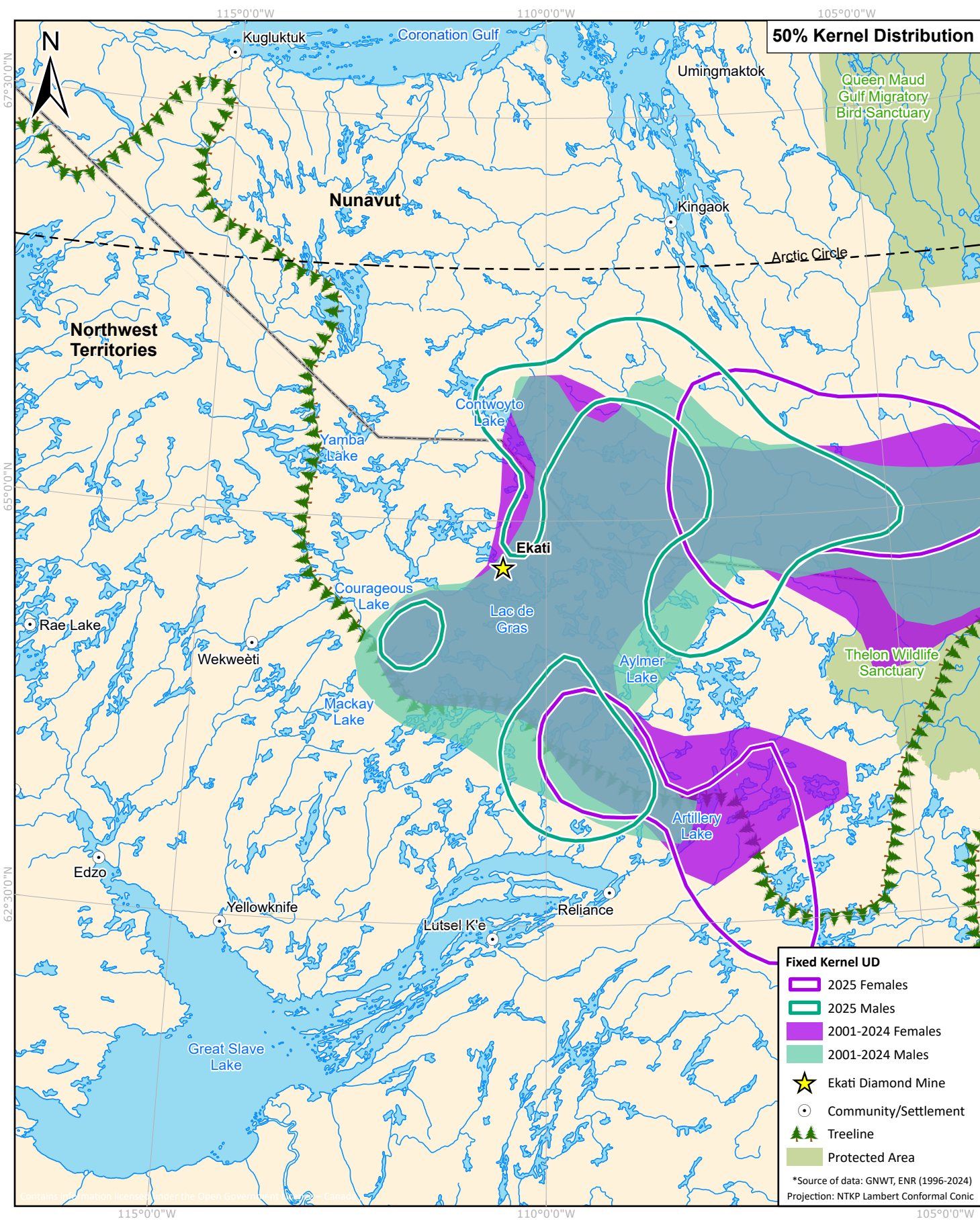


Figure 4.1-12 Historical and 2025 Distribution of Male and Female Satellite-Collared Beverly/Ahiak Caribou During Fall Migration

Burgundy monitors annual variation in caribou seasonal ranges and core areas at a regional scale and relative to the Ekati Mine using collared caribou. Other studies incorporate ground-based monitoring by local community members, Burgundy Environmental staff, biologists, and through collaborations with Diavik. 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 caribou are migrating through the Ekati Mine and surrounding area.

Ekati regularly falls within the Mobile Core Bathurst Caribou Management Zone, within which hunting of barren-ground caribou is prohibited under the *Wildlife Act* (2013) and Bathurst Caribou Range Plan (GNWT 2019b). The Mobile Zone is updated weekly by GNWT ECC based on current locations of collared caribou.

At the Ekati Mine, caribou are currently monitored annually through the camera monitoring program, road monitoring surveys, telemetry monitoring of collared caribou, behavioural surveys and incidental observations. Burgundy also documents the number of days spent at each CRMP alert level and any road-closures that occur due to caribou presence including location and duration.

4.1.1.2 Grizzly Bear

Grizzly bears are considered a wildlife VEC within the Ekati Mine study area. The grizzly bear (western population) is federally designated as “*Special Concern*” by COSEWIC, listed as “*Special Concern*” on SARA Schedule 1 (Government of Canada 2025) and is listed as “*No Status*” under the NWT SARA (GNWT 2024). The general status rank in NWT is “*Sensitive*”.

Grizzly bears occur at low densities in areas of low vegetative productivity and high seasonality (McLoughlin et al. 1999), which generally results in large home ranges in NWT. On average, female ranges are roughly 2,000 km² while male ranges can be up to 7,000 km² (McLoughlin et al. 2003). The Lac de Gras region supports a large number of grizzly bears because of the prevalence of esker habitats for secure denning, seasonal access to caribou, abundant lakes and streams supporting robust fish populations, productive forage in riparian zones, and the relatively low level of hunting in the area. Due to large home-ranges of grizzly bear in NWT and the location of the Ekati Mine make it likely that individuals in the region will encounter the mine site, as well as other mines in the area, over their lifetime (McLoughlin et al. 1999).

From 2012 to 2017, the Ekati and Diavik mines collaborated on a Regional Grizzly Bear DNA study as part of their wildlife monitoring programs (ERM 2018). Over the six-year study, grizzly bear densities ranged from 2.0 to 3.0/1,000 km² for males and 3.6 to 4.7/1,000 km² for females, confirming that the central barrens of the NWT is a productive area for grizzly bears. 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 km²; McLoughlin and Messier 2001), although direct comparison of the two studies is somewhat limited as the method used to achieve each population estimate varied. McLoughlin and Messier (2001) predicted, however, that the grizzly bear population in the area will remain stable if the annual removal rate does not increase from 13.4 bears/year. Only four grizzly bear mortalities have occurred at the Ekati Mine from 1997 to 2025, indicating that the mine has had negligible impacts to the annual removal rate of grizzly bears per year that would affect the regional population.

Waste from mine sites may potentially act as wildlife attractants, increasing the likelihood of human-wildlife interactions and wildlife habituation. Grizzly bears moving through the Ekati Mine site pose a risk to both human and wildlife safety, hence the need to monitor for these interactions and adaptively manage mitigations based on the results. Burgundy has a robust Waste Management Plan in place to limit the likelihood of attracting grizzly bears to site and discouraging habituation that may result in wildlife incidents or mortalities. As previous studies indicate that the mine is not influencing the regional population, grizzly bears are monitored at Ekati through incidental observations and documenting incidents.

4.1.1.3 Wolf

The wolf is assessed as “*Secure*” in the NWT (GNWT 2024) and is not listed federally but is monitored as it is an important species in the Arctic and interacts with the mine on a regular basis. As such, wolves are considered a wildlife VEC within the Ekati Mine study area. Populations are stable or increasing within their Canadian range, except in northern Alberta and some parts

of NWT (Frame et al. 2008). Previously, Ekati was within the Enhanced North Slave Wolf Harvest Incentive Area, where increased incentives were available for wolves harvested in the area by harvesters from both the NWT and Nunavut (GNWT ENR 2022). This program began in 2018 to support the recovery of Bathurst and Bluenose East caribou populations however the incentive program ended in May 2024.

Wolves in the region depend on the Bathurst caribou herd as their main source of prey (Kuyt 1972; Walton et al. 2001). During the spring, wolves follow the Bathurst caribou herds north of the treeline and choose den sites south of the Bathurst 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 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).

Potential risks for the local wolf population may also arise from habitat removal and human disturbance in the region (Clark et al. 1996). Human development can result in avoidance behaviour (Johnson et al. 2005) however, certain features of human developments (such as landfills and infrastructure) can act as attractants, increasing the likelihood of wildlife interaction and habituation with mine sites. In response to these concerns, Burgundy monitors wolves near mine infrastructure, and supports regional wolf monitoring initiatives coordinated by GNWT ECC. Between regional wolf monitoring study periods, wolves are monitored at the Ekati Mine through incidental observations and documenting incidents.

4.1.1.4 Wolverine

The wolverine is considered a wildlife VEC within the Ekati Mine study area. 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) is federally designated as “*Special Concern*” by COSEWIC, listed as “*Special Concern*” on Schedule 1 of the SARA (Government of Canada 2025), and is listed as “*No Status*” under the NWT SARA (GNWT 2024). The general status rank is “*Sensitive*” in NWT.

Wolverines are curious animals and will investigate human-made structures and food caches when humans are not present (COSEWIC 2014). They prefer undisturbed areas, but home ranges may overlap with human infrastructure, such as trap lines and logging roads (COSEWIC 2014). Wolverine home ranges are typically 400 km² for females and 1,580 km² for males (Rowland et al. 2003; COSEWIC 2014). They opportunistically travel on snowmobile trails and scavenge along trap lines and at hunter kills (COSEWIC 2014). Human activity, including mining, hunting, trapping, and major transportation routes, may displace or alter wolverine travel routes and lead to increased human-caused mortalities (Weir 2004).

Wolverines moving through human-occupied areas pose a risk to both 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 these interactions on an annual basis and adaptively manages mitigations based on the results (i.e., repairing wildlife gates at the incinerator, repairing damaged skirting around buildings). Burgundy has contributed previously to regional wolverine hair snagging studies led by GNWT ECC to monitor populations using a DNA mark-recapture analysis. Based on the results of these studies indicating that population impacts are not occurring regionally, wolverines are monitored at the Ekati Mine through incidental observations and documenting incidents.

4.1.1.5 Raptors

Raptors are considered a wildlife VEC within the Ekati Mine study area. Raptors (i.e., eagles, falcons, hawks, and owls) and corvids (i.e., ravens and crows) can serve as indicators of the effects of human activities on ecosystem health. As predators in the upper levels of the food chain with large home ranges, they are more sensitive to environmental alterations and disturbances (Steenhof et al. 1999). Legislation for the protection of raptor species prevents destruction and/or disturbance to individuals, eggs, or nests, even if unoccupied, under the NWT *Wildlife Act*, Section 51(1) (2013), and the Phase 2 Regulations (2019).

Three species of cliff-nesting raptors observed frequently nesting within the Ekati Mine study area include peregrine falcon, 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 and Bromley 1988; Poole 2011). Of these cliff-nesting raptor species, the peregrine falcon (*Falco peregrinus anatum/tundrius*) is now federally designated as “Not at Risk” by COSEWIC (ECCC 2023), de-listed from Schedule 1 of the SARA (ECCC 2024) and not listed under the NWT SARA (GNWT 2024). However, it remains a VEC as it is an important species in the Arctic and continues to interact with the mine on a regular basis.

Three species of ground-nesting raptors that have been observed in the study area are the short-eared owl, snowy owl (*Bubo scandiacus*), and northern harrier (*Circus cyaneus*). Short-eared owl (*Asio flammeus*) is federally designated as “Threatened” by COSEWIC, listed as “Special Concern” on SARA Schedule 1 (Government of Canada 2025) and is listed as “No Status” under the NWT SARA (GNWT 2024). The general status rank in NWT is “At Risk”. Snowy owl was assessed as “Threatened” by COSEWIC in May 2025 (COSEWIC 2025), is under consideration for Schedule 1 of SARA and is listed as “No Status” under the NWT SARA (GNWT 2024). The general status rank in NWT is “Secure”.

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 as “Not at Risk” or were not assessed (e.g., northern harrier, common raven).

The monitoring of raptors is a priority at Ekati, particularly for birds that have a federal or territorial conservation status. Burgundy monitors raptors near mine infrastructure and supports regional falcon monitoring initiatives coordinated by GNWT ECC. Previous results from regional falcon studies have indicated that impacts are not occurring at a regional scale and as such, raptors are currently monitored at the Ekati Mine through incidental observations and pit wall nest monitoring surveys.

4.1.2 Non-Value Ecosystem Component Wildlife Groups

Non-VEC wildlife groups include foxes and migratory birds. Foxes are monitored because they interact with the mine frequently, while migratory birds are monitored as they interact with the mine at certain times of the year and are protected under the *Migratory Bird Convention Act* (MBCA; 1994) and Migratory Bird Regulations (MBR; 2022). Incidental observations of additional wildlife species during monitoring, such as moose and muskox, are also recorded.

4.1.2.1 Fox

Two species of fox inhabit the Slave Geological Province of NWT: the red fox and the Arctic fox. The population sizes of Arctic and red fox for the region are unknown but estimates based on surveys from 2007 are >10,000 for both species combined (GNWT ENR 2016). Both species are considered “Secure” in NWT (GNWT 2024) and are not federally listed in Canada (Government of Canada 2025). Arctic fox and red fox were not identified as a VEC during the assessment process however, foxes (especially Arctic fox) are considered important furbearers in the north for fur trade.

Foxes are opportunistic foragers. As human activity in the Arctic increases, fox populations occasionally thrive near landfills and other artificial food sources. Along with increased fox populations near mining camps and areas with other human activities, the risk of disease transmission also increases. Of particular concern is the transmission of rabies to humans. Foxes are the primary animal vector of rabies in NWT (Walker and Elkin 2005). In response to these concerns, foxes are monitored at the Ekati Mine through incidental observations and documenting incidents.

4.1.2.2 Migratory Birds

The general nesting period for the Ekati Mine study area extends from mid-May to mid-August. Small perching song birds and shorebirds are the most common breeders in the area, including the American tree sparrow (*Spizella arborea*), Harris’s sparrow (listed as “Special Concern” by COSEWIC, listed as “Special Concern” on SARA Schedule 1 [Government of Canada 2025] and listed as “Not Applicable” under the NWT SARA with a general status ranking of “Sensitive” in NWT [GNWT 2025], lapland longspur (*Calcarius lapponicus*), least sandpiper (*Calidris minutilla*), and savannah sparrow (*Passerculus sandwichensis*). Other species present but less common include lesser yellowlegs (listed as “Threatened” by COSEWIC and is

under consideration for addition to SARA Schedule 1 and listed as “*Not Applicable*” under the NWT SARA with a general status ranking of “*Sensitive*” in NWT), pectoral sandpiper (*Calidris melanotos*), yellow-rumped warbler (*Setophaga coronata*), red-necked phalarope (listed as “*Special Concern*” by COSEWIC, listed as “*Special Concern*” on SARA Schedule 1 and listed as “*Not Applicable*” under the NWT SARA with a general status ranking of “*Sensitive*” in NWT), and rusty blackbird (listed as “*Special Concern*” by COSEWIC, listed as “*Special Concern*” on SARA Schedule 1 and listed as “*No Status*” under the NWT SARA with a general status ranking of “*Sensitive*” in NWT).

While less likely to be present but with the potential to occur due to shifting ranges, barn swallow is listed as “*Special Concern*” by COSEWIC, listed as “*Threatened*” on Schedule 1 of SARA and listed as “*Not Applicable*” under the NWT SARA with a general status ranking of “*Sensitive*” in NWT while bank swallow is listed as “*Threatened*” by COSEWIC, listed as “*Threatened*” on Schedule 1 of SARA, and listed as “*Not Applicable*” under the NWT SARA with a general status ranking of “*At Risk*” in NWT.

Natural and human-induced disturbances that occur during the breeding period can correlate with changes in migratory 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, migratory birds within the Ekati Mine study area were previously monitored annually. 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.

The formal migratory bird survey was terminated in 2009 in consultation with GNWT and other stakeholders, 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. Previous operators of the Ekati Mine also monitored migratory birds through the North American Breeding Bird Surveys (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. 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.

4.2 Potential Impacts and Key Environmental Risks to Wildlife

4.2.1 Potential Impacts

4.2.1.1 Caribou and Caribou Habitat

Below is a list of predicted potential effects of the Ekati Mine on caribou:

- Increased hunting mortality related to the winter road;
- Sensory disturbance or displacement as a result of mine operations; direct loss and fragmentation of plant communities and wildlife habitat from the Project footprint;
- Direct injury or mortality (wildlife-vehicle collisions, predation);
- Attraction and increased human-wildlife interactions and mortality risk;
- Attraction and increased predator numbers;
- Local barrier effect to caribou movement; and
- Effects on health (toxins, metals etc.).

4.2.1.2 Carnivores and Associated Habitat

Predicted potential effects on carnivores such as grizzly bears, wolves, and wolverines of the Ekati Mine include:

- Habitat loss or modification due to mine infrastructure;
- Disturbance and displacement from aircraft and vehicles;
- Negative interactions with humans as a result of increased human-wildlife interactions and attraction to the mine’s waste facilities;

- Direct injury or mortality (wildlife-vehicle collisions); and
- Effects on health (toxins, metals etc.).

Foxes were not identified as a VEC in the EIS; however, fox occurrence at the Ekati Mine is an ongoing concern, and a decision was made to monitor foxes (at least informally) in 1997. Monitoring and recording incidental fox observations in the study area may help to direct mitigation actions to minimize risks associated with human-wildlife interactions. Once a fox is sighted within the mine site area, staff that is at risk of encountering the fox are notified, and work activities are adjusted accordingly.

4.2.1.3 Migratory Birds and Nesting Habitat

The 1995 EIS predicted several potential effects of mine development on migratory birds including:

- Loss of nesting habitat;
- Disturbance from noise, human presence, vehicles, and aircrafts;
- Collisions with vehicles (birds other than waterfowl only) and collisions with and disturbance from aircrafts (waterfowl in particular); and
- Subsequent reductions in abundance and species diversity.

4.2.2 Key Environmental Risks for Wildlife

4.2.2.1 Environmental Impact Review

An Environmental Impact Report (EIR) is a requirement of the Environmental Agreement originally signed in 1997 between BHP and the governments of Canada and NWT. As required by the Environmental Agreement, the EIR compares the results of environmental monitoring activities conducted at the Ekati Mine against the predictions of the 1995 EIS (BHP 1995a). The most recently completed EIR reports for this comparison was for 2019 to 2022 (Arctic Canadian 2023) and 2022 to 2024 (Arctic Canadian 2025). The EIRs completed in 2000, 2003, 2006, and 2009 concluded that the effects of the Ekati Mine on the environment have been of relatively minor significance, and that the mine has left a manageable and reversible footprint on the mineral lease area (BHP 2000c; BHP 2003; BHP 2006; BHP 2009). Following feedback and discussions regarding the EIR approach and methodology, the focus of the most recent EIRs varied from the four previous editions, providing ranked current Environmental Risks and management actions to address the risks (DDEC 2019; Arctic Canadian 2025).

4.2.2.2 Environmental Risks for Wildlife

The key environmental risks for wildlife that were considered in the most recent EIRs (Arctic Canadian 2022; Arctic Canadian 2025) included:

- Changes in caribou migration routes and population decline;
- Caribou interactions with linear features (roads and power lines);
- Caribou interactions with mine activities and infrastructure (other than roads);
- Habituation of carnivores; and
- Breeding bird interactions with mine activities and infrastructure.

Caribou herds remain a key concern and Burgundy will continue to provide site-specific information relevant for input to regional cumulative effects studies. Extensive camera monitoring at the mine has contributed to a better understanding of the fine-scale effects of roads on caribou behaviour and movement. Ekati Mine Wildlife Advisors have participated in regional government studies and workshops to improve caribou monitoring and examine opportunities to synchronize monitoring with other mines. When possible, collaboration with Burgundy has been better able to address the regional impacts of mining on caribou populations (e.g., aerial surveys and integrated methods for behavioural and other ground-based surveys). Community site visits have also been completed on a regular basis to share caribou monitoring knowledge and address monitoring improvements at the Ekati Mine.

5 MITIGATION

The environmental design features and mitigation policies, practices, and procedures that Burgundy implements to avoid and minimize (limit) effects to wildlife abundance and distribution are collectively referred to as mitigation. The WMMP includes numerous mitigations implemented on a hierarchy of intensity (action) levels, and spatial and temporal scales to protect wildlife and wildlife habitat. Standard mitigation hierarchy classifications include (BBOP 2015):

- **Avoid:** actions taken to completely avoid creating impacts from the outset, such as careful spatial or temporal placement of elements of infrastructure and engineered designs of facilities;
- **Minimize:** actions taken to reduce the duration, intensity and/or spatial extent of impacts that cannot be avoided;
- **Reclaim:** actions taken to rehabilitate degraded ecosystems or restore ecological function following exposure to impacts that cannot be completely avoided and/or minimized; and
- **Offset:** measures taken to compensate for any residual significant, adverse impacts that cannot be avoided, minimized and/or rehabilitated or restored. Offsets are achieved once compensation is sufficient that the outcome is no net loss or a net gain for the feature (e.g., VEC) for which compensation was developed. Offsets can take the form of positive management interventions, such as restoration of degraded habitat, arrested degradation or averted risk, and protecting areas where there is imminent or projected loss.

Adverse effects from a mine or development should be mitigated as much as possible using avoidance, followed by minimization and reclamation. Effects that are avoided entirely or minimized initially reduces the need for reclamation at a later stage. Burgundy aims to follow the hierarchy by using mitigation that avoids, minimizes, and reclaims adverse effects associated with potential effects and environmental risks. The results of the EAs for the Ekati Mine (BHP 1995a; BHP 2000b) and Jay Project (DDEC 2014) indicate that there are no expected significant adverse environmental effects.

Mitigation at the Ekati Mine is applied and intensified or reduced within an adaptive management framework (see Figure 7-1). The ability to manage the intensity of mitigation will depend on the type of environmental design feature and mitigation. For example, designing the development footprint to cover the smallest practicable spatial extent is applied at its maximum level, and is therefore constant. Other mitigation, such as the use of wildlife deterrents, occurs intermittently and is applied as required. The intensity of the application of this kind of mitigation can be implemented through monitoring and adaptive management. For example, if monitoring demonstrates that wildlife-vehicle collisions are occurring frequently, then the scope or frequency of driver training, speed limits, or other mitigation can be managed adaptively in a way that is intended to reduce the effect. Adaptive management could also include increasing monitoring, consideration of alternate mitigation, or implementing a special study to better understand an effect.

Burgundy implements and tracks several general management actions and mitigations to reduce potential interactions with wildlife:

- Site-wide notification about the presence of wildlife via:
 - Site-wide emails;
 - Safety meetings at the beginning of each shift;
 - Department-specific radio channels;
 - All call radio announcements; and
 - Safety alerts
- Wildlife awareness presentations to specific departments;
- Posting road signs about reduced speed limits or to alert drivers that wildlife is in the area;
- Delayed or postponed blasting activity if caribou are within a one km distance of the planned blasting area; and
- Temporary road closures and/or work stoppages due to the presence of wildlife.

5.1 Wildlife Habitat Alteration and Loss

Direct habitat loss refers to the physical disturbance and immediate loss of wildlife habitat (e.g., upland and riparian vegetation, wetlands, and water) within the footprint of the Ekati Mine. Direct habitat disturbance occurs during construction, through the creation of roads, WRSAs, core mine facilities, and increased water levels in local lakes and streams. Direct habitat loss is monitored in the WMMP.

Indirect habitat loss is a result of a decrease in the perceived quality of habitat by wildlife, and subsequent changes in movement and behaviour of individuals that occurs outside of the Ekati Mine footprint. These changes in movement and behaviour can affect the local abundance and distribution of animals. Changes in movement and behaviour in wildlife can result from sensory disturbance around mining operations, which may be caused by dust deposition, noise, light, general human activity, and animal memory of previous encounters with industrial developments. Thus, sensory disturbance can reduce habitat quality for wildlife even where the habitat remains intact.

Mitigation for habitat alteration and loss is designed so that the physical footprint of the Ekati Mine does not exceed that authorized in the Land Use Permits, and includes the following:

- Maintaining downstream flows within the natural range of variability to the extent practicable;
- Maximizing the use of the existing infrastructure for any new projects to reduce the environmental footprint to the extent practicable;
- New access and spur roads are as narrow as feasible, while maintaining safe construction and operation practices;
- Progressive reclamation activities may be scheduled as part of the ICRP (Section 3.3) for mine areas where there is no potential for future benefits or business opportunities, or in areas where there is immediate environmental risk;
- Conditions will continue to be monitored over time to evaluate the success of the ICRP and, using industry best practice, adaptive management, and newer proven methods as available, to adjust the ICRP as necessary and appropriate;
- Regular maintenance of equipment to limit noise and particulate matter emissions;
- Dust suppression is applied as appropriate to roads, airstrip, and laydown areas;
- Speed limits are posted and limit fugitive dust;
- Use of existing surface facilities will limit the area disturbed during construction of any new projects, and minimize the quantity of new sensory disturbances;
- Wildlife always has the right-of-way;
- Kimberlite stockpile areas have been designed in strategic locations that facilitate continued mine operations through road closures (Section 5.4.1);
- Misery Road surface height was constructed close to surrounding land surface levels to facilitate crossing of caribou and other wildlife;
- Wildlife crossing signs are erected at sections of roads where wildlife crossings are frequent, or in areas where animals reside near roads;
- A minimum flying altitude of 600 meters (m) above ground level (except during takeoff and landing and field work) will be maintained for cargo, passenger aircraft, and helicopters outside of the mine site;
- Vehicles are restricted to designated roads and prepared work areas (recreational use of off-road vehicles is prohibited);
- Continued education and environmental sensitivity training will be provided to employees and contractors;
- Continue to use TK to enhance caribou monitoring activities and adaptive management;
- Completion of project activities in accordance with the *MBCA* and *MBR*;
- Clearing of vegetation outside of the migratory bird nesting period (May 15 to August 18), when possible;

- If disturbance activities (i.e., vegetation clearing, lake dewatering) are to be completed during the migratory bird nesting period, nest searches will be completed prior to initiation of work; and
- If nests are found during nest searches, mitigation will be applied as needed on a case-by-case basis to avoid destroying or disturbing the nest.

5.2 Waste Management and Habituation of Carnivores

The following mitigations are intended to reduce the numbers of predators and scavenging wildlife attracted to the Ekati Mine and avoid and limit human-wildlife interactions and changes to predator-prey relationships. Improperly disposed waste from mine sites may potentially act as a wildlife attractant, increasing the likelihood of human-wildlife interactions and wildlife habituation. Wildlife moving through the mine site area is a concern from the perspective of both human and wildlife safety. In response to these concerns, the following mitigations are implemented:

- Application of the Waste Management Plan (Section 3.3) which also includes the Solid Waste Landfill Management Plan, the Hazardous Waste Management Plan, the Incinerator Management Plan, and the Compost Management Plan;
- Separate bins are located throughout the accommodations complex, shops, and other facilities on-site for immediate sorting of domestic wastes;
- Implementation of recycling bins for recyclable food containers, such as pop cans and water bottles;
- Food wastes are collected in specific bins for transport directly to the incinerator storage area for incineration;
- Incinerator is enclosed and camp waste is burned regularly;
- Littering and feeding of wildlife is prohibited;
- Raised, heated buildings are skirted to prevent wildlife access to shelter under the buildings;
- Weekly building skirting inspections at the Main Camp and Misery Camp buildings, and inspections of fencing structures at Misery Camp are completed;
- Wildlife activity is monitored at waste management areas, and informs adaptive management;
- The landfill and waste storage areas are inspected, and have restricted access;
- The efficiency of the waste management program is reviewed as needed and improved through adaptive management;
- Education and reinforcement of proper waste management practices and issues surrounding wildlife habituation is provided to all workers and visitors to the site;
- A chain-link fence is maintained around Misery Camp to prevent wildlife from entering;
- Wildlife carcasses near mine infrastructure (i.e., roads, camps) are removed to minimize the attraction of predators and scavengers, where there would be an increased risk of colliding with vehicles or human-wildlife interaction;
- Field crews are relocated or their work is delayed before deciding to actively deter an animal;
- Site-wide notifications are sent out to all staff when bears, wolves or wolverines are observed in high traffic work zones;
- Waste management procedures, site awareness (e.g., closing doors), and wildlife interactions continue to be a part of the orientation that new employees receive;
- Shipment of solid waste (i.e., kitchen grease and liquid waste) off site and use of composter system;
- Immediate reporting of misdirected waste to the Waste Management Department.

5.3 Mine-Wildlife Interaction

As the Ekati mine overlaps the ranges of many wildlife species, it is inevitable that wildlife will encounter mine infrastructure and/or mine personnel. It is necessary to try and reduce wildlife interactions with the mine both for the safety of mine personnel and the wildlife themselves.

5.3.1 Deterring Wildlife

The goal of wildlife deterrence is to respond to situations using humane methods that keep both humans and wildlife safe. Wildlife is only deterred when there is a risk to either humans or the wildlife itself, as judged by the Ekati Mine Environment staff. All deterrent actions start with the least intrusive method and increase in intensity as needed. Each deterrent action stops as soon as the animal moves away from the potentially hazardous site and there is no longer a risk to personnel or the animal. Deterrents may be used to remove wildlife from the airstrip, or near other potentially hazardous sites and activities.

Burgundy practices successive levels of deterrence, starting with avoidance, visual monitoring, truck deterrence, bear bangers, rubber bullets, and the use of a helicopter. Where appropriate, the first response to potential wildlife incidents is to remove personnel 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 wildlife (primarily grizzly bears) from areas where personnel are working. Relocating or killing of an animal is only considered after successive levels of deterrents are not effective at moving an animal away from site. Whenever possible and safe to do so, all deterrent actions are completed in consultation with GNWT ECC. All deterrent actions involved in wildlife incident events are documented and reported to GNWT ECC in the annual report.

Specific deterrent actions for caribou consider the following:

- All incidents involving interactions, use of deterrents or potential injury of caribou will be documented and evaluated;
- Caribou will only be moved away from roads or the airstrip under specific circumstances, such as when there are incoming flights or if there is an emergency; and
- Caribou will be deterred from the airstrip by driving a truck down the strip, getting out of the vehicle and deterring the animals as gently as possible. Only when there is an imminent flight scheduled to land at the airstrip and an immediate need to mitigate risk to human or wildlife safety will more intrusive methods of deterrence be used (i.e., truck horn, yelling, bear bangers, etc.).

