



# Hope Bay Mine

## 2024 Wildlife Mitigation and Monitoring Program Compliance Report

PREPARED FOR



**AGNICO EAGLE**

Agnico Eagle Mines Limited

DATE

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REFERENCE

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# Hope Bay Mine

## 2024 Wildlife Mitigation and Monitoring Program Compliance Report

April 2025



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## ACKNOWLEDGEMENTS

This report was prepared for Agnico Eagle Mines Limited (Agnico Eagle) by ERM Consultants Canada Ltd. (ERM). Onsite field and office work was completed by Agnico Eagle staff: Johnny Avalak, Guy Dufour, Brett Fairbairn, Georgia Hogarth, Jason Inkster, Will Nalley, Kailey Niemi, and Rachael Sorochan. The report was prepared and written by Kylie Beninger (BSc, BIT), Dylan Brassard (MSc, BIT), Alice Merondun (MSc, RPBio), Nicole Perrin (AS), and Andy Pustina (BSc, RPBio). Technical review was completed by Leslie Bol (MSc, RPBio). The compliance program was managed by Kevin Murphy (MSc) and Nicole Parent (BSc). Craig Neufeld (BSc, PBIol) was the Partner in Charge. Graphics production was coordinated by Jason Widdes (BA), Geographical Information System (GIS) production was coordinated by Luke Powell (MSc, ADP GIS), and report publishing was coordinated by Agnes Untz (BA).

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## EXECUTIVE SUMMARY

Wildlife mitigation and monitoring requirements for the Hope Bay Mine (the Mine) are included in the Doris Project Certificate No. 003 (Nunavut Impact Review Board [NIRB] 2016, Amendment 002), the Madrid-Boston Project Certificate No. 009 (NIRB 2018), and the Framework Agreement with the Kitikmeot Inuit Association (KitIA; the Framework Agreement 2015). Monitoring activities are summarized in the Wildlife Mitigation and Monitoring Program Plan (WMMP), which is revised regularly.

The Mine is currently in Care and Maintenance status with advanced exploration activities. Madrid-Boston Final Environmental Impact Statement (Madrid-Boston FEIS) predictions assess steady state operations, and do not consider Care and Maintenance activities and/or an active exploration program. To this end, with the Mine presently in Care and Maintenance, current activities and observed effects are not comparable to steady state operations, as assessed in the Madrid-Boston FEIS.

In 2024, monitoring data were collected, as outlined in the WMMP (Agnico Eagle Mines Limited 2023). Results from the 2024 Wildlife Mitigation and Monitoring Program (hereafter referred to as the Program) are summarized in Table 1.



TABLE 1      SUMMARY OF THE 2024 WILDLIFE MITIGATION AND MONITORING PLAN (WMMP) COMPLIANCE REPORT RESULTS

Program Component	Reason for Program	Results	Comparison to Terms and Conditions, Predictions, and Program Objectives	Report Section
Habitat Loss	Addresses commitments in the WMMP (Agnico Eagle Mines Limited 2023)	<ul style="list-style-type: none"><li>The total habitat loss in 2024 was 15.51 ha for a cumulative total of 159.67 ha overall. This is 3.4% of the approved PDA.</li><li>Additions to the Mine Footprint included new exploration tracks in the Madrid area and early work activities in the Doris area.</li><li>Habitat loss was &lt;0.1% of the suitable habitat available in the Madrid-Boston FEIS RSA for caribou, muskox, grizzly bear, and wolverine. Habitat loss was 0.36% or less of all suitable habitat available in the Madrid-Boston FEIS LSA for upland breeding birds, waterbirds, and short-eared owls.</li></ul>	<ul style="list-style-type: none"><li>The Madrid-Boston FEIS predicted a negligible magnitude effect of habitat loss for caribou, grizzly bear, and wolverine, and a low magnitude effect for upland breeding birds, waterbirds, and raptors.</li><li>The magnitude of habitat loss in 2024 is 3.4% of the Madrid-Boston FEIS PDA. Hence, the conclusions of the Madrid-Boston FEIS remain valid.</li></ul>	2.1
Road Traffic Monitoring	Addresses commitments in the WMMP (Agnico Eagle Mines Limited 2023) and Project Certificate Term and Condition 20 (NIRB 2018)	<ul style="list-style-type: none"><li>The daily and monthly road traffic in 2024 was summarized between Roberts Bay and Doris/Madrid North and between Doris and Madrid North. Hauling traffic included trips in the Madrid area.</li><li>Average daily traffic from Roberts Bay to Doris (wildlife camera 18) and between Doris and Madrid North (camera 35) was summarized during the 3 months in which data was available. Daily average transits between Doris and Madrid exceeded Madrid-Boston FEIS predictions in June and August 2025. Daily average transits between Doris and Madrid North were below Madrid-Boston FEIS predictions. The traffic is attributed to exploration, and care and maintenance activities.</li></ul>	<ul style="list-style-type: none"><li>Traffic levels exceeded daily average predictions between Roberts Bay and Doris. However, these did not occur in two consecutive months and as such, no additional evaluation of wildlife protection measures is required, and also reflect care and maintenance and exploration traffic, which is not part of Madrid-Boston FEIS predictions. Traffic levels between Doris and Madrid North were below predictions from the Madrid-Boston FEIS.</li></ul>	2.2
Helicopter and Fixed-Wing Flight Monitoring	Addresses commitments in the WMMP (Agnico Eagle Mines Limited 2023) and Project Commitment #GN-60 from Project Certificate No. 009 (NIRB 2018)	<ul style="list-style-type: none"><li>Helicopter trips around Boston, Doris, and between Boston and Doris were summarized from 2024 flight records.</li><li>Helicopter trips between Boston and Doris, and around Boston occurred far below maximum frequencies predicted in the Madrid-Boston FEIS. Daily maximum activity in the Doris area was higher than predicted in the Madrid-Boston FEIS.</li><li>Fixed-wing aircraft flights occurred on average at 31% of the frequencies modelled for noise disturbance in the Madrid-Boston FEIS.</li></ul>	<ul style="list-style-type: none"><li>The majority of helicopter and fixed-wing aircraft flight traffic levels were below levels predicted in the Madrid-Boston FEIS.</li><li>Helicopter traffic in the Doris area was higher than predicted maximums because of the Madrid drilling program; however, this exploration program was not included in the Madrid-Boston FEIS. To prevent impacts to wildlife, helicopters maintained 300 m vertical and 600 m horizontal separation (including starts and takeoffs) from caribou and muskox.</li></ul>	2.3
Snowbank Height Monitoring	Addresses Project Commitment #GN-49 from Project Certificate No. 009 Term and Condition 20 (NIRB 2018)	<ul style="list-style-type: none"><li>Snowbank heights across all years of monitoring (2020–2023) indicate that the AWR has been consistently well managed for wildlife passage across all years of monitoring (ERM 2024).</li></ul>	<ul style="list-style-type: none"><li>The snowbank monitoring program has been discontinued, following discussion of monitoring results at the 2024 IEAC meeting.</li></ul>	2.4
Noise Monitoring	Project Commitment Term and Condition 4 (NIRB 2018) and Final Hearing Commitment #GN-41 (Appendix B in Project Certificate No. 009)	<ul style="list-style-type: none"><li>In 2024, noise monitoring was completed and summarized for 32 instances of blasting.</li><li>The results were inconsistent and impacted by ambient noise at site.</li></ul>	<ul style="list-style-type: none"><li>The Madrid-Boston FEIS predicted that 96 Lpeak dBZ will not exceed at 2,800 m from the location of the blast. The results could not be used to confirm that the overpressure value of 96 Lpeak dBZ will not exceed at 2,800 m from the location of the blast.</li><li>Prior to blasting, prechecks were completed and there were no instances of caribou observed within line of sight out to 2.8 km of the blasting point.</li><li>The inconsistent results of the monitoring suggest that a local monitoring approach would be more effective to determine impacts to caribou at the Mine.</li></ul>	2.5
Construction Management	Addresses commitments in the WMMP (Agnico Eagle Mines Limited 2023)	<ul style="list-style-type: none"><li>Wildlife residence (bird nests and dens) preclearing surveys were completed in 2024, as vegetation clearing / ground disturbance activities took place.</li><li>Three active and one inactive bird nest were found, which did not require mitigation (i.e., nest buffer), as they were outside of the vegetation clearing / ground disturbance areas. No dens were observed.</li></ul>	<ul style="list-style-type: none"><li>Wildlife residence preclearing surveys followed commitments in the WMMP (Agnico Eagle Mine Limited 2023). No wildlife residences were impacted by vegetation clearing or ground disturbance activities.</li></ul>	2.6

Program Component	Reason for Program	Results	Comparison to Terms and Conditions, Predictions, and Program Objectives	Report Section
Facilities Camera Monitoring	Addresses Project Term and Condition 25 (NIRB 2016; Amendment 002)	<ul style="list-style-type: none"><li>A total of two grizzly bear events were recorded at facility cameras. One event consisting of three individuals occurred at the ERM Fish Fence. The remaining event was of a lone adult traversing the TIA.</li><li>There were 16 events of caribou detections at specific monitoring cameras. This includes three events at crossing ramps and an additional 13 events at the TIA. However, caribou do not appear attracted to the TIA, as indicated by the low number of caribou events relative to the rest of the Mine.</li></ul>	<ul style="list-style-type: none"><li>The Madrid-Boston FEIS predicted bears and wolverine would be attracted to the site at a “low” magnitude. No wolverines or bears were observed on the Waste Management Facility cameras in 2024, indicating grizzly bears and wolverines are not generally attracted to the waste site; therefore, current mitigation is effective, and the Madrid-Boston FEIS prediction is valid.</li><li>Events do not appear to indicate an attraction to the TIA specifically. No wolverine or muskox were recorded on cameras at the TIA. The overall low levels of wildlife recorded indicates that wildlife is seldom using the TIA area.</li></ul>	3.4 to 3.8 (Results within each Section)
Wildlife Interactions	Addresses Project Term and Condition 25 (NIRB 2016; Amendment 002); Framework Agreement Schedule 3.1; J. Wildlife; and Items 2 and 7	<ul style="list-style-type: none"><li>In 2024, one caribou interaction occurred at the Mine. On July 20, 2024, two caribou were identified within Quarry D and the blast was postponed. As the caribou remained in the vicinity the following day and posed a safety concern, they were successfully deterred from the blasting area using a human line and drone.</li><li>In 2024, four grizzly bear interactions occurred at the Mine site. Two grizzly bears entered the core shack area, and were deterred using bear bangers and a drone. A grizzly bear was observed near drill 4 and required helicopter action to deter it, as it posed a safety risk to personnel. A grizzly bear was observed at the Vent Raise and a drone was flown over during monitoring of the grizzly bear, causing the grizzly bear to slightly move away (the intention was not to deter the bear, only monitor it). Lastly, a bear had to be deterred using a truck and a helicopter because it posed a safety risk to employees servicing wildlife cameras in the Roberts Bay area.</li></ul>	<ul style="list-style-type: none"><li>Attraction to the Mine was predicted as low in the Madrid-Boston FEIS for grizzly bear and wolverine due to smells associated with the camp. There were four grizzly bear interactions and no wolverine interactions in 2024. Grizzly bears were all successfully deterred.</li><li>The predictions of the Madrid-Boston FEIS regarding attraction to the Mine remain valid.</li></ul>	3.4 to 3.11 (Results within each Section)
Wildlife Incidents	Addresses Project Term and Condition 25 (NIRB 2016; Amendment 002); Framework Agreement Schedule 3.1; J. Wildlife; and Items 2 and 7	<ul style="list-style-type: none"><li>There were no wildlife incidents recorded in 2024.</li></ul>	<ul style="list-style-type: none"><li>Direct mortality of raptors and upland birds was predicted as a low magnitude effect at the extent of the PDA.</li></ul>	3.4 to 3.11 (Results within each Section)
Wildlife Mortalities	Addresses Project Term and Condition 23 (NIRB 2018) and Term and Condition 25 (NIRB 2016; Amendment 002); Framework Agreement Schedule 3.1; J. Wildlife; and Items 2 and 7	<ul style="list-style-type: none"><li>There were two wildlife mortalities, both involving non-VEC species: two Arctic ground squirrels were found deceased on Windy Road due to vehicle collisions.</li></ul>	<ul style="list-style-type: none"><li>Wildlife mortalities were predicted to be negligible for all VECs. The predictions of the Madrid-Boston FEIS remain valid.</li></ul>	3.4 to 3.11 (Results within each Section)
Federal or Territorial Species at Risk	-	<ul style="list-style-type: none"><li>There were 11 federal and/or territorial species at risk observed at the Mine in 2024, including:<ul style="list-style-type: none"><li>Beverly/Ahiak herd, and Dolphin and Union herd caribou (barren-ground caribou);</li><li>Grizzly bear;</li><li>Wolverine;</li><li>Four upland bird species: American Golden-Plover, Hoary Redpoll, Red-necked Phalarope, and Semipalmated Plover;</li><li>Two waterbird species: Common Eider and King Eider;</li><li>Two raptor species: Golden Eagle and Short-eared Owl; and</li><li>Ringed seal.</li></ul></li></ul>	<ul style="list-style-type: none"><li>Results of monitoring activities for these species are summarized in their respective sections.</li></ul>	Caribou—3.4 Grizzly bear—3.6 Upland breeding birds—3.9 Raptors—3.11

Program Component	Reason for Program	Results	Comparison to Terms and Conditions, Predictions, and Program Objectives	Report Section
Caribou Kernel Density Analysis of Beverly/ Ahiak Calving Range	Addresses commitments in WMMP (Agnico Eagle Mines Limited 2023)	<ul style="list-style-type: none"><li>Collar data from the Beverly and Ahiak subpopulations were analyzed for their core calving range (50% kernel density) and the 95% kernel density calving range.</li><li>Neither the Beverly or Ahiak core calving ranges overlapped with the Study Area in 2024. Generally, the calving ranges were consistent with previous years (2002–2023), with some portions of both calving areas varying in their spatial extent.</li></ul>	<ul style="list-style-type: none"><li>The Beverly and Ahiak populations calving grounds have shown variation between years, but the core areas remain consistent and do not overlap the Study Area.</li></ul>	3.4
Caribou Kernel Density Analysis of Dolphin and Union Winter Range	Addresses comments on 2016 Compliance Report (ERM 2017)	<ul style="list-style-type: none"><li>Collar data from the Dolphin and Union herd were analyzed for their core (50% kernel density) and 95% kernel density winter range.</li><li>Neither the core winter range nor 95% winter ranges overlapped with the Study Area in 2024. The core winter range was largely similar to the long-term range, while the 95% range appeared to occur more substantially on west side of Bathurst Inlet, into the Coronation Gulf, and on Killinik (Victoria Island).</li></ul>	<ul style="list-style-type: none"><li>The Dolphin and Union herd winter range has shown some variability in 2024, but the core areas remain consistent and do not overlap the Study Area.</li></ul>	3.4
Wildlife Camera Monitoring—Caribou	Addresses commitments in WMMP (Agnico Eagle Mines Limited 2023)	<ul style="list-style-type: none"><li>There were 234 caribou events recorded in the Doris and Madrid areas during the recent monitoring period. These primarily occurred in the months of June and July, which contained over 75% of total events.</li><li>Caribou events were most commonly observed in the treatment zone, which is consistent with previous years.</li></ul>	<ul style="list-style-type: none"><li>The Madrid-Boston FEIS predicted potential minor effects on caribou due to change in movement and behaviour from avoidance of infrastructure within &lt;1–10 km² of the Mine, and possible avoidance of the Hope Bay Belt, a 3–4 km wide band of low-lying sedge meadows and rocky dykes.</li><li>Camera data suggest that caribou are not avoiding the Mine.</li></ul>	3.4
Wildlife Camera Monitoring—Muskox	Addresses commitments in WMMP (Agnico Eagle Mines Limited 2023)	<ul style="list-style-type: none"><li>Detections of muskox by wildlife cameras continue to be rare. There were nine muskox events recorded in the Doris and Madrid areas during the recent monitoring period. These primarily occurred in the month of June, which contained over 50% of the total events.</li><li>Over 50% of total events were observed in the Control zone, with the remaining events occurring in the Treatment zone.</li></ul>	<ul style="list-style-type: none"><li>The Madrid-Boston FEIS predicted potential minor effects on muskox due to change in movement and behaviour from avoidance of infrastructure around the Mine areas.</li><li>Muskox are rarely recorded in the Study Area.</li><li>The muskox camera data do not indicate avoidance of the Mine. The conclusions of the Madrid-Boston FEIS remain valid.</li></ul>	3.5
Wildlife Camera Monitoring—Grizzly Bear	Addresses commitments in WMMP (Agnico Eagle Mines Limited 2023)	<ul style="list-style-type: none"><li>There were 33 grizzly bear events recorded in the Doris and Madrid areas during the recent monitoring period. These primarily occurred in the month of September, approximately 40% of the total events.</li><li>Approximately 40% of total events were observed in both the Treatment and ZOI zones, with the remaining approximately 20% occurring in the Control zone.</li></ul>	<ul style="list-style-type: none"><li>The Madrid-Boston FEIS predicted a potential minor effect due to grizzly bear altering their movement and behaviour to avoid the Mine site.</li><li>The conclusions of the Madrid-Boston FEIS remain valid based on this monitoring method.</li></ul>	3.6
Wildlife Camera Monitoring—Wolverine	Addresses commitments in WMMP (Agnico Eagle Mines Limited 2023)	<ul style="list-style-type: none"><li>There were two wolverine events recorded in the Doris and Madrid areas during the recent monitoring period. Both events occurred on October 1, 2023, and occurred in the Control zone.</li><li>Wolverine events remained low in 2024, which is consistent with historical results.</li></ul>	<ul style="list-style-type: none"><li>The Madrid-Boston FEIS predicted potential minor effects on movement and behaviour of wolverine, including potential disruption of movement at the scale of the PDA or attraction to Mine infrastructure.</li><li>Using the criteria for residual effects ratings from the Madrid-Boston FEIS, the residual impact on wolverines remains the same (categorized as a low magnitude, medium duration, and reversible, not significant, effect).</li></ul>	3.7
Nest Predator Monitoring	Addresses commitments in WMMP (Agnico Eagle Mines Limited 2023)	<ul style="list-style-type: none"><li>Based on the camera monitoring program, there is no evidence that nest predators are more common closer to the Mine site (ERM 2024).</li></ul>	<ul style="list-style-type: none"><li>The nest predator monitoring program has been discontinued in 2024, after discussion of the program results at the 2024 IEAC meeting.</li></ul>	3.8
Upland Breeding Birds (Regional and TIA PRISM Surveys)	Addresses commitments in WMMP (Agnico Eagle Mines Limited 2023); and Project Certificate Terms and Conditions 25 (NIRB 2016; Amendment 002) and 26 (NIRB 2018)	<ul style="list-style-type: none"><li>Regional upland bird surveys following the PRISM protocols were completed in 2024.</li><li>Upland bird surveys following PRISM protocols were completed at the TIA.</li></ul>	<ul style="list-style-type: none"><li>Regional upland bird monitoring was completed in 2024 to contribute to a regional Arctic monitoring initiative by the CWS.</li><li>No species of conservation concern were detected during the TIA upland bird surveys.</li></ul>	3.9

