

Reviewer Comments and Proponent Responses

Project: Ekati

Board: Wek'eezhii Land and Water Board

Organization: Arctic Canadian Diamond Company Ltd.

Organization	ID	Topic	Reviewer Comment	Reviewer Recommendation	Proponent Response
Wek'eezhii Renewable Resources Board - Laura Meinert	1	WMMP	Cover Letter.	N/A	<p>Arctic Canadian would like to thank WRRB for the comments received and also confirm that the additional initial review comments have been addressed in the WMMP, as discussed during the workshop on February 10 2023.</p>
Wek'eezhii Renewable Resources Board - Laura Meinert	2	Bird Monitoring	<p>The Board understands that Ekati has discontinued all non-incidental surveys of migratory birds at the mine. Ekati's reasoning is that no impacts of the mine on migratory birds have been detected in the past, and therefore monitoring is no longer required. The WRRB is, however, concerned about the increasingly noticeable effects of climate change on all species in Wek'eezhii, including migratory birds. The Board is interested in how migratory bird biodiversity is changing around Ekati in response to climate change, and if the mine locally acts to accelerate or protect from these effects.</p>	<p>The WRRB recommends Ekati use passive bird monitors around the mine to continue to monitor if migratory bird biodiversity is changing locally.</p>	<p>Potential impacts from the Ekati mine on breeding birds (songbirds, shorebirds, and ptarmigans) have been investigated using multi-year data in a comprehensive analysis (Smith et al. 2005). Through five metrics (relative density of individual species, relative density of all birds, species richness using rarefaction curves, and species diversity using two indices) potential impacts on breeding birds were assessed up to a distance of 1 km from the mine. The study found that the mine has had a relatively limited impact on the upland breeding bird community, but has provided habitat for some upland species, such as American Robin (<i>Turdus migratorius</i>), that can nest on infrastructure.</p> <p>While Arctic Canadian can appreciate the interest in changes to bird populations due to climate change, Arctic Canadian considers the potential impacts of the mine on breeding birds investigated and therefore, if external factors are causing changes in bird biodiversity, they are likely unrelated to the mine. As such, Arctic Canadian considers it an inappropriate precedence to undertake monitoring for impacts not caused by the mine.</p> <p>Any qualitative changes to bird populations around Ekati are captured for breeding birds similar to other species potentially affected by climate change, e.g., moose, through incidental observations, which are documented and reported on in the annual WMMP reports. If WRRB is specifically concerned about a specific species or species group, Arctic Canadian is happy to flag such species in the WMMP for potential</p>

Wek' eezhii Renewable Resources Board - Laura Meinert	3	Drone Usage	The WRRB understands that Ekati intends to only deploy drones to aid in grizzly bear management during wildlife incidents. The Board is interested in the level of disturbance that different Unmanned Aerial Vehicles cause to wildlife.	The Board recommends that as much information about how grizzly bears (or other nearby wildlife) respond to the drone be recorded, if it is used. In this way, the disturbances caused in these safety situations can provide information to the WRRB and the public, aiding in future work.	Arctic Canadian appreciates the interest in drone effect on grizzly bears. To confirm, the utilization of drones at Ekati is to scan for bear presence prior to field crew deployment, something historically done using a helicopter (i.e., substantially increased sensory disturbance). As such, the intention is specifically not to elicit a response in the bear, but merely effectively document presence/absence. However, any bear response to drone usage will be documented and included in the annual WMMP reports.
Fisheries and Oceans Canada (DFO) - Nicholas Wasilik	1	Wildlife Management and Monitoring Plan	Fisheries and Oceans Canada has reviewed the plan and has no comments at this time.	Fisheries and Oceans Canada has no recommendations at this time.	Arctic Canadian would like to thank DFO for their review.
Denínu Ké First Nation (DKFN) - Dr. Marc d'Entremont	1	Table 1.2-1: Specific Wildlife Monitoring Program Objectives	Historical Zone of Influence monitoring - Arctic Canadian is focused on garnering stakeholder consensus to define the objectives and methods for the telemetry analysis which will provide a more comprehensive investigation of caribou behavioural changes with increasing proximity to the mine. The telemetry analysis replaces previous methodological approaches including zone of influence monitoring.	Can Arctic Canadian provide an update on the status of the approach and methods for the telemetry analysis?	A summary and update on the status of the approach and methods for the telemetry project was presented at the February 3 workshop. Arctic Canadian is happy to recirculate the presentation slides and to answer any further questions on this project if required (please see response to TG 9).
Denínu Ké First Nation (DKFN) - Dr. Marc d'Entremont	2	2.2 The Ekati Diamond Mine Wildlife Study Area	Wildlife monitoring around the Ekati Diamond Mine is conducted in a study area of 2,800 km ² .	It appears that more recently wildlife monitoring is localized around project infrastructure and less monitoring is occurring within the larger study area. We recommend Arctic Canadian confirm this is true, particularly in relation to future monitoring activities under this plan.	Arctic Canadian takes a collaborative approach to its monitoring programs at Ekati. Through ongoing consultation with stakeholders over the years, and with the advance in technology leading to more refined methods to detect effects, human survey effort has been reduced as data availability has gone up (e.g., collar data) and may encompass data from larger study areas. The objective of the telemetry project is to investigate caribou mitigation effectiveness at both the local and regional scale (please see response to IEMA 7).