5.3.2 Wildlife Incidents and Mortalities

Occasionally, mining operations have contributed to the mortality or injury of wildlife. This may be either accidental (such as vehicle collisions with wildlife), or the deliberate removal (re-location or intentional destruction) of problem wildlife to protect worker safety. Deterrent actions always start with the least intrusive method and then increase with intensity as needed. In the past, an effective way to reduce wildlife mortality has been to establish and enforce low speed limits on mine roads. Reducing the availability of food and shelter for wildlife, thus limiting the attraction and presence of animals within the Ekati Mine, is also highly effective at preventing mortality or harm to wildlife. Incidents and mortalities, and effectiveness of mitigation for the protection of caribou and other wildlife are monitored in the WMMP.

Mitigation to avoid and limit direct mine-related mortality and injury to caribou and other wildlife from collisions with vehicles or aircraft, physical hazards (e.g., pits, blasting), and destruction of migratory bird nests includes the following:

- Implementation of the mitigation from the CRMP (Section 5.4.1);
- Current mitigation policies and practices for safety of wildlife on roads, airstrip and other areas of the Ekati Mine will be continued (Section 5.4), including the reporting of wildlife sightings by all employees, and control of encounters by Environment staff;
- Investigation of all caribou and other wildlife incidents and mortalities by Environment staff, reporting to government, and carrying out recommend follow-up (Section 6.3);
- Caribou and other wildlife are deterred from areas of risk;
- Wildlife always has the right-of-way;
- Speed limits are posted and enforced;
- Awareness training is conducted to inform and minimize human-wildlife interactions;
- Pit wall monitoring procedures for raptor/raven nests are followed (Section 6.6.2);

- Birds showing nesting activity in areas of critical risk will be actively deterred. Burgundy will not deter birds from nesting in inactive pits;
- Mine-altered waterbodies will be regularly monitored for use by migratory birds, and data collected is used for adaptive management;
- Guy wires are secured and removed if deemed unnecessary;
- Visual airstrip inspections for wildlife are completed prior to take-off and landing of all aircraft;
- A fence is maintained around Misery Camp to prevent wildlife from entering;
- Inuksuit (traditional rock structures used to deflect wildlife) are strategically constructed around the airstrip and other potentially hazardous mine structures to deter caribou from these areas; Wildlife carcasses near mine infrastructure are removed to minimize the attraction of predators and scavengers, where there would be an increased risk of colliding with vehicles or human-wildlife interaction;
- Vehicles encountering wildlife on roads are to stop and communicate the presence of wildlife on the road to the Environment Department and others in the area;
- The power line incorporates perching deterrents on poles including cone-shaped pole caps and cross arm perch preventers, to prevent large birds from perching and nesting on poles or on dangerous areas around phase conductors;
- Bird deterrents (e.g., spinning reflectors) are installed on the power line in identified areas of concern (e.g., near waterbodies known to represent staging areas);
- To the extent practicable, vegetation clearing occurs outside of the migratory bird nesting period (May 15 to August 18);
- If disturbance activities are to be completed during the migratory bird nesting period, nest searches will be completed prior to work initiation; and
- Environment and Climate Change Canada (ECCC; Environment Canada 2015) recommended setback (buffer) distances specific to species groups are implemented around nests detected during pre-clearing surveys (Table 5.3-1). Implementation of setback distances occur on a case-by-case basis after further discussion with ECCC to determine the most practicable setback distances for protecting migratory birds within an adaptive management framework, and how best to monitor the success of such nests. Results are provided in the annual monitoring report.

TABLE 5.3-1: ECCC RECOMMENDED SETBACK DISTANCES FOR NESTS OF MIGRATORY BIRDS SPECIES GROUPS

Species Group	Setback Distance for Pedestrians/ All-Terrain Vehicles (m)	Setback Distance for Clearing and Construction Activities (m)
Songbirds	30	100
Shorebirds	50 ^a	100 ^a
Terns/gulls	200	300
Ducks	100	150
Geese	300	500
Swans/loons/cranes	500	750
Rusty blackbird	300	300
Short-eared owl	1,500	1,500
Red-necked phalarope	100	100

Notes:

^a If project activities may disturb nest of American Golden Plover, then setbacks should increase to 150 m and 300 m for pedestrians and clearing, respectively.

5.4 Linear Features and Traffic

The physical presence of roads and associated traffic can cause wildlife to alter their movement and behaviour. Depending on the species and traffic volume, some animals may cross roads, be deflected along roads before crossing, or completely avoid roads. Increased traffic along the Sable, Misery, and Lac du Sauvage roads, and associated power lines and pipelines that result in barriers to wildlife movement, including movement of caribou throughout their annual range, at the Ekati Mine site is a key concern for Burgundy, Indigenous communities, IEMA, GNWT ECC, and the public.

The operation of the Ekati Mine requires numerous roads to support a variety of equipment, from light duty (i.e., pick-up trucks) to heavy duty (i.e., haul trucks) vehicles. The Ekati Mine also has an airstrip used to access the mine site. Vehicles encountering wildlife on roads or along the airstrip can pose a risk for both wildlife and human safety. Burgundy has implemented several mitigation measures to avoid and limit the semi-permeable barrier effects from roads on wildlife, and to minimize potential interactions between mine-related road and air traffic and wildlife:

- Four levels of mitigation and monitoring are included in the CRMP, and the intensity of mitigation and monitoring increases when specific action levels (triggers) are met (Section 5.4.1);
- Speed limits are reduced, and road closures may be implemented, according to action levels in the CRMP; kimberlite stockpile areas have been designed in strategic locations that facilitate continued mine operations through road closures;
- Only one access road crosses the Lac du Sauvage esker, and the intersection is constructed as a caribou crossing;
- Caribou crossings have been constructed using crushed rock (six inches or less in size) making the road shoulders flatter while providing easier walking for caribou;
- Roads are designed to have low side-slopes and low banks to facilitate caribou crossing, except in areas where rock berms are necessary to adhere to regulatory safety requirements;
- Employee education is conducted frequently to ensure personnel are knowledgeable about wildlife on site;

- Speed limits are posted and enforced; speed limits are 60 kilometres per hour (km/h) along haul roads, 20 km/h around camps and other mine buildings, and 40 km/h along the remaining roads unless otherwise indicate;
- Wildlife always has the right-of-way;
- Observations of wildlife sightings on roads are communicated to the Environment Department and other drivers in the area;
- Wildlife carcasses on or near the roads are removed to minimize attracting predators and scavengers to roads and road edges where there is an increased risk of colliding with vehicles;
- Snow berm height is managed during the winter by pushing out and leveling off accumulated snowbanks to 1 m. This reduces the potential impact that roads with snowbanks may have in presenting visual or physical barriers to caribou movement. Berms are continuously cleared during spring migration.
- Increased signage in areas where caribou might encounter the road;
- Site-wide notifications of caribou approaching the Ekati Mine;
- TK continues to be incorporated into the design of roads and caribou crossing ramps, as well as their placement, to help facilitate easy access for caribou to cross potential barriers;
- Construction of caribou crossings along the Lac du Sauvage Road, as it was identified through community engagement and sharing of TK, is an important area for caribou migration and movement and caribou crossings are in place along 71% of the Lac du Sauvage Road;
- Visual airstrip inspections for wildlife are completed prior to take-off and landing of all aircraft;
- A gated chain-link fence is maintained around Misery Camp to prevent wildlife from entering;
- Inuksuit (traditional rock structures; Photo 5.4-1) are placed at specific locations around the airstrip and other potentially hazardous mine infrastructure to deter caribou from these areas.

5.4.1 Caribou Road Mitigation Plan (CRMP)

The CRMP was originally created for the Jay Project, a previously permitted extension to the Ekati Mine (Golder Associates 2017b). Although Ekati decided against continuing with the Jay Project, it made the commitment to apply the CRMP on a site-wide basis. The CRMP provides strategies to reduce the potential effects from roads to caribou. In the previous WEMP, the CRMP was provided separately; however, this WMMP now incorporates mitigation from the CRMP.

Mitigation and adaptive management for caribou in this WMMP has been guided by the results of a comprehensive telemetry analysis completed in 2024 (Rettie et al. 2024) and other recent publications on the Bathurst caribou herd (Boulanger et al. 2021). The 2024 Telemetry Report assessed the potential impacts of the Ekati and Diavik Mines on caribou habitat selection at a regional scale, and along with new information from zone of influence research (Boulanger et al. 2021), informed minor updates to the mitigation and monitoring measures in the CRMP (Sections 5.4.1 and 6.4.1).



PHOTO 5.4-1: EXAMPLE OF AN INUKSUIT (TRADITIONAL ROCK STRUCTURES) THAT ARE PLACED AT INTERVALS AROUND INFRASTRUCTURE TO DETER WILDLIFE AND MINIMIZE POTENTIAL INTERACTIONS BETWEEN THE MINE AND WILDLIFE.

The objectives from the CRMP are to:

- Avoid and minimize (reduce) the risk of caribou and other wildlife mortalities from vehicle traffic;
- Avoid and minimize the barrier effect of the Lac du Sauvage, Sable 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.

5.4.1.1 Adaptive Management

Adaptive management was informed by the results of the comprehensive telemetry project, which helped determine the current effects of the Ekati and Diavik Mines on caribou habitat selection and movement at a regional scale (Rettie et al. 2024). Based on the results of the comprehensive telemetry analysis, and other recent publications for the Bathurst caribou herd (Boulanger et al. 2021), minor change to mitigation and monitoring measures from the CRMP (Section 5.4.1; Section 6.4) were made where warranted. The results of this research, reported separately from the WMMP annual report, were produced in the 2024 telemetry report.

The mitigation trigger distances included previously for increased caribou mitigation and monitoring (Table 5.4-1) were based on the size of the Regional Study Area (RSA) with a radius of 30 km from the mine (Alert Level 1 [Yellow]) and a 2012 publication (Boulanger et al. 2012) indicating a ZOI of 14 km (Alert Level 2 [Orange]; Golder Associates 2017b). These distances have been changed based on the results of the comprehensive telemetry analyses (Rettie et al. 2024) and a more recent ZOI publication (Boulanger et al. 2021). Boulanger et al. (2021) found an average ZOI of 7.2 km using caribou collar and aerial survey data from 1998 to 2017 and determined there was not a significant ZOI in all years. The trigger distance for the Alert Level 2 (Orange) has therefore been changed to 7 km, and the trigger distance for the Alert Level 1 (Yellow) to double this distance (i.e., 14 km).

5.4.1.2 Mitigation and Monitoring Framework

Burgundy's strategy for managing risks to caribou associated with roads is to increase mitigation and monitoring as caribou approach the Ekati Mine (Figure 5.4-1). Four levels of mitigation and monitoring occur (Figure 5.4-2), and the intensity of mitigation and monitoring increases when specific action levels (triggers) are met (Table 5.4-1) including:

- Operational Level (Blue – continuously);

- Level 1 (Yellow – low risk);
- Level 2 (Orange – medium risk); and
- Level 3 (Red – high risk).

This tiered approach for managing mitigation and monitoring (above the regular Operational Level) is similar to other operation plans at the Ekati Mine (e.g., cold weather policy). This consistency allows mine employees to understand the hierarchical structure of increasing and decreasing caribou mitigation and monitoring.

Operational Level mitigation and monitoring occurs continuously throughout the year, and higher levels are implemented when the associated action levels are met (Figure 5.4-2). For example, if Level 1 mitigation and monitoring is underway when Level 3 is triggered then there is an immediate escalation from Level 1 to Level 3 mitigation and monitoring, and caribou observations are compared continuously to the action levels. All mitigation from the previous lower level is applied to the next higher level. Thus, escalation from Level 1 to Level 3 includes mitigation and monitoring in Level 2. The mitigation and monitoring for each level continues for the minimum amount of time until the trigger is no longer met, regardless of how long this takes. For example, the mitigation and monitoring for Level 1 continues until caribou have moved beyond 14 km from the mine site, or a trigger for a higher level has been met. The annual number of days spent at each CRMP alert level, along with details of CRMP alert level changes for each year since implementation at Ekati in 2017, can be found in Table 5.4-2 and Table 5.4-3.

Mitigation has been designed to provide the highest protection for caribou encountering the Ekati Mine. Most mitigations are applied to all seasons in the same way so that caribou are given a high level of protection year-round. However, in certain instances, mitigation is increased depending on the season and group composition of caribou approaching roads (Table 5.4-1). Pregnant cows migrating to the calving grounds during spring migration, cows during calving and cows with calves during the early post-calving season are considered to be the most sensitive to mine-related impacts (Miller 2001; Mallory et al. 2020) and, therefore, trigger the most mitigations. The mitigations listed below are based on those that have been used at Ekati since operations began.

Monitoring is completed and assessed by the Environment Department and results are used to manage mitigation levels. Monitoring caribou with satellite collars provides early detection of caribou approaching the Ekati Mine and helps inform the level of mitigation required for caribou safety. Burgundy currently receives maps from GNWT ECC with the buffer zones from the CRMP outlined around Ekati showing if and where collared caribou in the Bathurst Herd are located in relation to these zones. Burgundy also receives the weekly barren-ground caribou map from the GNWT ECC showing regional collared caribou locations. Both of these maps aid in assessing caribou proximity to Ekati. This monitoring, as well as site-wide incidental observations, inform the Environment Department what alert level to implement and when a change is necessary through adaptive management (Section 7.0). Alert levels, and subsequent mitigation and monitoring, increase immediately if a higher action level trigger occurs, however an alert level will only be decreased after three consecutive days of observations indicating a lower action level is sufficient. Management actions for caribou will be scaled back to reduced levels at this time.

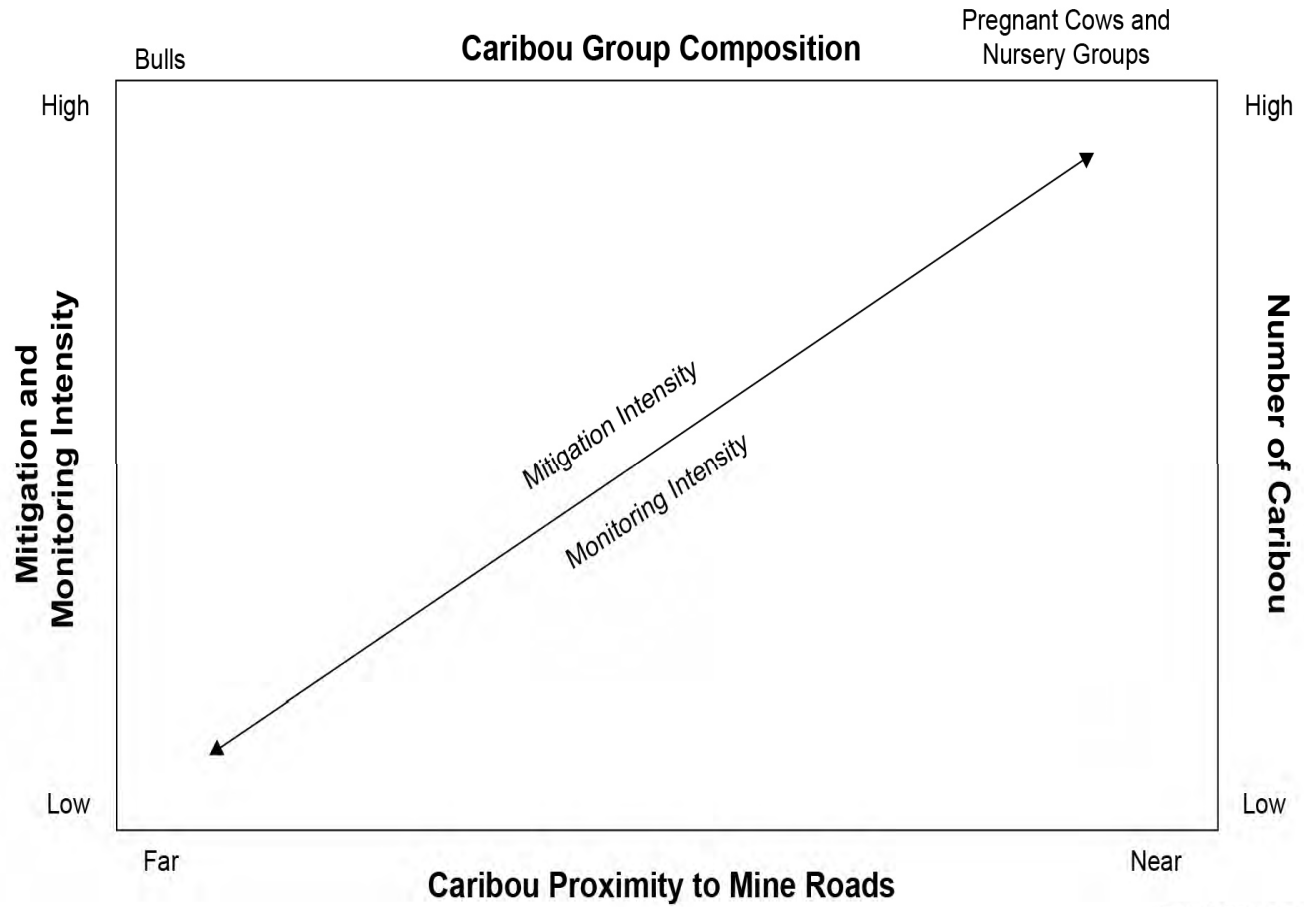


FIGURE 5.4-1: MITIGATION AND MONITORING INTENSITY FOR EKATI DIAMOND MINE ROADS

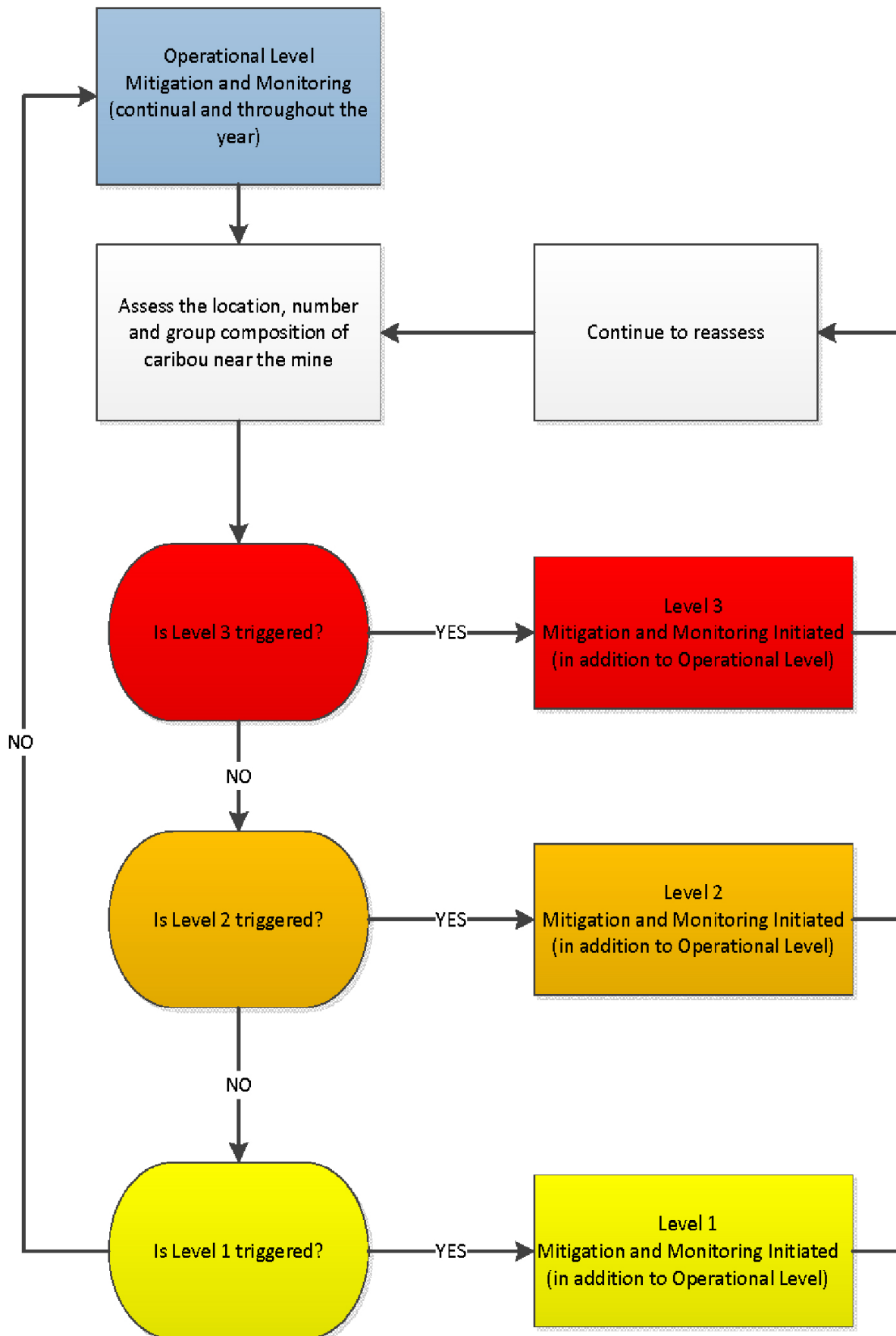


FIGURE 5.4-2: DECISION TREE FOR ROAD TRAFFIC MITIGATION AND MONITORING

TABLE 5.4-1: ACTION LEVELS (TRIGGERS) AND ASSOCIATED CARIBOU ROAD MITIGATION AND MONITORING

Level (Alert)	Action Level (Triggers) to Initiate	Wildlife Road Mitigation	Caribou Monitoring
Operational (Blue)	Continual and throughout the year	- Roads incorporate caribou crossings - Employee education - Speed limits are posted - Wildlife has right-of-way on all roads - Observations of wildlife on roads are communicated to the Environment Department and other drivers in the area - Wildlife carcasses on or near roads are removed - Road snow berm height is managed during winter (~1 m high)	- Collared caribou monitoring - Incidental wildlife sightings - Behavioural observations and cameras at road and esker crossings - Weekly road surveys
1 (Yellow)	One or more collared caribou or caribou observed by site personnel are within 14 km of the Ekati Mine (i.e., RSA).	- Site-wide notifications of caribou approach to Ekati Mine - Signage indicating caribou could be encountered (Yellow alert)	- Collared caribou monitoring - Incidental wildlife sightings - Behavioural observations and cameras at road and esker crossings - Daily road surveys
2 (Orange)	One or more collared caribou or caribou observed by site personnel are within 7 km of the Ekati Mine.	- Site-wide notifications of caribou approach to Ekati Mine - Increased signage in areas where caribou might encounter the road - Signage indicating caribou are likely to be encountered (orange alert) - Speed limits are decreased and posted	- Collared caribou monitoring - Incidental wildlife sightings - Behavioural observations and cameras at road and esker crossings - Daily road surveys - Environment Technicians dispatched to monitor traffic and provide caribou safety (if required)
3 (Red)	- One or more caribou are observed within 200m of mine roads during any season. - One or more caribou are observed within 500m of mine roads during the spring (April 20 to June 1) or fall (September 07 to November 30) migrations.	- Site-wide notifications of caribou approach to Ekati Mine - Signage indicating caribou are highly likely to be encountered (red alert) - Road closures as necessary	- Collared caribou monitoring - Incidental wildlife sightings - Behavioural observations and cameras at road and esker crossings - Daily road surveys - Environment Technicians dispatched to monitor traffic and provide caribou safety - Behavioural surveys (scan and focal sampling) will occur, when possible, at any time of year.

Notes:

RSA - regional study area for the Ekati Mine.

TABLE 5.4-2: DAYS SPENT AT EACH CRMP ALERT LEVEL AT EKATI, 2017-2025

Alert Level	Year								
	2017	2018	2019	2020	2021	2022	2023	2024	2025
Blue	14	5	0	0	31	33	52	50	34
Yellow	0	0	0	0	14	17	24	15	15
Orange	334	258	62	8	0	0	250	0	31
Red	17	102	303	358	320	315	39	301	285
Total	365	365	365	366*	365	365	365	366*	365

Notes:

* leap year

TABLE 5.4-3: SUMMARY OF CRMP ALERT LEVEL CHANGES AT EKATI, 2017-2025

Event#	Start Date	End Date	Duration (days)	Previous Level	Alert Level	Alert Trigger
2017						
1	1-Jan	25-Apr	115	n/a	Orange	Caribou observed periodically during helicopter flights. Continued observations during power line surveys, incidental, and/or road surveys.
2	26-Apr	9-May	14	Orange	Blue	No caribou sightings near roads
3	10-May	1-Nov	177	Blue	Orange	Caribou observed incidentally > 1.5 km from Pigeon Pit. Continued observations during power line surveys, incidental, and/or road surveys.
4	2-Nov	7-Nov	6	Orange/Red	Orange/Red	Alert level switched between red and orange during these 6 days pending location of caribou observations. Caribou group (5 individuals, < 0.25% cows) observed < 100 m from Sable Road at Km 15, caribou group (30 individuals, < 0.25% cows) observed crossing Sable Road at the caribou ramp near Km 14, large group (300 individuals) was reported at Sable Road near Km 10 slightly away from the road before moving to cross, and caribou group (14 individuals) observed crossing Sable Road.
5	8-Nov	15-Nov	8	Red	Orange	Caribou group crossed the road. No additional caribou sightings near roads. Road re-opened at 8:50 pm following a short-term closure.
6	16-Nov	1-Dec	16	Orange	Red	Caribou groups observed crossing Misery Road. Short-term road closures occurred due to caribou groups. Jay Road closed to traffic and personnel due to instability of road.
7	2-Dec	31-Dec	30	Red	Orange	No caribou sightings near roads.
2018						
1	1-Jan	4-May	123	Orange (from 2017)	Orange	Caribou observed.
2	4-May	8-Jun	35	Orange	Red	Caribou observed crossing Misery Road at Km 11. Seven caribou were observed, with at least two bulls.
3	8-Jun	28-Jun	20	Red	Orange	This level change was triggered caribou collar data after receiving the map, which showed all collared females have moved >10 km from site. There were also few observations of caribou crossing roads around site
4	28-Jun	3-Jul	5	Orange	Blue	No caribou observed for several days
5	3-Jul	25-Oct	114	Blue	Orange	Caribou observation near Misery Road Km 3
6	25-Oct	30-Dec	67	Orange	Red	Level change triggered due to caribou observations near Misery and Sable Roads and the caribou satellite collar map.
7	31-Dec	31-Dec	1	Red	Orange	No caribou observed since December 21.
2019						
1	1-Jan	31-Jan	31	Orange (from 2018)	Orange	No caribou had been observed since December 21, 2018.
2	31-Jan	14-Jun	134	Orange	Red	Caribou observed crossing Misery Road at km 22.
3	14-Jun	8-Jul	24	Red	Orange	Level change based on lack of caribou sightings near the roads and satellite mapping indicated that the majority of collared individuals have moved away from the mine site (one collared individual remains within ~14 km of the Ekati mine).
4	8-Jul	24-Oct	108	Orange	Red	Level change triggered due to recent observations of caribou near Sable Road.
5	24-Oct	31-Oct	7	Red	Orange	Lack of caribou sightings near roads and mapping indicated that the majority of collared individuals have moved away from the mine site.
6	31-Oct	31-Dec	61	Orange	Red	A lone caribou was reported as injured (limping). Level change followed observations of a caribou near Sable Road and satellite collared caribou mapping.
2020						
1	01-Jan	27-Oct	300	Red (from 2019)	Red	No change in CRMP level as of December 31, 2019. Caribou remained around Misery and Sable Roads.

2	27-Oct	4-Nov	8	Red	Orange	Level change based on lack of caribou sightings near the roads.
3	4-Nov	31-Dec	57	Orange	Red	A large herd of caribou (~400) was observed around Sable Road. The herd split to either side of the road.
2021						
1	1-Jan	6-Oct	279	Red (from 2020)	Red	Due to continued caribou presence (collar data and/or observations)
2	6-Oct	20-Oct	14	Red	Yellow	Changed from Level 3 (red) to Level 1 (yellow) based on collar data and observations.
3	20-Oct	1-Dec	41	Yellow	Red	Changed to Level 3 (red) from Level 1 (yellow) based on two large herds (~2,500) crossings roads.
4	1-Dec	31-Dec	31	Red	Blue	Changed from Level 3 (red) to Operational Level (blue) based on collar data and lack of observations.
2022						
1	1-Jan	17-Jan	16	Blue (from 2021)	Blue	Initiated 2022 at operational level and remained there until January 17th due to caribou presence (collar data and observations)
2	17-Jan	2-Feb	17	Blue	Yellow	Escalated to level 1 (yellow) from Operational Level (Blue) based on two caribou observed at Misery Road.
3	2-Feb	14-Dec	315	Yellow	Red	Changed from Level 1 (yellow) to Level 3 (red) based on collar data and observations.
4	14-Dec	31-Dec	17	Red	Blue	Changed from Level 3 (red) to Operational Level (blue) based on collar data and lack of observations.
2023						
1	1-Jan	18-Jan	18	Blue (from 2022)	Blue	Initiated 2023 at operational level and remained there until February 18 due to caribou presence (collar data and observations)
2	18-Jan	18-Feb	31	Blue	Red	Escalated to Level 3 (Red) from Operational Level (Blue) based on increased observations of caribou on site.
3	18-Feb	26–Oct	250	Red	Orange	Changed from Level 3 (Red) to Level 2 (Orange) based on collar data and observations. A herd of caribou moved into the LLCF.
4	26-Oct	03-Nov	8	Orange	Red	Changed from Level 2 (Orange) to Level 3 (Red) based on collar data and observations.
5	03-Nov	07-Dec	34	Red	Blue	Changed from Level 3 (Red) to Operational Level (Blue) based on collar data and lack of observations.
6	07-Dec	31-Dec	24	Blue	Yellow	Escalated to Level 1 (Yellow) from Operational Level (Blue) based on one observation of a caribou on Misery Road.
2024						
1	1-Jan	2-Feb	33	Yellow (from 2023)	Blue	Initiated 2024 at yellow level. No caribou presence (collar data and observations) for 2 weeks.
2	3-Feb	12-Feb	10	Blue	Yellow	Changed to level 1 (Yellow) based on Caribou observations on Fox Haul Road.
3	13-Feb	29-Feb	17	Yellow	Blue	Changed to Operational (Blue). No caribou observed during road surveys in 10 days, no collared caribou nearby.
4	1-Mar	19-Oct	233	Blue	Red	Escalated to Level 3 (Red). Collar data reported that caribou are starting to move into the Mine area.
5	20-Oct	24-Oct	5	Red	Yellow	Changed to Level 1 (Yellow). Only 3 caribou (observations and collar data) in the last 30 days.
6	25-Oct	31-Dec	68	Yellow	Red	Changed to Level 3 (Red) for the start of Caribou migration. Stayed at Level 3 until the end of 2024.
2025						
1	1-Jan	7-Jan	7	Red (from 2024)	Yellow	Caribou collar data indicated caribou within 30 km of the mine site, but outside the 14 km buffer.
2	8-Jan	15-Jan	8	Yellow	Red	Caribou observed during road surveys close to the Lac du Sauvage road.
3	16-Jan	19-Jan	4	Red	Orange	No triggers for Alert Level 3 occurred for 3 days but caribou remained within 14km of the mine site.
4	20-Jan	1-Jun	133	Orange	Red	Caribou observed during road surveys close to the Misery road.
5	2-Jun	24-Jun-	23	Red	Orange	No triggers for Alert Level 3 occurred for 3 days but caribou remained within 14km of the mine site.
6	25-Jun	6-Sep	74	Orange	Red	Caribou observed frequently during road surveys close to the mine roads and collar data showed caribou moving in and out of the study area.
7	7-Sep	10-Sep	4	Red	Orange	No triggers for Alert Level 3 occurred for 3 days but caribou remained within 14km of the mine site.
8	11-Sep	20-Sep	10	Orange	Red	Caribou observed during road surveys close to the Sable road.
9	21-Sep	22-Oct	32	Red	Blue	No caribou observed during road surveys and caribou collar data did not indicate caribou within 30 km of Ekati Mine.
10	23-Oct	7-Dec	46	Blue	Red	Caribou observed frequently during road surveys close to the mine roads and collar data showed caribou moving through the study area.
11	8-Dec	9-Dec	2	Red	Blue	No caribou observed during road surveys and caribou collar data did not indicate caribou within 30 km of Ekati Mine.
12	10-Dec	17-Dec	8	Blue	Yellow	Caribou collar data indicated caribou within 30 km of the Ekati Mine site, but outside of the 14 km buffer.
13	18-Dec	31-Dec	14	Yellow	Red	Caribou collar data indicated caribou located within the 14 km buffer zone around the mine site.