Program Component	Reason for Program	Results	Comparison to Terms and Conditions, Predictions, and Program Objectives	Report Section
Waterbirds (Regional and TIA Shoreline Surveys)	Addresses commitments in WMMP (Agnico Eagle Mines Limited 2023); and Project Certificate Terms and Conditions 25 (NIRB 2016; Amendment 002) and 26 (NIRB 2018)	<ul style="list-style-type: none"><li>Regional waterbird shoreline surveys were completed at various distances from the Mine (Treatment and Control sites). Overall, the number of species were similar between Control and Treatment, although Treatment sites had a higher range of waterbird abundance.</li><li>TIA waterbird shoreline surveys were completed in 2024 at Treatment (TIA) and Control (Ogama Lake) sites. Overall, the number of species between Treatment and Control sites were similar, but the abundance of birds was higher at Treatment sites.</li></ul>	<ul style="list-style-type: none"><li>Regional waterbird monitoring is scheduled to occur every 2 years. These surveys were completed for the first time in 2022. As multiple years of monitoring are necessary to establish broader trends in waterbird activity, none are presented at this time.</li><li>No species of conservation concern were detected during the TIA shoreline surveys.</li></ul>	3.10
Waterbirds (TIA Water Quality Monitoring)	Addresses commitments in WMMP (Agnico Eagle Mines Limited 2023) and Project Term and Condition 26 (NIRB 2018)	<ul style="list-style-type: none"><li>Water quality at the TIA was monitored weekly and did not exceed relevant CCME guidelines.</li></ul>	<ul style="list-style-type: none"><li>Water quality did not exceed relevant CCME guidelines, so no ecological risk assessment was required.</li></ul>	3.10
Raptors	Addresses commitments in WMMP (Agnico Eagle Mines Limited 2023) and Project Certificate Term and Condition 27 (NIRB 2018)	<ul style="list-style-type: none"><li>No construction of the Madrid North area occurred in 2024 and as such, no preconstruction surveys for raptors were completed.</li></ul>	<ul style="list-style-type: none"><li>Preconstruction monitoring in Madrid North was not necessary in 2024.</li></ul>	3.11
Marine Mammals	Addresses commitments in WMMP (Agnico Eagle Mines Limited 2023); and Project Certificate Terms and Conditions 30, 31, 32, and 33 (NIRB 2018)	<ul style="list-style-type: none"><li>The Roberts Bay marine mammal program was completed for the second year in 2024. One ringed seal was recorded and did not display behaviour changes as a result of shipping activity.</li><li>No marine wildlife incidents were reported along shipping routes. Vessel tracks from 2024 were summarized to confirm that mitigations for setbacks and designated routes were followed. Several marine mammal sightings were reported along shipping routes from the three vessels servicing the Mine.</li></ul>	<ul style="list-style-type: none"><li>The monitoring program and shipping procedures for marine mammals were completed in accordance with the procedures detailed in the Shipping Management Plan.</li></ul>	3.12
Plants	Addresses commitments in WMMP (Agnico Eagle Mines Limited 2023); Project Term and Condition 17; and Commitment #GN-04 (NIRB 2018)	<ul style="list-style-type: none"><li>Invasive plant surveys were completed in 2023 and were therefore not completed in 2024.</li></ul>	<ul style="list-style-type: none"><li>No specific predictions around effects on plants were included in the Madrid-Boston FEIS.</li><li>Monitoring for invasive plants occurs every 5 years and will occur again in 2029.</li></ul>	3.13

Notes:

< = less than; % = percent; dBZ = Z-weighted decibel; ha = hectare; km = kilometre; km<sup>2</sup> = square kilometre; Lpeak = peak sound overpressure level; m = metre

AWR = All-Weather-Road; CCME = Canadian Council of Ministers of the Environment; CWS = Canadian Wildlife Service; FEIS = Final Environmental Impact Statement; IEAC = Inuit Environment Advisory Committee; LSA = Local Study Area; NIRB = Nunavut Impact Review Board; PDA = Project Development Area; PRISM = Program for Regional and International Shorebird Monitoring; RSA = Regional Study Area; TIA = Tailings Impoundment Area; VEC = Valued Ecosystem Component; WMMP = Wildlife Mitigation and Monitoring Plan; ZOI = Zone of Influence



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## ACRONYMS AND ABBREVIATIONS

<	less than
>	more than
%	percent
Agnico Eagle	Agnico Eagle Mines Limited
AWR	All-Weather-Road
CCME	Canadian Council of Ministers of the Environment
cm	centimetre
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
CWS	Canadian Wildlife Service
dBZ	Z-weighted decibel
ECCC	Environment and Climate Change Canada
ELC	Ecological Land Classification
ERM	ERM Consultants Canada Ltd.
FEIS	Final Environmental Impact Statement
GIS	Geographical Information System
GN DOE	Government of Nunavut Department of Environment
GPS	Global Positioning System
ha	hectare
HOL	Height of Land
IEAC	Inuit Environment Advisory Committee
KitIA	Kitikmeot Inuit Association
km	kilometre
km/hr	kilometre per hour
km <sup>2</sup>	square kilometre
Lpeak	peak sound overpressure level
LSA	Local Study Area
m	metre
m <sup>2</sup>	square metre
m <sup>3</sup>	cubic metre
mg/L	milligram per litre
Mine, the	Hope Bay Mine, including the Doris North Project and the Phase 2 expansion of Madrid and Boston

Miramar	Miramar Mining Corporation
misc.	miscellaneous
MOU	Memorandum of Understanding
N	north
NIRB	Nunavut Impact Review Board
NW	northwest
PDA	Project Development Area
Phase 2 Project, the	Phase 2 development of the Madrid and Boston deposits
PRISM	Program for Regional and International Shorebird Monitoring
Program, the	Wildlife Mitigation and Monitoring Program
Project Certificate, the	Phase 2 Hope Bay Belt Project Certificate Nunavut Impact Review Board No. 009; issued November 18, 2018
Report, the	Wildlife Mitigation and Monitoring Plan Compliance Report
RSA	Regional Study Area
SARA	<i>Species at Risk Act</i>
SOP	Standard Operating Procedure
SW	southwest
t	ton
TEM	Terrestrial Ecosystem Mapping
TIA	Tailings Impoundment Area
TLR	Tail Lake Road
TMAC	TMAC Resources Inc.
UD	utilization distribution
VEC	Valued Ecosystem Component
WMMP	Wildlife Mitigation and Monitoring Plan
ZOI	Zone of Influence



## GLOSSARY

COSEWIC	Committee on the Status of Endangered Wildlife in Canada—A federal committee of experts that assesses and designates the level of threat to wildlife and vegetation species in Canada.
Environment Personnel	Onsite environment technicians, wildlife biologists, and environment contractors.
Framework Agreement	Framework Agreement between the Kitikmeot Inuit Association and Agnico Eagle.
Hectare (ha)	10,000 m <sup>2</sup> or 0.01 km <sup>2</sup> or 2.47 acres.
Home Range	The area used by a wildlife species for living and moving. Home ranges can represent annual ranges (e.g., for animals, such as caribou and grizzly bear) or seasonal ranges (e.g., for birds).
LSA	Local Study Area. The permitted Madrid-Boston footprint of the Mine plus a buffer averaging 1,000 m radius around infrastructure and roads.
Migration	The regular seasonal or daily movement of animal populations to and from different areas, often considerable distances apart. Migration often occurs in corridors between preferred habitat types.
<i>Migratory Birds Convention Act (1994)</i>	<i>Migratory Birds Convention Act (1994).</i>
Mine, the	Hope Bay Mine, including the Doris North Project and the Phase 2 expansion of Madrid and Boston.
PDA	Project Development Area. The permitted Madrid-Boston footprint of the Mine plus a buffer averaging 250 m radius around infrastructure and 100 m radius around roads.
Phase 2 Project, the	Phase 2 development of the Madrid and Boston deposits.
PRISM	Program for Regional and International Shorebird Monitoring. Used to monitor Arctic shorebird populations.
Program, the	Wildlife Mitigation and Monitoring Program. Refers to the current WMMP, the monitoring that occurs, and the associated report for any given year.
Project Certificate, the	Phase 2 Hope Bay Belt Project Certificate Nunavut Impact Review Board No. 009; issued November 18, 2018.
Raptor	Birds of prey, including hawks, eagles, falcons, and owls. Common Raven is considered a functional raptor based on similar nesting preferences to other true raptor species in the Arctic.
Report, the	Wildlife Mitigation and Monitoring Plan Compliance Report.
RSA	Regional Study Area. This is the largest study area around the Madrid-Boston permitted infrastructure. The wildlife RSA encompasses an area large enough to characterize potential effects to species, which may come into contact with the Hope Bay Mine or Mine-related activities, approximately 30 km from Mine infrastructure.

SARA	<i>Species at Risk Act</i> (2002)—A Canadian federal statute, which is designed to meet one of Canada’s commitments under the International Convention on Biological Diversity. The goal of the Act is to protect endangered or threatened organisms and their habitats. It also manages species that are not yet threatened, but whose existence or habitat is in jeopardy.
Shorebird	Any bird that lives, breeds, or forages on or near the shores of coastal or inland waters; also known as waders of the order Charadriiformes, such as a sandpiper or a plover. It excludes gull species.
TIA	Tailings Impoundment Area. A lake that has been dammed and is the location of the tailings deposition.
TLR	Tail Lake Road. The access road to the TIA.
Upland Breeding Bird	Passerines (with the exception of Common Raven, which is included as a functional raptor), shorebirds, and ptarmigan.
WMMP	Wildlife Mitigation and Monitoring Plan. The WMMP is the official document that outlines the program to be conducted to mitigate and monitor wildlife for the Doris Project.
Waterbird	Umbrella term used to encompass all birds that exclusively use water habitat for foraging, breeding, or staging during the year.
Wildlife Study Area	Wildlife Mitigation and Monitoring Program Study Area.

# 1. INTRODUCTION

The requirements for the wildlife monitoring program for the Hope Bay Mine (the Mine) are described in the Wildlife Mitigation and Monitoring Plan (WMMP; Agnico Eagle 2023). Agnico Eagle Mines Limited (Agnico Eagle) discusses the WMMP regularly with the Inuit Environmental Advisory Committee (IEAC) and circulates the WMMP to the Kitikmeot Inuit Association (KitIA) and various stakeholders for discussion. The WMMP specifies the activities to be undertaken during the annual Wildlife Mitigation and Monitoring Compliance Program (the Program). This document, the WMMP Compliance Report (the Report), summarizes the results of the Program.

## 1.1 MINE REQUIREMENTS AND MONITORING OBJECTIVES

### 1.1.1 MINE WMMP REQUIREMENTS

The wildlife mitigation and monitoring requirements for the Mine are set out in the Doris Project Certificate No. 003 (Nunavut Impact Review Board [NIRB] 2006, 2013, 2016), the Madrid-Boston Project Certificate No. 009 (NIRB 2018), and the Framework Agreement (2015) with the KitIA, as well as commitments made during the review of the Madrid-Boston Project Final Environmental Impact Statement (Madrid-Boston FEIS) associated with each Project Certificate.

The WMMP is designed to assess residual Mine-related effects on the Valued Ecosystem Components (VECs) predicted in the Madrid-Boston FEIS (TMAC Resources Inc. [TMAC] 2017). The Madrid-Boston FEIS identified seven terrestrial wildlife VECs, including caribou (*Rangifer tarandus*), muskox (*Ovibos moschatus*), grizzly bear (*Ursus arctos*), wolverine (*Gulo gulo*), upland breeding birds, waterbirds, and raptors. The Madrid-Boston FEIS predicted the following five residual Mine effects on wildlife VECs, none of which were predicted to be significant and all with negligible or low magnitude (Table 1.1-1):

- Habitat loss;
- Disturbance;
- Disruption of movement;
- Attraction to the Mine; and
- Direct mortality.

TABLE 1.1-1 MAGNITUDE OF MADRID-BOSTON FEIS RESIDUAL IMPACT PREDICTIONS

VEC	Habitat Loss	Disturbance	Disruption of Movement	Attraction	Direct Mortality
Caribou	Negligible	Low	Low	N/A <sup>a</sup>	N/A <sup>a</sup>
Muskox	Low	Low	Low	N/A <sup>a</sup>	N/A <sup>a</sup>
Grizzly Bear	Negligible	Not residual	Low	Low	N/A <sup>a</sup>
Wolverine	Negligible	Not residual	Low	Low	N/A <sup>a</sup>
Upland Breeding Birds	Low	Negligible	N/A <sup>a</sup>	N/A <sup>a</sup>	Low
Waterbirds	Low	Negligible	N/A <sup>a</sup>	N/A <sup>a</sup>	Low

VEC	Habitat Loss	Disturbance	Disruption of Movement	Attraction	Direct Mortality
Raptors	Low	Low	N/A <sup>a</sup>	N/A <sup>a</sup>	Low
Marine Mammals	N/A <sup>a</sup>	N/A <sup>a</sup>	N/A <sup>a</sup>	N/A <sup>a</sup>	N/A <sup>a</sup>
Rare Plants	Low	N/A <sup>b</sup>	N/A <sup>b</sup>	N/A <sup>b</sup>	N/A <sup>b</sup>

Notes:

FEIS = Final Environmental Impact Statement; VEC = Valued Ecosystem Component

<sup>a</sup> Not applicable as effect was not considered a residual effect to terrestrial and/or marine wildlife.

<sup>b</sup> Not applicable effect to plants.

This Report describes the results of the monitoring activities associated with those predictions and VECs, including:

- Habitat loss due to the Mine (Section 2);
- Disturbance and disruption of movement—traffic, helicopter and fixed-wing aircraft, and noise monitoring to confirm estimates used in the Madrid-Boston FEIS (Section 2);
- VEC-specific monitoring (Section 3); and
- Attraction and direct mortality—wildlife use of the Mine site, including any interactions, incidents, and mortalities (Section 3).

The Report also describes monitoring completed to guide adaptive management, such as:

- Construction Management (Section 2.6); and
- Incidental observations (within VEC subsections; Section 3).

The annual Compliance Reports are provided to the NIRB who distributes them to stakeholders, including Environment and Climate Change Canada (ECCC), the Government of Nunavut Department of the Environment (GN DOE), the Canadian Wildlife Service (CWS), and the KitIA for review and comments. The WMMP is updated as needed during the life of the Mine, in part based on these review comments, which is then reflected in this Program.

### 1.1.2 INCLUSION OF INUIT QAUAJIMAJATUQANGIT

Agnico Eagle is committed to considering and incorporating Inuit Qauajimajatuqangit, or Traditional Knowledge, into all stages of the WMMP, including identification of mitigation measures, monitoring study design, data collection, and follow-up programs. Agnico Eagle includes Traditional Knowledge through the following mechanisms.

- The IEAC was formed under the Mine's Inuit Impact and Benefit Agreement with the KitIA. The IEAC is comprised of Inuit who are Elders and/or active land users with extensive knowledge of wildlife and the environment, and with experience in the Hope Bay study area. Typically, two meetings are held annually with the IEAC to review existing and proposed mitigation and monitoring for wildlife, describe monitoring results to date, discuss adaptive management for wildlife and fish, and gain Inuit perspectives and local knowledge on the Mine site.
- A series of workshops was held with Elders and harvesters familiar with the Mine area prior to the Madrid-Boston FEIS application to review and support the Mine's caribou mitigation measures.



- The Inuit Traditional Knowledge report (Banci and Spicker 2016) has also been reviewed and information regarding trends in VEC species or group populations have been included in Sections 3.4 to 3.11 of this Report.
- The KitIA presents perspectives of Inuit and scientific review when they comment on WMMP Plans and Reports and Madrid-Boston FEIS documents, and during their regular site visits. Examples of incorporation of their input include the construction and monitoring of road crossing structures on the Doris-Windy All-Weather Road (AWR), using incinerators for food waste management to mitigate the attraction of bears, and assistance by land users in selecting the locations for site monitoring cameras. The WMMP and the Report are circulated to the KitIA and IEAC for review and comment.

### 1.1.3 PROGRAM AUDIT PROCESS

Project Certificate No. 009 Term and Condition 19 requires an audit process for the WMMP to identify updates that may be required (NIRB 2018). Agnico Eagle fulfills this requirement through the submission of annual reports and updated management actions to regulators and the IEAC, and through consultation and discussion at regular meetings with the IEAC and KitIA. In 2024, Agnico Eagle held two IEAC meetings with relevant review as part of the audit process. The specific engagement for this audit process in 2024, the feedback provided, and updates to the WMMP are included in Table 1.1-2.

## 1.2 PROGRAM COMPONENTS

The WMMP (Agnico Eagle 2023) identifies the monitoring and mitigation programs applicable to the Mine.

Agnico Eagle entered the Mine into Care and Maintenance in February 2022. Care and Maintenance status remained in effect for all developments (Doris, Madrid, and Boston sites) in 2024. Table 1.2-1 outlines the WMMP requirements relevant to the Mine in Care and Maintenance in 2024 and the associated Report section in which they are described.

## 1.3 PROGRAM STUDY AREA

The 2024 Wildlife Study Area (the Study Area) used a similar area as the Madrid-Boston Project Regional Study Area (RSA; Figure 1.3-1), with some slight extensions to the study area in order to encompass VECs, particularly marine mammals in Roberts Bay. The Doris Study Area used in previous years is also included on Figure 1.3-1 for comparative purposes. The Madrid-Boston RSA is provided on Figure 2.1-1 for comparison.

TABLE 1.1-2 WMMP PROGRAM AUDIT PROCESS RECORDS, 2024

Audit Process	Parties Included	Program Feedback	Program Updates
IEAC Meeting July 3–4, 2024	IEAC, KitIA	IEAC agreed that the snowbank monitoring program can be discontinued based on previous WMMP Compliance Report results.	The snowbank monitoring program will be discontinued and the WMMP will be updated accordingly.
		IEAC agreed to discontinue the nest predator monitoring program, as results have been consistent in showing no evidence that nest predators are attracted to the Mine.	The nest predator monitoring program will be discontinued and the WMMP will be updated accordingly.
		IEAC agreed to keep the cameras around Doris and Madrid, but to complete the camera analysis every 3 years rather than annually.	In accordance with the feedback, no camera analysis was completed in 2024 and the WMMP will be updated to reflect the updated timing of the camera analysis.
		IEAC indicated that the caribou herd identification protocol is working well.	No program update required.
		Snow track surveys were noted as needing to start when operations resume and the IEAC shared ideas on methods to use. It was also raised that a baseline should be established before construction occurs.	The snow track survey section of the WMMP will be updated according to the IEAC program feedback.
IEAC Meeting October 11, 2024	IEAC	No feedback relevant to the WMMP or the Report.	No program update required.