Denínu Kéé First Nation (DKFN) - Dr. Marc d'Entremont	3	5.0 Mitigation	Arctic Canadian implements several general mitigation actions to reduce potential interactions with wildlife, including: 2 Wildlife awareness presentations to specific departments;	Can Arctic Canadian confirm which specific departments receive wildlife awareness presentations and what these presentations entail.	In addition to the general wildlife awareness training is a part of the general introduction training all staff at Ekati receive when arriving to site the first time, the Environment Team also undertakes wildlife awareness presentations to specific departments, e.g., to promote awareness on wildlife avoidance, waste management practices, bird nesting potential and procedures, in order to enhance mitigative efforts and reinforce to mine staff expectations and requirements at site. All departments are targeted for these presentations, i.e., from Housekeeping to Surface Mining.
Denínu Kéé First Nation (DKFN) - Dr. Marc d'Entremont	4	5.0 Mitigation	Arctic Canadian implements several general mitigation actions to reduce potential interactions with wildlife, including: 3 Posting road signs about reduced speed limits or to alert drivers that wildlife are in the area;	Can Arctic Canadian provide analysis to show that posting road signs to reduce speeds is an effective mitigation action. We request specific data to support this action.	Arctic Canadian has not completed an analysis specifically on the efficacy of road signs, but, as stated in response to comment IEMA 5 and TG 11, mitigating in the absence of an ability to demonstrate effectiveness is sometimes inevitable and in the case of a low effort mitigation as road signs, Arctic Canadian is of the opinion that posting road signs as a driver awareness tool is a meaningful choice. Further, no carnivores or caribou road collisions have occurred at Ekati, a testimony to the appropriateness of the speed limits (and other mitigations) at the mine roads in terms of reducing potential wildlife interactions.
Denínu Kéé First Nation (DKFN) - Dr. Marc d'Entremont	5	5.1 Habitat Alteration and Loss	progressive reclamation activities may be scheduled as part of the ICRP (Section 3.3) for mine areas where there is no potential for future benefits or business opportunities, or in areas where there is immediate environmental risk;	Can Arctic Canadian confirm that progressive reclamation has been completed on the mine site to date and provide details (location, area reclaimed) where this has occurred.	Arctic Canadian can confirm that progressive reclamation activities have been initiated at the mine site. Please refer to the Annual Closure and Reclamation Progress Reports and Interim Closure and Reclamation Plan (ICRP) V3.1 for further details.
Denínu Kéé First Nation (DKFN) - Dr. Marc d'Entremont	6	5.1 Habitat Alteration and Loss	conditions will continue to be monitored over time to evaluate the success of the ICRP and, using industry best practice, adaptive management, and newer proven methods as available, to adjust the ICRP as necessary and appropriate;	Mitigations need to be more specific and measurable. Can Arctic Canadian provide more details on what conditions will be monitored.	ICRP V3.1 was submitted to the WLWB in December 2022 and is currently under review. Comments related to ICRP should be submitted as part of that review as they do not pertain to the WMMP.

Denínu Kéé First Nation (DKFN) - Dr. Marc d'Entremon t	7	5.1 Habitat Alteration and Loss	speed limits are posted and limit fugitive dust;	Can Arctic Canadian provide the measurable parameters related to this mitigation to show that speed limits reduce the amounts of fugitive dust.	While Arctic Canadian cannot produce measurable parameters to show this correlation, the company is of the opinion that the correlation between increased velocity on gravel surfaces and fugitive dust is commonly understood as a positive correlation. Two additional parameters are also positively correlated, namely vehicle weight and number of axles.
Denínu Kéé First Nation (DKFN) - Dr. Marc d'Entremon t	8	5.1 Habitat Alteration and Loss	If nests are found during nest searches, mitigation will be applied to avoid incidental take of nesting individuals.	We request Arctic Canadian be specific as to what mitigations will be applied to avoid incidental take.	Please see response to ECCC 1 and Section 5.3.2 and Table 5.3-1.
Denínu Kéé First Nation (DKFN) - Dr. Marc d'Entremon t	9	5.2 Waste Management and Habituation of Carnivores	wildlife activity is monitored at waste management areas, and provides feedback into adaptive management	We request Arctic Canadian provide details how adaptive management is applied in these situations, particularly how the monitoring activities influence positive change and the reduction of habituation of carnivores.	Arctic Canadian applies adaptive management through e.g., increased monitoring frequency to reduce exposure risk, wildlife awareness presentations (please see response to DKFN 3), conducting correctional analyses such as 5-Why investigations, among others. In situations where signs of potential habituation are occurring Arctic Canadian works closely with ENR Wildlife Officers on appropriate actions. Arctic Canadian notes that Ekati has an excellent track record of avoiding carnivore habituation.
Denínu Kéé First Nation (DKFN) - Dr. Marc d'Entremon t	10	5.2 Waste Management and Habituation of Carnivores	waste management procedures, site awareness (e.g., closing doors), and wildlife interactions continue to be a part of the orientation that new employees receive;	Can Arctic Canadian confirm the new employee orientation is effective (i.e., reduction in waste management issues). In this regard we request to see the extent of what this orientation includes. There may be more effective waste management awareness training that could be implemented to improve overall compliance.	Arctic Canadian opinions that internal training materials are for internal purposes only; however, the Waste Management Plan summarizes Ekati policies and procedures. As stated in response to DKFN 9, Ekati has a good track record of avoiding carnivore habituation, indicative of waste management policies and staff awareness training being effective in ensuring overall compliance.