Monitoring caribou with satellite collars provides early detection of caribou approaching roads and assists in managing appropriate levels of mitigation to protect caribou and other wildlife. The monitoring techniques discussed below are to be considered in sequence. Monitoring is completed and assessed by the Environment Department and is used to manage mitigation levels. Monitoring informs the Environment Department if action levels have been met and whether or not a change in mitigation and monitoring level is necessary through adaptive management (Section 7.0).

5.4.1.3 Operational Level (Blue)

This level of mitigation is the baseline for all higher levels and is continuous throughout the year and life of the mine including when no collared caribou or caribou observations are recorded within 14 km of the Ekati mine site. Many of the mitigations presented below have been applied to the Ekati Mine since operations began in 1998 (BHP 2000a).

Employee Education

The Environment Department completes presentations to communicate the importance of mitigation (e.g., wildlife has the right-of-way and incidental sightings reporting) for the protection of caribou and information regarding caribou behaviour. Presentations are made to the departments that use the Sable, Misery and Lac du Sauvage roads (i.e., Site services, Mine Operations, Logistics, Geology and Mine Technical Services, and Aviation) and distributed to other department managers to communicate the information to their employees. These presentations are in addition to employee mine orientation training and driver training and are included as part of the Site Orientation for all new staff, contractors, and visitors.

Speed Limits Are Posted

Speed limits are 60 kilometres per hour (km/h) along haul roads and 20 km/h or 40 km/h on other roads and around buildings. Driving slowly gives drivers more reaction time and reduces the distance required to stop. Haul truck traffic is monitored at site using Wenco. Wenco is an on-board vehicle electronic tracking system that records vehicle location and can be used to calculate speed.

Wildlife Has the Right-of-Way on All Roads

All employees operating vehicles are responsible for stopping for caribou, and other wildlife, on the Lac du Sauvage, Sable and Misery roads (and other Ekati Mine roads). If a driver encounters wildlife or caribou on the road, they must report this to the Environment Department or Security, pending when the encounter occurs. This allows the Environment Department to send Environment Technicians to the location to take any necessary actions, and for the message to be relayed to other drivers in the area.

Environment staff proceed to the location where caribou are encountered any time a driver stops to give caribou the right-of-way. The time when the driver can resume operation will be at the discretion of the driver only until Environment personnel arrives to take over traffic management. In situations where employees stop for wildlife and Environment personnel are not present, drivers will adhere to pre-established guidelines to determine when they can resume driving and at what speed (Table 5.4-4).

Drivers must wait until caribou move more than 100 m from the road before vehicles can proceed at a reduced speed of 20 km/h to limit disturbing animals. This distance can be estimated accurately and quickly by drivers, and at this speed, drivers are expected to be able to safely come to a complete stop should caribou decide to change direction or behaviour. When the animal has moved more than 200 m from the road, the driver can increase their speed to 40 km/h. When the animal has moved more than 500 m from the road the driver can increase their speed to 60 km/h. It is important to note that these instructions are used to direct drivers actions until Environment personnel arrive to monitor caribou and direct the flow or stopping of traffic, which will depend partially on the current alert level (Table 5.4-1). In other words, once Environment personnel are on site, traffic may be directed to remain stopped at distances greater than 100 m, depending on the behaviour and movement of caribou.

TABLE 5.4-4: CARIBOU DISTANCE THRESHOLDS AND SPEED LIMITS^{1,2}

Distance of Caribou from the Road	Speed Guideline
Less than 100 m	Driver to remain stopped
100 m to 200 m	Driver to proceed at 20 km/h
200 m to 500 m	Driver to proceed at 40 km/h
500 m or more	Driver to proceed at 60 km/h

Note to all drivers:

¹ – Applies to caribou in line of sight from the road

² – Notify Environment Department and other drivers immediately

Observations of Wildlife on Roads Are Communicated to the Environment Department and Other Drivers in the Area

This mitigation alerts other drivers and the Environment Department of wildlife presence and is required by all employees operating a vehicle on a mine road. The Environment Department will respond according to the perceived threat to human or wildlife safety by issuing site-wide notifications, dispatching Environment staff to sections of the road, managing the movement of traffic, and/or closing roads. All incidental wildlife sightings are summarized in the annual monitoring report.

Wildlife Carcasses on or near Roads Are Removed

This mitigation is intended to reduce the presence of predators and scavengers near roads. It is expected that all employees will report wildlife carcasses to the Environment Department for removal. The Environment Department reports all wildlife mortalities at site to the GNWT ECC or ECCC and receives direction back regarding disposal. Burgundy will not chase any wildlife off a kill but will wait for wildlife to finish with the kill before moving the carcass. All wildlife mortalities that occur at the Ekati Mine and details regarding carcass removal (e.g., distance carcass was moved from the road) are included in the annual monitoring report.

Road Snow Berm Height Will Be Managed during Winter

During winter, snow berms present along roads will be maintained to provide safe driving conditions, improve visibility and reduce the berms as obstacles for migrating caribou. Results from monitoring at the Misery Road during the spring migration of Bathurst caribou indicated that snow berm heights may influence movements of caribou (Rescan 2011). The results indicated that caribou crossed roads more when berms were 0.5 m high or less and deflected when berms were at least 1.6 m high. Snow berms along the Misery, Sable and Lac du Sauvage roads are maintained at a height of approximately 1 m, where possible, to limit effects on caribou movement while still controlling windblown snow along roadways.

5.4.1.4 Level 1 (Yellow)

Additional mitigation and monitoring in Level 1 (Yellow) is triggered when one or more collared caribou or caribou observations occur within 14 km from the Ekati Mine (see Section 5.4.1.1. for an explanation of the distance). Mitigation at this level is to provide heightened awareness to Ekati Mine employees that caribou may be encountered near or on the mine site.

Site-wide Notifications of Caribou Approaching the Ekati Diamond Mine

Notifications are communicated through site-wide email, during morning safety meetings or department-specific radio channels by the Environment Department. Notification included signage alerting drivers departing on the Lac du Sauvage, Sable and Misery roads that migrating caribou are approaching the Ekati Mine.

Signage Indicating Caribou Could Be Encountered (Yellow Alert)

The Environment Department posts Level 1 (Yellow) alert signs for drivers that caribou could be encountered in the area. This provides drivers with reminders to be vigilant. Signs are posted at entry points of the Lac du Sauvage, Sable and Misery roads. All drivers are notified at the beginning of their shift of the alert level the mine is currently at and are provided with maps of any recent incidental caribou sightings. These maps include recent observations and information of where caribou have historically been encountered along the road.

5.4.1.5 Level 2 (Orange)

Additional mitigation and monitoring in Level 2 (Orange) occurs when one or more collared caribou or caribou observations occur within 7 km of the Ekati Mine. Mitigations are intended to reduce sensory disturbance from roads and traffic on approaching caribou (i.e., within 7 km of the mine), and the perception by caribou that roads and vehicles are a barrier to movement.

Signage Indicating Caribou Are Likely to Be Encountered (Orange Alert)

The alert signs posted will change from Level 1 (Yellow) to Level 2 (Orange). All drivers are notified at the beginning of their shift of the level the mine is currently at and provided with maps showing areas of the road they are most likely to encounter caribou.

Increased Signage in Areas Where Caribou Might Encounter the Road

The Environment Department posts alert signs at key sections of the roads to warn drivers that caribou are approaching the mine. This reminds drivers to slow down if caribou are seen 100 m to 500 m from the road (speed reduction depends on the distance interval) or stop if and when required (Table 5.4-2). The location of the signs is based on incidental caribou observations, camera monitoring data and TK. Together these data are used to update the map distributed to drivers and the location of alert signs along roads. Focusing mitigation efforts near sections of the roads that have a high likelihood of caribou encounters is practical, particularly when visibility is restricted due to darkness and/or poor weather conditions (e.g., fog, blizzards), and monitoring of approaching animals at intermediate distances is difficult.

Speed Limits Are Decreased and Posted

The maximum speed limit on haul roads is 60 km/h. As a general rule, speed limits are decreased to 40 km/h along the required section(s) of the Lac du Sauvage, Sable or Misery roads when caribou herd are observed at 200 to 500 m from the road (Table 5.4-2). When caribou are observed 100 m to 200 m of the road, the speed limit is decreased to 20 km/h. Vehicles are to stop and remain stopped when caribou are on or within 100 m of the road.

Importantly, these triggers and actions are guidelines for drivers when Environment personnel are not present. The length and section of the road, and duration of the speed limit decrease will be determined by the Environment Department, and traffic may be stopped for periods of time at any distance, depending on the behaviour and movement of caribou. Speed limits will apply to all vehicles. Wildlife will continue to have the right-of-way during speed limit reductions.

5.4.1.6 Level 3 (Red)

Additional mitigation and monitoring for Level 3 (Red) is triggered when caribou are within 200 m of the Misery, Sable or Lac du Sauvage roads (i.e., the maximum stopping distance of a loaded haul truck travelling 60 km/h) in any season and during the fall and spring migrations when caribou are within 500 m of the Misery, Sable or Lac du Sauvage roads and their direction of travel indicates they will encounter the road. This is when cows are more sensitive to disturbance and caribou movement is more directional and predictable.

Mitigations are intended to avoid and limit the following effects to caribou:

- Risk of caribou mortalities from vehicles;
- Barrier to caribou movement and migration from roads; and

- Sensory disturbance from roads and traffic on caribou behaviour (and associated adverse energetic and reproductive changes).

Environment personnel are dispatched to the location of any caribou observations along mine roads to monitor and adaptively manage traffic to protect caribou. They are also present during speed limit reductions to monitor traffic and enforce compliance. Descriptions and photos of locations where caribou crossed or were deflected by roads are used to provide feedback for adaptive management of mitigations.

Signage Indicating Caribou Are Highly Likely to Be Encountered

The alert signs will change from Level 2 (Orange) to Level 3 (Red). All drivers will be notified at the beginning of their shift the level the mine is currently at and provided with maps of any recent incidental caribou sightings.

Road Closures

A road closure will be initiated (i.e., traffic will be stopped) in any season if a caribou is observed within 100 m of any mine road. During the spring and fall migrations, when caribou movement is directional, more predictable and caribou are more sensitive to disturbance, road closures will occur when caribou are observed within 500 m of a road and their direction of travel indicates they will encounter the mine road (Table 5.4-5). Road closures that have occurred annually since the CRMP was implemented in 2017 are reported in Table 5.4-6.

TABLE 5.4-5: ROAD CLOSURE DECISION MATRIX

Season	Threshold Distance	Direction of Travel	Road Closure	Trigger to Reopen Road
Any season	On road to 100 m from road	N/A	Yes	Caribou have moved more than 100 m from the mine road
Spring and fall migration	≤ 500m	Towards a mine road	Yes	Caribou have moved more than 500 m from the mine road and are travelling away from the road
Summer and winter	200 m to 500 m	N/A	At the discretion of Environment Department	Caribou appear stationary or are moving away from the road and appear unaffected by sensory disturbance

TABLE 5.4-6: SUMMARY OF ROAD CLOSURES AT EKATI DUE TO CARIBOU, 2017-2025

Location	# of Road Closures	Total Time Delay (mins)
2017		
Sable haul road	4	187
Misery haul road	1	Not reported
Total	5	187+
2018		
Sable hau road	6	295
Misery haul road	2	10
Total	8	305
2019		
Unknown haul road	120	5,310
Total	120	5,310
2020		
Falcon Lake road	1	9 days
Misery haul road	1	10
Total	2	9 days and 10 mins
2021		
Sable haul road	14	Not reported, stoppages lasted 10 minutes to 6.5 hours
Misery haul road	3	Not reported, stoppages lasted 10 minutes to 6.5 hours
Fox haul road	1	Not reported, stoppages lasted 10 minutes to 6.5 hours
Polar	1	Not reported, stoppages lasted 10 minutes to 6.5 hours
Total	19	Unknown
2022		
Sable haul road	1	150
Total	1	150
2023		
Sable haul road	1	Unknown
Sable crusher	1	120
Pigeon culvert	1	80
Unknown	1	90
Total	4	290 +
2024		
Sable haul road	62	5,329
Misery haul road	4	165
Beartooth corner	4	290
Unknown	8	2,377
Total	77	8,161
2025		
Sable Haul Road	11	658
Misery	1	60
Fox haul road at AN building	1	15
Point Lake Pit Ramp	1	13
Total	14	746

Road closures help reduce sensory disturbance and maximize the time interval between vehicles. Road closures involve closing sections of the road until caribou have successfully moved out of the threshold range. The necessity and length of the road closure is determined by the Environment Department and will depend on the number, group composition and behaviour of caribou near the road. Road closures may be necessary during periods of darkness if closures or speed limit reductions have been triggered throughout the day. Road closures may also occur at distances closer or further than the trigger(s) based on the discretion of the Environment Department. This discretion includes but is not limited to the following:

- Caribou behaviour (i.e., bedded)
- Composition of caribou groups (i.e., primarily cows with calves);
- Numbers of caribou observed within proximity of the Misery, Sable or Lac du Sauvage roads;
- If caribou are exhibiting signs of sensory disturbance; and
- It is anticipated that the caribou intend to cross the road.

During the summer period, caribou tend to be more sedentary, moving to find food, and avoid insects and predators. During this period, mitigation can be applied on a case-by-case basis. For example, mitigation focuses on limiting sensory disturbance (energetic cost) when caribou are observed feeding adjacent to roads but would switch to road closure or other traffic modifications should it be anticipated that caribou intend to cross or use the road for other purposes (i.e., insect avoidance).

5.4.1.7 Mitigation for the Lac du Sauvage Road

The Lac du Sauvage Road was constructed previously as part of the early works of the Jay Project. The Lac du Sauvage Road (formerly the Jay Road) was constructed to comply with Measure 6-1 of the Mackenzie Valley Environmental Impact Review Board Report of Environmental Assessment requiring that at least 70% of the road be constructed as a caribou crossing. The resultant Lac du Sauvage road is currently constructed as a caribou crossing along 71% of its length (excluding areas where safety berms are required with 10 m transition zones), including where it crosses the Lac du Sauvage esker. The caribou crossings were constructed at a slope of 4:1 (H:V) along the road and 3:1 through the esker cut.

TK was incorporated at the time of initial construction of the Jay Road to inform the design and location of the caribou crossings. Based on feedback during engagement in 2015 and 2016 design adjustments were made to reduce transition zones between berms and caribou crossings to ensure that that maximum percentage of the road was constructed as a caribou crossing to reduce semi-permeable barrier effects on caribou.

5.4.2 Open Pits

Open pits may lead to wildlife injury or mortality through the presence of steep sides, fly rock, and traffic. No caribou or other wildlife mortalities from animals entering the open pits at the Ekati Mine have been reported. In high-risk areas, passive deterrence occurs by strategically installing heavy weight orange barrier fencing to mitigate hazards to caribou and other wildlife. At Beartooth Pit, a single line of fencing was installed in 2006 on the northeast side to deflect caribou around the immediate area, which demonstrated that fencing of this nature can be effective. At Pigeon, a similar type of heavy weight orange barrier fence was placed around the test pit after its completion in 2011. No caribou have been seen inside the Pigeon fence.

Formal monitoring has been introduced to detect possible nesting by raptors and ravens in open pits at the Ekati Mine. In 2002, there were two instances of rough-legged hawks nesting or attempting to nest within open pits and a peregrine falcon nested on the stairs of a fuel tank (BHP 2002). Following these instances, monitoring was implemented to occur each spring to detect nesting behaviour before egg-laying occurs (Section 6.8.2)

5.4.3 Dust

The Ekati Mine produces dust through various sources including blasting and crushing rock, road construction and traffic.

Proactive measures to reduce fugitive dust at Ekati include:

- Establishment and posting of speed limits on all roads; and

- Control of fugitive dust emissions through road watering and the use of approved dust suppressants.

Dust suppression as a mechanism to mitigate the effects of fugitive dust at the Ekati Mine has been employed since the commencement of mining in 1998. Monitoring the long-term effectiveness of dust suppression is presented in the AQMP Annual reports (e.g., lichen tissue results). Various methods of dust suppression are used on-site including road watering, the application of EnviroKleen, and the use of EK-35 on the airstrip.

Water is approved by the GNWT Lands Inspector for usage as a dust suppression method. The application of water as a dust suppression occurs once temperatures remain above freezing and during the spring, prior to application of any chemical dust suppressants. EK-35 is used on the Ekati Mine airstrip in accordance with Boeing guidelines to assist in the control of fugitive dust from incoming and outgoing aircraft and associated vehicle traffic.

In addition to the application of the above dust suppressants, the Ekati Mine continues to implement a reduced speed limit around site, which minimizes the impact of vehicle generated road dust since emissions increase almost directly with the speed of the vehicle (ECCC 2022).

5.4.4 Toxic Substances and Contaminants

The following mitigations decrease risks to caribou and other wildlife from ingestion of toxic substances or encounters with toxic spills on the Ekati Mine site:

- Regular equipment maintenance (e.g., regular checks for leaks);
- Drip trays are used during servicing and refuelling;
- Hazardous substances are stored and handled on site in accordance with applicable regulations;
- Fuel is stored at a central bulk fuel farm at the Ekati Mine Main Camp and at satellite fuel farms located at Misery, Fox, and Koala North. Fuel tanks are housed within bermed areas;
- Ekati's Spill Contingency Plan (Section 3.3) is followed in the event of a spill (spill response training is provided and updated);
- Soil and snow affected by hydrocarbon spills are handled in accordance with the existing Hydrocarbon Impacted Materials Management Plan (Section 3.3) and soil is remediated in the landfarm or shipped off-site;
- Minewater and fine processed kimberlite slurry pipelines are monitored and inspected throughout construction (i.e., dewatering of diked area), operations, and closure. Additional mitigation is applied, if required; and
- Any leaks or spills identified along the pipelines are addressed and clean-up, if required, is implemented following the existing Spill Contingency Plan (Section 3.3).

5.5 Education

Environmental education is part of every employee's mandatory training upon starting at the Ekati Mine. Environmental education training includes:

- Review of the Corporate Sustainability Policy;
- Wildlife awareness;
- Spill reporting;
- Review of the Wildlife reporting policy;
- Workplace Hazardous Materials Information System (WHMIS); and
- Waste management.

The Ekati Mine Environment Department also provides role- and department-specific training and presentations based on seasonal environmental issues. For instance, haul truck drivers are given presentations prior to the Bathurst herd spring migration reminding them of mitigation and alerting them to the increased likelihood of caribou presence.

6 MONITORING

6.1 Wildlife Habitat Alteration and Loss

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, including the EIS (BHP 1995), the Environmental Assessment Report conducted for Sable, Pigeon, and Beartooth in 2000 (BHP and Dia Met 2000), the amendment for Lynx Development in 2014 (Water Licence W2012L2-0001), the Jay Project DAR in 2014 (DDEC 2014), and the Point Lake Project (ACDC 2021b).

6.1.1 Objectives

The objective for this component of the WMMP is to:

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

6.1.2 Methods

The cumulative area of direct habitat loss is determined by superimposing the current project footprint on the pre-development (i.e., baseline) habitat map of the study area using Geographic Information System (GIS) software. Both the project footprint and the baseline habitat map were developed from LANDSAT Thematic Mapper satellite imagery (BHP 2004). Direct habitat loss is measured by classifying pre-disturbance land cover into 15 habitat types (Table 6.1-1) that represent an association of vegetation, soil, and moisture characteristics, using the Ecological Land Classification (ELC) system developed for the Slave Geological Province (Matthews et al. 2001). Direct habitat loss is measured in hectares and determined as cumulative successive annual changes in the project footprint. Disturbed areas that are under reclamation are included in the tabulated results.

TABLE 6.1-1: DESCRIPTION OF HABITAT TYPES WITHIN THE EKATI DIAMOND MINE 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 (<i>Betula spp.</i>) and willow (<i>Salix spp.</i>) 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 wind-swept 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 (<i>Ericaceae</i>) 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 (<i>Alnus spp.</i>) that follow active stream courses, usually with a cobble or boulder substrate. Understory plant species may include dwarf raspberry (<i>Rubus pubescens</i>), dwarf marsh violet (<i>Viola epipsila</i>), cloudberry (<i>Rubus chamaemorus</i>), grasses (<i>Poaceae spp.</i>), sedges (<i>Carex spp.</i>), club mosses (<i>Lycopodium spp.</i>), and common horsetail (<i>Equisetum arvense</i>).
Sedge wetland	Wet sedge meadows and other sedge associations of non-tussock plant species. Sedge species such as <i>Carex aquatilis</i> and <i>Carex bigelowii</i> , and cotton grass (<i>Eriophorum angustifolium</i>) 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 (<i>Cyperaceae spp.</i>) are dominant and tussock cotton grasses such as <i>Eriophorum vaginatum</i> and <i>Eriophorum russeolum</i> 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.

6.1.3 Frequency

Mine footprint updates indicating habitat alteration and loss are provided annually.

6.1.4 Data Analyses

The total area of terrestrial habitat loss for Ekati was estimated to be 1631 ha in the 1995 EIS, with an additional 494 ha of terrestrial habitat estimated to be lost in the 2000 EA Report for the Sable, Pigeon, and Beartooth Expansion Project (BHP and Dia Met 2000). This estimation did not include the future development of the Lynx pit, however terrestrial habitat loss was minimal as existing mine infrastructure and waste rock storage at the Misery pit was utilized as much as possible (DDEC 2013). The predicted direct habitat loss from the most recent Point Lake project was estimated to be 118 ha, of which 88.2 ha is expected to be terrestrial habitat (ACDC 2021b).

The amount of direct terrestrial habitat loss caused by the project footprint from 1997 to 2024 was 2,976.4 ha or 2.8% of the total pre-development terrestrial habitat in the study area (Table 6.1-2). The land cover types most affected by development of the mine, relative to their availability within the study area include: heath tundra (30-80% bedrock; 3.6%), heath tundra (30-80% boulder; 3.3%), tussock/hummock (3.2%), and spruce forest (3.1%; ERM 2025c).

TABLE 6.1-2 : AMOUNT OF TERRESTRIAL HABITAT IN THE EKATI MINE STUDY AREA DURING PRE-DEVELOPMENT, PREDICTED LOSS, AND DIRECT LOSS OF HABITAT FROM MINE DEVELOPMENT, 1997 TO 2024

Habitat Type	Amount in Study Area during Pre-development (ha)	Predicted Habitat Loss (ha [1995 Footprint])*	Predicted Habitat Loss (% [1995 Footprint])	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	81	2.0	79.6	0.7	80.3	1.96
Birch seep/riparian shrub	2,971	36	1.2	79.6	5.5	85.1	2.86
Boulder complex (> 80% rock)	2,273	21	0.9	33.8	0.0	33.8	1.48
Esker complex	3,196	16	0.5	39.5	1.0	40.5	1.27
Heath tundra (< 30% rock)	28,403	263	0.9	736.5	29.7	766.2	2.70
Heath tundra (30--80% bedrock)	15,361	376	2.4	554.0	3.3	557.2	3.63
Heath tundra (30--80% boulder)	22,623	471	2.1	730.4	11.0	741.4	3.28
Lichen veneer	2,059	2	0.1	6.1	0.0	6.1	0.30
Riparian tall shrub	5,225	25	0.5	108.1	13.2	121.3	2.32
Sedge wetland	3,100	16	0.5	27.5	0.5	28.0	0.90
Spruce forest	970	11	1.1	28.1	1.8	29.9	3.09
Tussock/hummock	14,854	307	2.1	454.0	23.7	477.7	3.22
Unclassified	629	6	1.0	8.8	0.1	8.9	1.42
Total	105,756	1631	1.5	2885.9	90.6	2976.4	2.8

Notes:

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

*predicted habitat loss from the 1995 EIS

Analyses are completed in a GIS platform to compare predicted and observed cumulative area of ELC units altered due to mine activities, including revegetated areas. The area and percentage area of each habitat type directly disturbed by Ekati Mine operations over the most recent reporting period are included in the annual monitoring reports.

6.2 Waste Management

Waste is managed to minimize the presence of attractants and toxins in the Ekati landfill. Unlike a municipal landfill (which contains batteries, various chemical waste, and food waste), no reactive products or food waste products are permitted in the landfill at Ekati. Waste is sorted by using specific garbage containers for each type of waste (e.g., oil rags, used absorbent pads, oil and fuel filters, used grease, aerosol cans, incinerator waste, and inert waste). Hazardous materials such as oil filters, paint, and batteries are transported off the mine site for recycling. Food-contaminated waste (such as lunch bags) and most wood products are segregated and incinerated, with the remnant ash deposited into the landfill. Wooden pallets and heavy cardboard containers are segregated for recycling. Inert waste (such as treated wood and metal) are placed directly in the landfill, and recyclable materials are segregated at the landfill. Attractants and hazardous materials are sometimes misdirected to the landfill, where they may be available to wildlife, therefore, Burgundy monitors the waste in the landfill.

As part of the Waste Management Plan, waste is collected at source waste bins on a regular basis for redirection to final disposal. Waste bins destined for the landfill are monitored regularly. This component of the WMMP is designed to address the key environmental risk of habituation of wildlife (Arctic Canadian 2025).

6.2.1 Objectives

The objectives of this component of the WMMP are to:

- Monitor the misdirection of wildlife attractants and hazardous wastes in waste bins and at the landfill 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 problem areas where improvements may be required; and
- Manage potential wildlife attractants, wildlife activity, and habituation to waste bins and the landfill.

6.2.2 Methods

6.2.2.1 Landfill

Waste from various locations across the Ekati Mine site is hauled to the landfill, incinerator, and composter. Landfill surveys involve visual investigations of the landfill and 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) are recorded. The availability of attractants is categorized as none, low (1 piece), medium (2 to 5 pieces), high (6 to 10 pieces), and very high (>10 pieces; Appendix A).

All attractants and other misdirected waste are safely removed and properly discarded or immediately buried by the Waste Management Department if attractants cannot be safely removed. The presence of wildlife and wildlife signs (such as tracks and scats) are noted, photographs are taken where possible, and behaviour of animals (if present) is recorded to document potential habituation, illness and/or injury.

6.2.2.2 Waste Bin

The amount and type of animal attractants (e.g., food, food packaging, oil products, and oil-contaminated wastes) and other misdirected waste (e.g., batteries, bulbs and aerosol cans) within the various waste bin types are counted, recorded, and removed if possible. The availability of attractants is categorized as none, low (1 piece), medium (2 to 5 pieces), high (6 to 10 pieces), and very high (> 10 pieces; Appendix A). Wildlife signs (visual observations, tracks, scat), species, number of individuals, and behavior are also recorded. Misdirected waste (wildlife attractants and/or waste placed incorrectly in the specified waste bin category) and wildlife observations detected during surveys are reported to the Environment Department

and Waste Management Superintendent, and the supervisor of the area is contacted to arrange for removal of all misdirected wastes from waste bins prior to disposal in the landfill.

6.2.3 Frequency

Landfill surveys occur two or more times per week (more if concerns are noted by Environment Department staff). Waste bins around site are surveyed approximately once every two weeks (more frequently if concerns are noted).

6.2.4 Data Analyses

Data analyses are completed to identify trends over time in the number of wildlife attractants observed at the landfill and in misdirected waste. Analyses also attempt to identify any further mitigation that would improve the effectiveness of the Waste Management Plans with respect to wildlife.

6.3 Wildlife Incidents and Mortalities

Natural wildlife activity and ecological processes are left undisturbed unless there is risk to the safety of Ekati Mine staff. Incidents include wildlife-vehicle, wildlife-aircraft, wildlife-infrastructure and wildlife-human interactions where there is a potential risk of harm to human, wildlife, and/or infrastructure. Incidents also include any action where deterrents are deemed necessary. Incidents involving wildlife near mine infrastructure, such as roads, open pits, WRSAs, and the LLCF must be managed to minimize risk to wildlife and staff. All wildlife incidents are recorded and reviewed to adaptively manage these events.

Natural and human-caused wildlife mortalities are monitored at the Ekati Mine to determine whether wildlife VECs or other species of interest (e.g., fox, migratory birds) are being injured and/or dying when interacting with the Ekati Mine site.

Wildlife carcasses can attract predators and scavenging wildlife to the mine site, creating risks for both wildlife (e.g., being drawn to the road by carrion and subsequently being struck by a vehicle) and personnel who may 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.

As part of the WMMP, all wildlife mortalities are recorded and reviewed to determine if mine operations contributed to a mortality event. Documenting and evaluating mortalities enables adaptive management approaches and improvements to mitigation.

6.3.1 Objectives

The objectives of this component of the WMMP are to:

- Document, minimize, and mitigate potential effects of mine activities and infrastructure on wildlife;
- Reduce risks to both wildlife and humans;
- Monitor if wildlife is killed or injured as a result of vehicles or aircraft interactions; and
- Evaluate whether preventative measures are sufficient to minimize risks of wildlife injury and mortality.

6.3.2 Methods

6.3.2.1 Incidents

Wildlife incidents are reported to the Environment Department, and the details are entered into a database. The species, number of individuals, sex, age, location, condition of the animal, management response(s), wildlife behaviour, type of incident (i.e., interaction with field crew, vehicle, aircraft, mine infrastructure, other), type and number of deterrents used, and outcome are recorded (Appendix A). All deterrent actions are documented and reported to GNWT ECC (Table 6.3-1). Deterrent measures used during the pit wall raptor nest monitoring program are reported separately to GNWT ECC (Section 6.8.2) under the General Wildlife Permit reporting requirements.

Detailed inspections of skirting around buildings and fencing (Appendix A) are conducted on a weekly basis. Specifically, surveys are completed by walking or driving around buildings with skirting (i.e., the Ekati Main Camp and Misery Camp), and around fencing structures (i.e., Misery Camp). 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 and repair needs are communicated to Site Services for prioritized execution.