## Notes:

IEAC = Inuit Environment Advisory Committee; KitIA = Kitikmeot Inuit Association; WMMP = Wildlife Mitigation and Monitoring Plan

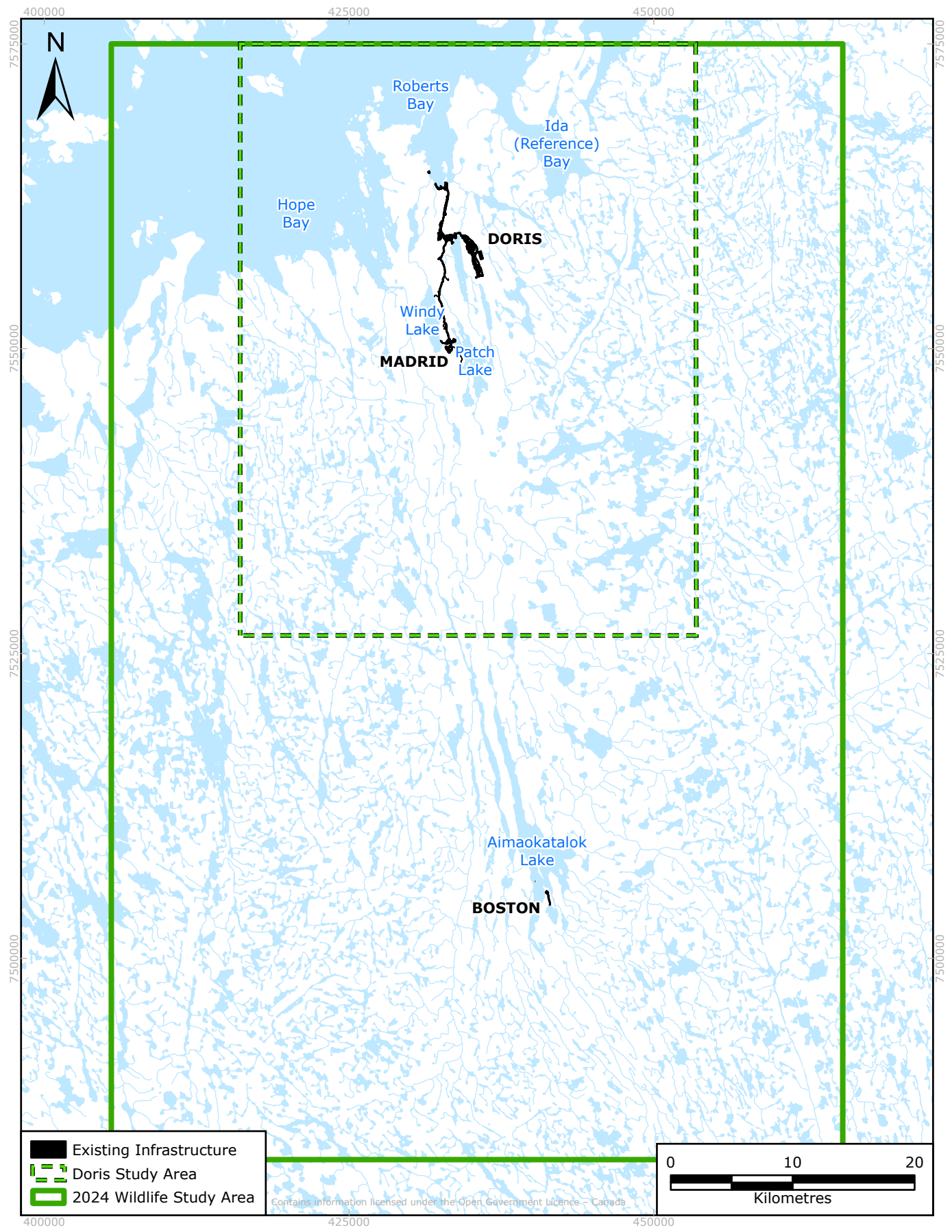
TABLE 1.2-1 WILDLIFE MONITORING PROGRAMS, 2024

Monitoring Program	Relevant Report Section
<i>Infrastructure Development and Activities</i>	
a. Habitat Loss	Section 2.1
b. Traffic Monitoring	Section 2.2
c. Helicopter and Fixed-Wing Aircraft Monitoring	Section 2.3
d. Snowbank Monitoring	Section 2.4
e. Noise Monitoring	Section 2.5
f. Construction Management	Section 2.6
<i>VECs and Other Species Monitoring and Mitigation</i>	
a. Monitoring Methods and Results Common Across VECs	Section 3.2 and 3.3
b. Caribou	Section 3.4
c. Muskox	Section 3.5
d. Grizzly Bear	Section 3.6
e. Wolverine	Section 3.7
f. Nest Predators	Section 3.8
g. Upland Breeding Birds	Section 3.9
h. Waterbirds	Section 3.10
i. Raptors	Section 3.11
j. Marine Mammals	Section 3.12
k. Plants	Section 3.13

Note:

VEC = Valued Ecosystem Component

FIGURE 1.3-1 2024 WILDLIFE STUDY AREA



## 2. HABITAT LOSS AND SITE ACTIVITY MONITORING

### 2.1 HABITAT LOSS

Direct loss of wildlife habitat may occur through site clearing, infrastructure construction, and facility expansion. The amount of direct habitat loss due to the development and production phases of the Mine has been monitored annually since 2006. There were changes to the Mine Footprint in 2024; therefore, habitat loss was calculated and evaluated against the Madrid-Boston FEIS predictions for loss of suitable habitat for VEC species or groups (Section 2.1.3).

#### 2.1.1 FEIS PREDICTIONS

In the Madrid-Boston FEIS (TMAC 2017), wildlife habitat was predicted to be lost within the Project Development Area (PDA), which extends 500 to 1,500 metres (m) surrounding planned infrastructure. This extent of the PDA allowed future development and operational flexibility. Infrastructure construction was predicted to result in the reduction of existing wildlife habitat. Habitat loss was predicted to not be a significant residual effect, and the magnitude was classified as negligible for caribou, grizzly bear, and wolverine, and low for muskox, upland breeding birds, waterbirds, and raptors. The geographic extent of habitat loss was the PDA for all wildlife VECs.

Habitat loss for rare plants was not assessed directly in the Madrid-Boston FEIS (TMAC 2017), but instead was evaluated by determining the loss of special landscape features. Special landscape features include riparian ecosystems, rare or sensitive wetlands, ecosystems that can contain eskers, cliffs, bedrock lichen, and outcrop ecosystems, and beaches and marine intertidal areas. Loss of special landscape features was predicated to be an effect with low magnitude that is not significant and at the geographic scale of the PDA.

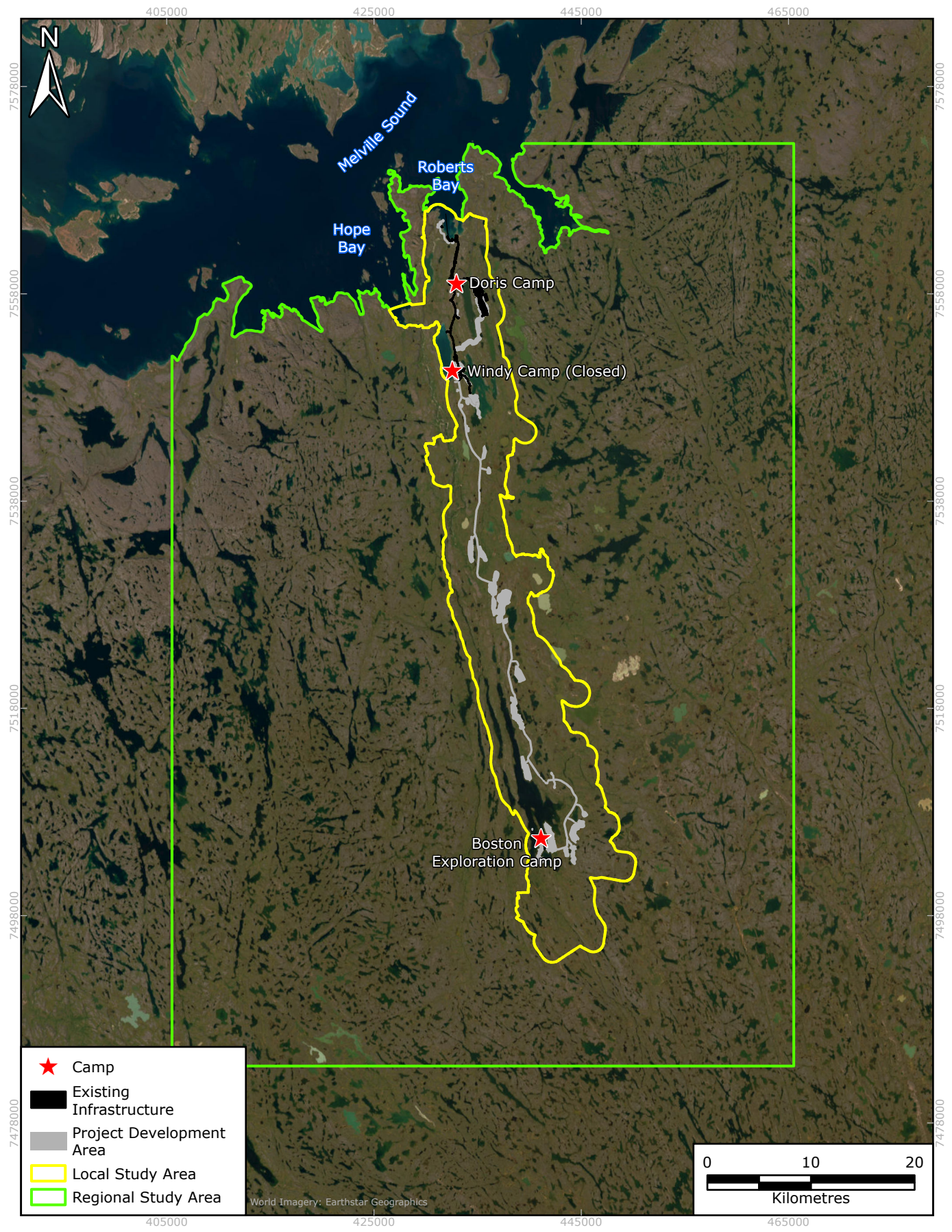
#### 2.1.2 METHODS

Habitat loss is evaluated as the direct loss of vegetation communities due to the Mine Footprint. Habitat loss is evaluated annually and is compared to the amount of habitat available within the relevant study area, Figure 2.1-1, and using Ecological Land Classification (ELC) for the Slave Geological Province and Terrestrial Ecosystem Mapping (TEM) ecosystem units.

To evaluate the loss of suitable habitat for VEC species or groups, the loss is expressed as a proportion of available suitable habitat within the relevant study area as determined in the Madrid-Boston FEIS (TMAC 2017). Any loss of special landscape features designated as potential rare plant habitat (i.e., riparian areas, rare wetlands, eskers, cliffs, or marine beaches) is reported directly as number of hectares (ha) lost.



FIGURE 2.1-1 WILDLIFE REGIONAL AND LOCAL STUDY AREAS FOR HOPE BAY MINE



### 2.1.3 RESULTS AND DISCUSSION

The total habitat lost in 2024 was 15.51 ha, adding to the approximately 144.15 ha previously lost to construction (Figure 2.1-2). Collectively, the Mine Footprint covers 159.66 ha to date, which is 3.4 percent (%) of the assessed PDA in the Madrid-Boston FEIS (4,706 ha, Boston PDA inclusive; TMAC 2017). In 2022 and 2023, the total habitat lost was incorrectly reported as 141.15 ha and should have been reported as 144.15 ha. The incorrectly reported amount was the total habitat loss for upland breeding birds at the Mine site.

Among each of the mammalian VECs, for which habitat loss is evaluated relative to the RSA, less than 0.1% of available suitable habitat within the RSA has been lost due to the Mine to the end of 2024 (Table 2.1-1). With respect to the proportion of suitable habitat for upland bird VECs, for which habitat loss is evaluated relative to the Local Study Area (LSA), habitat loss has accounted for 0.4% or less of suitable habitat to the end of 2024 (Table 2.1-1). No loss of special landscape features designated as potential rare plant habitat occurred.

The magnitude of predicted habitat loss was classified as negligible for caribou, grizzly bear, and wolverine, and low for muskox, upland breeding birds, waterbirds, and raptors (TMAC 2017). The predictions of the Madrid-Boston FEIS (TMAC 2017) remain valid, with respect to the constructed Mine Footprint.

## 2.2 TRAFFIC MONITORING

Road traffic is monitored as part of the Madrid-Boston FEIS commitments. Traffic was evaluated in the Madrid-Boston FEIS for its potential to pose a hazard to wildlife crossing roads or due to noise. Mitigation includes conservative speed limits, road signage, and employee training for wildlife avoidance. The WMMP also includes a Road Management Plan, which describes road safety, design, and monitoring practices (Agnico Eagle Mines Limited 2023).

### 2.2.1 FEIS PREDICTIONS

Peak vehicle traffic between Mine areas (i.e., Roberts Bay, Doris, Madrid, Windy Lake, and [in future years], Boston) was predicted in the Madrid-Boston FEIS (TMAC 2017), and is summarized in Table 2.2-1. Estimates of Peak Years were based on planned Mine development, starting in 2019. However, Madrid and Boston development has been paused, delaying the date estimates presented in the Madrid-Boston FEIS.

Traffic levels are reported in accordance with Project Certificate No. 009 Commitment 20 and Final Hearing Commitment 52 (NIRB 2018).



FIGURE 2.1-2 INFRASTRUCTURE DEVELOPMENT OF HOPE BAY MINE AS OF 2024

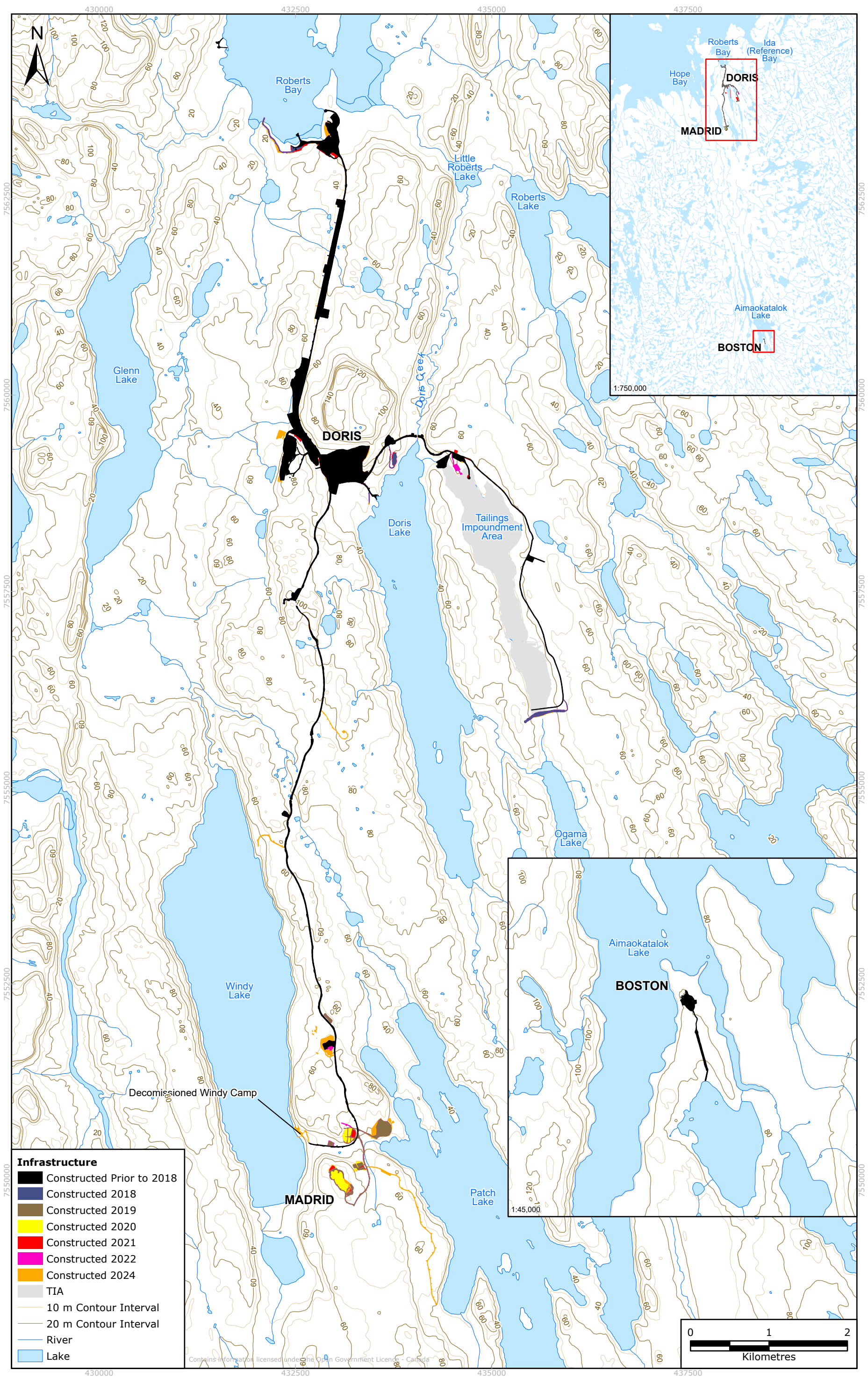


TABLE 2.1-1 HABITAT LOSS BY VEC AT HOPE BAY MINE THROUGH 2024

VEC	Season	Total Habitat Loss		LSA (56,340 ha)			RSA (491,824 ha)		
		Predicted Loss in the 2017 PDA (ha)	Actual Loss to 2024 (ha)	Suitable <sup>a</sup> Area (ha)	Predicted Loss (%)	Actual Loss to 2024 (%)	Suitable <sup>a</sup> Area (ha)	Predicted Loss (%)	Actual Loss to 2024 (%)
Caribou	Summer	3,741	148.9	46,835	8.0	0.3	420,608	0.9	<0.1
	Fall	1,086	19.7	14,332	7.6	0.1	302,692	0.4	<0.1
	Winter	1,875	88.4	19,782	9.5	0.5	227,934	0.8	<0.1
Grizzly Bear	Spring	1,404	56.4	20,287	6.9	0.3	272,214	0.5	<0.1
	Summer	3,198	109.6	37,824	8.5	0.3	221,903	1.4	<0.1
	Fall	3,326	120.5	40,256	8.3	0.3	224,335	1.5	<0.1
	Denning	465.6	23.2	9,132	5.1	0.3	86,731	0.5	<0.1
Muskox	Winter/Spring	2,949	73.4	34,411	8.6	0.2	141,209	2.1	<0.1
	Summer/Fall	3,630	133.0	45,657	8.0	0.3	328,236	1.1	<0.1
Wolverine	Denning	920	159.7	10,667	8.6	1.5	173,360	0.5	<0.0
Short-Eared Owl	Spring Nesting	3,486	127.9	40,279	8.7	0.3	198,843	1.8	<0.1
	Summer Brooding	3,608	147.8	42,411	8.5	0.3	200,975	1.8	<0.1
Waterbirds	Waterbodies	105	0.3	9,757	1.1	0.0	99,612	0.1	<0.1
	Wetlands	620	28.9	10,907	5.7	0.3	58,370	1.1	<0.1
	Terrestrial Habitat	1,333	65.1	18,812	7.1	0.4	185,952	0.7	<0.1
	Unspecified TEM Type	N/A	1.0	N/A	N/A	N/A	N/A	N/A	N/A
	<b>Total</b>	<b>2,058</b>	<b>95.3</b>	<b>39,476</b>	<b>5.2</b>	<b>0.2</b>	<b>343,935</b>	<b>0.6</b>	<b>&lt;0.1</b>

VEC	Season	Total Habitat Loss		LSA (56,340 ha)			RSA (491,824 ha)		
		Predicted Loss in the 2017 PDA (ha)	Actual Loss to 2024 (ha)	Suitable <sup>a</sup> Area (ha)	Predicted Loss (%)	Actual Loss to 2024 (%)	Suitable <sup>a</sup> Area (ha)	Predicted Loss (%)	Actual Loss to 2024 (%)
Upland Birds	Dry Upland	1,848	60.8	19,901	9.3	0.3	280,133	0.7	<0.1
	Moist/Wet Lowland	2,329	95.8	26,524	8.8	0.4	183,326	1.3	<0.1
	<b>Total</b>	<b>4,177</b>	<b>156.6</b>	<b>46,425</b>	<b>9.0</b>	<b>0.3</b>	<b>463,459</b>	<b>0.9</b>	<b>&lt;0.1</b>

## Notes:

< = less than; % = percent; ha = hectare

LSA = Local Study Area; N/A = not applicable; PDA = Project Development Area; RSA = Regional Study Area; VEC = Valued Ecosystem Component

<sup>a</sup> Habitat loss models for caribou, grizzly bear, and muskox include high and moderate quality habitat assessed in the Madrid-Boston FEIS. All other VECs are modelled directly for suitable versus unsuitable habitat.



**TABLE 2.2-1 PREDICTED MAXIMUM MINE VEHICLE TRAFFIC IN YEARS 1 TO 5**

Transport Areas <sup>a</sup>	Peak Years <sup>b</sup>	Number of Daily Return Trips	Transport Categories	Vehicle Type
Roberts Bay to Doris/Madrid North	Year 1–Year 13 (2019–2030)	10	Fuel, supplies, service vehicles	60 m <sup>3</sup> tanker, flatbed trucks, misc. vehicles
Doris to Madrid North	Year 1–Year 13 (2019–2030)	78	Supplies, explosives, employees, service vehicles	Flatbed trucks, 40-person bus, misc. vehicles
Windy Lake to Doris	Year 1–Year 13 (2019–2030)	8	Transport of water	20 m <sup>3</sup> tanker
Roberts Bay to Boston <sup>c</sup>	Year 4–Year 12 (2022–2023)	2	Fuel, supplies	60 m <sup>3</sup> tanker, flatbed trucks
Boston to Doris <sup>c</sup>	Year 4–Year 13 (2022–2024)	31	Hauling, fuel, supplies, service vehicles	55 t haul truck, 60 m <sup>3</sup> tanker, flatbed trucks, misc. vehicles

Notes:

m<sup>3</sup> = cubic metre; t = ton

misc. = miscellaneous

<sup>a</sup> Multiply return trips by two for number of transits. Volume taken from the Madrid-Boston FEIS (Vol. 3, Section 4.5, Table 4.5-1; TMAC 2017).<sup>b</sup> Peak Years and Dates are from the Madrid-Boston FEIS and do not represent current Mine progress.<sup>c</sup> Indicates portions of road that have not been constructed, as of the current reporting year.