6.3.2.2 Mortalities

Burgundy records detailed information on wildlife mortalities into a database. Wildlife mortalities observed by Burgundy staff are reported immediately to the Environment Department and an inspection by Environment staff determines the probable cause of death. Obvious injuries, the position of the animal, and anything considered unusual is photographed and recorded. Further information including the time, date, location, estimated time of death, and any sightings of other wildlife in the area is also recorded (Appendix A).

Burgundy reports wildlife mortality details to GNWT ECC each time a VEC species, fox, common raven, or raptor is found dead anywhere at the Ekati Mine site (Table 6.3-1). In the unlikely event that a moose or muskox mortality occurs, Burgundy reports the event to GNWT ECC as well. Migratory bird mortalities are reported to ECCC as the agency responsible for migratory birds under the *MBCA* (1994). Unless otherwise directed by GNWT ECC or ECCC, carcasses found close to the mine site are incinerated or moved away from work areas (i.e., onto the tundra) to prevent attraction of predators and other scavengers to the mine site. Natural wildlife activity and ecological processes are left undisturbed unless there is risk of harm to onsite personnel or wildlife. For example, carcasses found in an area where they do not pose a threat to wildlife or human safety are left undisturbed.

TABLE 6.3-1: MANAGEMENT AUTHORITY CONTACTS AND CIRCUMSTANCES FOR CONTACT

Mortality	Cause of Mortality	Reporting Timeline	Management Authority	Contact
Caribou mortality	Predation / natural cause	Within 24 hours	GNWT ECC	- ECC Wildlife Enforcement Officer - If after hours, contact the Wildlife Emergency Hotline, North Slave Region (Yellowknife): 1-867-446-2073
	Mine-related	Immediately		
Grizzly bear, wolf, wolverine, common raven, raptor, moose, muskox, fox mortality	Predation / natural cause	In a timely manner	GNWT ECC	- ECC Wildlife Enforcement Officer - If after hours, contact the Wildlife Emergency Hotline, North Slave Region (Yellowknife): 1-867-446-2073
	Mine-related	Within 24 hours		
Migratory bird mortality (including migratory raptors)	Predation / natural cause	In a timely manner	ECCC-CWS	cwsnorth-scfjord@ec.gc.ca
	Mine-related	Within 24 hours		
Migratory bird mortality-listed species (including migratory raptors)	Predation / natural cause	Within 24 hours	ECCC-CWS	cwsnorth-scfjord@ec.gc.ca
	Mine-related	Immediately		

6.3.3 Frequency

Wildlife incident and mortality monitoring occurs as required and continuously throughout the year. As a follow up to any wildlife incident, the areas are scanned for any possible wildlife attractants. All incidents and mortalities require follow-up to determine if adaptive management is required.

6.3.4 Data Analyses

Data analyses are conducted to identify trends over time in the number of mine-related incidents and mortalities. Analyses also attempt to determine the cause of incidents or mortalities and identify any further mitigation that would improve the effectiveness of wildlife safety and prevent similar events from occurring in the future.

6.4 Caribou

Caribou specific monitoring surveys and frequency are dictated by the mitigation outlined in the CRMP and includes road monitoring surveys, telemetry monitoring, and behavioural monitoring. Incidental observations of caribou are also recorded at the Ekati Mine.

6.4.1 Caribou Road Mitigation Plan (CRMP)

6.4.1.1 Operational Level (Blue)

Operational Level (Blue) monitoring includes reviewing the locations of collared Bathurst caribou (Section 6.4.4), incidental observations (Section 6.4.2), weekly road surveys (Section 6.4.3), behavioural surveys (Section 6.4.5) and camera monitoring (Section 6.4.6), and the results are documented in the annual monitoring report.

Snow berm height is also monitored during winter months and includes monthly transects. One transect, with ten sample points per travel direction, per road is completed. Sections of road with safety berms are excluded.

6.4.1.2 Level 1 (Yellow)

Level 1 (Yellow) monitoring includes all monitoring in the Operational Level however the frequency of road surveys is increased from weekly to daily surveys. The number of days spent at Level 1 and all observations from additional road surveys are documented in the annual monitoring report.

6.4.1.3 Level 2 (Orange)

Level 2 (Orange) monitoring includes all monitoring in Level 1, and additional monitoring listed below. The number of days spent at Level 2, as well as the road, frequency, duration and length of road segments of speed limit reductions is documented, when possible, in the annual monitoring report.

Environment Technicians Dispatched to Monitor Traffic and Provide Caribou Safety

Environment personnel are dispatched to the location of caribou observations along roads to monitor and adaptively manage traffic to protect caribou and are present during speed limit reductions to monitor traffic and enforce compliance. Descriptions and photos of locations where caribou crossed or were deflected by roads are used to provide feedback for adaptive management of mitigations.

6.4.1.4 Level 3 (Red)

Level 3 (Red) monitoring includes all monitoring in Level 2, with the additional allocation of Environment staff so that behavioural monitoring and mitigation can be appropriately managed. The number of days spent at Level 3, and all survey data is documented in the annual monitoring report.

Behavioural Surveys (Scan and Focal Sampling)

Ground-based scan and focal sampling from the road is initiated to document caribou response to stressors (e.g., haul trucks). Behavioural monitoring of caribou allows the Environment Department to understand how caribou behaviour changes with distance to the road and in response to industrial stressors so that mitigation can be adaptively managed (e.g., modification to distance triggers for vehicle speed reductions and road closures). The allocation of additional Environment staff increases the likelihood that monitors can complete behavioural surveys, while mitigation actions are still being actively managed. Environment staff remain with observed caribou until the caribou are no longer visible from the road even if the behaviour monitoring has been completed.

6.4.2 Incidental Caribou Observations

Incidental caribou observations around the mine site are monitored and recorded to minimize potential risks associated with human and wildlife interactions, and to identify mine structures that might be acting as potential barriers to caribou movement. Furthermore, recording incidental caribou observations aids in determining the composition (e.g., age and sex) of caribou herds moving through the study area in conjunction with data collected from other caribou monitoring programs.

6.4.2.1 Objectives

The objectives of this component of the WMMP are to:

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

6.4.2.2 Methods

Incidental caribou observations at the Ekati Mine are reported to the Environment Department by helicopter operators, ground-based field workers, other mine site personnel, and people from visiting groups (Appendix A). For each caribou observation, the date, number of individuals, and location (UTM coordinates when possible) are recorded. Other information such as composition, dominant behaviour, distance to mine infrastructure, and presence of a satellite-collar are recorded when possible. Details from incidental observations are entered into a database by the Environment Department. Environment staff respond to caribou sightings of concern if required.

6.4.2.3 Frequency

Incidental caribou observations occur when caribou are observed by mine personnel at any time or by Environment staff outside of a formal survey. This monitoring occurs continuously throughout the year. An incidental sightings database will be maintained at site throughout the life of the Ekati Mine. Environment staff review the database weekly and respond to wildlife sightings or highlight trends of concern when they occur.

6.4.2.4 Data Analyses

As incidental observations are biased by observer effort and location (i.e., no standardized sampling design) no formal data analysis occurs, however caribou observations are summarized by broad seasonal periods, particularly dates surrounding the calving and post-calving period (Sutherland and Gunn 1996; Russell et al. 2002; Gunn et al. 2013). Results help to inform where and when additional monitoring and / or mitigation may be required.

6.4.3 Caribou Road Monitoring Surveys

Road surveys are completed by vehicle along the Lac du Sauvage (formerly Jay), Misery, and Sable roads to determine the location and number of caribou interacting with roads at the Ekati Mine and determine appropriate mitigation levels.

Environment personnel surveying the roads implement additional mitigation, such as deploying signs to notify drivers to the presence of caribou or implementing road closures, as needed (Section 5.4.1).

During the Jay Project EA, stakeholders raised concerns regarding how to detect caribou approaching roads at night and in poor visibility. In response, the use of a thermal imaging camera to detect caribou was trialed by the Environment Department. Data from the trial indicated that the natural insulation of Arctic species keeps them from displaying heat signatures that can be detected during winter months. This testing was further complicated as weather severe enough to limit visibility of caribou resulted in the mine roads being closed to anything except emergency travel. Due to the challenges of using thermal imagery at the Ekati Mine site and for Arctic species, thermal imaging is not completed independently or as a part of formal roads surveys.

6.4.3.1 Objectives

The objective of this component of the WMMP is to:

- Determine the location, numbers, and proximity of caribou relative to Ekati Mine site roads.

6.4.3.2 Methods

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

6.4.3.3 Frequency

Road monitoring surveys occur once per week during the Operational Level and become more frequent as higher action levels occur (Section 5.4.1) as per the CRMP mitigation. The number of surveys completed during the monitoring year is dependent on the presence of caribou in proximity to the mine site causing alert levels and monitoring frequency to change.

6.4.3.4 Data Analyses

The results are assessed on the days that surveys are conducted so that appropriate mitigation can be implemented immediately. This includes the appropriate location and type of traffic mitigation to be used to reduce the risk of vehicle collisions and barrier effects associated with road traffic. The results are summarized in the annual monitoring report.

6.4.4 Caribou Telemetry Monitoring

Caribou herds exhibit periodic changes in seasonal migration routes and in calving and winter ranges (Gunn et al. 1997; Gunn and D'hont 2002; BCMPC 2004; Boulanger et al. 2004). 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 are monitored annually for movement patterns across years, as well to determine the proximity of caribou relative to the Ekati Mine in real time. Maps generated weekly by the GNWT ECC show the location of satellite-collared individuals in proximity to Ekati and are used to inform the monitoring and mitigation levels required on site at any given time (Table 5.4-1).

6.4.4.1 Objectives

The objectives for this component of the WMMP are to:

- Provide advance warning of caribou approaching mine roads and mine infrastructure to inform monitoring and mitigation;
- Identify potential effects, investigate drivers, and evaluate effectiveness of mitigation;
- 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.

6.4.4.2 Methods

Maps generated by the GNWT ECC that show the location of satellite-collared individuals are used as tools to inform the local monitoring and mitigation levels in the CRMP (Table 5.4-1) by determining proximity to the Ekati Mine.

Seasonal movements of the Bathurst herd are tracked using satellite collars on caribou from data generated and managed by the GNWT ECC. Throughout the year, satellite collars provide point location data on caribou at fixed time intervals. With these data, linear pathways between consecutive points are created to plot spring migration routes from winter ranges north to the calving grounds. The data are also used to identify movement corridors and river crossings. Motion-triggered cameras, road surveys and incidental observations of caribou are used to identify additional time periods when caribou may be present in the study area.

6.4.4.3 Frequency

Maps are generated using collared caribou location data by the GNWT ECC and provided to Burgundy. The Environment Department uses the maps to adjust monitoring and mitigation as needed from the data provided. Fine scale collared caribou maps are received every Monday, Wednesday and Friday and regional maps are received weekly.

Seasonal distributions of the collared caribou are determined annually for the monitoring report.

Comprehensive telemetry studies are completed as needed and independent from the WMMP given the importance and complexity of evaluating potential impacts of the Ekati Mine on caribou.

6.4.4.4 Data Analyses

Caribou satellite collar data maps are compared against the results of the other monitoring activities that evaluate caribou presence (e.g., road surveys, camera trapping, incidental observations) at the Ekati Mine and determine short-term movement patterns and locations and inform daily mitigations and monitoring.

Formal data analyses for telemetry monitoring occur by determining the Utilization Distributions (UDs) from the full set of collar data for the reporting year. The fixed kernel UD are analyzed by season/life history stage to determine seasonal distributions. The time period for the spring and fall periods are defined by movement rates during migration relative to more resident periods when caribou occupy their winter, summer, calving, and post-calving range (Johnson et al. 2005). The general seasonal period dates for Bathurst caribou are provided in Table 4.1-2.

For periods other than spring migration, satellite daily collar location data are 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 during 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. All seasonal periods are contained within the calendar year, except the winter period (Table 4.1-2). The fixed kernel UD for the winter period combines data from December 1st to April 19th.

Fixed kernel 50% and 95% UD are also calculated for winters for the Beverly/Ahiak herd from collar data. For the purposes of the analyses, the same dates are used to define the winter season for the Beverly/Ahiak herd as for the Bathurst herd (December 1st to April 19th). Burgundy utilizes this point location data on caribou at fixed time intervals to generate seasonal movements relative to sensitive time periods, including the calving and post-calving season.

Burgundy also completed a stand-alone comprehensive telemetry study in 2024 using the satellite collared location data. To determine the potential effects of proximity to the Ekati Mine on habitat selection and movement by caribou Rettie et al. (2024) used a step-selection approach to model movement steps in relation to ecological covariates including land cover classes, insect harassment indices, and proximity to mine infrastructure. Step-selection functions (SSFs) were used to examine caribou movements by season, year, and sex. Step-selection function analysis involves plotting individual movement paths from pairs of telemetry locations (steps) separated by a specific time interval (e.g., 1 hour, 8 hours) and characterizing the step by the environmental covariate along or at endpoints of the movement path. For each observed step, a number of random steps are also created originating at the same, real location point. Each random step was then characterized by the same set of environmental covariates as the real step. The SSF analyses was conducted over multiple scales to example the influence of environmental factors, including mine infrastructure, at a range of scales.

The results of the telemetry analysis contributed to informing the updates in this WMMP and updates to the mitigations identified in the CRMP (Section 5.4.1; Section 6.4.1).

6.4.5 Caribou Behavioural Monitoring: Activity Budgets and Response to Stressors

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 group compositions (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, such as feeding and resting (Nellemann and Cameron 1996). At the Ekati Mine, stressors that have the potential to influence caribou behaviour include vehicle traffic, aircraft activity, the presence of mine staff, and blasting.

Ground-based behavioural monitoring of caribou allows the Environment Department to understand how caribou behaviour changes with distance to roads and in response to industrial stressors so that mitigation can be adaptively managed (e.g., modification to distance triggers for vehicle speed reductions and road closures).

6.4.5.1 Objectives

The objective of this component of the WMMP is to:

- Determine if caribou behaviour changes with distance from roads or in response to various potential stressors.

6.4.5.2 Methods

Two approaches, focal sampling and scan surveys (Altmann 1974), are used to record the behaviours of caribou in the Ekati Mine study area (Appendix A). 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 a period of time (Altmann 1974), which can be thought of as an activity budget at the group level (or an average of individual activity budgets for all members of the social group being surveyed).

For both focal and scan sampling, when first arriving on site, the observers wait five minutes before commencing the survey. During that time, distance from mine infrastructure, information on group location and insect harassment is recorded, and a composition count conducted. In the event that caribou remain on site for sufficient periods of time, or additional personnel are not available, priority is given to focal sampling over scan sampling.

For focal surveys, an individual caribou is randomly selected from a group, and in the case where focal observations are conducted on multiple individuals, the sex of the individual selected for observation alternates. The location of each group from which an individual is randomly sampled is recorded, and group composition is tallied (bulls, cows, juveniles, unknowns). There is no distinction made between nursery and non-nursery groups for analysis. Observations are conducted on either cows with calves, lone cows, bulls, or juveniles. An attempt is made to monitor the behaviour of individuals for a minimum of 20 minutes; however, survey length is reduced in cases where caribou move out of the observer's sight line. Depending on the size

of the group, observations on several individuals may occur, time permitting. Surveys are recorded as completed if the survey took place for the full 20 minutes or if it was under 20 minutes and stressors are recorded.

For scan surveys, a caribou group is selected for monitoring. For groups of 10 to 30 animals, all animals are included in the scan. For larger groups, a sub-sample of 20 to 30 animals is observed. Priority is placed on surveying nursery groups (groups with calves). The group composition (bulls, cows, juveniles, unknowns) and group size is recorded for the total group present or the sub-sample group surveyed. An attempt is made to monitor groups for a minimum of 32 minutes at 4-minute intervals; however, survey length is reduced in cases where caribou move out of the observer's sight line. Surveys are recorded as completed if the survey took place for the full 32 minutes or if it was under this time and stressors occurred. Incomplete focal and scan surveys are excluded in analyses.

Focal and scan survey observations are conducted whenever caribou pass through the mine site, and Environment staff can respond. For each survey type, the following behaviours are 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 occurs during a focal or scan observation, the observers record the immediate response in terms of a change in behaviour from one state to another. Estimated distance from the stressor is also recorded. Categories of potential stressors recorded during surveys include aircraft (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, 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.

6.4.5.3 Frequency

This monitoring is completed throughout the year any time that Alert Level 3 (Red) from the CRMP has been triggered. The ability to complete the surveys is dependent on the presence of caribou at site and within observational range.

6.4.5.4 Data Analyses

Data from focal surveys is presented as the average percentage of time spent in each type of observed behaviour. Group composition is reported from scan surveys, and the percentage of time caribou are observed in the different behaviours. The total number of observed stressor events is reported from each survey type. The distance to the assumed stressor is reported for both focal and scan surveys.

6.4.6 Camera Monitoring

Communities and regulators are particularly concerned about potential mine related effects to caribou in light of the population declines observed in recent decades. Burgundy is committed to the ongoing evaluation of its wildlife programs and implements the best techniques to monitor and mitigate impacts to wildlife and provide the most accurate information regarding wildlife-mine interactions. Of importance at the Ekati Mine is the degree to which roadways and other infrastructure (i.e., powerlines, dewatering pipelines) may act as semi-permeable barriers to wildlife movement, particularly caribou. In order to monitor the effects these types of infrastructure have on wildlife, Ekati maintains a robust camera program across site year-round.

Camera trapping, the use of remotely triggered cameras that automatically take images when triggered by motion (Rovero and Marshall 2009), is routinely used as an effective tool for monitoring wildlife and has a long history in wildlife research (Cutler and Swann 1999). Over the past two decades wildlife cameras have become more readily available and affordable resulting in rapid and diverse growth of application (Rowcliffe and Carbone 2008). Remote camera monitoring has replaced traditional methods of visual surveys, drive counts, radiotelemetry, and track counts (Silveira et al. 2003) and can be completed year-round (with some maintenance of the cameras through the winter). In addition, cameras remove observer and sample timing bias by providing data coverage 24 hours per day. Combined with 1-year battery life and memory storage for approximately

30,000 photos, data collection opportunities increase over traditional techniques with minimal human involvement or invasiveness to wildlife. Due to the many benefits, wildlife cameras are now used to monitor wildlife activity around roads and other human infrastructure (Olsson et al 2008; Braden et al. 2008; Dunne and Quinne 2009; Noel et al. 2006).

The Ekati Mine has implemented the use of motion-triggered cameras to primarily monitor caribou activity near the mine site. The camera monitoring program was initiated in 2011 as an alternative survey methodology to monitor for potential effects on caribou movements and behaviour, which informs the ongoing evaluation and implementation of effective mitigation measures. The program has continued annually, and with improvements in data processing and data standardization, thorough analysis has continued throughout the duration of the program. TK continues to be an important component in establishing the annual objectives of this program and for highlighting important locations where cameras should be deployed.

While the scope of the Camera Monitoring Program is confined to investigate the behaviour of caribou that occur immediately at camera monitored Ekati roads, other data sources are suitable to investigate caribou movements at greater distance to the mine site (e.g., radio-collared data). Together, results from the camera program as well as telemetry monitoring, behavioural monitoring and road monitoring serve to provide a better overall picture of caribou movement across site.

6.4.6.1 Wildlife Monitoring

Objectives

The objectives for this component of the WMMP are to:

- Determine the level of caribou activity along active haul roads and along potential migration routes;
- Determine caribou response to roads (i.e., crossing or deflecting); and
- Determine caribou activity at other mine infrastructure.

Methods

Cameras are deployed annually to monitor wildlife interaction with roads, as well as other strategic locations that were identified as important areas (i.e., eskers) by TK holders during engagement. The number of cameras deployed has varied yearly since the camera program was first implemented, with 49 to 90 cameras being deployed in past years, due to changes in mine operations. Based on current mine operations and infrastructure, 94 cameras are deployed across site, including the Point Lake development area, as it was highlighted as an important area for caribou movement during engagement. Burgundy aims to keep the number of cameras deployed constant across years, however, as mine operations and infrastructure changes, the number may vary as needed.

Cameras are deployed primarily along the Misery, Sable and Lac du Savage roads to capture approaches and road crossings by caribou with additional cameras in the Point Lake area deployed to capture use of the corridor between Thinner Lake and the Point Lake WRSA by caribou.

The cameras are programmed to take pictures at a specific timed interval (timed photos) and to take pictures when triggered by motion (motion triggered photos). A series of 10 motion-triggered photos with a one-second delay between each photo are automatically recorded whenever the camera's infrared signal-monitoring system detects movement in the camera's field of view. There is no time delay set to occur between motion-triggered series events. The cameras are programmed to take one timed photo at noon each day for the purposes of determining camera effort. The date and time of each digital image is recorded.

Each camera is checked at least once during the survey period to determine battery levels, the available memory remaining on the SD card, if the camera is still operating as programmed, and to ensure it has not been disturbed by wildlife or weather. Memory cards and batteries are exchanged when necessary to prevent data loss. Data from memory cards are retrieved for processing and analysis.

Frequency

This monitoring is completed annually on an ongoing basis.

Data Analyses

Camera data are analyzed and reported on every three years. Camera monitoring results will be reported in the Comprehensive 3-Year WEMP Report, with the next report set for issuance in 2027.

Data analyses are completed to identify patterns in caribou behaviour in response to roads, traffic, and other infrastructure, if possible. Camera-specific crossing success will be determined and physical attributes of camera locations that indicate less than 90% crossing success will be reviewed for improvement and discussed during engagement with TK holders. Cameras that fail to function properly or that fail to capture any caribou during operation are excluded from analyses. When other wildlife is detected, it will also be included in the report.

Prior to analyses, camera data are screened with the following criteria:

- Only photographs that captured caribou are included;
- All photographs containing caribou are included in analyses of calm versus stressed behaviour; and
- For analyses of caribou responses to roads (deflection versus on-road [including road crossing]) only photographs from cameras along roads are included while data from cameras placed away from roads are excluded.

For the analysis, all photos are processed for detections of lone caribou or caribou groups. Given the limitations to quantifying animal behaviour from timed photographs, behavioural analyses are restricted to motion-triggered photos, unless a timed photo falls within the series of motion triggered photos. This helps to remove any potential bias in caribou detections. Due to a wildlife camera's limited field of view, it is possible that portions of some groups are never photographed, thus remote camera monitoring likely yields conservative estimates of group size.

Animal behavior is quantified from the motion-triggered photos, including the number of caribou and dominant behaviours exhibited by group members. When possible, individuals are classified by age (adult or juvenile) and sex (male, female, unknown). The dominant behaviour of each caribou group is determined; with priority given to categorizing road usage and road avoidance. Additionally, alert behaviour is noted (e.g., body oriented towards a potential stressor, ears erect and pointed in a particular direction, or remaining motionless in an alarm posture throughout several consecutive motion-triggered photos). Potential stressors, such as vehicles travelling along the road, are also recorded whenever evident in the photos. As a conservative estimate of behaviour frequency, calm behaviours (i.e., foraging, bedded or standing) had the lowest priority in terms of scoring the dominant group behaviour. The key attributes related to camera data analyses are provided in Table 6.4-1.

For each recorded crossing/deflection at mine site roads by caribou from wildlife cameras, traffic volume in the previous 60 minutes will be summarized, when possible. Data will be analyzed for patterns of crossing success correlated with traffic volumes (Section 6.4.7) and road closure timing.

TABLE 6.4-1: CARIBOU PHOTOGRAPH CODING RELEVANT TO ANALYSES

Attribute	Codes	Description
Group size	1, 2, 3+	Group sizes of single animals, pairs of animals, or groups of three or larger.
Calm or stressed behaviour ¹	Calm	- Behavioural observations assessed for all groups photographed. - Calm behaviours include: bedded away from or near road; foraging away from or near road; foraging while walking; investigating camera; and resting/bedded.
	Stressed	Stressed behaviours include: evidence of being startled (tail flick, head going up, quick run or change of direction); deflected/deterred from path of motion (did not fully cross road); running (away from road); running along road; and running off road.
Behaviour regarding road usage	Deflected	Behavioural observation made for all photographs from cameras adjacent to roads, noting if the group had entered the road corridor. These include neutral behaviours and both stressed and calm behaviours noted above.
	On road	- Deflected behaviour indicated animal deflected/deterred from path of motion (did not fully cross road). - On-road behaviours include: crossing road walking or running (fully crossed road), walking or running along road, and running off road.

Notes:

¹ Standing and walking are considered as neutral behaviours and are excluded from both calm and stressed categories.

² Each photograph receives a code for group size; one or more codes for calm or stressed behaviours; and one or more codes for on-road or deflected behaviours. A single photograph might be coded as including both calm and stressed animals; it is also coded for on-road and deflected behaviours and might include animals in each of those categories.

6.4.6.2 Traffic Monitoring

Concern has been raised with regards to roads being semi-permeable barriers and the effect traffic volumes are having on caribou crossing roads. Traffic monitoring was committed to as part of the Point Lake WEMP Addendums (Arctic Canadian 2021a). A full traffic monitoring dataset began in 2023 and has continued annually since.

Objectives

The objectives of this component of the WMMP are to:

- Determine hourly traffic volumes;
- Analyze traffic volumes associated with caribou crossings identified from wildlife cameras and caribou collar data; and
- Attempt to determine impact of traffic levels on road response behaviour of caribou.

Methods

Cameras are deployed annually to monitor traffic on the Misery, Sable and Lac du Sauvage Roads (both east and west of the Point Lake Access Road). Based on current mine operations and infrastructure, four traffic monitoring cameras are deployed. Burgundy aims to keep the number of cameras deployed constant across years, however, as mine operations and infrastructure changes, the number may vary as needed.

The cameras are programmed to take pictures when the motion infrared sensor is triggered. One motion-triggered photo is taken whenever the camera's infrared signal-monitoring system detects movement in the camera's field of view. There is no time delay set to occur between motion-triggered events. The date and time of each digital image is recorded.

Each camera is checked once a month to determine battery levels, the available memory remaining on the SD card, if the camera is still operating as programmed, and to ensure it has not been disturbed by wildlife or weather. Memory cards and batteries are exchanged as needed to prevent data loss. Data from memory cards are retrieved for processing and analysis.

Frequency

This monitoring is completed annually on an ongoing basis.

Data Analyses

The number and type of traffic captured is determined for each month of traffic monitoring data. Data is summarized for each hour in each day for each camera. For each recorded caribou crossing event from wildlife cameras and caribou collar data, traffic volume in the previous 60 minutes is determined and summarized, if possible. Analyses will be conducted using the best available science, though a suggested framework is inclusion of hourly traffic volume prior to any crossing or deflection event as a predictor in a logistic regression model, with crossing success as the response variable.

6.5 Grizzly Bear

From 2012 to 2017, the Ekati and Diavik mines collaborated on a Regional Grizzly Bear DNA study as part of their wildlife monitoring programs (ERM 2018). 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 km²; McLoughlin and Messier 2001), although direct comparison of the two studies is somewhat limited as the method used to achieve each population estimate varied. McLoughlin and Messier (2001) predicted, however, that the grizzly bear population in the area will remain stable if the annual removal rate does not increase from 13.4 bears/year. Only four grizzly bear mortalities have occurred at Ekati from 1997 to 2024, indicating that the mine has had negligible impacts to the annual removal rate of grizzly bears per year that would affect the regional population. As such, grizzly bear monitoring now is specific to incidental observations and documenting incidents.

6.5.1 Incidental Observations

Recording incidental grizzly bear observations in the study area provides information on grizzly bear activity, which can help locate and eliminate bear attractants and minimize human/bear interactions. Once a bear is observed within the mine site, personnel are notified and work activities are adjusted if necessary to avoid encounters. Incidental observations can also be used to monitor changes in bear activity near the mine over time, assess differences in activity by population demographic (e.g., age, sex groups) and identify problem locations on site.

6.5.1.1 Objectives

The objectives of this component of the WMMP 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.

6.5.1.2 Methods

Incidental observations of grizzly bears in the vicinity of the Ekati Mine are reported by staff to the Environment Department on an ongoing basis (Appendix A). This includes all grizzly bear observations by helicopter operators, field workers, and by other staff on all working shifts. For each bear observation, the date, number of individuals, sex and age (when possible), condition, behaviour, presence of a collar, and UTM coordinates (when possible) or a description of the location are recorded.

All observations of persistent grizzly bears reported near roads, personnel, and mine structures at the Ekati Diamond Mine are investigated, as these are of particular concern with regards to human and wildlife safety. Where necessary, grizzly bears are deterred from these areas using vehicles (truck, helicopter), air horns, screamers, bear bangers, and/or bean bags in order of increasing intensity (Section 5.3.1).

6.5.1.3 Frequency

Incidental observations occur when grizzly bears are sighted by mine personnel at any time. This monitoring occurs continuously throughout the year, however grizzly bear observations are unlikely during the winter denning season (October to May). An incidental sightings database will be maintained at site throughout the life of the Ekati Mine. Environment staff review the database weekly and respond to wildlife sightings or highlight trends of concern when they occur.

6.5.1.4 Data Analyses

As incidental data are biased by observer effort and location (i.e., no standardized sampling design) no formal analysis of these data are conducted. Instead results inform where and when additional monitoring or mitigation may be required.

6.6 Wolf

Over the years, regional wolf monitoring, including den occupancy and productivity surveys, was coordinated by the GNWT ECC and operators of the Ekati Mine collaborated to support these initiatives. As previous studies did not indicate impacts to wolves were occurring at a regional scale, den monitoring is no longer an active component of the WMMP. Wolf monitoring at the Ekati Mine occurs through incidental observations and incident reporting.

6.6.1 Incidental Observations

Potential risks associated with human-wildlife interactions may be avoided by monitoring incidental wolf observations in the study area. Once a wolf is observed within the mine site, Burgundy personnel 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.

6.6.1.1 Objectives

The objectives of this component of the WMMP are to:

- Avoid and minimize wolf-human interactions;
- Identify the presence and 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.

6.6.1.2 Methods

Incidental wolf observations in and near the Ekati Mine are reported to the Environment Department (Appendix A). This includes all wolf observations made by helicopter operators, field workers, and other staff on all working shifts. For each wolf observation, the date, location, number of individuals sighted, sex and age of individuals (when possible), dominant behaviour, condition of the animal, and the presence or absence of a radio or satellite collar are recorded. Where necessary, wolves are deterred from areas using vehicles (truck, helicopter), air horns, screamers, bear bangers, and/or bean bags in order of increasing intensity (Section 5.3.1).

6.6.1.3 Frequency

Incidental observations occur when wolves are sighted by mine personnel at any time. This monitoring occurs continuously throughout the year. An incidental sightings database will be maintained at site throughout the life of the Ekati Mine. Environment staff review the database weekly and respond to wildlife sightings or highlight trends of concern when they occur.

6.6.1.4 Data Analyses

As incidental data are biased by observer effort and location (i.e., no standardized sampling design) no formal analysis of these data are conducted. Instead results inform where and when additional monitoring or mitigation may be required.

6.7 Wolverine

In 2015, Ekati participated in a wolverine DNA program conducted by GNWT ECC. Nineteen individual wolverines were identified from samples collected in the Ekati Mine study area (Efford and Boulanger 2018). From the samples, the 2015 density was calculated as 3.88 wolverines per 1,000 km² (95% confidence interval: 2.60 – 5.79) and the overall population trend in the study area from 2005 to 2015 was $\lambda = 0.982$ (95% confidence interval: 0.931 – 1.035). Efford and Boulanger (2018) assessed the finding as providing no evidence for population decline in the Ekati Mine study area. This study is now complete and, as it did not indicate regional impacts, wolverine monitoring occurs through incidental observations and documenting incidents

6.7.1 Incidental Observations

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, personnel that are at risk of encountering the wolverine are notified and work activities are adjusted accordingly.

6.7.1.1 Objectives

The objectives of this component of the WMMP 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.

6.7.1.2 Methods

Incidental observations of wolverines are reported to the Environment Department (Appendix A). This includes all wolverine observations made by helicopter operators, field workers, and other staff on all shifts. Each wolverine observation includes the date, number of individuals, sex and age (when possible), location (UTMs when possible), behavior, and condition of the animal. Where necessary, wolverines are deterred from areas using vehicles (truck, helicopter), air horns, screamers, bear bangers, and/or bean bags in order of increasing intensity (Section 5.3.1).

6.7.1.3 Frequency

Incidental observations occur when wolverines are sighted by mine personnel at any time. This monitoring occurs continuously throughout the year. An incidental sightings database will be maintained at site throughout the life of the Ekati Mine. Environment staff review the database weekly and respond to wildlife sightings or highlight trends of concern when they occur.

6.7.1.4 Data Analyses

As incidental data are biased by observer effort and location (i.e., no standardized sampling design) no formal analysis of these data are conducted. Instead results inform where and when additional monitoring or mitigation may be required.

6.8 Raptors

Falcon nest occupancy, abandonment, and productivity can vary over time. Regional GNWT ECC falcon surveys were last conducted in 2015 and found that nest occupancy was the lowest recorded since 1995. However, abandonment and productivity in 2015 were within the range recorded in 1998 and from 2000 to 2010. To further investigate the low 2015 occupancy result near the Ekati Mine, the percentage of falcon nests occupied was compared to near Daring Lake, a “control” site 50 km west of the mine. The occupancy at Daring Lake was 41%, only slightly higher than that recorded near the Ekati Mine (35%), indicating the mine was not having significant effects on occupancy rates in the area. Based on these results, regional falcon surveys are no longer an active component of the WMMP as impacts are not occurring at that scale. As such,

monitoring of raptors at the Ekati Mine occurs through incidental observations and pit wall nest monitoring (and deterrence as needed).

6.8.1 Incidental Observations

Incidental raptor observations around the mine site are monitored and recorded to minimize potential risks associated with human-wildlife interactions, to identify mine structures that are used by raptors as nesting locations, and to identify any species of conservation concern in the Ekati Mine site area.

6.8.1.1 Objectives

The objectives of this component of the WMMP 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.

6.8.1.2 Methods

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

6.8.1.3 Frequency

Incidental observations occur whenever raptors are sighted by mine personnel at any time. This monitoring occurs continuously throughout the year for resident species and from spring through fall for migratory species. An incidental sightings database will be maintained at site throughout the life of the Ekati Mine. Environment staff review the database weekly and respond to wildlife sightings or highlight trends of concern when they occur.

6.8.1.4 Data Analyses

As incidental data are biased by observer effort and location (i.e., no standardized sampling design) no formal analysis of these data are conducted. Instead, results inform where and when additional monitoring or mitigation may be required.

6.8.2 Pit Wall Nest Monitoring

In northern environments, bird species such as peregrine falcons, rough-legged hawks, gyrfalcons, and common ravens nest on ledges and cliff faces. In landscapes with human-made structures, cliff-nesting birds have been observed to nest on human-built ledge structures such as 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.

The monitoring of 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) or COSEWIC (Government of Canada 2025), or under the NWT SARA (2009). 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 NWT *Wildlife Act*, Section 51(1)(2013) and the Phase 2 Regulations (2019).

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 open pits ensure that nests are not established in potentially unsafe areas for the raptors and to prevent temporary cessation of mining activities, which would be required for the duration of the nesting period should nests be located close to blasting areas.

6.8.2.1 Objectives

The objectives of this component of the WMMP are to:

- Determine if pit walls or other infrastructure are utilized as nesting sites for raptors;
- Determine nest success in areas of development and document effectiveness of deterrent efforts that may be employed; and
- Document and determine the cause of direct mine-related mortalities of raptors should they occur.

6.8.2.2 Methods

Formal visual surveys for nesting activity occurs by designated trained monitors at all active pits at the Ekati Mine during the sensitive breeding period. Observations of birds, breeding behaviour, nests, and nesting activity (i.e., nest construction, perching, and incubation) are recorded (Appendix A). All bird observations are reported to the Environment Department.

If breeding or nesting behaviour is observed by monitors, appropriate mitigation is used to deter the birds before a nest can be constructed and become active. If an active nest is discovered, the Environment Wildlife Advisor and GNWT ECC will be notified immediately for advice on mitigation. Mitigation will be applied on a case-by-case basis.

6.8.2.3 Frequency

Pit wall nest monitoring occurs daily during the breeding season for raptors (end of March to the end of June) at the Ekati Mine.

6.8.2.4 Data Analyses

Data analyses will be completed to identify trends over time in the number of mine-related incidents. Analyses will also attempt to determine the cause of incidents and identify any further mitigation that would improve the effectiveness of wildlife safety. Nests detected on infrastructure will be analysed for trends in use and productivity.

6.9 Fox

6.9.1 Incidental Observations

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, personnel that are at risk of encountering the fox are notified, and work activities are adjusted accordingly.

6.9.1.1 Objectives

The objectives of this component of the WMMP are to:

- Avoid and minimize fox-human interactions;
- Identify the presence and 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.

6.9.1.2 Methods

Incidental observations of foxes are reported to the Environment Department. Observations include those made by helicopter operators, field workers or any other Burgundy staff (Appendix A). Each fox observation includes the species (if known), number of animals, sex and age (when possible), location (UTM coordinates when possible), dominant behavior, and condition of the animal.

All observations of persistent foxes reported near roads, personnel, and mine structures at the Ekati Mine are investigated, as these are of particular concern with regards to human and wildlife safety. Where necessary, foxes are deterred from areas using vehicles (truck, helicopter), air horns, screamers, bear bangers, and/or bean bags in order of increasing intensity (Section 5.3.1).

6.9.1.3 Frequency

Incidental observations occur when foxes are sighted by mine personnel at any time. This monitoring occurs continuously throughout the year. An incidental sightings database will be maintained at site throughout the life of the Ekati Mine. Environment staff review the database weekly and respond to wildlife sightings or highlight trends of concern when they occur.

6.9.1.4 Data Analyses

As incidental data are biased by observer effort and location (i.e., no standardized sampling design) no formal analysis of these data are conducted. Instead results inform where and when additional monitoring or mitigation may be required.

6.10 Migratory Birds

A study conducted at the Ekati Mine suggested that migratory bird species that prefer open-disturbed habitat may be attracted to mine infrastructure, while other species may avoid developments (Smith et al. 2005). However, since changes in bird behaviour observed in the study were localized and similar to predicted effects, the North American Breeding Bird Survey is no longer an active component of the WMMP. As such, migratory bird monitoring occurs through incidental observations and documenting incidents.

6.10.1 Incidental Observations

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.

6.10.1.1 Objectives

The objectives of this component of the WMMP are to:

- Document the presence of migratory 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.

6.10.1.2 Methods

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

Burgundy reports any confirmed detections of barn and bank swallows to CWS as soon as possible to ensure adequate mitigation and monitoring measures are put in place.

6.10.1.3 Frequency

Incidental observations occur when migratory birds are sighted by Environment staff at any time. This monitoring occurs from spring through fall when there is the potential for migratory birds to be present at the Ekati Mine. An incidental sightings database will be maintained at site throughout the life of the Ekati Mine. Environment staff review the database weekly and respond to wildlife sightings or highlight trends of concern when they occur.

6.10.1.4 Data Analyses

As incidental data are biased by observer effort and location (i.e., no standardized sampling design) no formal analysis of these data are conducted. Instead results inform where and when additional monitoring or mitigation may be required.

6.11 Rare or Uncommon Species

6.11.1 Incidental Observations

6.11.1.1 Objectives

The objectives of this component of the WMMP are to:

- Document presence of rare or uncommon species at the Ekati Mine.

6.11.1.2 Methods

Burgundy will record all incidental observations of rare or uncommon species (e.g., species that have expanded or shifted their range so that they occur more frequently in the study area) that are observed within the Ekati Mine study area (Appendix A). For each observation, the species, number of individuals, date, location (UTM coordinates, where possible), habitat, breeding evidence, and behaviour are recorded.

6.11.1.3 Frequency

Incidental observations occur when rare or uncommon species are sighted by Environment staff at any time. This monitoring occurs continuously throughout the year. An incidental sightings database will be maintained at site throughout the life of the Ekati Mine. Environment staff review the database weekly and respond to wildlife sightings or highlight trends of concern when they occur.

6.11.1.4 Data Analysis

As incidental data are biased by observer effort and location (i.e., no standardized sampling design) no formal analysis of these data are conducted. Instead, results will help inform about potential shifts or expansions of species ranges in the region.

If rare or uncommon species are recorded at Ekati for three consecutive years, Burgundy will engage with communities and relevant government organizations to discuss including specific management and monitoring for these species. The monitoring program may be expanded to include specific rare or uncommon species for the remaining years prior to the next WMMP update depending on the frequency of observations and likelihood and severity of potential effects from the mine.

7 ADAPTIVE MANAGEMENT

Adaptive management is a structured process of decision making to deal with uncertainty. The objective of adaptive management is to reduce uncertainty through monitoring, or “learning by doing” (WLWB 2010). In the case of wildlife monitoring, the “doing” is the environmental monitoring, and the “learning” is continual improvements to environmental management and the monitoring programs. This requires the monitoring program to be adaptive and flexible. The monitoring program must be flexible enough to incorporate comments, suggestions, and information based both on science and TK. The Ekati Mine WMMP has and will continue to incorporate adaptive management.

The process of developing a WMMP is collaborative and requires input from communities, monitoring agencies, government and other regulators. As indicated in Section 1.1, the overall objectives of monitoring include:

- Measure compliance with regulatory requirements;
- Determine the environmental effects of the Ekati Mine;
- Test impact predictions; and
- Measure the performance of operations and effectiveness of impact mitigation.

Results from local (i.e., mine-specific) and regional collaborative monitoring programs are used to provide feedback on Ekati Mine operations to determine if the objectives are being met (Figure 7-1). Modification and/or implementation of additional mitigation may be required as determined through monitoring results and the adaptive management process. Similarly, changes to the objectives and/or study methods for local and regional monitoring programs may be required if it is determined that the measurement indicator for the associated effects pathway has a low sensitivity to detect mine-related changes or that the scale of the response does not match the objective. Problems with sampling methods and/or sample size and duration would also require a review and potential modification of the monitoring program for a particular objective (e.g., previous grizzly bear sign surveys and wolverine snow track surveys).

Alternately, the data and results may be sufficient to demonstrate that mine-related effects on the VEC are negligible, confirming the objective and supporting the decision to stop monitoring that component of the program (Table 1.2-1). Examples include raptors and migratory birds, which after a decade of sampling showed little effects from the Ekati Mine relative to natural factors occurring at larger regional scales. Through discussions and engagement with communities, monitoring agencies, and government, the decision was made to remove these VECs from mine-specific objectives of the monitoring program.

In some cases, even when mine-related effects are determined to be negligible, monitoring may be continued because it can increase the confidence of impact predictions in future EAs and contributes to the assessment and management of cumulative effects by government (Figure 7-1). For example, the WMMP provides regional data on caribou, grizzly bear, wolverine, migratory birds, and raptors that can be used to better understand the potential cumulative effects on these species and will further the overall understanding of the tundra ecosystem. In other cases, public concern may be the key reason to continue monitoring even after years of detecting negligible effects.

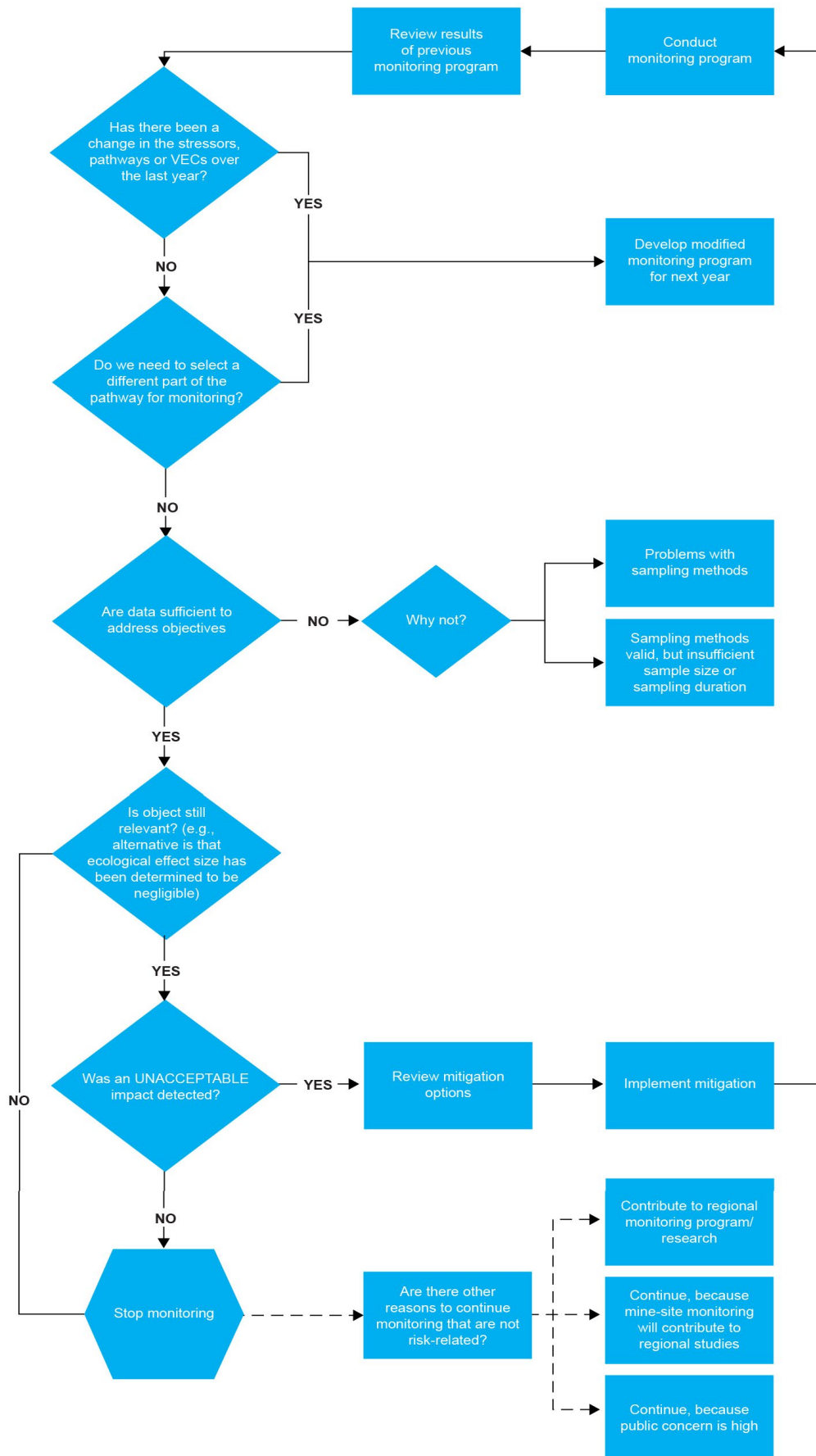


FIGURE 7-1: ADAPTIVE MANAGEMENT DECISION TREE FOR THE EKATI DIAMOND MINE

Burgundy has and will continue to actively seek input from regulatory authorities and communities through engagement activities and other regional programs led by the GNWT. Annual reports and meetings are ways that Burgundy will present the results of the monitoring program, and the basis for communities and monitoring and regulatory agencies to provide feedback and direction. In accordance with the concept of adaptive management, monitoring programs and mitigations in the WMMP have and will continue to be adaptively managed over the life of the mine.

Adaptive management is generally considered to include four themes (Greig et al. 2008; WLWB 2010):

- Learning to reduce management uncertainties;
- Using what is learned to change policy and practice;
- Focusing on improved management; and,
- Basing adaptive management on a structured and systematic approach.

Monitoring programs must be flexible enough to incorporate comments, suggestions, and information based both on science and TK. Following the principles of adaptive management, wildlife monitoring has undergone changes since the initial development of the WMMP in 1998 (BHP 1998) and 2000 (BHP 2000a). These changes have been implemented following the results of monitoring and effectiveness of mitigation, recommendations and suggestions from communities, IEMA, and government agencies.

Adaptive management will be an ongoing process throughout the life of the Ekati Mine and may include the outcome of no change. If changes are required to the WMMP, they will occur as monitoring results are analyzed and assessed over time. If negative effects are detected, the actions available to Burgundy include the following:

- Increasing monitoring effort;
- Implementing special studies to further understand the effects; and/or,
- Implementing additional mitigation to reduce the effects.

8 REPORTING PROTOCOLS

Data analysis and reporting will continue to focus on meeting objectives and providing results that can be used in a timely manner to adjust mitigation as necessary. The use of adaptive management as a scientific backdrop for the WMMP is integral to its effectiveness as a monitoring and mitigation tool. Adaptive management enables mitigation to be properly focused on those areas where the greatest potential for effects exists and where the greatest reduction in risk can be achieved. Adaptive management is an ongoing process based on a consistent and well-founded framework that continually adjusts according to new information. In this way, the success of mitigation can be reliably monitored. Accordingly, any necessary changes to mitigation procedures will be instituted should monitoring results indicate there is a need.

8.1 Data Processing

Throughout the field season, progressive analysis of data is performed wherever possible and/or necessary. At the conclusion of the monitoring season, all data is analyzed in preparation of reporting.

8.1.1 Quality Assurance/ Quality Control Procedures

Quality Assurance (QA) refers to plans or programs encompassing internal and external management and technical practices designed so that data of known quality are collected, and that such collections match the intended use of those data (Environment Canada 2012). Quality Control (QC) is an internal aspect of quality assurance. It includes the techniques used to measure and assess data quality and the remedial actions to be taken when QC assessment criteria are not met. The QA/QC procedures are implemented so that field sampling, laboratory analyses, data entry, data analysis, and report preparation produce technically sound and scientifically defensible results.

All components of the WMMP, study designs, field methods, and data collection techniques will be reviewed on an ongoing basis by Burgundy and their environmental consultant. These QA/QC procedures will provide consistency and integrity of study designs, field protocols, and data collection techniques. Furthermore, continuous evaluation of study methods and results will be used to identify elements for modification or implementation of new techniques. This approach is intended to provide a WMMP that generates feedback for adaptive management, and which concurrently complies with the terms and conditions in the Environmental Agreement for the Ekati Mine.

8.2 Annual Report

The annual monitoring report will be produced and distributed to communities, the Wek'èezhì Renewable Resources Board (WRRB), GNWT ECC, IEMA, and other relevant stakeholders to provide feedback. The annual report will summarize monitoring results for the previous season and make comparisons to past years. It will briefly describe methods and related objectives. A discussion and interpretation of results will be presented. The report will use plain English and make effective use of graphics and photographs.

The annual monitoring report includes, but is not limited to the following information:

- Updates or recommended changes to mitigation, environmental design features, or other strategies required to meet the WMMP objectives;
- Occurrences of mine-wildlife interactions, incidents, accidents, injuries or mortalities involving wildlife;
- Records of disturbances to wildlife habitat that were not predicted; and
- Documentation of all monitoring activities that occurred during the previous calendar year.

8.2.1 Comprehensive Reporting

A comprehensive report will be completed every three years in place of that year's standard annual report. The report will include an in-depth analysis of all data collected during the past three-year period in place of submitting individual detailed

reports (e.g. annual WEMP report and camera monitoring report in the same reporting year). The next issuance of the comprehensive report will be in 2027.

9 ROLES AND RESPONSIBILITIES

To limit mine effects on wildlife it is necessary to define mine staff roles and responsibilities with respect to implementing mitigation and monitoring for wildlife and wildlife habitat (Table 9-1).

TABLE 9-1: EKATI MINE EMPLOYEE CARIBOU ROAD MITIGATION PLAN ROLES AND RESPONSIBILITIES

Job Title	Responsibility
Superintendent Mining	• Ensure training is provided for site personnel • Hold all employees accountable for complying with all Environment commitments and policies • Incorporate mitigation from the CRMP into the site Traffic Management Plan
Head HSECT	• Ensure Environment Department is implementing and following the appropriate plans • Ensure other departments understand requirements and are following mitigation and management strategies
Wildlife Advisor	• Owner of the WMMP • Design monitoring programs, verify that monitoring and mitigations meet regulatory obligations • Review data, and adapt programs as required to fulfill adaptive monitoring and mitigation objectives • Complete annual reporting and engagement • Provide expertise and support to Operations teams • Oversee and contribute to implementation of the WMMP, completing the review and any updates
Senior Environmental Specialist	• Responsible for implementing the WMMP and executing programs (sampling and data collection) • Responsible for overseeing Environmental Technicians and Summer Students at site
Environmental Specialists and Summer Students	• Understand procedures, complete WMMP mitigation and monitoring
All Employees	• Report all wildlife and act in a manner that will protect all wildlife, except where it could affect personal safety • Obey all posted speed limits and rules of the road and give wildlife the right-of-way on all roads • Understand and follow WMMP procedures and act in accordance with Burgundy Environmental Standards and Policies

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APPENDIX A

STANDARD OPERATING PROCEDURES



EKA WI 2115.08 Landfill Survey

Version:	2.0
Replaces:	1.1
Creation Date:	2013-11-25
Scheduled Review Date:	2025-01-25
Review Date:	2025-10-01
Document Team Members:	Environment Advisor – Wildlife Senior Environmental Specialist Environmental Technician
Document Owner:	Environment Advisor - Wildlife
Document Approver:	Senior Environmental Specialist
Related Documents:	N/A
Key Contacts:	Senior Environmental Specialist Environment Advisor - Wildlife
Change Requests:	Environment Advisor - Wildlife
Brief Description:	The Ekati Landfill is designed for the disposal of inert waste. Regular inspections are required to ensure waste management procedures are being followed.



Table of Contents

TASK DESCRIPTION:.....	3
HSE INFORMATION / SAFETY RISKS:	3
ADDITIONAL RESOURCES REQUIRED:	3
WORK PREPARATION:.....	3
WORK EXECUTION STEPS:.....	3
GENERAL REMARKS.....	5
Versioning and revision tracking.....	6
Appendix	7
Approval signatures record.....	7



TASK DESCRIPTION:

The Ekati Landfill is designed for the disposal of inert waste. Landfill surveys are conducted regularly to ensure adherence to waste management procedures and policies. Preventing hazardous materials from entering the landfill ensures that there will be no leaching or environmental contamination after reclamation. Removal of wildlife attractants from the landfill protects animal health, prevents habituation, and limits potential interaction between people and wildlife across site. Proper waste management is the key to controlling wildlife activity around site.

HSE INFORMATION / SAFETY RISKS:

- Hazardous materials
- Sharp objects (nails, glass, steel)
- Wildlife encounters
- Heavy equipment traffic
- Slips/trips/falls
- Weather

ADDITIONAL RESOURCES REQUIRED:

- Light vehicle
- Shovel or other device to manoeuvre /uncover buried items in the landfill.
- Garbage bags
- Camera
- PPE including task specific gloves
- Peterson's Guide to Animal Tracks
- GPS and spare batteries
- Communication device
- Bear banger kit
- Tablet with Landfill Inspection form uploaded prior to leaving the office

WORK PREPARATION:

Item	Task Description
1	• Gather all materials listed above for survey.
2	• Be familiar with types of animal attractants.
3	• Become familiar with tablet use and uploading documents from MP Field onto the tablet.

WORK EXECUTION STEPS:

Item	Task Description
1	• Complete a Personal Safety Card that identifies hazards and eliminates risks.
2	• Drive to the Landfill, if heavy equipment is operating in the area, communicate with operator and either reschedule inspection or park in a safe area and wait for equipment to vacate the landfill.



	• If there is no equipment present and/or it is safe to do so, park the vehicle close to the area to be inspected (it can act as refuge if unexpected wildlife shows up).
3	• Scan for a minimum of 15 minutes looking for wildlife and record all sightings. • If any potentially dangerous wildlife is present, do not leave the vehicle but continue to take photos and record behaviour from within the truck. Make sure to note the area of the landfill the animal explores, as this can indicate location of attractants. • When it is safe to do so inspect all portions of the landfill, concentrating on areas where wildlife was noted or where there are signs of wildlife activity such as tracks, chews, and digs. • Vary the day of the week and time of the day for landfill inspections, as wildlife has schedules, routines, and routes, to have a representative sample of the landfill across all days of the week and times of day.
4	• If no large animals (i.e., grizzly bear) are present, survey the area on foot focusing on the region around the burn bin and location where garbage is exposed. • Locate, identify, count, photograph and record all animals (including birds) and/or animal signs (scat, tracks, chewing, hair, etc).
5	• Be sure to locate and ONLY record if any wildlife attractants are present, including: • Food • Food packaging • Hydrocarbons • Hydrocarbon impacted waste • Other misdirected waste (i.e., batteries and aerosol cans). • If there is no misdirected waste or wildlife attractants, leave the fillable drop down as blank (this is to prevent issues in MP5 regarding failed landfill inspection quantification)
6	• If safe to do so, collect all attractants and misdirected waste and properly dispose of it (marking YES on survey) • Use a shovel to manoeuvre/uncover waste items to prevent encountering sharp objects that are obscured by snow or other waste.
7	• If it is not safe to collect the waste, have the Environment Operations Team Lead or Wildlife Advisor arrange to have Operations remove any hazardous waste or cover any inert attractants like food waste (mark NO on the survey)
8	• Upon returning to the office report misdirected waste to the Wildlife Adviser and Environment Operations Team Lead immediately and provide pictures. Misdirected waste in the landfill gets reported as an FPE item and will be recorded as a near-miss because there is potential for wildlife to be attracted to the area • Upload survey to MP field on tablet.
9	• Save any photos and correspondence on SharePoint. Ensure that all photos and emails are named DD-MMM-YY_Location_Issue. (e.g., 20Oct24_Landfill_Food Waste)



GENERAL REMARKS

When observing the behaviour of any wildlife at the landfill, record any signs of wildlife habituation such as begging, approaching the vehicle, or lack of fear of humans.

Record any indication of injury or disease and take photos of both the animal's condition and of its behaviour.

Frequency: to be conducted **two** or more times **per week** (more if concerns are noted by Environment Department Staff).



VERSIONING AND REVISION TRACKING

REVISION NUMBER	PAGE NUMBER	CHANGE EFFECTED	DATE OF CHANGE	WHO MADE THE CHANGE
2.0	All	Changed formatting and updated document to reflect new ways of documenting data	02-Jan-2023	Melissa MacLellan
2.1	4	Added MP5 issue addressing the filling in of the attractant field if nothing present	02-Jan-2024	Adam Scott
2.2	All	Updated frequency	01-Oct-2025	Alyce Straub



APPENDIX

APPROVAL SIGNATURES RECORD

ROLE	NAME	SIGNATURE	DATE
REVIEWER	Gavin MacDougall		
DOCUMENT OWNER	Alyce Straub		
DOCUMENT APPROVER	Jonah Kelly		



EKA WI 2115.02 Waste Bin Survey

Version:	2.1
Replaces:	2.0
Creation Date:	2013-07-26
Scheduled Review Date:	2026-12-12
Review Date:	2025-09-29
Document Team Members:	Environment Advisor – Wildlife Senior Environmental Specialist Environmental Technician
Document Owner:	Environment Advisor - Wildlife
Document Approver:	Senior Environmental Specialist
Related Documents:	N/A
Key Contacts:	Senior Environmental Specialist Environment Advisor - Wildlife
Change Requests:	Environment Advisor - Wildlife
Brief Description:	This document contains the standard methods to complete a waste bin survey site-wide at the Ekati Mine



Table of contents

TASK DESCRIPTION:.....	3
HSE INFORMATION / SAFETY RISKS:	3
ADDITIONAL RESOURCES REQUIRED:	3
WORK PREPARATION:.....	3
WORK EXECUTION STEPS:.....	4
GENERAL REMARKS.....	4
Versioning and revision tracking.....	5
Appendix	6
Approval signatures record.....	6



TASK DESCRIPTION:

Survey all waste bins around the mine site to ensure compliance to proper waste management procedures. Record and report all misdirected waste, including wildlife attractants and hazardous materials.

HSE INFORMATION / SAFETY RISKS:

- WHMIS
- Wildlife encounters
- Weather
- Heavy equipment traffic
- Slips/trips/falls
- Pinch/pulls/cuts and punctures

ADDITIONAL RESOURCES REQUIRED:

- Light vehicle
- Communication device
- PPE including task specific gloves
- Camera
- Bear banger kit
- Tablet with Waste Bin Inspection form uploaded prior to leaving the office

WORK PREPARATION:

Item	Task Description
1	• Become familiar with waste management procedures, as per the Waste Management Plan and in training provided during site orientation by the training department. • Waste is segregated into different waste categories and bins according to the method of final disposal. Categories include incinerator/food waste, landfill waste (all inert, non-reactive solid wastes), oily rags, aerosols, batteries, metals, beverage containers, plastics, fluorescent bulbs and contaminated snow and soil.
2	• Become familiar with waste bin locations around Site. • Waste bin locations include main camp, main fuel farm, security, powerhouse, process plant, truck shop, Fox fuel farm, DPRT laydown, truck shop, Koala heavy haul, Misery camp and Misery underground.
3	• Be familiar with driving around site and any changes to the Traffic Management Plan (temporary or permanent). • There are bins located in areas that could be deemed unsafe when heavy equipment is operating in the area (e.g., near the truck shop's bay doors).
4	• Be familiar with types of animal attractants. • Animal attractants include food, food packaging, oil products and oil-impacted waste, fuel cans, rubber gas lines, cigarettes packages and leather, among others.