## 2.2.2 METHODS

In 2024, daily average traffic volumes were calculated using data from two wildlife cameras stationed along transit routes. See Section 3.2 for camera placement information and methods. For the 3 months (June 2024 to August 2024), data was collected; total daily traffic volume at camera 18 (Roberts Bay to Doris) and camera 35 (Doris to Madrid North) were determined using 1 week of motion-triggered photos. Typically, this was the first week of the month, starting on the first Sunday. Data were not available after August 2024 due to the timing of camera checks. The traffic logs from 2024 were summarized for the maximum, minimum, and average monthly traffic levels between each transport area: Roberts Bay to Doris, and Doris to Madrid North.

The Mine is currently in Care and Maintenance phase with advanced exploration activities.

## 2.2.3 RESULTS AND DISCUSSION

Two of 3 months with available data in 2024 had daily average transits from Roberts Bay to Doris that were above predictions from the Madrid-Boston FEIS. Daily average transits in 2024 from Doris Camp to Madrid North were below predictions from the Madrid-Boston FEIS (Table 2.2-2, Table 2.2-3). Traffic between Roberts Bay and Doris was above the predicted levels, with the overall average at 26.8 daily transits, compared to a predicted peak of 20 transits (Table 2.2-2). Traffic between Doris and Madrid North was below the predicted levels, with the overall average at 63.9 daily transits, compared to a predicted peak of 102 transits (Table 2.2-3). Camera data were not available along the Doris to Madrid route (camera 35) in September 2023 to May 2024 due to camera card malfunctions.



**TABLE 2.2-2 VEHICLE TRAFFIC CALCULATED FROM ROBERTS BAY TO DORIS CAMP  
(CAMERA 18), SEPTEMBER 2023 TO AUGUST 2024**

Month	Predicted Peak Daily Transits <sup>a</sup>	Daily Average	Daily Minimum	Daily Maximum
September 2023–May 2024*	20	No Data	No Data	No Data
June 2024	20	36.1	10	53
July 2024	20	15.0	10	26
August 2024	20	29.3	16	47

Notes:

\* Vehicle traffic data unavailable for both Roberts Bay to Doris, and Doris to Madrid North in October to December 2023, and January to May 2024.

<sup>a</sup> Maximum predicted daily transits were calculated from two times maximum daily return trips.

**TABLE 2.2-3 VEHICLE TRAFFIC CALCULATED FROM DORIS CAMP TO MADRID NORTH  
(CAMERAS 35), SEPTEMBER 2023 TO AUGUST 2024**

Month	Peak Daily Predicted Transits <sup>a, b</sup>	Daily Average	Daily Minimum	Daily Maximum
September 2023–May 2024*	172	No Data	No Data	No Data
June 2024	172	72.3	25	83
July 2024	172	58	24	71
August 2024	172	61.6	47	75

Notes:

\* Vehicle traffic data unavailable for both Roberts Bay to Doris, and Doris to Madrid North in October to December 2023, and January to May 2024.

<sup>a</sup> Maximum predicted daily transits were calculated from two times maximum daily return trips.

<sup>b</sup> Values are from Table 2.2-1 and include traffic from Doris to Madrid North, and Windy Lake to Doris.

Final Hearing Commitment 52 establishes the need to compare current traffic levels to predictions in the Madrid-Boston FEIS and to enhance wildlife protection measures if levels are exceeded in two consecutive monitoring periods. In August 2024, the average daily transit was exceeded by more than 25% from Roberts Bay to Doris. It was not exceeded in July 2024 and due to the timing of the collection of the camera cards, it is unknown if this number was exceeded during September 2024.

## 2.3 HELICOPTER AND FIXED-WING AIRCRAFT MONITORING

Helicopters and fixed-wing aircrafts currently operate from the Doris and Boston areas. Helicopters make trips between the Doris and Boston areas and take supplies (e.g., drilling gear for exploration activities) and crews to other areas. Fixed-wing aircrafts service crew and supply movement in and out of Hope Bay. Aircraft noise can pose a disturbance risk to wildlife (Manc et al. 1988), but the level of disturbance depends on both the frequency and altitude of aircrafts (e.g., more noise during take off and landing).

## 2.3.1 MADRID-BOSTON FEIS PREDICTIONS

### 2.3.1.1 HELICOPTER FLIGHTS

Helicopter flight traffic levels were modelled in the Madrid-Boston FEIS according to predicted frequency of routes, noise levels based on altitude, and flight duration (TMAC 2017). Helicopter traffic is monitored and reported annually in accordance with Project Certificate No. 009 Commitment #GN-45 (NIRB 2018). Helicopter flight frequencies were predicted and modelled by area; travel between Doris and Boston helipads was predicted at eight daily one-way trips (four round trips), as well as eight daily trips of general activity in the area of each Doris and Boston helipad (four round trips each). An additional scenario beyond this basic scenario predicted up to five additional roundtrips daily to service drilling sites from either Doris, Boston, or Windy helipads (TMAC 2017). Since the Mine is in Care and Maintenance with advanced exploration activities, predictions of helicopter activity are no longer aligned with the Madrid-Boston FEIS predictions that were made based on the year of Mine development, assuming ongoing construction and operation of Madrid and Boston, rather than Care and Maintenance.

### 2.3.1.2 FIXED-WING AIRCRAFT FLIGHTS

The wildlife chapter of the Madrid-Boston FEIS (TMAC 2017; Volume 4, Chapter 9, Section 9.8.3.2) evaluated the potential effects of noise on caribou from fixed-wing aircrafts using a standard noise model, estimating if a 737-200 and a Dash 8 took off and landed at both Doris and Boston airstrips in both directions for four take offs and four landings per day at each airstrip. The predicted Zone of Influence (ZOI) for other Mine effects on caribou was 4 km from infrastructure, which is wider than the estimated effects of aircraft noise.

## 2.3.2 METHODS

### 2.3.2.1 HELICOPTER FLIGHTS

Helicopter flight logs tracked general flight locations within the Mine area, each log corresponding to a one-way trip from either the Doris or Boston area, or between Doris and Boston. No helipad is currently in use at Windy Camp. Helicopter data were analyzed from machines associated with site maintenance, monitoring programs, and exploration support. The helicopter flight logs were summarized as number of flights per days within and between the Doris and Boston areas during the period that helicopters were present at site.

### 2.3.2.2 FIXED-WING AIRCRAFT FLIGHTS

Fixed-wing aircraft flights were summarized by the number of take offs and landings each day by month. Values were summarized for 2024 and compared to the predicted levels in the Madrid-Boston FEIS. Fixed-wing aircraft have standard flight altitudes and are only expected to pose a potential noise disturbance to wildlife during take off and landing. Therefore, this report does not examine average or daily flight elevations.

## 2.3.3 RESULTS AND DISCUSSION

### 2.3.3.1 HELICOPTER FLIGHTS

In 2024, data from 3,177 one-way helicopter trips were logged around the Mine. A total of 3,177 helicopter trips included both transport (359 flights) and exploration activities (2,819 flights). Activity was logged on helicopters from May 3, 2024, through October 12, 2024, for 163 helicopter monitoring days. Helicopter trips between Boston and Doris (an average of 0.1 daily trips) and around Boston (an average of 0.1 daily trips) occurred at much lower frequencies than the predicted maximum frequencies in the Madrid-Boston FEIS; a maximum of eight daily trips predicted for both areas. Trips around Doris occurred above the level predicted in the Madrid-Boston FEIS (eight flights maximum per day), with an average of 19 helicopter trips per day, primarily related to exploration activities. However, the Madrid-Boston FEIS predictions no longer aligned with Mine development progress, given that the site was in Care and Maintenance with an advanced exploration program in 2024. The WMMP specifies that helicopters avoid caribou by 300 m vertically and 600 m horizontally, thereby reducing potential impacts to caribou.

### 2.3.3.2 FIXED-WING AIRCRAFT FLIGHTS

Fixed-wing aircraft flights were active throughout 2024, with an overall frequency of 1.25 one-way flights (i.e., take off or landing) per day. Flight frequency was consistent throughout the year, ranging from 1.14 to 1.41 one-way flights per day (Table 2.3-1). Daily flights were around 31% of predicted levels in the Madrid-Boston FEIS (Table 2.3-1), and were therefore within predicted levels for the Mine.

**TABLE 2.3-1 DAILY FIXED-WING AIRCRAFT TRAFFIC, 2024**

Airstrip	Predicted Daily Trips <sup>a</sup>	Average Daily Trips	Average Daily Trips Jan–Mar	Average Daily Trips Apr–Jun	Average Daily Trips Jul–Sept	Average Daily Trips Oct–Dec
Doris	4	1.25	1.14	1.23	1.41	1.22
Boston	4	0	0	0	0	0

Notes:

<sup>a</sup> Maximum predicted daily take offs or landings, based on the Madrid-Boston FEIS. See Section 2.3.1.

## 2.4 SNOWBANK MONITORING

Monitoring of snowbank heights along Mine roads was completed to fulfill commitment #GN-49 in Project Certificate No. 009. The commitment states that the snowbank monitoring program “will continue until operational snow management is characterized.” Snowbank monitoring was completed between 2020 and 2023, and all 4 years of data were compiled and assessed for broad-scale trends and consistency in snowbank management in the 2023 WMMP Compliance Report (ERM 2024). The average snowbank height across all years and months was 9.8 centimetres (cm), and the range in average height was 0.0 to 18.2 cm, indicating consistent management for wildlife passage across Mine roads since 2020 (ERM 2024). To this end, the snowbank monitoring program has been discontinued, following discussion with the IEAC during the 2024 meeting.



## 2.5 NOISE MONITORING

Project Certificate No. 009 (Term and Condition 4) indicates that a Noise Abatement Monitoring Plan includes a) measures to protect people, fish, and wildlife from mine noise, including quarry blasting; and b) monitor noise at least once during each phase of the Mine and following quarry blasts to demonstrate that noise levels remain within predicted levels. Noise monitoring during blasting is conducted to refine the setback distances required for caribou presence near a blast. This setback distance was proposed at 2.8 km based on noise modelling conducted in the Madrid-Boston FEIS (NIRB 2018). A 96 peak sound overpressure level (L<sub>peak</sub>) Z-weighted decibel (dBZ) was the sound level estimated at this distance. This sound level was deemed a conservative estimate of the sound level at which a blast may produce noise with the potential to produce a freeze or startle response in caribou. However, monitoring the distance at which quarry blasting results in a caribou behavioural change is more indicative of potential noise disturbance effects to caribou. This monitoring is not required as a Project Certificate compliance activity and is included as part of the adaptive management of mitigation actions.

### 2.5.1 METHODS

A Standard Operating Procedure (SOP) for noise measurement during quarry blasts has been in development and testing since 2018. The current draft of this SOP is provided in Appendix A. Tests were conducted using a SoundAdvisor™ Model 831C. The SOP recommended best practices to complete noise monitoring during periods of wind speeds of less than 5 m per second.

### 2.5.2 RESULTS AND DISCUSSION

The noise monitoring SOP was updated in 2024 to improve the process for capturing noise data during blasts at site. In August 2024, the most recent update was provided for use at site to accommodate the use of the SoundAdvisor™ Model 831C and to address the issues with ambient noise (i.e., wind) encountered while monitoring during blasting. Based on the recordings during 2024, ambient noise (i.e., wind) continues to impact the ability to accurately capture the noise from the blasts at site. Data collected in 2024 will be used to further refine the SOP and determine if the maximum wind speed of 5 m per second should be decreased.

In many of the monitoring events, the ambient noise (i.e., wind) could not be differentiated from the blasting. As part of the SOP, noise monitoring captured all noise 15 minutes before and after the blast. In that time period, it was commonly observed that the ambient noise was at a much higher decibel than the 96 L<sub>peak</sub> dBZ threshold.

It is recommended that, based on the inconclusiveness of the results captured during noise monitoring, that the staff move to a local monitoring approach of the reaction of caribou to the quarry blasts. The locations selected for Height of Land (HOL) monitoring could be used to monitor the response of caribou to blasting as long as it is safe to do so. In addition, continuing to delay blasting when caribou are in line of sight from the quarries will minimize disturbance to caribou.

## 2.6 CONSTRUCTION MANAGEMENT

As per the WMMP (Agnico Eagle 2023), vegetation clearing and ground disturbance activities that may disturb wildlife residences (nests and dens) are avoided during specified periods of the year. If avoidance during these time periods is not possible, preclearing surveys are conducted to identify and buffer residences.

### 2.6.1 METHODS

Preclearing surveys followed protocols outlined in the Doris North Migratory Bird Preclearing Survey SOP and the WMMP (Agnico Eagle 2023). Nest preclearing surveys were completed for raptors, waterbirds, and upland birds from May 15 to August 5, as required (Agnico Eagle 2023). Den preclearing surveys were completed for grizzly bear (October 1 to April 30), wolverine (February 1 to May 15), and wolf (*Canis lupus*; May 1 to July 30), as required (Agnico Eagle 2023). Surveyors conducted ground transects within the area to be disturbed and recorded any wildlife residences observed. If a wildlife residence was found, the residence was buffered as outlined in the appropriate SOP and WMMP (Agnico Eagle 2023).

### 2.6.2 RESULTS AND DISCUSSION

In 2024, 17 nest preclearing surveys were completed between May 15 and August 15, 2024, and two den preclearing surveys were completed between November 14 and 16, 2024 (Table 2.6-1). Mine areas surveyed for wildlife residences included the Roberts Bay Fuel Line, the Tailings Impoundment Area (TIA) North Dam, Naartok Portal, Quarry E and D, the Exploration Track, Pad U Waste Rock / Ore Storage Area, and the Windy Lake North Freshwater Intake (Figure 2.1-2). A total of four nests were observed during preclearing surveys: three Common Redpoll nests (*Acanthis flammea*) and one redpoll sp. nest (*Acanthis* sp.; Table 2.6-1). The redpoll sp. nest was found empty, indicating that it was likely an old nest or had been depredated, and all other nests were in the incubation stage (Table 2.6-1). No nest buffers were required because all nests, and their respective required buffer distances, were outside of the proposed vegetation clearing / ground disturbance areas. No dens were found during the den preclearing surveys.

TABLE 2.6-1 SUMMARY OF PRECLEARING SURVEYS COMPLETED IN 2024

Survey Type	Date	Survey Area	Start Time	End Time	Start Easting <sup>a</sup>	Start Northing <sup>a</sup>	End Easting <sup>a</sup>	End Northing <sup>a</sup>	Species	Residence Stage	Contents	Easting <sup>a</sup>	Northing <sup>a</sup>	Buffer?
Nests	May 16, 2024	Roberts Bay Fuel Line	9:30	10:20	432170	7563260	432448	7563082	No nests found					
Nests	May 22, 2024	Roberts Bay Fuel Line	14:00	15:00	432448	7563082	432170	7563260	No nests found					
Nests	June 1, 2024	Roberts Bay Fuel Line	11:00	11:45	432448	7563082	432170	7563260	Common Redpoll	Incubating	4 eggs	432244	7563149	Not needed <sup>b</sup>
Nests	June 4, 2024	Roberts Bay Fuel Line	11:00	11:40	432448	7563082	432170	7563260	No nests found					
Nests	June 6, 2024	North Dam	16:30	17:00	434417	7559221	434442	7539235	Common Redpoll	Incubating	5 eggs	434381	7559257	Not needed <sup>b</sup>
Nests	June 6, 2024	North Dam	16:00	16:30	434292	7559098	434261	7559106	No nests found					
Nests	June 10, 2024	Naartok Portal	9:30	10:00	433424	7550594	6433499	7550571	No nests found					
Nests	June 10, 2024	North Dam	8:30	9:00	434417	7559221	434442	7539235	No nests found					
Nests	June 10, 2024	North Dam	8:00	8:30	434292	7559098	434261	7559106	No nests found					
Nests	June 10, 2024	Roberts Bay Fuel Line	10:30	11:15	Not provided	Not provided	Not provided	Not provided	Common Redpoll	Incubating	5 eggs	Not provided	Not provided	Not needed <sup>b</sup>
Nests	June 13, 2024	Quarry E	14:00	15:45	433282	7550653	6433086	7550736	Repoll sp.	Old/depredated	Empty	433012	7550765	Not needed <sup>b</sup>
Nests	July 8, 2024	Naartok Portal	10:30	11:00	433424	7550594	6433499	7550571	No nests found					
Nests	July 8, 2024	Quarry E	11:00	11:20	433282	7550653	6433086	7550736	No nests found					
Nests	July 22, 2024	Exploration Track	17:00	17:20	433430	7550138	433407	7550187	No nests found					
Nests	July 28, 2024	Exploration Track	16:30	16:45	433419	7550163	433400	7550194	No nests found					
Nests	August 15, 2024	Exploration Track	14:00	14:30	434036	7549696	434036	7549396	No nests found					
Nests	August 15, 2024	Quarry D	13:00	13:30	432849	7551847	Not provided	Not provided	No nests found					
Dens	November 14, 2024	Pad U Waste Rock/ Ore Storage Area	Not provided	Not provided	Not provided	Not provided	Not provided	Not provided	No dens found					
Dens	November 16, 2024	Windy Lake North Freshwater Intake	Not provided	Not provided	Not provided	Not provided	Not provided	Not provided	No dens found					

Notes:  
<sup>a</sup> Zone 13 W.  
<sup>b</sup> Buffers for wildlife residences were not required when vegetation clearing / ground disturbance activities would occur outside of the buffer distance or when an upland bird nest was no longer in use (e.g., old nest or depredated).

### 3. VEC AND OTHER SPECIES MONITORING AND MITIGATION

#### 3.1 OBJECTIVES

The wildlife VECs identified in the Madrid-Boston FEIS included caribou, muskox, grizzly bear, wolverine, upland breeding birds, waterbirds, and raptors. The objective of monitoring the wildlife VECs is to assess the Madrid-Boston FEIS predictions of Project effects. This assessment is primarily executed through the camera monitoring program (TMAC 2017). In addition, the facility cameras monitor sites that have the potential to attract wildlife (waste management areas, landfills, and TIA). Some cameras are located to confirm wildlife use of wildlife mitigation structures (e.g., wildlife road crossings) to address Project Term and Condition 25 (NIRB 2016; Amendment 002).

Nest predators were not considered a VEC, but are monitored in the Mine area during the bird breeding season (May 15 to August 15) to detect possible attraction to the Mine and indirect impacts on upland breeding birds. Marine mammals and plants are also included, as they are monitored for their Project Certificate No. 009 commitments (NIRB 2018).

#### 3.2 METHODS COMMON TO MULTIPLE VECs

##### 3.2.1 WILDLIFE CAMERA MONITORING

Currently, 60 Reconyx™ PC800 HyperFire Professional wildlife cameras are used to monitor caribou, muskox, grizzly bear, wolverine, and other wildlife within focal areas of the Study Area, as described in Section 3.2.1. The camera monitoring design has been employed since 2016; however, camera monitoring has been ongoing at the Mine since September 2012. Cameras are currently placed in three primary zones, including a Treatment zone within 2 km of the Mine (21 Cameras), a ZOI from 2 to 10 km from the Mine (17 Cameras), and a Control zone beyond 10 km from the Mine (19 Cameras; Figure 3.2-1). There is also the Ladder area, which is part of the ZOI and will be included in the Treatment zone once Madrid is fully developed. Some cameras also have site-specific monitoring objectives and monitor specific Mine facilities. Two additional wildlife cameras were deployed near a culvert on Windy Road to investigate potential caribou use (as an alternative road crossing) in August 2022. All cameras are serviced twice annually, once in June and once in September. Data from the cameras were classified into “events,” which represent the detection of an animal or animals. Events were considered independent based on a 30-minute temporal interval between captures of the same species. Wildlife camera event data for the Doris-Madrid area is summarized in Appendix C.