5	• Become familiar with tablet use and uploading documents from MP Field onto the tablet.
WORK EXECUTION STEPS:	
Item	Task Description
1	• Complete a Personal Safety Card that identifies hazards and eliminates risks.
2	• Visit all waste bins across site and record bin location on tablet (e.g., underground), bin type (e.g. landfill), the amount and type of misdirected waste (e.g. animal attractants), any wildlife observations, and any general comments. • Ensure to record the date of the survey on the tablet and take photos of waste bins with misdirected waste.
3	• At the end of your survey notify the Environment Operations Team Lead, Wildlife Advisor and Facilities Team Lead by email of any bins that are out of compliance including the details of the issue, pictures and any corrective actions taken. • Upload survey to MP Field on tablet.
4	• Save any photos and correspondence on SharePoint. Ensure that all photos and emails are named DD-MMM-YY_Location_Issue. (e.g., 20Oct24_Main Camp Landfill Bin_Oil Impacted Waste)
GENERAL REMARKS	
When waste is improperly disposed of, it creates unsafe conditions for personnel handling the waste, unsafe conditions for wildlife on site, and the potential to pollute the environment.	
Waste materials that create an odour can function as attractants to wildlife. Wildlife can incur harm by ingesting waste products at the landfill or directly out of waste bins. Wildlife can become habituated to the camp, which poses a threat to workers as well as the animal because habituated wildlife is often relocated or dispatched due to the threat they pose.	
Frequency: to be conducted once every two weeks (more frequently if concerns are noted by Environment Department Staff).	



VERSIONING AND REVISION TRACKING

REVISION NUMBER	PAGE NUMBER	CHANGE EFFECTED	DATE OF CHANGE	WHO MADE THE CHANGE
2.0	ALL	Updated Template	31-Jan-23	Melissa MacLellan
2.1	3-4	Updated survey details	02-Oct-25	Alyce Straub



APPENDIX

APPROVAL SIGNATURES RECORD

ROLE	NAME	SIGNATURE	DATE
REVIEWER	Gavin MacDougall		
DOCUMENT OWNER	Alyce Straub		
DOCUMENT APPROVER	Jonah Kelly		



EKA WI 2115.06 Skirting and Fencing Inspections

Version:	2.0
Replaces:	1.1
Creation Date:	2013-11-23
Scheduled Review Date:	2026-12-12
Review Date:	2025-09-29
Document Team Members:	Environment Advisor – Wildlife Senior Environmental Specialist Environmental Technician
Document Owner:	Environment Advisor - Wildlife
Document Approver:	Senior Environmental Specialist
Related Documents:	N/A
Key Contacts:	Senior Environmental Specialist Environment Advisor – Wildlife
Change Requests:	Environment Advisor – Wildlife
Brief Description:	Visual inspection of skirting and fencing site-wide at the Ekati Mine to ensure access points are closed and there is no damage which could allow wildlife access to spaces under infrastructure or unwanted areas.



Table of Contents

TASK DESCRIPTION:.....3

HSE INFORMATION / SAFETY RISKS:3

ADDITIONAL RESOURCES REQUIRED:3

WORK PREPARATION:.....3

WORK EXECUTION STEPS:.....3

GENERAL REMARKS.....4

 Versioning and revision tracking.....5

Appendix6

 Approval signatures record.....6



TASK DESCRIPTION:

Visual inspection of skirting and fencing (Ekati Main Site & Misery) to ensure that all access points are closed and there is no damage which could allow wildlife access to the spaces under infrastructure or unwanted areas. Subsequent surveys serve as a check to ensure that repairs are completed in a timely manner.

HSE INFORMATION / SAFETY RISKS:

- Wildlife encounters
- Slips/trips/falls
- Weather
- Heavy equipment traffic

ADDITIONAL RESOURCES REQUIRED:

- Light vehicle
- Communication device
- PPE including task specific gloves
- GPS and spare batteries
- Camera
- Bear banger kit
- Peterson's Field Guide to Animal Tracks
- Flagging tape
- Tablet with Skirting and Fencing Inspection forms uploaded prior to leaving the office.

WORK PREPARATION:

Item	Task Description
1	• Become familiar with wildlife identification and wildlife sign recognition including digs, hair, scat, prey remains and tracks.
2	• Be familiar with driving around site and any changes to the Traffic Management Plan (temporary or permanent).
3	• Become familiar with the layout of the accommodations at both Ekati and Misery camps.
4	• Become familiar with tablet use and uploading documents from MP Field onto the tablet.

WORK EXECUTION STEPS:

Item	Task Description
1	• Complete a Personal Safety Card that identifies hazards and eliminates risks.
2	• Walk or drive around all areas of the EKATI and Misery accommodations areas. Consideration should be given to the fact that many people work nightshift. Driving, especially reversing, should be limited around any dorm wings.
3	• Scan the skirting/fencing and surrounding area for wildlife and/or wildlife signs and record all observations on the inspection form.



	Record the GPS coordinates of all wildlife/wildlife sign locations. For all wildlife in or around the skirting take pictures. This could help identify problem wildlife, attractants, and possible corrective actions.
4	- Scan the skirting for holes large enough for wildlife to enter, holes with potential to become enlarged, or any damage. - Record the GPS coordinates of the holes in the inspection form and take a photo of the hole using an object for scale. Mark holes with flagging tape so that maintenance can easily locate them.
5	- As wildlife may become trapped under buildings, check for signs of wildlife under buildings before covering holes - If there are no signs that wildlife has gone under the building, temporarily block the hole until maintenance can create a permanent fix.
6	- If holes are observed, send the Wildlife Advisor and Environment Operations Team Lead an e-mail with photos and exact locations of the hole(s). - Ensure that any reported holes or damage in the skirting or fencing are repaired as soon as possible. Follow up with the Wildlife Advisor or Environment Operations Team Lead if holes have not been repaired.

GENERAL REMARKS

Wildlife often seek access under buildings for shelter, warmth, protection from predators, and/or in search of food sources (e.g., sewage lines, sheltering prey, etc.). Wildlife that has gained access to areas underneath buildings may become trapped, injured, and/or aggressive. There is a high potential to encounter wildlife around and under buildings where skirting has been compromised. Practice extreme caution to prevent dangerous wildlife interactions.

Try to limit presence and noise around accommodations wings where night shift crews may be sleeping

When snow builds up during the winter months it may cause strain on the skirting so be aware of this when the snow thaws for summer months

Ensure snow piles do not create easy access to the rooftops of buildings

As Misery camp is far away it is always helpful to go into the Misery office and talk to individuals such as the Safety personnel to get an idea of wildlife activity and concentrate on problems areas

Frequency: to be conducted on a **weekly basis**.



VERSIONING AND REVISION TRACKING

REVISION NUMBER	PAGE NUMBER	CHANGE EFFECTED	DATE OF CHANGE	WHO MADE THE CHANGE
2.0	All	Updated to include fencing inspections as well	29-Sep-2025	Alyce Straub



APPENDIX

APPROVAL SIGNATURES RECORD

ROLE	NAME	SIGNATURE	DATE
REVIEWER	Gavin MacDougall		
DOCUMENT OWNER	Alyce Straub		
DOCUMENT APPROVER	Jonah Kelly		



EKA WI 2115.40 Reporting Incidental Wildlife Sightings

Version:	1.0
Replaces:	N/A
Creation Date:	2024-07-20
Scheduled Review Date:	2026-07-20
Review Date:	2025-10-16
Document Team Members:	Environment Advisor – Wildlife Senior Environmental Specialist Environmental Technician
Document Owner:	Environment Advisor - Wildlife
Document Approver:	Senior Environmental Specialist
Related Documents:	N/A
Key Contacts:	Senior Environmental Specialist Environment Advisor - Wildlife
Change Requests:	Environment Advisor - Wildlife
Brief Description:	This document describes the process for Ekati Mine employees to report incidental wildlife observations around site



Table of Contents

TASK DESCRIPTION:.....	3
HSE INFORMATION / SAFETY RISKS:	3
ADDITIONAL RESOURCES REQUIRED:	3
WORK PREPARATION:.....	3
WORK EXECUTION STEPS:.....	3
GENERAL REMARKS.....	4
Versioning and revision tracking.....	5
Appendix	6
Approval signatures record.....	6
Common wildlife encountered on roads and around Ekati Mine Site	7
Large Mammals:.....	7
Birds and other small mammals.....	7



TASK DESCRIPTION:

The Ekati Mine is located 100km north of the tree line and is situated on the arctic tundra. While working and living at Ekati, employees will often come close to many species of wildlife that live and move through the Ekati Claim. Wildlife that can be expected to be encountered can include caribou, grizzly bears, wolves, foxes and a variety of bird species. Wildlife sightings can be expected to occur when traveling on haul roads, in and around work areas and the main camp area. The task of reporting wildlife sightings to the Environment Department is an integral part of the Wildlife Monitoring Effects Program or WEMP that Ekati completes. The WEMP serves to meet Burgundy's obligations under the Environmental Agreement and federal and territorial Acts and regulations. Ekati is legally required to report all wildlife sightings, incidents and mortalities. When reporting large carnivore sightings like grizzly bears, reporting the sighting in a prompt manner serves to alert other employees of the risk of an encounter and ensure the safety and wellbeing of all Burgundy employees.

HSE INFORMATION / SAFETY RISKS:

- Equipment interactions.
- Wildlife encounters.

ADDITIONAL RESOURCES REQUIRED:

- Completion of the following Pavilion Modules:
 - Environmental Awareness

WORK PREPARATION:

Item	Task Description
1	• Have some knowledge of local wildlife. See Appendix 2 for a listing of common species of animals and birds that can be encountered at different times of the year.

WORK EXECUTION STEPS:

Item	Task Description
1	• Call in any wildlife sightings (including live, injured and deceased wildlife) including grizzly bears, wolves, wolverines, foxes, caribou, raptors and migratory birds. • Be prepared to provide some basic information so that the wildlife sighting can be recorded in the Wildlife Effects Monitoring Program database. Basic information includes the species or species group (i.e., red fox or unknown fox), the number of animals, general location of the sighting, direction of travel of the animal and the behaviour of the animal (walking, standing, bedded, etc.).
2	• If you see grizzly bears or other potentially dangerous wildlife (e.g., wolves), determine if anyone's safety is at risk. Alert the Environment Department on channel 9 during the day (06:00 to 18:00) and Security on channel 7 during the night (18:00 to 06:00) immediately if the safety of either mine personnel or the wildlife is at risk.



3

- For caribou sightings on haul roads, contact the Environment Department on channel 9 during the day (06:00 to 18:00) and the Security Department. on channel 7 during the night (18:00 to 06:00).

GENERAL REMARKS

Frequency: Incidental sightings should be reported year-round when observed.

Various species will be present at Ekati and different times of year.



VERSIONING AND REVISION TRACKING

REVISION NUMBER	PAGE NUMBER	CHANGE EFFECTED	DATE OF CHANGE	WHO MADE THE CHANGE



APPENDIX

APPROVAL SIGNATURES RECORD

ROLE	NAME	SIGNATURE	DATE
REVIEWER	Gavin MacDougall		
DOCUMENT OWNER	Alyce Straub		
DOCUMENT APPROVER	Jonah Kelly		



COMMON WILDLIFE ENCOUNTERED ON ROADS AND AROUND EKATI MINE SITE

Large Mammals:

WILDLIFE	TIME OF YEAR	LIKELIHOOD OF ENCOUNTER
Caribou	Year-round	High
Foxes	Year-round	High
Grizzly Bears	May-November	Moderate
Wolves	Year-round	Moderate
Wolverines	Year-round	Low

Birds and other small mammals

WILDLIFE	TIME OF YEAR	LIKELIHOOD OF ENCOUNTER
Arctic Hare	Year-round	High
Arctic Ground Squirrel (Sik Sik)	April/May-October	High
Ptarmigan	Year-round, but more abundant in the spring/fall	High
Ravens	Year-round	High
Various geese and duck species	Seasonal – open water	Moderate
Falcons, hawks, and eagles	Seasonal to Year-round	Moderate



EKA WI 2115 37 Helicopter Usage for Deterring Bear Activity

Version:	1.1
Replaces:	1.0
Creation Date:	2022-10-02
Scheduled Review Date:	2023-10-02
Review Date:	2025-10-02
Document Team Members:	Environment Advisor – Wildlife Senior Environmental Specialist Environmental Technician
Document Owner:	Environment Adviser – Wildlife
Document Approver:	Senior Environmental Specialist
Related Documents:	N/A
Key Contacts:	Senior Environmental Specialist Environment Advisor – Wildlife Ekati Airport Technician
Change Requests:	Environment Advisor – Wildlife
Brief Description:	To ensure the safe and effective operation of helicopter when used to deter bear activity near Ekati



Table of Contents

TASK DESCRIPTION:.....	3
HSE INFORMATION / SAFETY RISKS:	3
ADDITIONAL RESOURCES REQUIRED:	3
WORK PREPARATION:.....	3
WORK EXECUTION STEPS:.....	3
GENERAL REMARKS.....	4
Versioning and revision tracking.....	5
Appendix	6
Approval signatures record.....	6



TASK DESCRIPTION:

Using a helicopter to deter a bear away from an undesirable area at Ekati.

HSE INFORMATION / SAFETY RISKS:

- Equipment and traffic interactions
- Wildlife encounters
- Slips/trips/falls/strains/sprains
- Powerline Safety
- Weather

ADDITIONAL RESOURCES REQUIRED:

- PPE
- Communication device
- Camera for photo/video documentation of the deterrent event
- GPS and spare batteries

WORK PREPARATION:

Item	Task Description
1	• Review Group Job Hazard Analysis and complete a Personal Safety Card that identifies hazards and eliminates risks.
2	• Prepare a Journey Management Plan (JMP) ahead of time using a template map (appendix A)
3	• Any personnel in the helicopter are required first to complete the Helicopter Safety Pavilion module, Review of the Acasta Safety Briefing video (this can be arranged through the Acasta HSC), as well as a pilot briefing of the current pilot
4	• All members of the flight crew shall be instructed on their duties, the location of emergency equipment associated with operation, and the contact information and procedures in case of an emergency.

WORK EXECUTION STEPS:

Item	Task Description
1	• When a bear needs helicopter deterrence (“a push”), the crew will establish positive communication with helicopter pilot to confirm expected coordinates of flight plans and to complete the required JMP.
2	• Environment will be required to have a person accompanying the pilot during the push. Other passengers on the flight should be kept to a minimum.
3	• The Environment staff member in the helicopter during the push should be provided with information relating to the bear’s general health and details around its activity at site. This will help to avoid unnecessary stress on the bear.



4	The Environment staff member should be aware of the ambient temperature and other conditions that could place stress on the bear during the push. In general, during hotter days the effectiveness of the push may be limited to the environmental factors of that day.
5	When possible, the bear should be directed towards lakes and ponds to provide effective cooling. Do not actively push a bear in the water. Allow it to exit the water body on its own.
6	Document the push timeline and use photos to indicate the health of the bear over the course of the push. Photos of the bear swimming or resting will show the condition of the bear is not being adversely affected. Also, document distance and direction of push using GPS or a map software (GIS, Google Earth etc)
7	Update the Incident Tracker and upload any photo/video documentation in SharePoint (07 Field > Wildlife Effects Monitoring Program > Photos > Incidents) with details of the deterrent event and provide quick update to the Wildlife Advisor and Team Lead of outcome of deterrent event.

GENERAL REMARKS

Outside of urgent health and safety concerns for employees and wildlife, all reasonable efforts will be made to ensure that a bear is not pushed in the general direction of caribou.

Wildlife Act (55): *Notwithstanding any other provision of this Act or the regulations, a person may chase wildlife away from a dwelling place, camp, work site, municipality or unincorporated community, or its immediate vicinity, if doing so is necessary to prevent injury or death to a person or damage to property.*

Government of the Northwest Territories Wildlife Hotline will put you in touch with an on-call wildlife resource officer (after hours, weekends, holidays) if Wildlife Advisor, or other individuals cannot be reached. Phone number: **(867) 446-2073**



VERSIONING AND REVISION TRACKING

REVISION NUMBER	PAGE NUMBER	CHANGE EFFECTED	DATE OF CHANGE	WHO MADE THE CHANGE
1.1	3	Addition of notes (WL Act and GWT on-call contact number)	23-Oct-2023	Adam Scott



APPENDIX

APPROVAL SIGNATURES RECORD

ROLE	NAME	SIGNATURE	DATE
REVIEWER	Gavin MacDougall		
DOCUMENT OWNER	Alyce Straub		
DOCUMENT APPROVER	Jonah Kelly		



EKA WI 2115.23 Road Monitoring Survey

Version:	1.1
Replaces:	1.0
Creation Date:	2018-11-16
Scheduled Review Date:	2023-01-01
Review Date:	2025-10-14
Document Team Members:	Environment Advisor - Wildlife Senior Environmental Specialist Environmental Technician
Document Owner:	Environment Advisor – Wildlife
Document Approver:	Senior Environmental Specialist
Related Documents:	Caribou Road Mitigation Plan Wildlife Effects Monitoring Program Plan
Key Contacts:	Senior Environmental Specialist Environment Advisor – Wildlife
Change Requests:	Environment Advisor – Wildlife
Brief Description:	This document outlines the protocol for monitoring and recording caribou and other wildlife activity near and on the mine haul roads.



Table of Contents

TASK DESCRIPTION:.....	3
HSE INFORMATION / SAFETY RISKS:	3
ADDITIONAL RESOURCES REQUIRED:	3
WORK PREPARATION:.....	3
WORK EXECUTION STEPS:.....	3
GENERAL REMARKS.....	5
Versioning and revision tracking.....	6
Appendix	7
Approval signatures record.....	7



TASK DESCRIPTION:

Monitor the along the haul roads (Misery Road, Sable Road, and Lac du Sauvage Road) and record all caribou sightings and signs of caribou (e.g. scat and tracks) to determine if present mitigation measures effectively minimize the potential risks associated with the road to wildlife and meet the requirements of the Caribou Road Mitigation Plan (CRMP).

HSE INFORMATION / SAFETY RISKS:

- Heavy equipment traffic
- Wildlife encounters
- Slips/trips/falls
- Powerline safety

ADDITIONAL RESOURCES REQUIRED:

- Light vehicle
- Communication device
- Binoculars & spotting scope with tripod
- GPS and spare batteries
- Camera
- Tablet with Road Monitoring Survey Form uploaded prior to leaving the office

WORK PREPARATION:

Item	Task Description
1	• Be familiar with driving around site and any changes to the Traffic Management Plan (temporary or permanent).
2	• Be familiar with the species of wildlife that you are likely to encounter on any given day, including migratory birds and species defined as valued ecosystem components (VECs) in the Environmental Agreement (e.g. grizzly bear, wolverine, caribou, wolf, raptor species, listed migratory birds). You need to be comfortable identifying caribou herd composition, wildlife behaviour and habitat identification to complete this survey. ○ If you are not comfortable with the requirements above, wildlife reference sheets from the wildlife office may be brought into the field.
3	• Be aware of the road conditions and whether road access is possible
4	• Become familiar with tablet use and uploading documents from MP Field onto the tablet.

WORK EXECUTION STEPS:

Item	Task Description
1	• Complete a Personal Safety Card that identifies hazards and eliminates risks.
2	• The operator of the light vehicle is first and foremost required to focus on the responsibilities of operating a vehicle on the haul road, other operators, calling in kms and driving conditions, etc.



	• This task is best accomplished with two persons: one that operators the light vehicle and keeps their full attention on the road and the other person/passenger that completes the survey.
3	• It is important to track and record survey effort. Survey start time and end time for each leg of the survey is recorded as a measure of survey effort. ○ If surveys cannot be completed for that day due to weather, road access, or resourcing issues, this information is recorded in the excel tracking sheet for effort.
4	• On all roads, a survey should be conducted on both legs of the trip (both northbound and southbound). The presence of large mammals or VEC species that have not been noted earlier in the survey should be recorded, particularly if they have not crossed the road since the previous trip.
5	• When caribou or signs of caribou activity are observed, record the following information in the Road Monitoring Survey form on the tablet: ○ Date ○ Start Time ○ Crew Initials ○ Road Name: Misery, Sable, Lac du Sauvage ○ Wildlife Sign: Visual, Track/Scat, No Sign ○ Total # of Caribou ○ Herd Composition: Number of bulls, cows, juveniles, calves, unknown ○ UTM Coordinates of sighting ○ Distance and Direction to the observation from the survey location ○ Within 500m of road: (Y/N) ○ Feature: Road, Caribou Crossings, Tundra ○ Signs of Distress: Alert behaviour (directed gaze, erect tail, sniffing, erect ears, stiff posture with spread hind legs) or deflections (changing path of motion at road) from the road or hesitation in crossing the road ○ Dominant Behaviour: record the main behaviour of the individual/herd as either bedded (B), feeding (F), standing (S), walking (W), trotting (T), running (R), unknown (U), no data (X). Immediately report any signs of distress to Wildlife Advisor or Environment Operations Team Lead. ○ Caribou Behavioural Survey Completed: (Y/N); enter “Y” if a behavioural survey is conducted on the caribou individual or group before or after the road monitoring survey or enter “N” ○ End Time ○ The comments section should contain a note if any photos were taken and any pertinent comments related to unusual behaviour or anything out of the ordinary. Take photos of interesting wildlife/wildlife sign observations and all wildlife in distress. Save only the best or most representative photo on SharePoint (07 Field > Wildlife Effects Monitoring Program – WEMP > Photos > Road Monitoring Survey) with the naming convention ddmmmyy_Road_km X_”Description” (e.g. Caribou using caribou crossing).



6

- Upon returning to the office, upload survey to MP field on tablet.

GENERAL REMARKS

Frequency: As per the CRMP (Caribou Road Mitigation Plan) - Surveys to be conducted **weekly during Blue and Yellow alert levels** and **daily during Orange and Red alert levels**.



VERSIONING AND REVISION TRACKING

REVISION NUMBER	PAGE NUMBER	CHANGE EFFECTED	DATE OF CHANGE	WHO MADE THE CHANGE
1.1	4	Update to survey data collected.	14-Oct-2025	Alyce Straub



APPENDIX

APPROVAL SIGNATURES RECORD

ROLE	NAME	SIGNATURE	DATE
REVIEWER	Gavin MacDougall		
DOCUMENT OWNER	Alyce Straub		
DOCUMENT APPROVER	Jonah Kelly		



EKA WI 2115.38 Snow Berm Monitoring Survey

Version:	1.1
Replaces:	1.0
Creation Date:	2023-3-29
Scheduled Review Date:	2026-3-29
Review Date:	2025-10-16
Document Team Members:	Environment Advisor – Wildlife Senior Environmental Specialist Environmental Technician
Document Owner:	Environment Advisor – Wildlife
Document Approver:	Senior Environmental Specialist
Related Documents:	Caribou Road Mitigation Plan Wildlife Effects Monitoring Program Plan
Key Contacts:	Senior Environmental Specialist Environment Advisor - Wildlife
Change Requests:	Environment Advisor – Wildlife
Brief Description:	Protocol for monitoring and recording snow berm heights along active hauls roads at Ekati during the winter months.



Table of Contents

TASK DESCRIPTION:.....	3
HSE INFORMATION / SAFETY RISKS:	3
ADDITIONAL RESOURCES REQUIRED:	3
WORK PREPARATION:.....	3
WORK EXECUTION STEPS:.....	3
GENERAL REMARKS.....	5
Versioning and revision tracking.....	6
Appendix	7
Approval signatures record.....	7



TASK DESCRIPTION:

Monitor snow berm heights along the haul roads (Misery Road, Sable Road, and LDS Road) to determine if heights exceed 1.6 m, which could impede visibility for caribou and thus deter them from crossing the roads.

HSE INFORMATION / SAFETY RISKS:

- Heavy equipment traffic
- Wildlife encounters
- Slips/trips/falls
- Powerline safety
- Weather

ADDITIONAL RESOURCES REQUIRED:

- Light vehicle
- Communication device
- Binoculars & spotting scope with tripod
- GPS and spare batteries
- Camera
- Bear banger kit
- Tablet with Snow Berm Survey form uploaded prior to leaving the office

WORK PREPARATION:

Item	Task Description
1	• Become familiar with the roads and radio call in procedures.
2	• Be familiar with the species of wildlife that you are likely to encounter on any given day, including migratory birds and species defined as valued ecosystem components (VEC) in the Environmental Agreement (e.g. grizzly bear, wolverine, caribou, wolf, raptor species and listed migratory birds). You need to be comfortable identifying caribou herd composition, wildlife behavior and habitat identification to complete this survey.
3	• If you are not comfortable with the requirements above, wildlife reference sheets from the wildlife office may be brought into the field.
4	• Be aware of the road conditions and whether road access is possible
5	• Become familiar with tablet use and uploading documents from MP Field onto the tablet.

WORK EXECUTION STEPS:

Item	Task Description
1	• Complete a Personal Safety Card that identifies hazards and eliminates risks.
2	• The operator of the light vehicle is first and foremost required to focus on the responsibilities of operating a vehicle on the haul road, other operators, calling in km and driving conditions, etc.

WORK EXECUTION



	• This task is best accomplished with two persons: one that operators the light vehicle and keeps their full attention on the road and the other person/passenger that completes the survey.
3	• Complete one transect with ten sample points per travel direction per road (i.e., 20 sample points per road). Divide the road length by 10 to get the average kms to travel between sample points. It is helpful to reset the truck odometer between each sample point to ensure even distribution. Measuring berm height at each sample point should target the highest snow berms as they are the primary concern. Sections of road where there are safety berms are excluded; these are usually marked with delineators. At each sample point the following metrics are recorded in the tablet survey form: ○ Travel Direction (North or South for Misery/Sable; East or West for Lac du Sauvage) ○ Height (in cm from road surface to berm top) ○ UTM coordinates ○ Survey Complete (toggle “Yes” before moving to next sample point entry) • The passenger will get out of the vehicle, stand next to the passenger window or just off the nose of the truck, holding the measuring stick as close to the berm as safely possible, while the driver will estimate the height of the berm and record the data (Image 1). If the berm is too low and out of the driver’s view, the person holding the measuring stick must determine the berm height.  Image 1: Picture of individual with full PPE standing next to example snow berm along haul road. Individual is holding measuring stick/ device. Observer (inside the vehicle) then estimates snow berm height to ensure no greater than 1.6 meters in height.
4	• Upon return to the office, upload data collected into MP5 from the tablet.



- If a snow berm height is found to exceed 1.6 m the Team Lead needs to be notified so Site Wide Surfaces can be notified and the berm height reduced (hence road, location (UTMs), travel direction is needed).

5



Image 2: Example of a leveled snow berm along the haul road less than 1 meter in height.

GENERAL REMARKS

Frequency: Survey is completed **monthly** for each road during the winter months (i.e., while roads are still being plowed).



VERSIONING AND REVISION TRACKING

REVISION NUMBER	PAGE NUMBER	CHANGE EFFECTED	DATE OF CHANGE	WHO MADE THE CHANGE
1.1	4	Added image 1 with description of measuring device	02/29/2024	Adam Scott
1.1	4	Added image 2 to show example snow berm that is at appropriate height	03/20/2024	Adam Scott



APPENDIX

APPROVAL SIGNATURES RECORD

ROLE	NAME	SIGNATURE	DATE
REVIEWER	Gavin MacDougall		
DOCUMENT OWNER	Alyce Straub		
DOCUMENT APPROVER	Jonah Kelly		



EKA WI 2115.34 Programming Camera SD Cards

Version:	1.0
Replaces:	N/A
Creation Date:	2022-04-04
Scheduled Review Date:	2027-04-04
Review Date:	2025-10-02
Document Team Members:	Environment Advisor - Wildlife Senior Environmental Specialist Environmental Technician
Document Owner:	Environment Advisor - Wildlife
Document Approver:	Senior Environmental Specialist
Related Documents:	EKA WI.2115.16 Camera Photo Processing EKA WI.2115.22 Camera Deployment and Check
Key Contacts:	Senior Environmental Specialist Environment Advisor – Wildlife
Change Requests:	Environment Advisor – Wildlife
Brief Description:	The Ekati Mine camera program monitors and records caribou and other wildlife activity near infrastructure using battery operated Reconyx wildlife cameras. Programmed memory cards determine the frequency, interval, and type of photos the cameras record. This work instruction provides details on how to program the camera memory cards.



Table of Contents

TASK DESCRIPTION:.....	3
HSE INFORMATION / SAFETY RISKS:	3
ADDITIONAL RESOURCES REQUIRED:	3
WORK PREPARATION:.....	3
WORK EXECUTION STEPS:.....	4
GENERAL REMARKS.....	11
Versioning and revision tracking.....	12
Appendix	13
1.0 Approval signatures record.....	13



TASK DESCRIPTION:

The Ekati Diamond Mine wildlife camera program monitors and records caribou and other large wildlife activity near infrastructure using battery operated RECONYX wildlife cameras. The frequency and type of photos recorded is dictated by how the memory cards are programmed. Programmed memory cards (SD cards) are inserted into the cameras. The cameras are programmed to record two types of photos:

- Timed photos - the camera takes a photo at timed intervals that are pre-programmed onto the memory card. The timed photos are important for determining camera effort.
- Motion-triggered photos - the camera takes a series of photos each time that an object moves across the field of view of the camera. The number and frequency of motion-triggered photos taken are also pre-programmed onto the memory card.

Memory cards are programmed in the office and inserted into the cameras during regular camera checks (see EKA WI. 2115.22 Camera Deployment and Check for more details on camera checks).

HSE INFORMATION / SAFETY RISKS:

The camera card programming and downloading is done in the office, therefore there are no HSE concerns.

ADDITIONAL RESOURCES REQUIRED:

- SD Cards (1 set per camera)
- Computer with Reconyx Professional Software or HyperFire 2 Professional Software (if programming for HyperFire 2 camera models) installed
- Computer with access to SharePoint and the G: drive/Ekati/EnvPhotos for data downloading.

WORK PREPARATION:

Item	Task Description
1	• Become familiar with the deployed camera locations.
2	• Install the RECONYX software called 'Professional Settings' (http://www.reconyx.com/software/pro-settings) for HyperFire 1 camera models or 'HyperFire 2 Professional Settings' (https://www.reconyx.com/software/pro-settings-hf2) for HyperFire 2 camera models.
3	• If you do not already have read/write access to the G drive/Ekati/EnvPhotos), please contact IT to request access. Refer to the 'Group Name: DDC-AzureEK-FileSyc-EnvPhotos-RW' in the request.
4	• Understand how the cameras are programmed. The cameras are typically programmed to record photos when triggered by motion, in addition to recording one timed photo each day at noon, which are used for determining effort and whether the camera is functional (up-right, screen cleared, capturing images).
5	• Understand the file set-up on the memory cards. The camera records photos into folders on the camera's SD card. The first folder is named 100RECONYX and the camera fills up this folder until it hits photo # 9999, and then makes a new folder called 101RECONYX and so on. The photos are named in order that they are taken and are not separated into groups of motion or triggered photos.