Twenty-nine wildlife cameras were previously deployed in the Boston area (Figure 3.2-2). Five cameras were deployed in the Treatment zone, five in the ZOI, five in the Control zone, and 14 along the proposed AWR route. These cameras have collected baseline data since September 2017. The Boston camera program (Figure 3.2-2) was discontinued in spring 2024. There is currently no planned construction in the Boston area, and no monitoring is required. Therefore, the cameras will be redeployed prior to the onset of any construction in the Boston area.



FIGURE 3.2-1 WILDLIFE CAMERA LOCATIONS, DORIS AND MADRID AREAS, 2016 TO 2024

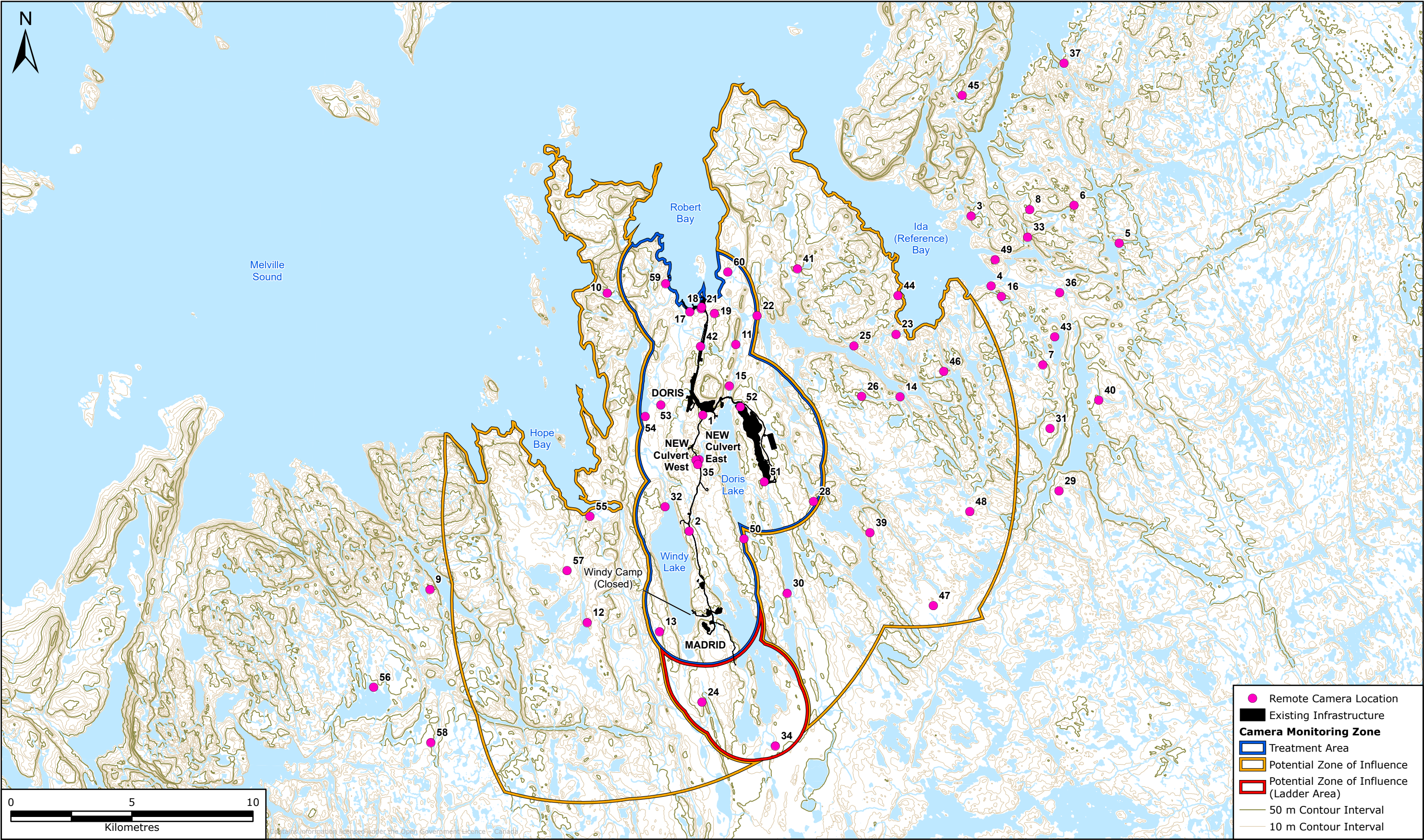
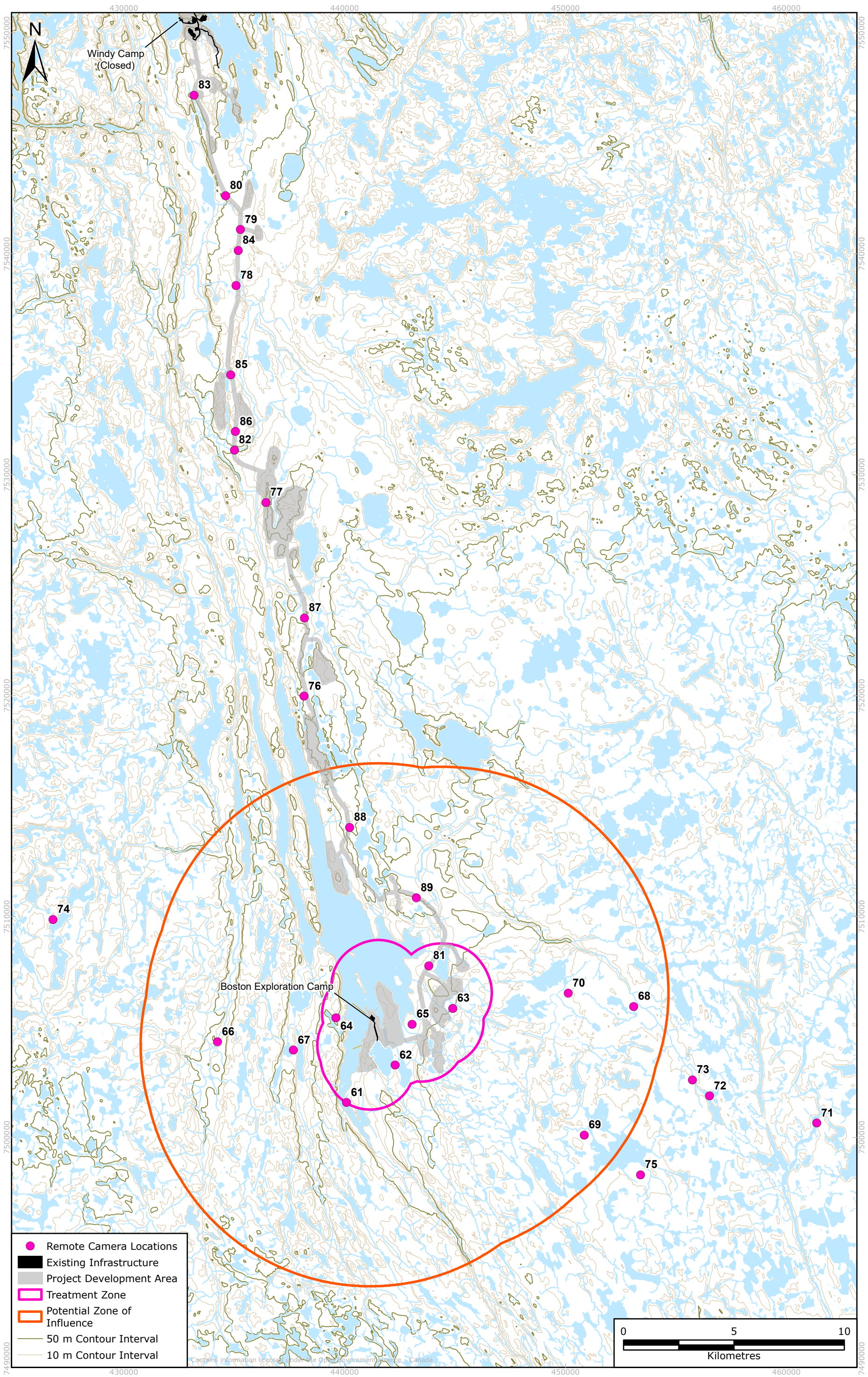




FIGURE 3.2-2 WILDLIFE CAMERA LOCATIONS, BOSTON AREA, 2018 TO 2024





### 3.2.2 WILDLIFE INTERACTIONS, INCIDENTS, AND MORTALITIES

Agnico Eagle records wildlife interactions, incidents, and mortalities as part of the Wildlife Sightings/Reporting Program and reports these interactions to the NIRB. An **interaction** occurs when wildlife comes into contact and acts upon or is acted upon by people or Mine infrastructure (e.g., a bear being observed on a road); deterrents may be used, but direct harm, injury, damage, or wildlife mortality does not occur. An **incident** is an interaction where there is active deterrent and direct harm, injury, damage, or wildlife mortality occurs.

Agnico Eagle executes various processes to mitigate wildlife interactions, incidents, and mortalities. Information about interactions, incidents, and mortalities recorded in the 2024 calendar year are included with the relevant section for each VEC (Sections 3.4 to 3.11) and data are summarized in Appendix E.

### 3.2.3 INCIDENTAL WILDLIFE OBSERVATIONS

Incidental observations of wildlife are collected through various sources, which include the Agnico Eagle wildlife sightings log (as part of the Wildlife Sightings/Reporting process), and by environment personnel, including wildlife biologists (Appendices F and G). Incidental observations by wildlife biologists have been collected since 1996 while conducting field surveys, and the wildlife sightings log has been maintained since 2009. Agnico Eagle wildlife sightings log data are corrected for the average number of employees and contractors onsite (Appendix H) as a measure of standardization for observations of caribou (Appendix K), muskox (Appendix M), grizzly bear (Appendix O), and wolverine (Appendix Q). Incidental wildlife data cannot be used quantitatively (e.g., to estimate population sizes or density) because it is not collected using standardized survey methods.

### 3.2.4 SPECIES OF CONSERVATION CONCERN

Annual observations of species of conservation concern are summarized in the relevant section of each VEC. Species of conservation concern are included if they have been assessed with a threat status by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), are listed under the federal *Species at Risk Act* (SARA; Government of Canada 2024), or if they have a Nunavut territorial status (NatureServe 2025). The species of conservation concern with the potential to occur at the Mine are listed in Table 3.2-1. Note that the Snow Bunting (*Plectrophenax nivalis*) was removed as it is no longer considered Vulnerable in Nunavut.

## 3.3 RESULTS AND DISCUSSION COMMON TO MULTIPLE VECs

### 3.3.1 CAMERA EFFORT

Camera effort is calculated to correct for periods when cameras are not capturing images (e.g., when knocked down, or obscured by snow or fog). Effort is summarized by the number of functional days for each camera in each month from September 2023 to September 2024. The total and average number of active camera days for available cameras are presented in Table 3.3-1. The total number of camera days for individual cameras is provided in Appendix B.



TABLE 3.3-1 SPECIES OF CONSERVATION CONCERN KNOWN TO OCCUR IN THE STUDY AREA

Species Group	Common Name	Species Name	Nunavut (General Status)	SARA	COSEWIC	Recorded in 2024?
Mammals	Caribou (Dolphin and Union)	<i>Rangifer tarandus</i>	Vulnerable (S3S4)	Special Concern	Endangered	Y
	Caribou (Beverly/Ahiak)	<i>Rangifer tarandus</i>	Vulnerable (S3S4)	N/A	Threatened	Y
	Grizzly bear	<i>Ursus arctos</i>	Vulnerable (S3)	Special Concern	Special Concern	Y
	Wolverine	<i>Gulo gulo</i>	Vulnerable (S3)	Special Concern	Special Concern	Y
Upland Birds	American Golden-Plover	<i>Pluvialis dominica</i>	Vulnerable (S3S4B)	N/A	N/A	Y
	Harris’s Sparrow	<i>Zonotrichia querula</i>	Apparently Secure (S4B)	Special Concern	Special Concern	N
	Hoary Redpoll	<i>Acanthis hornemanni</i>	Vulnerable (S3)	N/A	N/A	Y
	Red-necked Phalarope	<i>Phalaropus lobatus</i>	Vulnerable (S3B)	Special Concern	Special Concern	Y
	Semipalmated Sandpiper	<i>Calidris pusilla</i>	Vulnerable (S3B)	N/A	N/A	Y
Waterbirds	Common Eider	<i>Somateria mollissima</i>	Vulnerable (S3B, S3N)	N/A	N/A	Y
	King Eider	<i>Somateria spectabilis</i>	Vulnerable (S3S4B, SUN)	N/A	N/A	Y
Raptors	Golden Eagle	<i>Aquila chrysaetos</i>	Vulnerable (S3B)	N/A	Not at Risk	Y
	Short-eared Owl	<i>Asio flammeus</i>	Vulnerable (S3B)	Special Concern	Threatened	Y
Marine Mammals	Beluga (Eastern High Arctic-Baffin)	<i>Delphinapterus leucas</i>	Not Present	Under Consideration	Special Concern	N
	Bowhead whale (Bering-Chukchi-Beaufort)	<i>Balaena mysticetus</i>	Not Present	Special Concern	Special Concern	N
	Bowhead whale (Eastern Canada-West Greenland)	<i>Balaena mysticetus</i>	Not Present	Under Consideration	Special Concern	N
	Killer whale	<i>Orcinus orca</i>	Not Present	Under Consideration	Special Concern	N
	Narwhal	<i>Monodon monoceros</i>	Not Present	Under Consideration	Special Concern	N
	Ringed seal	<i>Pusa hispida</i>	Not Present	N/A	Special Concern	Y
	Walrus (High Arctic)	<i>Odobenus rosmarus</i>	Vulnerable (S3)	Under Consideration	Special Concern	N

Notes:  
COSEWIC = Committee on the Status of Endangered Wildlife in Canada; N/A = not applicable; SARA = *Species at Risk Act*

Consistent with previous years of the camera program, effort was low during winter from December through February due to snow covering the camera lenses, resulting in loss of effort for most days (Table 3.3-2). Effort was higher in the Treatment zone during this period. This has historically occurred because some Treatment zone cameras are easily accessible from site facilities or roads, so the cameras can be cleared of snow more frequently.

An increasing number of cameras have been knocked down each period, typically by grizzly bears, based on 2019 data. This issue was discussed with the IEAC in 2020 and 2021 along with plans to improve the camera tripod infrastructure. Of the 60 Doris cameras, 11 were found knocked down during camera checks in September 2024; this is an 18% knock-down rate, lower than the 30% knock-down rate noted in 2019. Camera tripods are repaired as required.

### 3.3.2 BASELINE RESULTS OF BOSTON CAMERA PROGRAM

Cameras in the Boston area were removed in the spring and summer of 2024 as the Boston baseline camera program has been discontinued. The camera program will resume once construction is planned in the Boston area. In-depth analyses of camera detections of each VEC in the Boston area will be conducted once data have been collected during both baseline and construction phases. Boston camera event data is included in Appendix I.

Consistent with previous years camera effort was low in winter months, however, unlike previous years camera effort remained low through the spring and summer due to the removal of cameras (Table 3.3-3). Across all VECs, caribou were the most frequently observed species in the Boston area. Caribou activity was highest in September with 55% of total caribou observations. Grizzly bear were only observed in September and October. Muskox were observed for the fourth and fifth time on Boston cameras, with two observations in September 2024. No wolverines were observed between September 1, 2023, and September 1, 2024. Low detections of all species are likely due to the majority of camera effort occurring over the winter months and the decommissioning of the Boston camera program.

### 3.3.3 NON-VEC WILDLIFE SIGHTINGS LOG, INCIDENTAL OBSERVATIONS, AND INTERACTIONS

In 2024, several observations of non-VEC species were recorded via the wildlife sightings log and through incidental observations by biologists, details of which are found in Appendix F and Appendix G. There were two mortality incidents involving non-VEC species: two Arctic ground squirrels were found deceased on Windy Road due to vehicle collisions, one on August 2, 2024, and one on August 8, 2024. Details regarding the non-VEC mortalities are included in Appendix E.

## 3.4 CARIBOU

Two caribou herds use habitat near the Mine: the Dolphin and Union herd, and the Beverly/Ahiak herd. The Mine overlaps with the winter range of the Dolphin and Union herd, and is near the summer, fall, and winter range of the Beverly/Ahiak herd.

TABLE 3.3-2 SUMMARY OF CAMERA EFFORT RECORDED AT TREATMENT ZONE, ZOI, AND CONTROL ZONE CAMERAS BY MONTH, SEPTEMBER 2023 TO AUGUST 2024

Year	Month	Treatment Zone			ZOI			Control Zone		
		Number of Cameras	Total Active Days	Average Active Days	Number of Cameras	Total Active Days	Average Active Days	Number of Cameras	Total Active Days	Average Active Days
2023	September	21	444	21.14	17	258	15.18	19	386	20.32
	October	21	297	14.14	17	156	9.18	19	212	11.16
	November	21	202	9.62	17	80	4.71	19	39	2.05
	December	21	142	6.76	17	59	3.47	18	44	2.32
2024	January	21	128	6.10	17	47	2.76	18	110	5.79
	February	21	159	7.57	17	56	3.29	18	121	6.37
	March	21	174	8.29	17	87	5.12	18	114	6.00
	April	21	138	6.57	17	75	4.41	18	151	7.95
	May	21	120	5.71	17	80	4.71	18	107	5.63
	June	21	416	19.81	17	368	21.65	18	294	15.47
	July	21	534	25.43	17	434	25.53	18	324	17.05
	August	21	483	23.00	17	314	18.47	18	200	10.53

Note:  
ZOI = Zone of Influence

TABLE 3.3-3 CAMERA EFFORT AND VEC SPECIES SUMMARIES FOR BOSTON CAMERAS, SEPTEMBER 2023 TO SEPTEMBER 2024

Year	Month	Camera Effort <sup>a</sup>	Caribou		Muskox		Grizzly Bear		Wolverine	
			Number of Events	Number of Individuals	Number of Events	Number of Individuals	Number of Events	Number of Individuals	Number of Events	Number of Individuals
2023	September	547	5	8	2	2	1	1	-	-
	October	402	2	2	-	-	2	2	-	-
	November	205	-	-	-	-	-	-	-	-
	December	198	-	-	-	-	-	-	-	-
2024	January	293	-	-	-	-	-	-	-	-
	February	270	-	-	-	-	-	-	-	-
	March	295	-	-	-	-	-	-	-	-
	April	257	1	1	-	-	-	-	-	-
	May	165	-	-	-	-	-	-	-	-
	June	60	1	1	-	-	-	-	-	-
	July	33	-	-	-	-	-	-	-	-
	August	47	-	-	-	-	-	-	-	-
Total	-	2,772	9	12	2	2	3	3	-	-

Notes:  
- = No detections of species in photos  
VEC = Valued Ecosystem Component  
<sup>a</sup> Camera effort is presented as the total number of camera days by month; lower camera effort in the summer is due to the camera program being decommissioned.

The Dolphin and Union herd winters on the mainland near the coast, both east and west of Bathurst Inlet, and travels on the sea ice during spring to Victoria Island to calve and spend the summer and fall (Poole et al. 2010). The herd return across the sea ice following freeze-up in November. The Dolphin and Union herd are listed as Special Concern under SARA and as Endangered by COSEWIC (Government of Canada 2024). Territorially, caribou are listed as Vulnerable in Nunavut (NatureServe 2025).

The Beverly/Ahiak herd calves to the east of the Mine area in the Queen Maude Gulf Bird Sanctuary and the herd then spreads south and west from the Queen Maude Gulf for the late summer and fall. The Beverly/Ahiak herd are barren-ground caribou assessed as Threatened by COSEWIC (Government of Canada 2024), but not yet listed under SARA. Caribou of the Beverly/Ahiak herd winter above the treeline on the tundra and also below the treeline in the Northwest Territories and northern Saskatchewan.

Currently, there is some disagreement over whether the Beverly/Ahiak herd should be referred to as a single herd, or separately as two subpopulations of the Beverly/Ahiak herd. The Government of Nunavut surveys the two groups separately and refers to them as two subpopulations in their population survey reports, rather than a distinct herd or separate herds. This document refers to these caribou either separately (as subpopulations) or together as the Beverly/Ahiak herd, where relevant. Calving areas for these two subpopulations are calculated separately, in response to a request from the Government of Nunavut.

Traditional Knowledge shared by the land users from the IEAC indicate that Dolphin and Union caribou now cross the sea ice to the east of Bathurst Inlet and the Mine, near Wellington Bay. IEAC members also indicate that Dolphin and Union caribou no longer winter on the northern part of the Kent peninsula and instead winter on the mainland. Other than these shifts, which began before 2019, the Dolphin and Union caribou have maintained a consistent usage of the area surrounding the Mine for over 20 years, with some animals transiting the area during spring and fall migration, and low numbers of caribou in the area during winter.

Agnico Eagle and the Government of Nunavut have signed a new Memorandum of Understanding (MOU) for collaborative monitoring for Dolphin and Union caribou as of March 2023, after the previous MOU with TMAC expired in 2019. Agnico Eagle has donated fuel for caribou work in 2020, directly donated to the muskox program in 2022, and provided support in kind by shipping fuel and lumber to Hope Bay in 2023 to assist with the Government of Nunavut's DNA Hair Snagging Barren-Ground Grizzly Bear population survey.

### 3.4.1 FEIS PREDICTIONS

The residual effects of disturbance and disruption of movement on caribou within the Madrid-Boston FEIS RSA were predicted to be not significant and low magnitude in the Madrid-Boston FEIS (TMAC 2017).

### 3.4.2 METHODS

Monitoring for caribou is completed using multiple approaches. The first approach is through analysis of collar data during specific seasonal periods. The analysis of collar data can detect shifts in the calving range for the Beverly/Ahiak herd. A shift towards the Mine would trigger additional mitigation measures for caribou. For Dolphin and Union caribou, winter range analyses are conducted to examine the amount of overlap between the Mine and this seasonal range, following a request from the KitIA (KIA 2017). The collar data are analyzed using kernel density analyses (ERM 2022).

The second approach is using wildlife cameras (see general wildlife camera methods in Section 3.2.1). Camera data are statistically analyzed every 3 years to investigate potential differences in the occurrence of caribou within the Treatment, Control, and ZOI areas. Wildlife cameras are also used to better understand seasonal use by caribou of the Mine. Caribou are also identified by herd based on a request by the IEAC to understand potential changes in the presence of Dolphin and Union caribou on the mainland year-round. Caribou herd identification differentiates individuals belonging to the Beverly/Ahiak herd from individuals belonging to the Dolphin and Union herd.

HOL monitoring was completed for the first time in 2024 as a monitoring method for caribou. This monitoring protocol is completed during the spring and fall migrations, and is triggered based on reported caribou activity onsite. Lastly, caribou are monitored through the Wildlife Sightings/Reporting program.

#### 3.4.2.1 ANALYSIS OF CARIBOU COLLAR DATA

To determine how different caribou herds use areas in proximity to the Mine, an analysis using kernel density and utilization distribution (UD) methods was conducted using Global Positioning System (GPS) collar data. Kernel density and UD methods assess spatial caribou use through a bivariate probability function. Kernel density estimates were created with the resulting 50% UD representing the “core” range and 95% UD representing the “overall” range.

#### **Beverly and Ahiak Subpopulation Calving Ground Locations**

Collar data for the Beverly and Ahiak subpopulations were supplied by the Government of Northwest Territories Department of Environment and Natural Resources for 2024 as well as historical data (2012 to 2023). Analysis on the Beverly and Ahiak subpopulations was limited to the calving season to determine each subpopulation’s calving range. For the purposes of this analysis, the calving season is defined as occurring from June 6 to June 19 (Nagy 2011; Table 3.4-1). During some years, females may arrive on the calving grounds later than expected and/or leave earlier than expected. To further refine the “calving” season to only include calving females, daily movement rates of individual females were examined in more detail. Caribou occupying a restricted area with daily movement rates less than (<) 5 km were considered to be calving. In contrast, if daily movement rates more than (>) 5 km were observed leading into or out of the calving ground, this was interpreted as indicating that the individual was still migrating or had concluded calving. Collar location data for these days were excluded from further analysis.

**TABLE 3.4-1 CARIBOU EVENTS RECORDED BY MONTH AT TREATMENT ZONE, ZOI, AND CONTROL ZONE CAMERAS, SEPTEMBER 2023 TO AUGUST 2024**

Year	Month	Treatment Zone		ZOI		Control Zone	
		Camera Effort <sup>a</sup> Total Active Days	Number of Events	Camera Effort <sup>a</sup> Total Active Days	Number of Events	Camera Effort <sup>a</sup> Total Active Days	Number of Events
2023	September	444	4	258	4	386	10
	October	297	1	156	1	212	4
	November	202	-	80	-	39	-
	December	142	-	59	-	44	-
2024	January	128	-	47	-	110	-
	February	159	-	56	-	121	-
	March	174	-	87	-	114	-
	April	138	-	75	-	151	2
	May	120	-	80	-	107	2
	June	416	35	368	26	294	5
	July	534	85	434	34	324	19
	August	483	-	314	2	200	-
<b>Total</b>		<b>-</b>	<b>125</b>	<b>-</b>	<b>67</b>	<b>-</b>	<b>42</b>

Notes:

- = No caribou recorded in camera images

ZOI = Zone of Influence

<sup>a</sup> A total of 60 cameras were deployed across the Treatment, ZOI, and Control zones.



## Dolphin and Union Herd Winter Range Locations

Dolphin and Union herd data was supplied by the GN DOE for 2024 as well as historical data (2001 to 2023). This analysis was temporarily paused from 2019 to 2022, as the data was unavailable from the GN DOE prior to the reporting deadline. The output of the analysis determines the amount of overlap between Dolphin and Union winter range (November 1 to April 14) and the Study Area both currently and historically. This analysis was requested by the KitIA in 2017 (KIA 2017). It is noted that the overlap between the Dolphin and Union caribou herd with the Mine area does not trigger any additional mitigation for caribou, as there are year-round caribou mitigation measures (Agnico Eagle 2023).

### 3.4.2.2 SUMMARY OF WILDLIFE CAMERA DATA

Camera data were corrected for daily effort, where the camera was considered to have no effort during periods when snow covered the camera or if the camera was knocked over for more than 24 hours. Caribou detection data was summarized.

Further details on methodology for this monitoring program can be found in Appendix A and in Section 3.2. Datasets of 2024 camera effort and detection events are presented in Appendices D to F.

## Caribou Herd Identification

Caribou were classified by herd, which was determined based on the Mine's Caribou Identification Guide developed via a caribou identification workshop with the IEAC. Caribou from each herd in the Mine area have distinct physical features and can be identified to herd level with clear photos of the whole animal. Identifications were made considering all consecutive images taken of each caribou. Classification of caribou herd was conducted by ERM staff trained to identify Beverly/Ahiak and Dolphin and Union individuals. Caribou detections with uncertain herd characteristics are provided to the IEAC for additional input.

### 3.4.2.3 HEIGHT OF LAND

HOL surveys were requested by the IEAC as a traditional Inuit way to survey caribou from a distance. Surveys are completed during the spring and fall migration and are triggered if 25 or more individual caribou are observed within 5 km of Mine infrastructure during a 24-hour time period. HOL surveys are completed for a 1-week period. Surveys are preferentially completed by an Inuit Monitor chosen by the Cambridge Bay Hunters and Trappers Organization. HOL surveys followed methods outlined in the Caribou Height of Land Monitoring SOP. The Caribou Height of Land Monitoring SOP and survey sites were developed during several workshops with the IEAC held between 2021 and 2023. HOL surveys are completed at three predetermined sites along Windy Road. Surveyors scan the landscape for caribou for 10 minutes and record caribou observed. Surveys are completed twice per day, spaced out as much as possible temporally, at each of the three survey sites.

### 3.4.3 RESULTS AND DISCUSSION

#### 3.4.3.1 CARIBOU COLLAR DATA

##### **Beverly and Ahiak Subpopulation Calving Ground Locations**

The results of the Beverly and Ahiak subpopulations calving range analysis indicate the 2024 calving ranges for these two subpopulations are generally consistent with historical data. Both the core (50% UD) and overall ranges (95% UD) of each subpopulation were generally centred along the Queen Maud Gulf and to the east of the Study Area (Figure 3.4-1, Figure 3.4-2). The calving range of the Beverly subpopulation generally occurs further west and extends further south than the Ahiak subpopulation. The calving ranges of each subpopulation show historical overlap with one another (Figure 3.4-1, Figure 3.4-2).

The core Beverly and Ahiak calving ranges occur along the coastline of the Queen Maud Gulf and extend southwards. The Ahiak subpopulation's core range in 2024 overlapped with the historical range, but occurred generally more southwards further away from the coast (Figure 3.4-1). The Beverly subpopulation in 2024 saw a notable shift southward compared to the historical range. Additionally, this range appears to be more elongated longitudinally as opposed to occurring along the coastline (Figure 3.4-1). In 2024, the core calving ranges of these two subpopulations do not overlap, which contrasts with the modest overlap observed in the historical ranges (Figure 3.4-1). Neither subpopulations core calving ranges overlap with the Study Area either historically or in 2024.

The Ahiak subpopulation's overall range in 2024 appears to occur within a centralized location of the historical range, with almost the entirety of the 2024 range located within the historical range (Figure 3.4-2). This location continues to be along the Queen Maud Gulf coastline. Similar to the historical range, 2024 has some overall calving range located towards the Boothia Peninsula south of Taloyoak. The Beverly subpopulation had greater variation between the 2024 and historical range compared to the Ahiak subpopulation. The Beverly 2024 overall calving range generally overlaps with the historical range, but it extends more southwards beyond the historical range. The historical range also has small, isolated pockets of calving range towards the tree line in both Nunavut and the Northwest Territories, but these were much further south than the main calving area (Figure 3.4-2).

The historical overall range of the Beverly subpopulation overlaps both the Doris and Boston sites, and extends across over half of the Study Area (Figure 3.4-2). The overlap was caused by several collared females in 2019 and 2021. One collared female appeared to calve within the northern half of the Study Area in 2019, in the vicinity of the Doris area. Three collared females appeared to calve in the southeastern corner of the Study Area in 2021, in the vicinity of the Boston area. These overlaps were described in the respective annual reports (ERM 2020, 2022). Notably, the calving female that was observed to overlap the Study Area in 2019 was described in the associated 2019 report, but was excluded from historical range analyses in subsequent report years (ERM 2023, 2024). It is included here, in the 2024 report, in order to provide representation of the historical distribution of calving females. The 2019 overlap will continue to be included in future annual reports. Despite these occasional incidents, the core range of the Beverly herd remains outside the Study Area and the majority of collared individuals continue to calve to the east of the Study Area, with no collared Beverly caribou observed in the Study Area during calving from 2022 to 2024. Additional mitigation has not been implemented at site for calving caribou, since the core range of the Beverly subpopulation does not overlap the Hope Bay Study Area.

FIGURE 3.4-1 50% KERNEL DENSITY ESTIMATES OF THE CALVING HOME RANGE OF BEVERLY AND AHIK SUB-POPULATIONS COLLAR DATA, 2012-2023 AND 2024

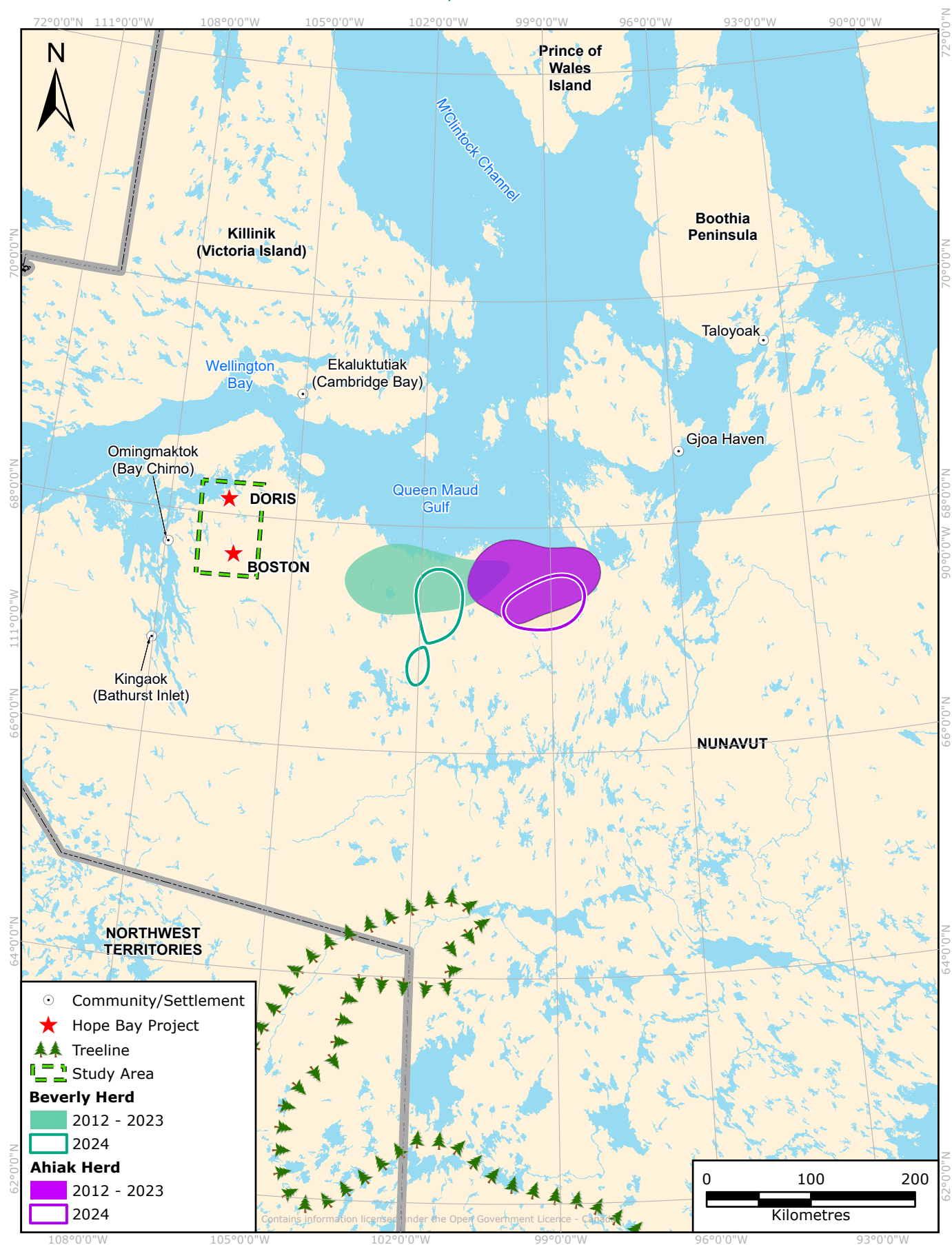
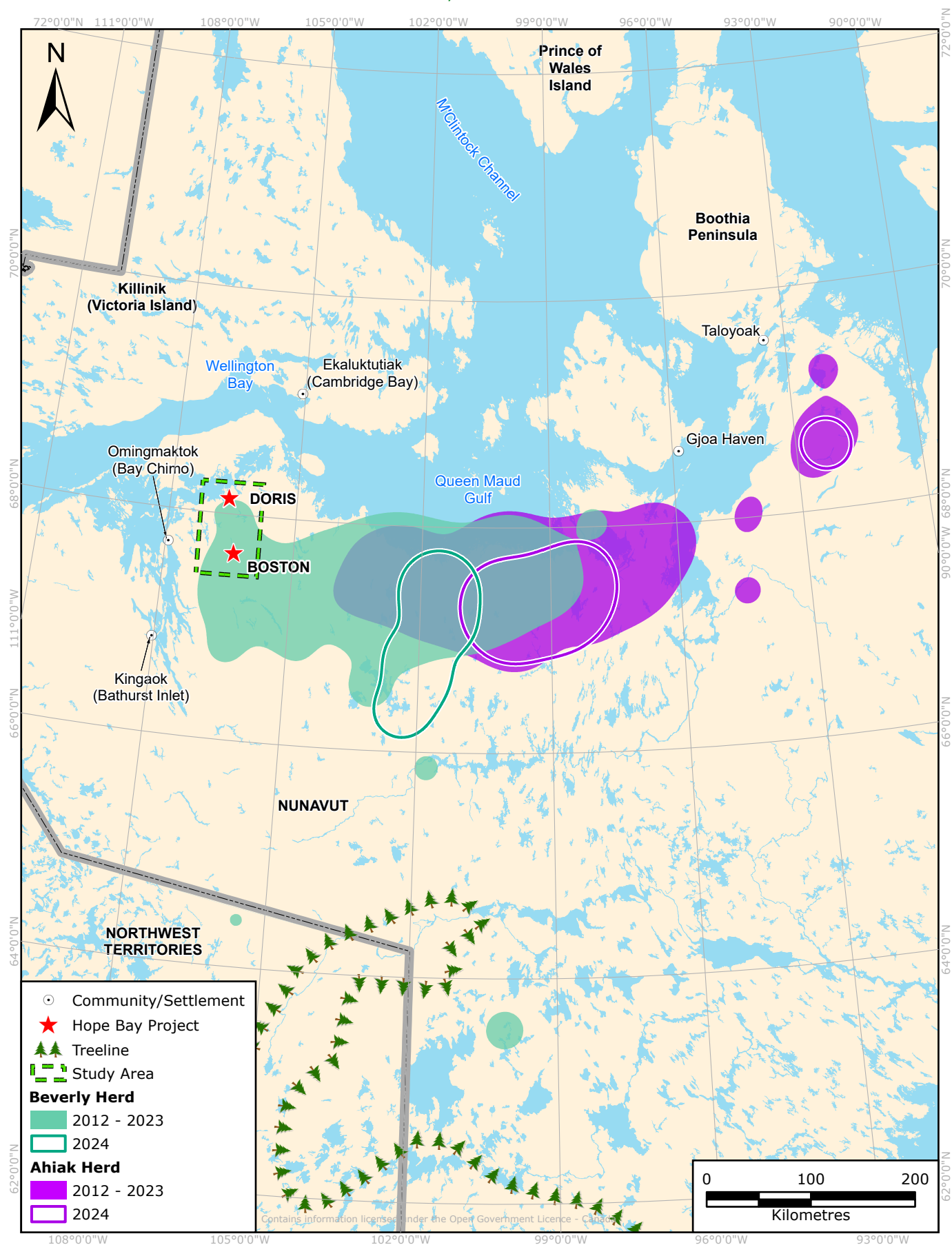


FIGURE 3.4-2 95% KERNEL DENSITY ESTIMATES OF THE CALVING HOME RANGE OF BEVERLY AND AHIK SUB-POPULATIONS COLLAR DATA, 2012-2023 AND 2024



## Dolphin and Union Herd Winter Range Locations

The Dolphin and Union herd winter range analysis indicate that both the core winter range and overall ranges were smaller compared to the historical range (Figures 3.4-3 and 3.4-4). Neither the core nor the overall ranges in 2024 overlapped with the Study Area. This differed from historic ranges in which the overall range overlapped the entirety of the Study Area. The core wintering area occurred exclusively on the west side of the Bathurst Inlet, both historically and in 2024. In 2024, the overall range was largely located on the west side of Bathurst Inlet with unconnected range pockets on Kent Peninsula, west of Wellington Bay, and on the northern shore of the Coronation Gulf.