WORK EXECUTION STEPS:

Item	Task Description
1	Preparing SD Cards: - Make sure the SD is not corrupted and is functioning properly. The data 'lock' switch on the top left side of the card should be in the upright 'unlocked' position. If there are any pictures on the card that have not been uploaded already, upload them to their respective location on the G drive (follow steps 5-7 below).  - Typically, corrupt cards cannot be erased of past data, though they may appear to erase properly. To check whether cards have properly erased, delete photos, eject the memory card, re-insert the memory card and check if there are still photos on the card. Alternatively, use the 'Format' tool to wipe the card clean (right click on memory card icon, click 'Format' and click 'Start'). Ensure the cards are empty of all files prior to reprogramming.
2	Labelling SD Cards: Physically label cards using the label maker found in the lab. The card number must match the camera number. There should be an A card and a B card for each camera. The A and B card are switched during camera checks.
3	SD Card Set-up: - Insert a blank memory card into the computer or card reader. For HyperFire 1 camera models: - Open the Reconyx software program called 'Professional Settings' - A dialog box will pop up to request that the user select the SD memory card that you are intending to program. The default option is 'Removable Disk (D:)', unless multiple memory cards are connected to your computer. This box opens every time you open the program, even if there is only one memory card inserted into your computer. Click ok to select the card. - The dialog box for programming settings onto the card will open - In the 'Triggers' tab, select the following settings (Photo 1): Quickset – Advanced Near Video: - When triggered take 10 pictures (wildlife cameras); When triggered take 1 pictures (traffic cameras) - Waiting 1 seconds between pictures; Quiet Period - Wait 0 seconds between triggers; Options - Use the internal motion trigger



-
- **Schedule** - View Schedule and click '**All On**'
- ii. In the '**Time Lapse**' tab, select the following settings (Photo 2):
- **Time-lapse Interval:**
 - Select Hours and change to **1** (for a 1 hour frequency)
 - Click on '**View Schedule**' and click on the 4 time slots between 12 PM 00:00 and 1 PM 00:00 to turn '**camera on**' (Photo 3)
 - At the specified interval: Select Take **1** picture
- iii. In the '**Images**' tab, select the following settings (Photo 4):
- **Options:**
 - **Label:** fill in text box with unique camera number (i.e. 'CM 07B') that pertains to the camera itself and the camera card (should be the same camera number as what's physically labelled on the card). **This number will need to be edited for every memory card that you program.** This is what sets the text on the border of the photo itself (i.e. see Photo 4). Note that the appropriate 'A' or 'B' identifier is included in this text box per SD card, downloading and labelling the photos later will be easier, however whether particular cameras require card A or B upon the next camera check is variable so attention to detail must be taken when labelling.
 - **Temperature:** select Celsius
 - **Time:** select 24 hr
 - All other settings can stay as is
- iv. In the '**Cellular**' tab, nothing needs to be changed in this dialogue box.
- v. In the '**Other**' tab, nothing needs to be changed in this dialogue box.
- Set the programming changes by clicking **OK** button at bottom of dialogue box.
 - A dialogue box called '**Information**' will appear to let you know that the settings have been properly applied to the memory card (Photo 5).
 - **IMPORTANT** – if this box does not appear, you will instead get an error message saying that the card could not be programmed. If you receive this error message, please set the memory card aside in a bag labelled '**error**' and IT will trouble shoot the error.
 - The settings applied to the memory card cannot be checked unless the card is placed into a camera and the photo captures are observed.
 - See below instructions on downloading data following a camera check.
 - See EKA WI.2115.22 Camera Deployment and Check for details on deploying the programmed memory cards into cameras.
-

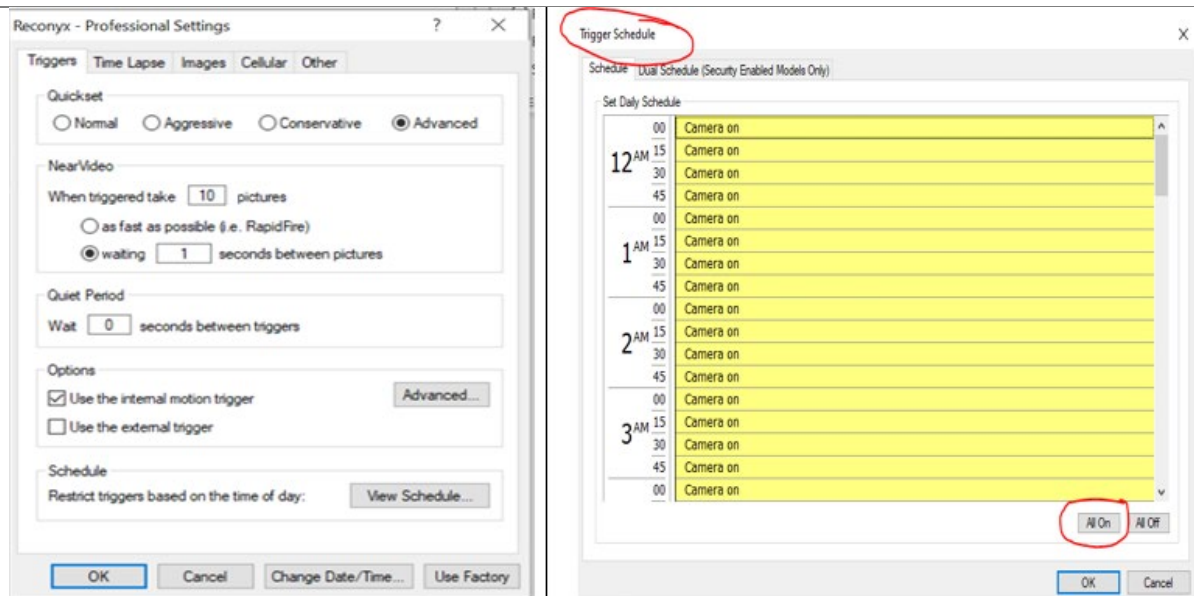


Photo 1. Settings for Triggers Dialogue Box in RECONYX – Professional Settings software.

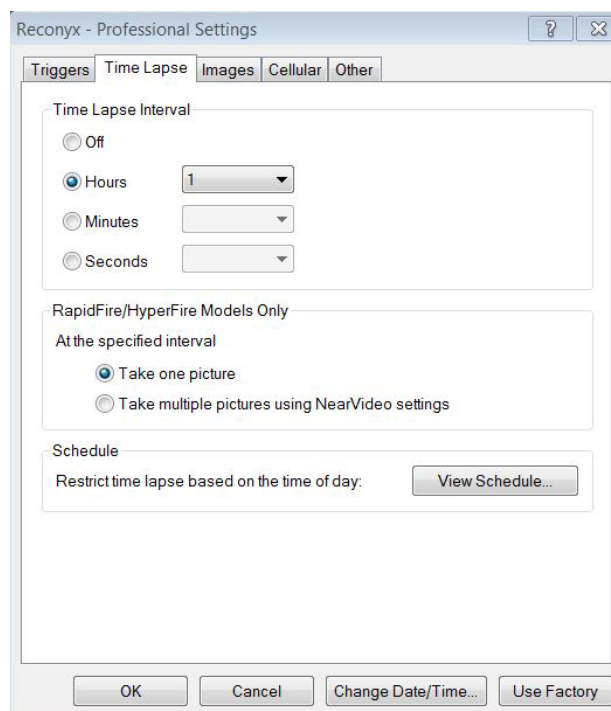


Photo 2. Settings for Time Lapse Dialogue Box in RECONYX – Professional Settings software.

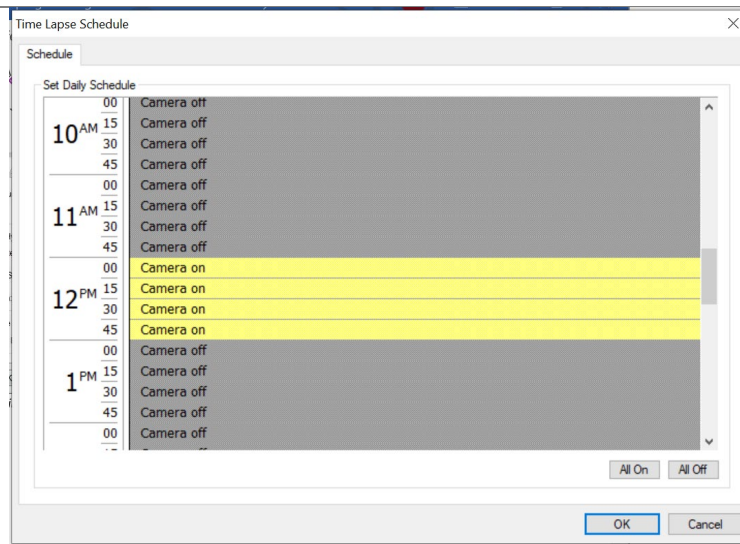


Photo 3: Settings for Time Lapse Schedule Dialogue Box in RECONYX – Professional Settings software

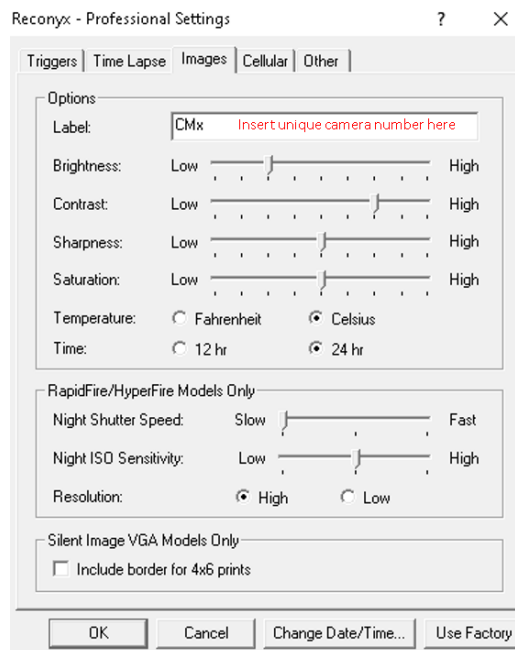


Photo 4. Settings for Images Dialogue Box in RECONYX – Professional Settings software.

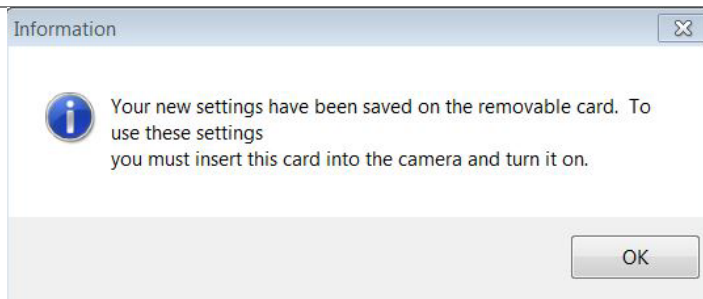


Photo 5. Information box that appears when the card has been successfully programmed.

For HyperFire 2 camera models:

- Open the Reconyx software program called 'HyperFire Professional Settings'
- A dialog box will pop up to request that the user select the SD memory card that you are intending to program. The default option is '**Removable Disk (D:)**', unless multiple memory cards are connected to your computer. This box opens every time you open the program, even if there is only one memory card inserted into your computer. Click ok to select the card
- The below dialog box for programming settings onto the card will open
 - i. In the '**Motion**' tab, select the following settings (Photo 6):
 - **Motion pictures** - On
 - **External trigger pictures** – Off
 - **Number of pictures** – 10 (wildlife cameras); 1 (traffic cameras)
 - **Time between pictures** – 1 second
 - **Motion videos** – Off
 - **External trigger videos** – Off
 - **Quiet period** – No delay
 - **Sensitivity** – High
 - ii. In the '**Time Lapse**' tab, select the following settings (Photo 7):
 - **Time lapse pictures** – On
 - **Number of pictures** – 1
 - **Time lapse videos** – Off
 - **Time lapse interval** – 1 hour
 - Under '**Schedule**' click on **Add Fixed** and specify start time from 12:00 PM and Stop Time 1:00 PM with every day checked (Photo 8).
 - iii. In the '**Display**' tab, select the following settings (Photo 9):
 - **Label:**
 - Fill in text box with unique camera number (e.g., 'CM07B') that pertains to the camera itself and the camera card (should be the same camera number as what's physically labelled on the card). **This number will need to be edited for every memory card that you program.** This is what sets the text on the border of the photo itself. Note that the appropriate 'A' or 'B' identifier is included in



this text box per SD card, downloading and labelling the photos later will be easier, however whether particular cameras require card A or B upon the next camera check is variable so attention to detail must be taken when labelling.

- **Time format** – 24 h
- **Temperature units** – Celsius
- **Show logo** - Yes
- In the '**Day/Night**' and '**Other**' tabs, nothing needs to be changed
- Set the programming changes by **clicking OK button** at bottom of dialogue box.
- A dialogue box called '**Information**' will appear to let you know that the settings have been properly applied to the memory card (Photo 10).
- **IMPORTANT** – if this box does not appear, you will instead get an error message saying that the card could not be programmed. If you receive this error message, please set the memory card aside in a bag labelled 'error' and IT will troubleshoot the error with these cards.
- The settings applied to the memory card cannot be checked unless the card is placed into a camera and the photo captures are observed (See EKA WI.2115.22 Camera Deployment and Check for details on deploying the programmed memory cards into the cameras).

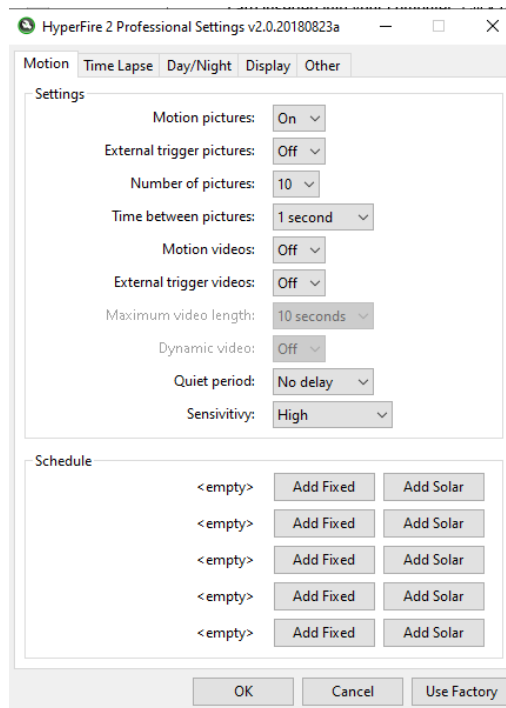


Photo 6. Settings for Motion Dialogue Box in RECONYX – HyperFire 2 Professional Settings software.

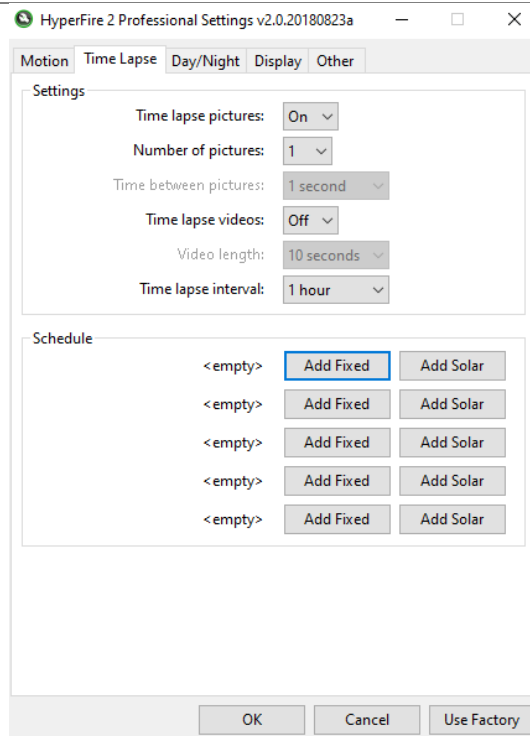


Photo 7. Settings for Time Laps Dialogue Box in RECONYX – HyperFire 2 Professional Settings software.

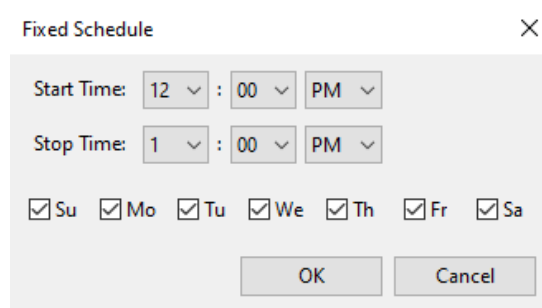


Photo 8. Settings for Add Fixed Schedule Dialogue Box in RECONYX – HyperFire 2 Professional Settings software.

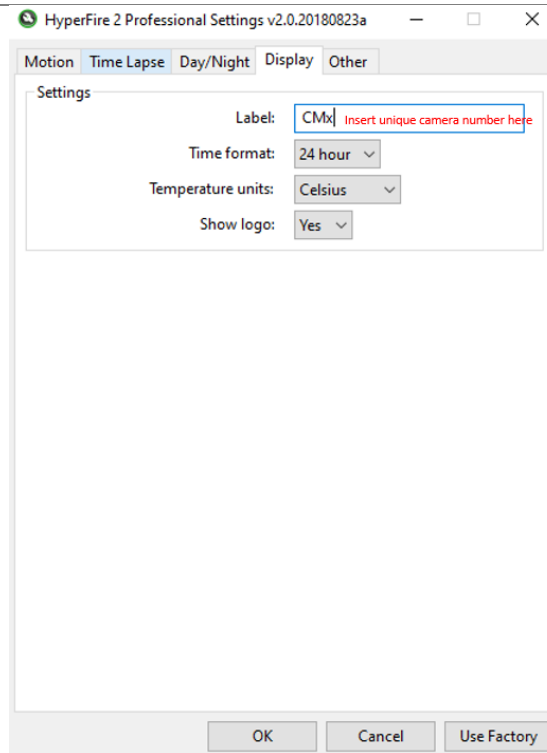


Photo 9. Settings for Display Dialogue Box in RECONYX – HyperFire 2 Professional Settings software.

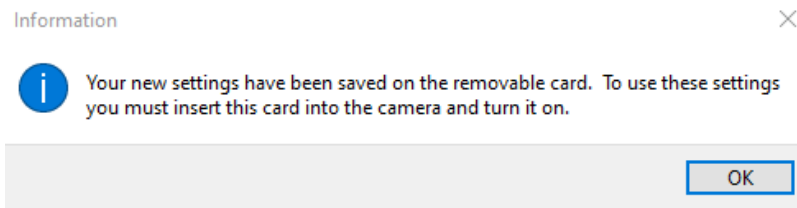


Photo 10. Information box that appears when the card has been successfully programmed.

GENERAL REMARKS

Frequency: Memory cards are programmed, deployed, and downloaded bi-annually (weather permitting) for the wildlife cameras and monthly for the traffic cameras.



VERSIONING AND REVISION TRACKING

REVISION NUMBER	PAGE NUMBER	CHANGE EFFECTED	DATE OF CHANGE	WHO MADE THE CHANGE



APPENDIX

APPROVAL SIGNATURES RECORD

ROLE	NAME	SIGNATURE	DATE
REVIEWER	Gavin MacDougall		
DOCUMENT OWNER	Alyce Straub		
DOCUMENT APPROVER	Jonah Kelly		



EKA WI.2115.22 Camera Deployment and Check

Version:	1.0
Replaces:	n/a
Creation Date:	2020-04-10
Scheduled Review Date:	2023-04-10
Review Date:	2025-10-14
Document Team Members:	Environment Advisor - Wildlife Senior Environmental Specialist Environmental Technician
Document Owner:	Environment Advisor – Wildlife
Document Approver:	Senior Environmental Specialist
Related Documents:	EKA WI.2115.16 Camera Photo Processing EKA WI.2115.34 Camera Memory Card Programming
Key Contacts:	Senior Environmental Specialist Environment Advisor – Wildlife
Change Requests:	Environment Advisor – Wildlife
Brief Description:	The Ekati Mine camera program monitors and records caribou and other wildlife activity near infrastructure using battery operated Reconyx wildlife cameras. Programmed memory cards determine the frequency, interval, and type of photos the cameras record. This work instruction provides details on how to service the cameras for the program.



Table of Contents

TASK DESCRIPTION:.....	3
HSE INFORMATION / SAFETY RISKS:	3
ADDITIONAL RESOURCES REQUIRED:	3
WORK PREPARATION:.....	3
WORK EXECUTION STEPS:.....	4
GENERAL REMARKS.....	6
Versioning and revision tracking.....	7
Appendix	8
Approval signatures record.....	8



TASK DESCRIPTION:

Deployment of wildlife cameras to monitor caribou behavior along Ekati mine roads. Frequent maintenance of cameras, batteries, and SD cards must be completed to ensure equipment is functioning properly.

HSE INFORMATION / SAFETY RISKS:

- Wildlife encounters
- Heavy equipment traffic
- Slips/trips/falls/strains/sprains
- Helicopter FRC
- BARS
- Blowing debris
- Hearing damage
- Helicopter crash
- Back strain while lifting rocks onto camera stands
- Energized power line (if required to walk beneath power lines to access cameras, contact Electrical Services TL to arrange meeting with Linesman or Electrical Dept. Crew will receive orientation and then follow the direction of the linesman for any continued work after first meeting).

ADDITIONAL RESOURCES REQUIRED:

- Light Vehicle
- Helicopter (as required)
- Communication device
- PPE including task specific gloves
- GPS and spare batteries
- Compass
- Wildlife camera location maps
- Camera booklet (yellow binder with extra datasheets), Clipboard and Pencil
- Spare RECONYX Cameras (to replace any that are broken in the field)
- Lithium batteries (12 per camera)
- Spare bucket posts with camera mounting brackets (to replace any that are broken in the field)
- Camera
- Binoculars
- Tablet with Camera Data Inspection form uploaded prior to leaving the office

WORK PREPARATION:

Item	Task Description
1	• See WI EKA.2115.34 Camera Memory Card Programming and Downloading for instruction on programming memory cards.



2	Load the camera location waypoints into the GPS and print the wildlife camera location maps. Both items are saved to Sharepoint (07 Field > Wildlife Effects Monitoring Program > Camera Programs > Camera Locations Combine "date".kmz).
3	Make sure you have enough camera posts beforehand. Additional buckets can be purchased as a reservation through the warehouse. Stands (post and camera bracket mount) can be built by the Carpentry Dept. through a notification request. Take an example post to Carpentry.
4	Be familiar with driving around site and any changes to the Traffic Management Plan (temporary or permanent).
5	Become familiar with tablet use and uploading documents from MP Field onto the tablet.

WORK EXECUTION STEPS:

Item	Task Description
1	Complete a Personal Safety Card that identifies hazards and eliminates risks.
2	Using the GPS navigate to your first site.
3	Park as far off the road as possible, place your delineators and have your 4-ways on and inform the other drivers via radio of your location. Remember that you cannot walk across a haul road.
4	If you're going to be crossing underneath an active powerline you will have to complete the powerline safety modules in Pavillion and complete a field orientation from Valard or Electrical Dept. member who can be reached on Radio Channel 5 prior to starting work.
5	Camera Deployment: - Cameras are deployed at caribou crossings along Sable, Misery and Lac du Sauvage Roads as well as at locations of interest along the Lac du Sauvage esker, and the movement corridor in the Point Lake area. Cameras on Misery Road are deployed in sets (one roadside, one 30 m from the road, and 2 cameras 60m from road in the tundra). Roadside cameras are placed at caribou crossings and should be pointed along the length of the road as opposed to across, with the caribou crossing in full view. Cameras located 30m from the road should be pointed towards the road, except the farthest camera along Misery Road, which should be pointed away from the road to increase the distance and space monitored. - For tundra cameras, carry rocks in case there aren't enough readily available near the camera. - Using the compass take a bearing of the direction the camera is facing. - Next you will take 5 photos from the camera starting at North, East, West, South and then one from the direction that the camera is facing. Make sure to record the photo numbers in the field sheet. Photos should be saved to Sharepoint (07 Field > Wildlife Effects Monitoring Program – WEMP > Photos > Wildlife Camera Program > "camera") - Record deployment details in the tablet. - Arm camera and wave your hand in front to verify that it is working correctly before leaving. If not working refer to Camera Checks Item 6.
6	Camera Checks:



-
- Check the cameras as per the schedule (monthly for the traffic monitoring camera program, bi-annually for the wildlife camera monitoring program) to swap out low batteries, full SD cards and to verify that the cameras are working properly.
 - Camera condition (whether upright or knocked over, broken, frosted over, covered in dust, missing, etc.) is recorded each time the camera is checked as this information can explain camera effort.
 - If necessary, adjust camera to ensure it is in an upright position, oriented in the right direction (as per the camera checks spreadsheet) and free of damage.
 - Check that the memory cards have been working properly and the camera is taking motion triggered images and timed photos.
 - Opening the camera usually causes it to display the Battery Level and Number of Photos (after the last motion photo is taken), but if not, click, 'OK' button, '>', and scroll to the menu option
 - 'Check Status' option which will give you all the information as well.
 - Record the number of photos and battery level in the tablet as well as any status messages.
 - If the memory card is full, the screen will indicate the date that the card was filled. Card error may also be displayed on the screen if the SD card is corrupt.
 - If the batteries are below 70% swap them for new batteries and record that the batteries were changed in the tablet.
 - Change the desiccant package (absorbs moisture) and record that the desiccant was changed in the tablet.
 - Arm camera and wave your hand in front to verify that it is working correctly before leaving. If the camera doesn't trigger when you wave your hand or motion in front of the camera, it is possible that the SD card is not programmed to take motion photos. Program the SD card manually using the menus on the camera
 - i. Go to CHANGE SETUP press the OK button
 - ii. It should read QUICKSET with ADVANCED underneath it. If not, cycle through the choices with the arrow keys until it does. If it is on ADVANCED already hit OK
 - iii. Select TRIGGER. At this point a prompt may come up saying that it's using PC setting and will have two options: GO BACK (will return you to the main menu) or CONTINUE (will display the options for the Motion Trigger)
 - iv. The settings for the Motion Trigger should be:
 - a. Motion Sensor: ON
 - b. Sensitivity: HIGH
 - c. Pics per Trigger: 10
 - d. Pic Interval: 1 SEC
 - e. Quiet Period: NO DELAY
 - f. Finished: OK.
-



	g. These should be the first options available. If not, cycle through with the arrow buttons and press OK v. For changing the Time Lapse options first follow steps i & ii vi. Once in ADVANCED settings press the arrow keys until you reach the TIME LAPSE option and hit OK vii. Repeat step iii viii. The settings for the Time Lapse should be: a. AM Period: OFF b. Start PM Period: 12:00PM c. End PM Period: 14:00PM d. Picture Interval: 1 HOUR e. Finished: OK f. These should be the first options available if not cycle through with the arrow buttons and press OK
7	• Upon returning to the office upload survey to MP field on tablet and fill in the appropriate tab in the Camera Program Tracker on SharePoint (07 Field > Wildlife Effects Monitoring Program – WEMP > Camera Programs > Camera Program Tracker)

GENERAL REMARKS

Make sure to bring rain gear, bug spray, sunscreen, lots of water, food and warm clothing so that you can work in any conditions that may arise while out in the field.

Bring bear banger kit and scan for wildlife often.

Getting to the far sites will have you walking over various types of ground conditions ranging from eskers to tussock fields. Take your time and watch where you're going.

Make sure everything is ready to go before you head out. During the deployment phase it is advised to take an hour so at the end of the day to prepare everything for the next day of work.

Frequency: Traffic cameras are checked **monthly**; **Wildlife cameras** (including PL wildlife cameras) are checked **bi-annually**



VERSIONING AND REVISION TRACKING

REVISION NUMBER	PAGE NUMBER	CHANGE EFFECTED	DATE OF CHANGE	WHO MADE THE CHANGE



APPENDIX

APPROVAL SIGNATURES RECORD

ROLE	NAME	SIGNATURE	DATE
REVIEWER	Gavin MacDougall		
DOCUMENT OWNER	Alyce Straub		
DOCUMENT APPROVER	Jonah Kelly		



EKA WI 2115.16 Camera Photo Processing

Version:	2.1
Replaces:	2.0
Creation Date:	2022-04-04
Scheduled Review Date:	2025-12-12
Review Date:	2025-10-15
Document Team Members:	Environment Advisor - Wildlife Senior Environmental Specialist Environmental Technician
Document Owner:	Environment Advisor - Wildlife
Document Approver:	Senior Environmental Specialist
Related Documents:	EKA WI.2115.34 Camera Memory Card Programming EKA WI.2115.22 Camera Deployment and Check
Key Contacts:	Senior Environmental Specialist Environment Advisor - Wildlife
Change Requests:	Environment Advisor - Wildlife
Brief Description:	The Ekati Mine camera program monitors and records caribou and other wildlife activity near infrastructure. The program can generate thousands of photos. This procedure ensures that photos do not get lost, mislabeled or otherwise confused. It also ensures that photos are sorted and processed in a way that reduces future rework during report writing.



Table of Contents

TASK DESCRIPTION:.....	3
HSE INFORMATION / SAFETY RISKS:	3
ADDITIONAL RESOURCES REQUIRED:	3
WORK PREPARATION:.....	3
WORK EXECUTION STEPS:.....	4
GENERAL REMARKS.....	8
Versioning and revision tracking.....	9
Appendix	10
Approval signatures record.....	10



TASK DESCRIPTION:

Reviewing camera photos recorded by remote motion-triggered cameras and recording caribou and other wildlife sightings, their behavior, and abundance to determine the level of activity and traffic along roads, responses to the road, and activity at other mine infrastructure and along historic movement corridors. Due to the large number of photos, processing progress is tracked in an excel worksheet. This document outlines how tracking and processing of photos is completed and how to properly store the photos once the processing is done.

HSE INFORMATION / SAFETY RISKS:

- Extended periods working at a desk
- Eye strain
- Muscle strains and other repetitive motion strain related to poor posture and office ergonomics

ADDITIONAL RESOURCES REQUIRED:

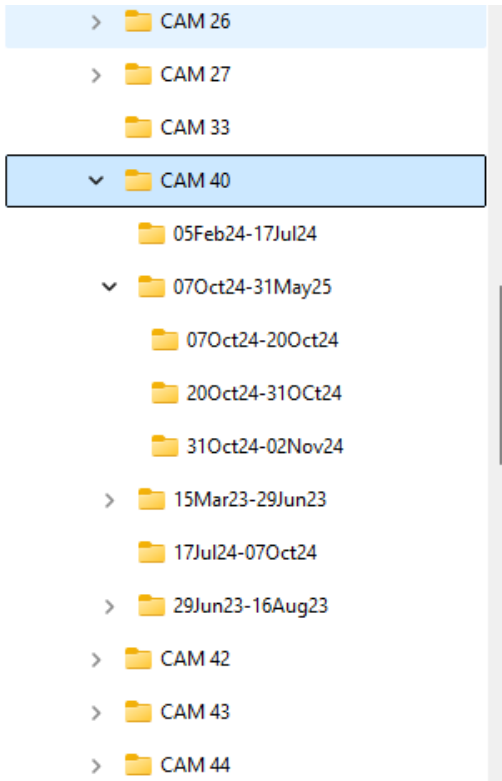
- Current map indicating camera locations and camera ID
- External hard drive and memory cards that contain photos
- Computer with access to SharePoint for data input into excel file
- Access to the G-drive
- WildTrax account

WORK PREPARATION:

Item	Task Description
1	• Become familiar with the camera deployment locations.
2	• Be familiar with the camera programming (may vary from year to year). The cameras are typically programmed to record photos when triggered by motion, in addition to recording a timed photo each day at noon. Times photos are useful for determining effort and whether the camera is functional (up-right, screen cleared, capturing images).
3	• Understand the file set-up on the hard drive or memory card. The camera records photos into folders on the SD card. The first folder is named 100RECNYX, which the camera fills up until it contains 9999 photos, and then makes a new folder called 101RECNYX and so on. The photos are named in order that they are taken and are not separated into groups of motion or triggered photos.
4	• Be familiar with the species of wildlife that you are likely to encounter on the photos, specifically medium to large mammals (i.e., caribou, grizzly bear, moose, wolf, wolverine, and fox). You need to be comfortable identifying caribou herd composition (cow, bull, juvenile, calf) and wildlife behaviour to complete the photo processing.
5	• If you are not comfortable with the above requirements, wildlife reference sheets found in the wildlife office can be used, as well as your colleagues!