The core wintering range had a high degree of overlap between 2024 and the historical data. There was a contraction in the range; however, the 2024 range was almost exclusively located within the range of historical data, except with a slight extension to the north in 2024 (Figure 3.4-3).

The 2024, overall winter range was distributed into four distinct areas, the largest of which mainly overlapped with the historical winter range on the mainland and was only on the west side of Bathurst Inlet. An isolated pocket of winter range was located to the northwest of the Doris site, which continued to primarily overlap with the historical range. Unlike the historical winter range, the 2024 data had two isolated pockets on Victoria Island, including one on the western side of Wellington Bay. The second isolated range pocket was located directly north of the main winter range across the Coronation Gulf on the southern coastline of Killnik (Victoria Island).

### 3.4.3.2 CAMERA MONITORING

Between September 1, 2023, and August 31, 2024, 60 cameras were active for 7,818 days averaging 130 active days per camera. Camera effort within monitoring zones for the most recent year is summarized by month in Table 3.3-2; effort summaries per camera are provided in Appendix D. A brief summary of the images and caribou events recorded across all cameras during is provided below. Data from cameras 2 and 35 (monitoring the road crossing ramps) as well as cameras 20 and 27 (monitoring the under-road culvert) are also included in the summary below.

A total of 234 events were recorded between September 1, 2023, and August 31, 2024 (Table 3.4-1). A total of 1 485 events were recorded of caribou between 2016 and 2024 (Figure 3.4-5; Appendix J). Caribou events occurred primarily in June and July, with 76% of caribou events occurring in these 2 months. Overall, caribou events were most common in the Treatment zone and represented 46% of total caribou events compared to 25% in the ZOI, and 16% in the Control zone. Occasional events were also recorded in fall and spring months, which is consistent with previous monitoring years.

## Facilities Camera Monitoring

Under the current camera program design, there are four cameras that have site-specific monitoring objectives for caribou. These are cameras 2 and 35, installed at the two caribou crossing ramps along the Doris-Windy AWR, and cameras 51 and 52, installed at the north and south end of the TIA. Individual camera effort information is provided in Appendix D. Camera effort varied greatly across facility monitoring cameras in 2024, with camera 51 having the most effort (220 active days), followed by camera 52 (129 active days), camera 2 (87 active days), and camera 35 (84 active days). This represents an increased number of active camera days for each specific monitoring camera in comparison to 2023.



**FIGURE 3.4-3 50% KERNEL DENSITY ESTIMATES OF THE WINTER RANGE OF DOLPHIN AND UNION HERD COLLAR DATA, 2001-2023 AND 2024**

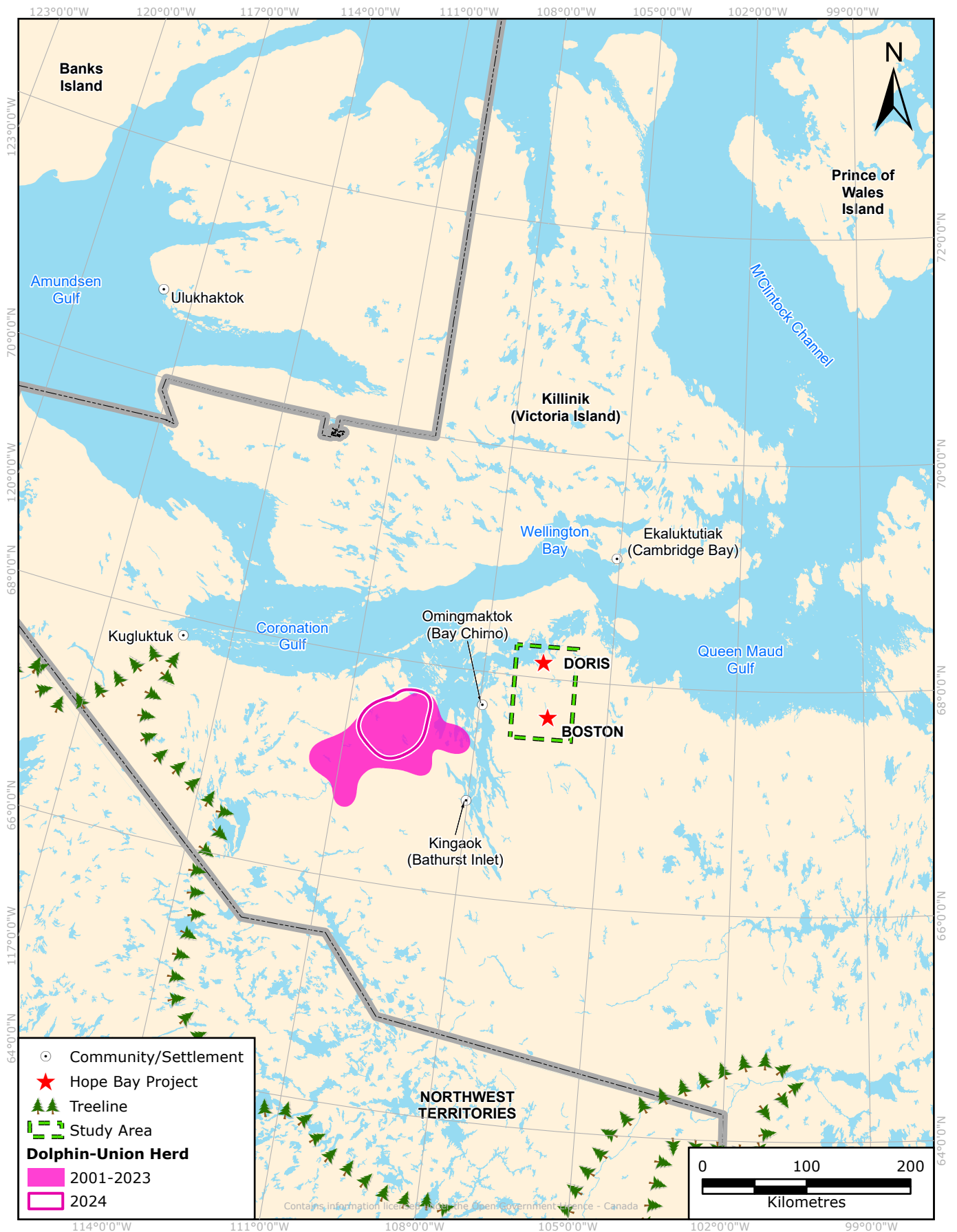




FIGURE 3.4-4 95% KERNEL DENSITY ESTIMATES OF THE WINTER RANGE OF DOLPHIN AND UNION HERD COLLAR DATA, 2001-2023 AND 2024

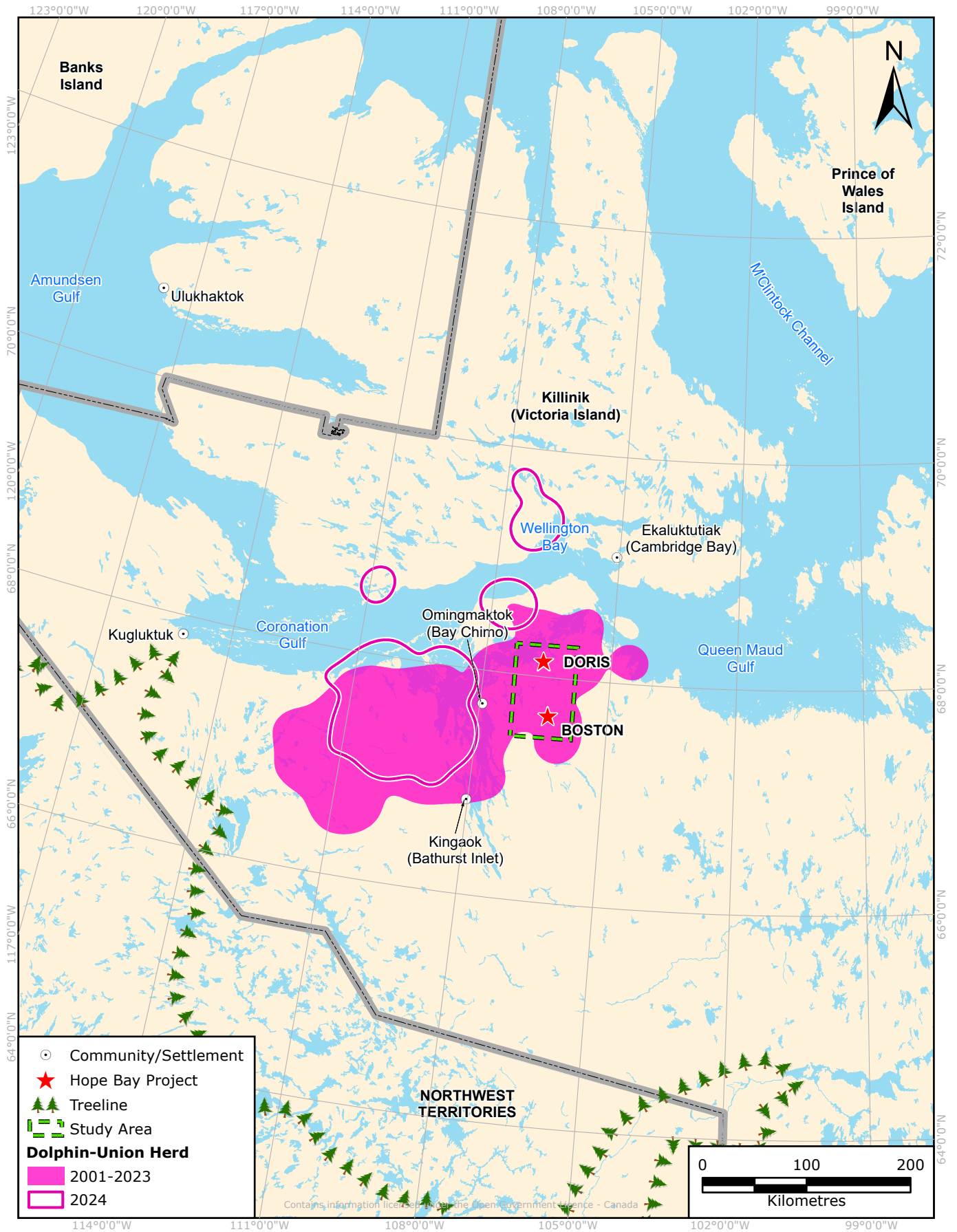
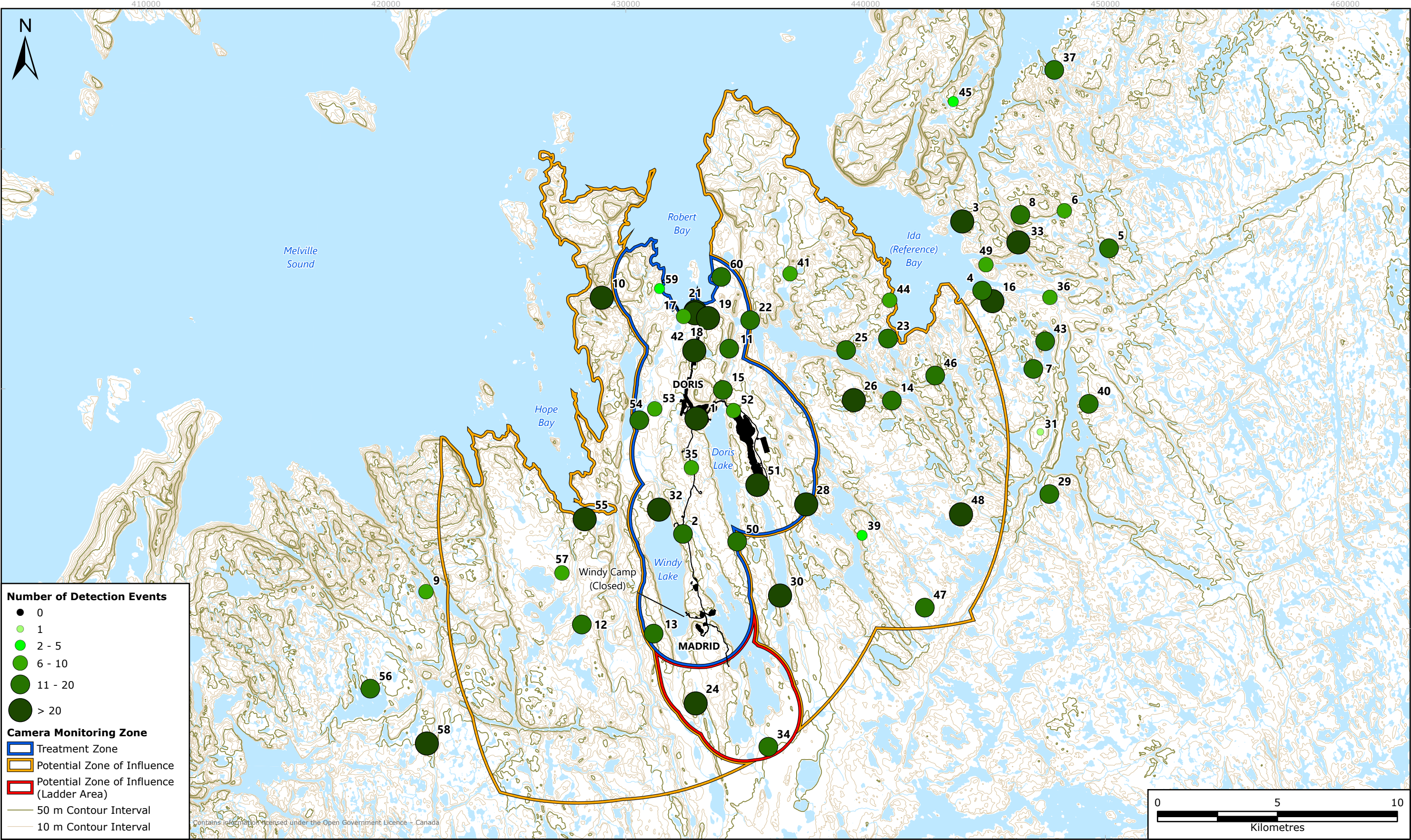




FIGURE 3.4-5 DETECTIONS OF CARIBOU ON MOTION-TRIGGERED PHOTOS RECORDED BY WILDLIFE CAMERAS IN DORIS AND MADRID AREAS, 2016 TO 2024





Facility monitoring cameras recorded 16 caribou events between September 1, 2023, and September 1, 2024. Camera 2 on the road crossing ramp had three caribou events between July 9, 2024, and July 27, 2024, each comprised of a lone adult (Appendix J). A total of 13 caribou events were recorded between June 25, 2024, and July 27, 2024, on camera 51 located on the TIA. Events were comprised of one to two adults in all cases with a total of 14 caribou observed. Caribou presence around site, noted through the Wildlife Sightings/Reporting process, is discussed in Section 3.4.3.4.

In 2022, two cameras were deployed at the Windy Road culvert, approximately 160 m north of one of the caribou crossing ramps. A total of five events were captured on these cameras between June 12 and July 18, 2024. A total of six adult caribou and one juvenile caribou were observed on the culvert cameras.

### Caribou Herd Identification

Caribou were identified by herd (either Beverly/Ahiak or Dolphin and Union) for all camera data from June 2023 to September 2024 across 641 caribou detections (Section 3.4-2). The Beverly/Ahiak herd accounted for the majority of events (79%), followed by unknown individuals (15%), and finally the Dolphin and Union herd (6%; Table 3.4-2). The majority of unknown classifications of caribou were due to caribou being too close or too far away from the camera to show identifiable herd characteristics. Unknown identifications due to uncertainty in the herd will be provided to the IEAC for identification assistance.

**TABLE 3.4-2 BEVERLY/AHIAK AND DOLPHIN AND UNION CARIBOU HERD IDENTIFICATION, 2023 TO 2024**

Date		Herd		
		Dolphin and Union	Beverly/Ahiak	Unknown
2023	June	10	30	11
	July	-	74	1
	August	-	7	2
	September	1	28	3
	October	1	6	2
	November	-	-	-
	December	-	-	-
2024	January	-	-	-
	February	-	-	-
	March	-	-	-
	April	1	-	1
	May	-	2	1

Date		Herd		
		Dolphin and Union	Beverly/Ahiak	Unknown
2024 (cont'd)	June	24	82	29
	July	2	164	31
	August	-	91	12
<b>Total</b>		<b>39</b>	<b>484</b>	<b>93</b>

Note:

- = No caribou detected

Individuals from the Beverly/Ahiak herd were observed from June to October in 2023 and between May and August in 2024. The month with the highest number of observations of individuals from the Beverly/Ahiak herd in both years was July, with 74 events in 2023 and 164 events in 2024 (Table 3.4-2). This peak in observations corresponds to the post-calving period for the Beverly/Ahiak herd.

Twelve individuals from the Dolphin and Union herd were observed in 2023 between June and October, and 27 individuals were observed between April and July in 2024. The month with the highest number of observations of the Dolphin and Union herd occurred in June of 2024 ( $n = 24$ ; Table 3.4-2). These observations align with the spring migration (May to June) period to Victoria Island. However, Dolphin and Union individuals observed in later June and July in both 2023 and 2024 may not be migrating to Victoria Island for calving, given the annual timing of sea ice melt.

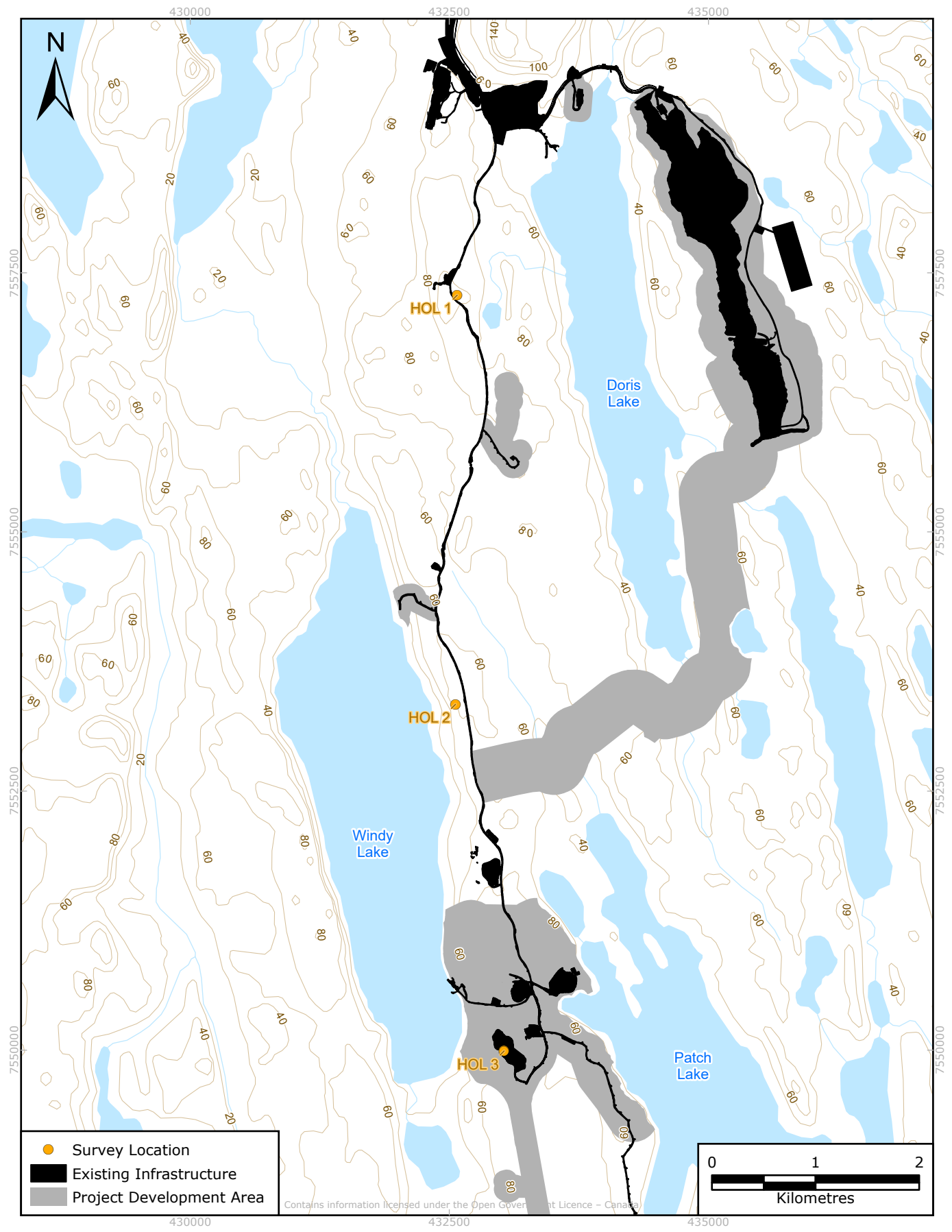
### 3.4.3.3 HEIGHT OF LAND

HOL surveys were completed during the fall migration as per the WMMP (Agnico Eagle 2023). HOL surveys were not completed in the spring because the first round of surveys began after discussions at the IEAC meeting in July 2024. Surveys were completed for 1 week in August and 1 week in September at the three predetermined survey sites (Figure 3.4-6). No additional HOL surveys were triggered (i.e., >25 caribou observed within 5 km of infrastructure). Of the 22 total surveys completed, 41% of surveys recorded caribou presence. Of the surveys with caribou observed, abundance was low with 89% of surveys recording one caribou and 11% of surveys recording two caribou, with only adult males and females observed (Table 3.4-3).

### 3.4.3.4 INTERACTIONS, INCIDENTS, AND MORTALITIES

In 2024, one caribou interaction occurred and there were no mortalities. On July 20, 2024, two caribou were identified within Quarry D and the blast was postponed until July 21, 2024. As the caribou remained in the vicinity of the quarry and posed a safety concern, they were deterred from the blasting area using a human line and drone (Appendix E). July is the peak time period when caribou frequent the site to escape biting insects. Caribou are only deterred in situations where they may be harmed.

FIGURE 3.4-6 HEIGHT OF LAND SURVEY LOCATIONS, 2024



**TABLE 3.4-3 SUMMARY OF CARIBOU OBSERVATIONS DURING THE HOL SURVEYS, 2024**

<b>Survey ID</b>	<b>Date</b>	<b>Site</b>	<b>Male</b>	<b>Female</b>	<b>Young</b>	<b>Total</b>	<b>Direction</b>	<b>Distance (m) to Caribou</b>
HOL7	September 18, 2024	HOL-1	1	0	0	1	SW	700
HOL8	August 18, 2024	HOL-3	1	0	0	1	SW	600
HOL11	August 19, 2024	HOL-3	1	0	0	1	SW	700
HOL12	August 19, 2024	HOL-1	1	0	0	1	SW	1,000
HOL12	August 19, 2024	HOL-2	1	0	0	1	NW	1,000
HOL15	August 20, 2024	HOL-3	1	0	0	1	SW	100
HOL16	August 20, 2024	HOL-2	1	0	0	1	SW	1,600
HOL19	August 21, 2024	HOL-3	0	1	0	1	N	1,000
HOL20	August 21, 2024	HOL-3	1	1	0	2	SW	400

Notes:

m = metre

HOL = Height of Land; N = north; NW = northwest; SW = southwest



### 3.4.3.5 WILDLIFE SIGHTINGS LOG AND INCIDENTAL OBSERVATIONS

In 2024, caribou were recorded on 220 occasions in the wildlife sighting log. In 2024, the highest number of caribou observed by personnel occurred in June, with 1.25 caribou per personnel (Appendix K). This is the highest number of individuals recorded at site in a month, since the previous high of 1.95 caribou per personnel recorded in March 2016. The greatest number of events for caribou from the camera monitoring in the Treatment zone and ZOI were in June and July.

Incidental observations of caribou by site personnel did not include the specific herd identification; however, we can infer from the caribou herd identification section (Section 4.4.3.2) which herd was more prevalent near site when incidental observations were made. The majority of incidental observations of caribou occurred between June and August 2024, which aligns with the highest number of camera events that observed caribou (Section 3.4.3.2). Additionally, the majority of the camera events that recorded caribou occurred in the Treatment zone, where incidental observations by site employees would most likely occur. The highest number of individual observations of caribou, both Dolphin and Union and Beverly/Ahiak, were in June and July. Caribou observed in June to July 2024 were primarily of the Beverly/Ahiak herd, which indicates that the individuals observed by the personnel were likely mostly Beverly/Ahiak (Table 3.4-4; Appendix F).

**TABLE 3.4-4 CARIBOU SIGHTINGS AND INCIDENTAL OBSERVATIONS, 2024**

General Location	Months	Total Sightings <sup>a</sup>	Total Individuals <sup>b</sup>
Doris Area	June–October	88	249
Roberts Bay	June–August	10	24
Windy Road / Madrid	February–October	101	199
TLR/TIA Area	May–August	17	52
Not Specified	July	4	9
Various Wildlife Survey Sites	June–July	-	22

Notes:

TIA = Tailings Impoundment Area; TLR = Tail Lake Road

<sup>a</sup> Total sightings are not provided for incidental biologist observations because these totals are combined from several wildlife surveys.

<sup>b</sup> The total number of individuals provided may not always be representative of the true number of individuals recorded, as certain wildlife sightings may include double counting of the same individual(s).

Several reported sightings were likely the same individuals moving through the area (e.g., caribou reported in the same group size, general locations, and on the same date; Appendix F). Most sightings took place in July and August. Caribou groups ranged in size from one to 16 individuals. In addition, 22 caribou were incidentally observed by biologists at various survey locations throughout the Study Area (Appendix G).

The majority of caribou sightings occurred in the Windy Road / Madrid area and in the Doris area. Seventeen caribou sightings occurred near the TIA / Tail Lake Road (TLR) area (Table 3.4-4). Caribou observed near the TIA were monitored to ensure that they left the area. None of the caribou were observed interacting with the tailings. Site personnel were made aware when caribou were sighted near active camp areas to allow mitigation measures to be implemented to avoid disturbing caribou until they had moved away from the active camp areas.

### 3.5 MUSKOX

Muskox inhabit Arctic tundra environments and occur in varying densities throughout Nunavut, including in the northern islands archipelago (Leclerc 2015). In recent years, possible declines in some muskox populations have been reported; the cause and extent of these declines are still uncertain, but it is likely related to disease, climate, and anthropogenic pressures (Cuyler et al. 2020). Although muskox are not listed as a species of conservation concern, federally or in Nunavut, these concerns have led to increased monitoring and research efforts throughout the Arctic.

#### 3.5.1 FEIS PREDICTIONS

Disturbance to muskox within the RSA was predicted as a not significant and low magnitude residual effect in the Madrid-Boston FEIS (TMAC 2017). Disruption of movement in the PDA was predicted as a low magnitude residual effect that was not significant. The previous Doris FEIS did not include muskox as a VEC (Miramar 2005); inclusion in the Madrid-Boston FEIS is a reflection of increased interest in monitoring muskox throughout the Canadian Arctic.

#### 3.5.2 METHODS

The potential effects of Mine-related activities on muskox are monitored through the wildlife camera monitoring program (see general wildlife camera methods in Section 3.2.1). Although detections of muskox have been recorded since 2016, very few camera events are recorded each year.

#### 3.5.3 RESULTS AND DISCUSSION

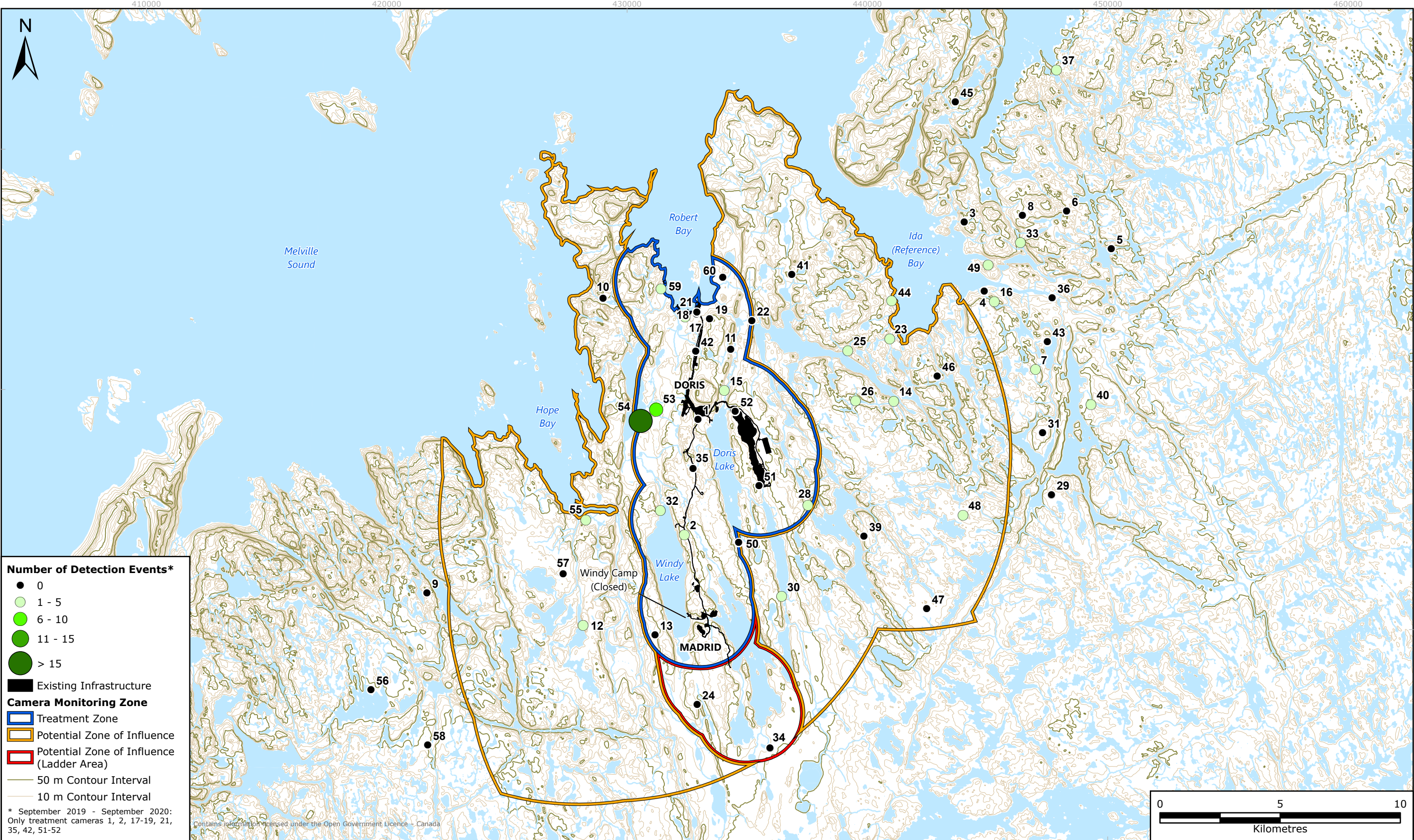
##### 3.5.3.1 CAMERA MONITORING

Between September 1, 2023, and August 31, 2024, 60 cameras were active for 7,818 days, averaging 130 active days per camera. Camera effort within monitoring zones for the most recent year is summarized by month in Table 3.3-2; effort summaries per camera are provided in Appendix D.

A total of nine events were recorded between September 1, 2023, and August 31, 2024. A total of 63 events were recorded of muskox between 2016 and 2024 (Figure 3.5-1; Table 3.5-1; Appendix L). Muskox events primarily occurred in June 2024, with 56% of the total muskox events. Overall, muskox events were most common in the Control zone, which also represented 56% of the total events. All five June events occurred between June 23 and June 25 between two different cameras. The remaining four events occurred in October to December in the Treatment zone and were all captured on the same camera. Detections of muskox by wildlife cameras continue to be rare, with only camera 54 in the Treatment zone having a larger number of events.



FIGURE 3.5-1 DETECTIONS OF MUSKOX ON MOTION-TRIGGERED PHOTOS RECORDED BY REMOTE CAMERAS, DORIS AND MADRID AREAS, 2016 TO 2024





**TABLE 3.5-1 MUSKOX EVENTS RECORDED BY MONTH AT TREATMENT, ZOI, AND CONTROL CAMERAS, SEPTEMBER 2023 TO SEPTEMBER 2024**

Year	Month	Treatment		ZOI		Control	
		Camera Effort <sup>a</sup> Total Active Days	Number of Events	Camera Effort <sup>a</sup> Total Active Days	Number of Events	Camera Effort <sup>a</sup> Total Active Days	Number of Events
2023	September	444	-	25	-	386	-
	October	297	2	156	-	212	-
	November	202	1	80	-	39	-
	December	142	1	59	-	44	-
2024	January	128	-	47	-	110	-
	February	159	-	56	-	121	-
	March	174	-	87	-	114	-
	April	138	-	75	-	151	-
	May	120	-	80	-	107	-
	June	416	-	368	-	294	5
	July	534	-	434	-	324	-
	August	483	-	314	-	200	-
<b>Total</b>		<b>3237</b>	<b>4</b>	<b>1781</b>	<b>0</b>	<b>2102</b>	<b>5</b>

Notes:

- = No muskox detected

ZOI = Zone of Influence

<sup>a</sup> A total of 60 cameras were deployed across the Treatment, ZOI, and Control zones.

## Facilities Camera Monitoring

Two cameras have site-specific monitoring objectives for muskox: cameras 51 and 52 installed at the north and south end of the TIA. No muskox events were recorded on motion-triggered or timed photo events at these two cameras between September 1, 2023, and August 31, 2024, which suggests that muskox use of the areas surrounding the TIA is infrequent.

### 3.5.3.2 INTERACTIONS, INCIDENTS, AND MORTALITIES

No muskox interactions, incidents, or mortalities were recorded in 2024 (Appendix E).

### 3.5.3.3 WILDLIFE SIGHTINGS LOG AND INCIDENTAL OBSERVATIONS

In 2024, muskox were recorded on 24 occasions in the wildlife sighting log (Table 3.5-2; Appendix F). Several sightings were likely repeats of the same group based on the date, location, and group size (Appendix F). In particular, a herd of 25 muskox were observed repeatedly throughout February 2024 in the Windy Road / Madrid area. The muskox sighting in the TIA/TLR area did not note any interactions with the tailings. No muskox were incidentally observed by biologists in 2024 (Appendix G).

**TABLE 3.5-2 MUSKOX SIGHTINGS AND INCIDENTAL OBSERVATIONS, 2024**

General Location	Months	Total Sightings	Total Individuals <sup>a</sup>
Doris Area	June	3	32
Windy Road/Madrid	January–July	19	321
TLR/TIA	June	1	Not specified
Not Specified	July	1	2

Notes:

TIA = Tailings Impoundment Area; TLR = Tail Lake Road

<sup>a</sup> The total number of individuals provided may not always be representative of the true number of individuals recorded, as certain wildlife sightings may include double counting of the same individual(s).

Muskox observations from the wildlife sightings log were corrected for the number of people onsite each month from 2009 to 2024 (Appendix M). Across years, sightings are variable and have occurred in all months. In 2024, corrected muskox observations peaked at 1.92 observations per personnel (Appendix M). Peaks in muskox sightings typically represent sightings of larger herds, rather than more sightings of a few individuals (Appendix M).

## 3.6 GRIZZLY BEAR

Grizzly bear is considered a species of Special Concern under COSEWIC and SARA (Government of Canada 2024). Additionally, grizzly bear is listed as Vulnerable in Nunavut (NatureServe 2025). Barren-ground grizzly bears are at the most northern and eastern limits of the continental grizzly bear range. Consequently, grizzly bears in the central Arctic have the largest annual home ranges and likely have the lowest densities of any grizzly bear population studied in North America (McLoughlin 1999). The RSA is located within a 200,000 square kilometre (km<sup>2</sup>) portion of the northwestern mainland of Nunavut that was previously estimated to contain 800 grizzly bears (TMAC 2017).

### 3.6.1 FEIS PREDICTIONS

The residual effects of disturbance and disruption of movement on grizzly bear within the RSA were predicted to be not significant and low magnitude in the Madrid-Boston FEIS (TMAC 2017).

### 3.6.2 METHODS

The potential effects of Mine-related activities on grizzly bear are monitored through the wildlife camera monitoring program (see general wildlife camera methods in Section 3.2.1). Camera data are statistically analyzed every 3 years to investigate potential differences in the occurrence of caribou within the Treatment zone, Control zone, and ZOI, and to monitor areas of possible bear attractants, such as the Roberts Bay Waste Management Facility. Bears may be attracted to specific infrastructure—despite mitigation to reduce the attractiveness—resulting in these cameras recording more events than other areas at/near the Mine.

### 3.6.3 RESULTS AND DISCUSSION

#### 3.6.3.1 CAMERA MONITORING

Between September 1, 2023, and September 1, 2024, a total of 60 cameras were active for 7,818 days, averaging 130 active days per camera. Camera effort within monitoring zones for the most recent year is summarized by month in Table 3.3-2; effort summaries per camera are provided in Appendix D. A brief summary of the images and grizzly bear events recorded across all cameras during the current periods is provided below. Data from facility monitoring cameras 18, 21, and 22 are also included in the summary below.

A total of 33 events were recorded between September 1, 2023, and August 31, 2024 (Table 3.6-1). A total of 952 events were recorded of grizzly bear between 2016 and 2024 (Figure 3.6-1; Appendix N). Grizzly bear events were primarily recorded in September 2023, which included 39% of all grizzly bear events. Overall, grizzly bear events were most common in the Treatment zone and ZOI, with each zone representing 39% of total grizzly bear events compared to 22% in the Control zone. Temporally, grizzly bears were observed between May and November, which is consistent with when bears are active and not hibernating.

#### **Facilities Camera Monitoring**

Under the current camera design, there are five cameras that have site-specific monitoring objectives for grizzly bear: cameras 18 and 21 at the Roberts Bay Waste Management Facility, camera 22 at the Roberts Lake Outflow / Fish Fence, and cameras 51 and 52 at the north and south ends of the TIA.

A total of two grizzly bear events were captured on facility monitoring cameras between September 1, 2023, and August 31, 2024. An event involving three grizzly bears was captured in September 2023 on camera 23 located at the Roberts Lake Outflow / Fish Fence. The other event consisted of a lone grizzly bear in November on camera 51 at the north end of the TIA. No grizzly bear events were recorded on cameras 18 and 21 at the Roberts Bay Waste Management Facility. There were less grizzly bear events at facility monitoring in 2024 than in the previous year (Figure 3.6-1). However, events occurred in similar locations as 2023, with no observations at the Roberts Bay Waste Management Facility and low levels of events at the Roberts Lake Outflow / Fish Fence and at the TIA.



**TABLE 3.6-1 GRIZZLY BEAR EVENTS RECORDED BY MONTH AT TREATMENT ZONE, ZOI, AND CONTROL ZONE CAMERAS, SEPTEMBER 2023 TO AUGUST 2024**

Year	Month	Treatment		ZOI		Control	
		Camera Effort <sup>a</sup> Total Active Days	Number of Events	Camera Effort <sup>a</sup> Total Active Days	Number of Events	Camera Effort <sup>a</sup> Total Active Days	Number of Events
2023	September	444	6	258	5	386	2
	October	297	2	156	1	212	-
	November	202	1	80	-	39	-
	December	142	-	59	-	44	-
2024	January	128	-	47	-	110	-
	February	159	-	56	-	121	-
	March	174	-	87	-	114	-
	April	138	-	75	-	151	-
	May	120	-	80	2	107	-
	June	416	1	368	-	294	1
	July	534	3	434	5	324	4
	August	483	-	314	-	200	-
<b>Total</b>		<b>3237</b>	<b>13</b>	<b>1781</b>	<b>13</b>	<b>2102</b>	<b>7</b>

Notes:

- = No grizzly bear detected

ZOI = Zone of Influence

<sup>a</sup> A total of 60 cameras were deployed across the Treatment, ZOI, and Control zones.