WORK EXECUTION STEPS:

Item	Task Description
1	Photo Upload: • Insert the SD card collected during camera maintenance into an SD card reader. On the SD card there should be a folder named with the camera and SD card ID (e.g., 49A), which will contain the RECNYX folder(s) that contain the photos. • Navigate to the 'Processing' folder on the G:Drive (G:Drive > Ekati > Environment Photos > Processing). Locate the folder for the correct camera and copy the folder(s) containing the photos from the SD card here. Rename the RECNYX folder(s) with the date range of the first and last photo taken in the folder. If there is more than one RECNYX photo folder, create a main folder with the maintenance check dates for that round of maintenance and move the photo folders into the newly created main folder.  Figure 1: Three RECNYX photo folders, renamed from first and last photos within the main photo folder named as the maintenance check date range, copied to the G:Drive • Once you are positive that all the photos copied over correctly to the G:Drive, clear the photos from the SD card. Eject the SD card and set aside, indicating that it has been cleared.
2	Photo Processing Spreadsheet: • Open the 'Camera Program Tracker' on SharePoint (07 Field > Wildlife Effects Monitoring Program – WEMP > Camera Programs) and navigate to the 'Photo Processing' tab.



	• In the next empty row, enter the required details for the SD card that you just uploaded onto the G:Drive. Use the correct 'Camera Checks' tab in the excel file to fill in the 'Deployment' and 'Check' dates – the 'Days Deployed' column will auto populate from the inserted dates and provide the camera effort. • Open the photo folder and use the date from the first photo in the folder as the 'Photo Start Date' and the last photo in the folder as the 'Photo End Date' – the 'Days w/ Photos' column will auto populate. • Fill in the remaining columns based on your progress. Ensure to fill in the 'Processor' column with your initials. The 'Comments' column can be filled out with important details once the photos are processed.
3	WildTrax Photo Processing Setting Up a WildTrax Account: • Go to WildTrax - Manage, store, process, and share sensor data. and create an account using your work email. • Login to your account. Once logged in, navigate to the Organizations page in the 'My Data' drop down menu. Find BDM (Burgundy Diamond Mines) and request 'User Access' from the drop menu on the right. • An email will be sent to the Wildlife Advisor, who will grant you access to the Project(s). • Review the User Guide while you wait for access. User Guide : WildTrax Uploading Photos: • In the 'My Data' drop down menu hover over 'Projects' and click 'Camera' from the 'Projects' drop down menu. This will take you to the Projects page. • Select the correct Project – Wildlife Camera Monitoring Program or Traffic Camera Monitoring Program – pending which camera photos you are processing. • Under the 'Image Sets' tab you will be able to upload photo folders for processing. • Copy the photo folder you want to process from the G:Drive to your desktop and rename it with the naming convention CAMXX_ddmmmyy-ddmmmyy (camera # and date range of the photos). Prior to uploading, right click on the folder and hit 'Properties' to check the size of the folder. Only folders less than 250 GB can be uploaded to WildTrax at once. If the folder is larger than 250 GB, divide into smaller folders and complete processing of each folder separately. • Hit the 'Upload' button and select the photo folder you renamed from your desktop. Enter the lat/long coordinates as requested (can be found in the 'Camera Program Tracker- "relevant" Camera Checks' tab on SharePoint) when you upload your folder. Once you enter the folder details and hit Upload, you will see a row pop up for the folder you just uploaded. • The 'Status' of the folder will change from 'Processing' to 'Ready for Tagging' once WildTrax is done processing the folder with AI. Larger files will take longer to become ready for tagging.



- Upload at the start of your day to give the program time to upload and Auto Process your folder.
- Once the photo status reads 'Ready for Tagging', click on the folder name. It will take to you to a screen with the photos. From here you can begin to tag the photos. (If the status doesn't change from 'Processing' you can still tag the photos, however you won't be able to complete the verification step and will need to have a fellow team member review your tagging work).

Photo Tagging:

- Click on one or more photos that you wish to tag. Numerous photos with the same objects in them can be tagged at once using the 'Shift' or 'Ctrl' keys on the keyboard to select multiple images. Once you have selected your photos that will receive the same tag, hit the 'Tag Selected' button in the righthand corner and a tagging box will open.
- Use the drop down menus to fill in the information for the photos. In the 'Tag Comments' box add additional details as required.
 - For timed and other photos with no subject in frame, select "NONE" under Species drop down menu. For staff/set up, select "STAFF/SETUP" under Species drop down menu. For vehicles, select "Vehicle" under Species drop down menu and identify what type in the 'Tag Comments' box.
 - Select 'Other' for the behaviour if wildlife/caribou are exhibiting Alert behaviour – add alert behaviour to the 'Tag Comments' box and if there was a stressor causing the alert behaviour
 - If wildlife/caribou are exhibiting more than one behaviour in the photo(s), document secondary behaviour in 'Tag Comments' box.
 - If wildlife/caribou are deflected, document in 'Tag Comments' box.
- You will need to tag photos individually or in groups (batch tagging) based on what is present in the photo. For example, if 3 photos have 1 caribou feeding, tag all 3 photos together, however if 1 photo has 1 caribou feeding, the second photo has 2 caribou feeding and the third photo has 2 caribou feeding and a vehicle is present, each photo needs to be tagged individually.
- If you need multiple tags for the same photo, hit the duplicate button in the righthand corner and an additional tagging box will appear. Adjust the tagging details in the duplicated box as necessary. For example, if the photo contains one adult caribou of unknown sex and 2 juvenile caribou of unknown sex you will need to create two tags – one for each of the groups. Hit save in the tagging box and the tag(s) will appear underneath the photo.
- Tags can be deleted if needed by simply selecting the 'garbage can' button next to the tag below the photo or in the upper righthand corner of the tagging box.
- If you come across a high-quality wildlife image (i.e., report worthy), please tag it with 'Nice' in the tagging box and copy that image from the photo folder to the 'Best Photos' folder on the G:Drive.



- Once you have tagged all the photos (there may be numerous pages that need to be tagged – use the tab at the bottom of the page to go through them) the image set’s status will change to ‘Tagging Complete’ and you will then need to verify the photo tagging.

Photo Tagging Verification:

- To complete verification of the photos, navigate to the main project page and click on the ‘Species’ tab.
- Click on a species (may include vehicles, human, and Staff/setup groups as well). Once all the images on the page have been checked to ensure they were tagged as the correct species, click on the ‘Verify Species’ button. You will need to verify each page of photos (found at the bottom) for each species.
- If errors are found, you can edit the tag with the correct information and then save and close. The photo(s) will move to the updated tag species group and will need to be verified in that location.
- **NOTE:** the photo verification step will only be possible if your image set’s status was “Ready for Tagging” prior to tagging your photos and the status now reads ‘Tagging Completed.’
 - If you could not verify the species due to a ‘Status’ issue please have a fellow staff member review your tagging.

Data Download:

- Once all the photos have been tagged and verified, you can download the data.
- Find the drop down menu for the overall camera program page and hit the ‘Download Report’ option. Open the downloaded folder and open the ‘Main Report’ file.
- Highlight the cells containing data (excluding the headings) and copy into the ‘Camera Program Tracker – WildTrax Photo Data’ tab. Paste the data into the first open row.
- Save the WildTrax ‘Main Report’ file to SharePoint (07 Field > Wildlife Effects Monitoring Program-WEMP > Camera Programs > WildTrax Data > CAM XX). If there is not already a folder for the camera that you just processed photos for, create a new one, otherwise save the report in the correct camera folder. Rename file **CAMXX_Main Report_ddmmmyy-ddmmmyy**.
- Once report has been uploaded, delete the uploaded image set from WildTrax and move onto the next photo folder for processing.

Note: Only process one photo folder at a time (data uploaded to WildTrax **must not exceed 250 GB at any time**)

Note: While entering data into the Camera Program Tracker Excel spreadsheet remember to save the document frequently to prevent loss of data.

IMPORTANT! If the main spreadsheet is accidentally deleted on the database, it stays deleted!



4	Once you complete the photo processing for a folder move the folder from the Processing folder on the G:Drive to the corresponding camera folder in the Archive folder on the G:Drive. Once complete, delete the copied photo folder from your desktop.
	When you have completed all the steps for processing the folder photo data, ensure the Camera Program Tracker has been updated to reflect completion so photo processing is not duplicated.

GENERAL REMARKS

Frequency: Photos are processed continually as data becomes available from memory cards. Memory cards are downloaded approximately **2 times per year** for the wildlife cameras and **monthly** for the traffic cameras.

Take frequent breaks to stretch and rest the eyes to avoid strain during long hours at the computer. Use the 20/20/20 rule: Every 20 minutes, stand up, stretch, and focus on an object 20 feet away for 20 seconds.

Be sure to practice ergonomically correct posture while being seated at the computer.



VERSIONING AND REVISION TRACKING

REVISION NUMBER	PAGE NUMBER	CHANGE EFFECTED	DATE OF CHANGE	WHO MADE THE CHANGE
2.0	5-7	Added note on behaviours 1, behaviour 2, behaviour 3 Added note on Image Start/ Image End. Added figures for image processing	05-Dec-2023	Adam Scott
2.1	Entire Document	Updated photo processing methods using WildTrax	16-Oct-2025	Alyce Straub



APPENDIX

APPROVAL SIGNATURES RECORD

ROLE	NAME	SIGNATURE	DATE
REVIEWER	Gavin MacDougall		
DOCUMENT OWNER	Alyce Straub		
DOCUMENT APPROVER	Jonah Kelly		



EKA WI 2115.11 Caribou Behavioural Surveys - Scan

Version:	2.0
Replaces:	1.0
Creation Date:	2013-11-25
Scheduled Review Date:	2025-01-25
Review Date:	2025-10-01
Document Team Members:	Environment Advisor – Wildlife Senior Environmental Specialist Environmental Technician
Document Owner:	Environment Advisor - Wildlife
Document Approver:	Senior Environmental Specialist
Related Documents:	EKA WI.2105.10 Field Check-ins EKA WI.2105.04 Working in Remote Locations
Key Contacts:	Senior Environmental Specialist Environment Advisor - Wildlife
Change Requests:	Environment Advisor - Wildlife
Brief Description	The document describes the process for monitoring and recording the behavior of multiple caribou using a scan survey method. Individual caribou behavior is known to be a function of herd behavior; the purpose of a scan survey is to capture the behavior of caribou at the herd level.



Table of Contents

TASK DESCRIPTION:.....	3
HSE INFORMATION / SAFETY RISKS:	3
ADDITIONAL RESOURCES REQUIRED:	3
WORK PREPARATION:	3
WORK EXECUTION STEPS:.....	4
GENERAL REMARKS.....	5
Versioning and revision tracking.....	6
Appendix	7
Approval signatures record.....	7



TASK DESCRIPTION:

The objectives of the caribou behaviour studies are to:

- Monitor the effects of mine and mine-related activities on the dominant behaviours in a group (activity budget at the group level) over a period (e.g., time spent feeding, resting, walking, running, etc.); and.
- Quantify the relative degree of responses to specific stressors by caribou (e.g., aircraft, vehicles, blasts).

It is important that we attempt to capture different demographics of caribou populations. Whenever possible, scan surveys should attempt to capture bachelor herds, nursery groups, mixed herds, and rutting groups. Every attempt should be made to complete scan surveys at a variety of locations around site to monitor the potential impact of each area and its associated activities on herd behaviour.

HSE INFORMATION / SAFETY RISKS:

- Heavy equipment traffic
- Wildlife encounters

ADDITIONAL RESOURCES REQUIRED:

- Light vehicle
- Communication device
- Binoculars
- Rangefinder
- Camera
- Hardcopy survey sheets
- Stopwatch

WORK PREPARATION:

Item	Task Description
1	• Learn the identification of female, male, adult, juvenile and calf caribou, types of caribou behaviour (i.e., bedding, feeding, alert, etc.), potential incidental wildlife species; types of vegetation habitats, directional movement of caribou; and how to operate the GPS unit and range finder.
2	• If parking on a haul road, announce that you are stopping on appropriate radio channel and contact Dispatch to advise of expected duration of stop. Ensure truck is on with all lights on and cone is placed on roadway along with chocks.
3	• Surveyors should work in teams of two with one person recording data/timing and the other person verbally calling changes in behaviour and potential stressors that are detected (visual or audio). Prior to beginning the work, both surveyors should familiarize themselves with the datasheet to ensure that all data is collected during the survey.



WORK EXECUTION STEPS:

Item	Task Description
1	Select a herd: Herds surveyed should ideally contain at least 10 individuals.
2	Before Scan: - Once you have identified the group you intend to survey, wait five minutes to begin the scan survey. During this time, fill out the general survey details on the datasheet. Record date, arrival time, weather, description of location relative to mine infrastructure, UTM coordinates, and herd composition details. Weather data can be obtained from the airport (channel 8) or from CAM Building remote connection. Use the rangefinder to estimate the distance from the nearest mine infrastructure to the herd being surveyed. - If group size exceeds 30 animals, observations should ideally include five individuals of either sex.
3	Start Scan Survey: - The total length of a scan survey is 32 minutes, with a scan observation conducted every four minutes. For groups up to 30 animals, all animals will be included in the scan. For larger groups, a sub-sample of 20-30 animals will be observed. Data may be supplemented with the use of video recordings. - For each-individual, the following behaviours will be recorded: i. Bedding (e.g., sitting with all four legs tucked under body, lying down, sleeping on the ground) ii. Feeding (i.e., actively grazing, ruminating, chewing cud) iii. Standing iv. Walking v. Trotting vi. Running vii. 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) viii. Other - Record primary behaviours first followed by secondary behaviours (i.e., Primary behaviour – Alert, secondary behaviour – Standing) - If ‘other’ is recorded as the dominant behaviour, the ‘other’ behaviour should be described in the comments section of the datasheet. - For each four minute scan period, record the total number of animals surveyed as well as the number of each male, female, juvenile, calf, or unknown engaged in any behaviour.
4	Stressor Observations: In the event that a stressor occurs at any point during a scan survey, the observer will record the time that the stressor occurred (i.e., the time that the stressor is first observed by surveyor), the duration of the stressor from start to finish, and the response of the caribou group to the stressor as either exhibiting no reaction, or a reaction (e.g., caribou look towards



	disturbance; caribou walk away; caribou trot or run away). The minimum distance from the stressor will be estimated using the rangefinder and recorded on the datasheet (i.e., the closest distance to a stressor [e.g., a moving vehicle comes to the herd]) as well as any change in behaviour of the caribou/herd from the first indication of the stressor. Stressors include aircraft (helicopter and airplane), three categories of vehicles (light [e.g., pick-up truck], medium [e.g., water truck, bus], and heavy truck [e.g., haul truck]), blasts from pits, wildlife (e.g., bears), and human presence (the observer is not a stressor unless they move during the survey). • Observers will watch the animal(s) for up to 15 minutes following a stressor event and record the time it takes for the animal to return to non-alert behaviour (i.e., behaviour that was occurring prior to being stressed, such as bedding or feeding). Following a stressor event, the scan survey will resume on the 4-minute interval; the duration between each scan observation will remain constant at four minutes, regardless of the frequency or number of stressor events. Regardless of stressor events, the total scan survey time will not exceed 60 minutes.
5	Data Entry: • Data will be entered into the database on SharePoint (07 Field > Wildlife Effects Monitoring Program – WEMP > Caribou Behavioural Monitoring > Caribou Behavioural Surveys_Tracker).

GENERAL REMARKS

Frequency:

Frequency varies as per the Caribou Road Mitigation Plan (CRMP) based on caribou presence around site.

Annual Timing Window:

Observations will be conducted throughout the year whenever possible.



VERSIONING AND REVISION TRACKING

REVISION NUMBER	PAGE NUMBER	CHANGE EFFECTED	DATE OF CHANGE	WHO MADE THE CHANGE
2.0	5	Removal of General Remarks	01-Oct-2025	Alyce Straub



APPENDIX

APPROVAL SIGNATURES RECORD

ROLE	NAME	SIGNATURE	DATE
REVIEWER	Gavin MacDougall		
DOCUMENT OWNER	Alyce Straub		
DOCUMENT APPROVER	Jonah Kelly		



EKA WI 2115 12 Caribou Behavioural Surveys - Focal

Version:	2.0
Replaces:	1.0
Creation Date:	2013-11-25
Scheduled Review Date:	2025-12-12
Review Date:	2025-10-01
Document Team Members:	Environment Advisor – Wildlife Senior Environmental Specialist Environmental Technician
Document Owner:	Environment Advisor - Wildlife
Document Approver:	Senior Environmental Specialist
Related Documents:	EKA WI.2105.10 Field Check-ins EKA WI.2105.04 Working in Remote Locations
Key Contacts:	Senior Environmental Specialist Environment Advisor - Wildlife
Change Requests:	Environment Advisor - Wildlife
Brief Description:	The document describes the process for monitoring and recording the behavior of individual caribou using the focal survey method. While the behavior of individual caribou is known to be a function of herd behavior, it is still important to recognize that the different demographics of the caribou population may react differently to disturbances.



Table of Contents

TASK DESCRIPTION:.....	3
HSE INFORMATION / SAFETY RISKS:	3
ADDITIONAL RESOURCES REQUIRED:	3
WORK PREPARATION:	3
WORK EXECUTION STEPS:.....	4
GENERAL REMARKS.....	5
Versioning and revision tracking.....	6
Appendix	7
Approval signatures record.....	7



TASK DESCRIPTION:

The objectives of the caribou behaviour studies are to:

- Monitor the effects of mine and mine-related activities on the dominant behaviours in a group (activity budget at the group level) over a period (e.g., time spent feeding, resting, walking, running, etc.); and;
- Quantify the relative degree of responses to specific stressors by caribou (e.g., aircraft, vehicles, blasts).

The purpose of a focal survey is to capture the behaviour of caribou at the individual level, allowing us to create an activity budget for each segment of the population. It is important that we attempt to capture the entire demographics of a caribou population. Whenever possible focal surveys should alternate between capturing the behaviour of males, cows, and cows with calves. Every attempt should be made to complete focal surveys at a variety of locations around site to assess the potential impact of each area and its associated activities on individual behaviour.

HSE INFORMATION / SAFETY RISKS:

- Heavy equipment traffic
- Wildlife encounters

ADDITIONAL RESOURCES REQUIRED:

- Light vehicle
- Communication device
- Binoculars
- Rangefinder
- Camera
- Hardcopy survey sheets
- Stopwatch

WORK PREPARATION:

Item	Task Description
1	• Learn the identification of female, male, adult, juvenile and calf caribou, types of caribou behaviour (i.e., bedding, feeding, alert, etc.), potential incidental wildlife species; types of vegetation habitats, directional movement of caribou; and how to operate the GPS unit and rangefinder.
2	• If parking on a haul road, announce that you are stopping on appropriate radio channel and contact Dispatch to advise of expected duration of stop. Ensure truck is on with all lights on and cone is placed on roadway along with chocks.
3	• Surveyors should work in teams of two with one person recording data/timing and the other person verbally calling changes in behaviour and potential stressors that are detected (visual or audio). Prior to beginning the work, both surveyors should familiarize themselves with the datasheet to ensure that all data is collected during the survey.



WORK EXECUTION STEPS:

Item	Task Description
1	Select a herd: Select a suitable single animal from a herd of any size.
2	Before Focal: Once you have identified the individual you intend to survey, wait five minutes to begin the focal survey. During this time, fill out the general survey details on the datasheet. Record date, arrival time, weather, description of location relative to mine infrastructure, UTM coordinates, and herd composition details. Weather data can be obtained from the airport (channel 8) or from CAM Building remote connection. Use the rangefinder to estimate the distance from the nearest mine infrastructure to the individual being surveyed.
3	Start Focal Survey: - Record caribou behaviour on the datasheet every time the focal individual changes its behaviour, or a potential stressor event is noted by the observer. Record the time spent in each behaviour. - The length of a focal survey will be at least 20 minutes, assuming the focal individual remains within the surveyor's view for the entirety of the survey. Survey time will be extended if a stressor occurs (focal surveys should be continued for 15 minutes following a stressor event). Data may be supplemented with the use of video recordings. - For the individual, the following behaviours will be recorded: i. Bedding (e.g., sitting with all four legs tucked under body, lying down, sleeping on the ground) ii. Feeding (i.e., actively grazing, ruminating, chewing cud) iii. Standing iv. Walking v. Trotting vi. Running vii. 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) viii. Other - Record primary behaviours first followed by secondary behaviours (i.e., Primary behaviour – Alert, secondary behaviour – Standing) - If 'other' is recorded as the dominant behaviour, the 'other' behaviour should be described in the comments section of the datasheet.
4	Stressor Observations: In the event that a stressor occurs at any point during a focal survey, the observer will record the time that the stressor occurred (i.e., the time that the stressor is first observed by surveyor), the duration of the stressor from start to finish, and the response of the individual to the stressor as either exhibiting no reaction, or a reaction (e.g., caribou look towards disturbance; caribou walk away; caribou trot or run away). The minimum distance from the



	stressor will be estimated using the rangefinder and recorded on the datasheet (i.e., the closest distance to a stressor [e.g., a moving vehicle comes to the individual]) as well as any change in behaviour of the individual from the first indication of the stressor. Stressors include aircraft (helicopter and airplane), three categories of vehicles (light [e.g., pick-up truck], medium [e.g., water truck, bus], and heavy truck [e.g., haul truck]), blasts from pits, wildlife (e.g., bears), and human presence (the observer is not a stressor unless they move during the survey). • Observers will watch the individual for up to 15 minutes following a stressor event and record the time it takes to return to non-alert behaviour (i.e., behaviour that was occurring prior to being stressed, such as bedding or feeding). Regardless of stressor events, the total focal survey time will not exceed 60 minutes.
5	Data Entry: • Data will be entered into the database on SharePoint (07 Field > Wildlife Effects Monitoring Program – WEMP > Caribou Behavioural Monitoring > Caribou Behavioural Surveys_Tracker).

GENERAL REMARKS

Survey Frequency:

Frequency varies as per the Caribou Road Mitigation Plan (CRMP) based on caribou presence around site.

Annual Timing Window:

Observations will be conducted throughout the year whenever possible.



VERSIONING AND REVISION TRACKING

REVISION NUMBER	PAGE NUMBER	CHANGE EFFECTED	DATE OF CHANGE	WHO MADE THE CHANGE
2.0	5	Removal of General Remarks	01-Oct-2025	Alyce Straub



APPENDIX

APPROVAL SIGNATURES RECORD

ROLE	NAME	SIGNATURE	DATE
REVIEWER	Gavin MacDougall		
DOCUMENT OWNER	Alyce Straub		
DOCUMENT APPROVER	Jonah Kelly		



EKA WI 2115 10 Pit Wall Monitoring

Version:	2.1
Replaces:	2.0
Creation Date:	2013-11-25
Scheduled Review Date:	2026-12-12
Review Date:	2025-10-01
Document Team Members:	Environment Advisor – Wildlife Senior Environmental Specialist Environmental Technician
Document Owner:	Environment Advisor - Wildlife
Document Approver:	Senior Environmental Specialist
Related Documents:	N/A
Key Contacts:	Senior Environmental Specialist Environment Advisor - Wildlife
Change Requests:	Environment Advisor - Wildlife
Brief Description:	This document contains methods for monitoring the pit walls and other mining infrastructure to track raptor breeding activity and determine if deterrent action is necessary at the Ekati Mine.



Table of Contents

TASK DESCRIPTION:.....	3
HSE INFORMATION / SAFETY RISKS:	3
ADDITIONAL RESOURCES REQUIRED:	3
WORK PREPARATION:.....	3
WORK EXECUTION STEPS:.....	4
GENERAL REMARKS.....	4
Versioning and revision tracking.....	6
Appendix	7
Approval signatures record.....	7



TASK DESCRIPTION:

Ekati is home to cliff nesting raptors and as such it is imperative to monitor pit walls in active pits and other mining infrastructure to track nesting activity and determine if deterrent action is necessary at the Ekati mine.

HSE INFORMATION / SAFETY RISKS:

- Pit high wall, working at heights.
- Wildlife encounters
- Heavy equipment traffic
- Blasting
- Deterrent usage

ADDITIONAL RESOURCES REQUIRED:

- Light vehicle
- Communication device
- PPE
- Binoculars
- Spotting scope and tripod
- Camera
- GPS and spare batteries
- Birds Identification Field Guide
- Tablet with Pit Wall Monitoring survey form uploaded prior to leaving the office.

WORK PREPARATION:

Item	Task Description
1	• Know the cliff/ledge nesting bird species that you may encounter during a survey. Historically, birds found nesting on pit walls include Rough-legged Hawk (RLHA; <i>Buteo lagopus</i>), Peregrine Falcon (PEFA; <i>Falco peregrinus tundrius</i>), Gyrfalcon (GYRF; <i>Falco rusticolus</i>), and Common Raven (CORA; <i>Corvus corax</i>). Other species that may be encountered are Golden Eagle (GOEA; <i>Aquila chrysaetos</i>), Bald Eagle (BAEA; <i>Haliaeetus leucocephalus</i>), Merlin (MERL; <i>Falco columbarius</i>) and American Kestrel (AMKE; <i>Falco sparverius</i>). • To identify what these birds look like refer to the provided Bird Identification Field Guide which contains laminated bird photos. For more information, also refer to the Power Point slideshow on SharePoint under Wildlife-Presentations-Bird Monitoring at Ekati.
2	• Be aware of any legislative protection (NWT <i>Wildlife Act</i> [2013], <i>Migratory Bird Convention Act</i> [1994], <i>Migratory Bird Regulations</i> [2022]) and conservation status (COSEWIC assessment and listing on Schedule 1 of the <i>Species At Risk Act</i> [2002]) for the bird species. • Peregrine Falcon, Gyrfalcon, Rough-legged Hawk, Common Raven, Merlin, Bald Eagle, Golden Eagle, and American Kestrel are assessed as “Not at Risk” by COSEWIC and not listed in Northwest Territories.



- All raptors and ravens, their nests, eggs, and essential components of their habitat are protected under both the Migratory Bird Regulations (2022) & NWT *Wildlife Act* (2013).

WORK EXECUTION STEPS:

Item	Task Description
1	• Complete a Personal Safety Card that identifies risks and eliminates hazards.
2	• Be familiar with the locations of the pits and other mining infrastructure that may host nesting birds. • Be aware of how to access these locations. If required, acquire updated maps from Surface Mining.
3	• Travel to the survey locations specified for that day by the Environment Operations Team Lead. • Stop at designated vantage points around the top of the pits. If leaving the vehicle, keep > 2m from the edge of the pit and never stand on or cross over berms.
4	• Look for breeding activity including copulation, defensive behaviour, carrying food or nesting materials, birds in pairs, and birds prospecting for sites, and look for nests on the pit walls. • The best way to locate a nest is to look for whitewash on cliff walls or follow a flying bird to their nesting location. Use of a spotting scope is recommended when a potential nest is found. For identification purposes, use a scope when a bird is perched on a pit wall. (Be sure to return all bird spotting equipment to the wildlife cabinet at end of the day).
5	• Record all potential nests and any suspected nesting activity. Once the birds start collecting sticks, it won't take long before a nest is built.
6	• Take photos of potential nesting sites and any birds. • Ensure that there are landmarks in the photograph so that cross-shifts can easily locate where the photograph was taken from.
7	• Upon returning to the office, mark any photos with the nest's location, using 'Paint' or other similar program, and upload nest location photos to SharePoint (07 Field > Wildlife Effects Monitoring Program – WEMP > Photos > Pit Wall Nest Monitoring > Current Year). Ensure that all photos are named DD-MMM-YY_Location_Issue. (e.g., 20Oct24_Sable Pit_PEFA Nest) • Upload survey data to MP Field on tablet.
8	• Report all nesting activity to Wildlife Advisor and Environment Operations Team Lead. • Complete Daily Reporting email and send to required distribution list (Team Lead and Wildlife Advisor will confirm email recipients at the start of the program each year).

GENERAL REMARKS

In natural habitats, Peregrine Falcons, Gyrfalcons, Rough-legged Hawks, and Common Ravens nest on ledges and precipitous cliff faces. Open pit walls at Ekati resemble steep sided ledges and offer attractive nesting locations. Cliff nesting birds have also been observed nesting on ledge-like structures such as cairns,



towers, mining dredges and bridges. Attracting cliff nesting birds to pit walls is a concern, particularly for birds that have conservation status.

Frequency: **Daily** inspections in pits being actively mined during the nesting period.

Annual Timing Window: End of March to end of June



VERSIONING AND REVISION TRACKING

REVISION NUMBER	PAGE NUMBER	CHANGE EFFECTED	DATE OF CHANGE	WHO MADE THE CHANGE
Version 2.1	4	Updated annual timing window for pit wall bird monitoring	01-Oct-25	Alyce Straub



APPENDIX

APPROVAL SIGNATURES RECORD

ROLE	NAME	SIGNATURE	DATE
REVIEWER	Gavin MacDougall		
DOCUMENT OWNER	Alyce Straub		
DOCUMENT APPROVER	Jonah Kelly		

APPENDIX B

DATA ENTRY FORMS

Landfill Survey Data Entry Form

[illegible]

Landfill Survey Data Entry Form (continued)

[illegible]

Waste Bin Survey Data Entry Form

[illegible]

Waste Bin Survey Data Entry Form (continued)

[illegible]

Incidental Wildlife Sightings and Incident Data Entry Form

[illegible]

Incidental Wildlife Sightings and Incident Data Entry Form (continued)

[illegible]

Wildlife Mortality Data Entry Form

[illegible]

Wildlife Mortality Data Entry Form (continued)

[illegible]

Skirting and Fencing Inspection Data Entry Form

[illegible]

Road Monitoring Survey Data Entry Form

[illegible]

Road Monitoring Survey Data Entry Form (continued)

[illegible]

Caribou Behavioural Survey Data Entry Form

[illegible]

Caribou Behavioural Survey Data Entry Form (continued)

[illegible]

Caribou Behavioural Survey Data Entry Form (continued)

[illegible]