Denínu Ké First Nation (DKFN) - Dr. Marc d'Entremont	11	5.4 Linear Features and Traffic	The physical presence of roads and associated traffic can also cause wildlife to alter their movement and behaviour. Depending on species and traffic volume, some animals may cross roads, be deflected along roads before crossing, or completely avoid roads. Increased traffic along the Misery and Lac du Sauvage roads, and associated power lines and pipelines that results in barriers to the movement of caribou and other wildlife the Ekati Diamond Mine site is a key concern for Arctic Canadian, communities, IEMA, ENR, and the public.	We recommend traffic along Sable Road be included in the consideration of the barrier effect.	Please see response to IEMA 3.
Denínu Ké First Nation (DKFN) - Dr. Marc d'Entremont	12	5.4.1.1 Adaptive Management	Adaptive management will be informed by the results of the comprehensive telemetry project that will determine the effectiveness of mitigation measures for caribou at a regional scale.	Can Arctic Canadian provide an update on the status of the approach and methods for the telemetry analysis?	Please see response to DKFN 1.
Denínu Ké First Nation (DKFN) - Dr. Marc d'Entremont	13	5.4.1.5 Level 2 (Orange) Increased Signage in Areas Where Caribou Might Encounter the Road	The location of the signs is based on incidental caribou observations, camera trapping data and TK.	Can Arctic Canadian provide details on how data and information from camera trapping and TK is relayed in real time to update mitigation efforts in response to this level of caribou presence near the mine and roads.	Camera data and TK informs longer term/future monitoring and mitigation efforts, e.g., ramp placements have been informed during site visits by Elders providing TK. Immediate mitigation efforts are based on the criteria set out in the CRMP (please see response to IEMA 15).

Environment and Climate Change Canada (ECCC) - Jennifer Sabourin	1	<p>Table 3.1-1 on concordance of Legislation/Regulation Requirements and Wildlife Management and Monitoring Plan details the various Acts and regulations relevant to wildlife in NWT and which apply to the practices carried out by the mine.</p> <p>In table 3.1-1, Row 2 details those requirements as defined under the Migratory Bird Convention Act (MBCA) and the Migratory Bird Regulations (MBR).</p> <p>The requirements detailed within this section refer to MBCA schedule 2, which cover the convention between Canada and the United States and are not the most pertinent section of the MBCA to reference in this section.</p> <p>These requirements should instead reflect MBCA section 5, detailing the prohibitions in place for the protection of migratory birds.</p>	<p>ECCC recommends the Proponent update Table 3.1-1 such that the requirements detailed for the MBCA and the MBR are reflective of section 5 of the MBCA and section 5 of the MBR.</p> <p>In addition, ECCC recommends the Proponent include a plain language summary of the prohibitions detailed within the MBCA, MBR, and the Species at Risk Act as an Annex to the WMMP so that they are accessible to employees and contractors that may be using this document.</p>	<p>Arctic Canadian will update table 3.1-1 with the requirements detailed for the MBCA and MBR. All staff at Ekati receive environmental awareness training, including on the requirements specified in the MBCA and MBR. Any observed nesting activity is reported to the Environment Team and the Wildlife Advisor who are fully familiar with the legislative framework. As such, a plain language annex is not necessary or helpful.</p>
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Environment and Climate Change Canada (ECCC) - Jennifer Sabourin	2	<p>ECCC notes that Bank Swallows colonies have been observed nesting at the Gahcho Kue Mine in 2021 and 2022. Bank and Barn Swallows are listed as threatened under the Species at Risk Act. The Bank Swallow is a colonial species that nests in burrows dug into near vertical faces of exposed sand and soil and exhibit high nest fidelity.</p> <p>ECCC has previously informed Arctic Diamond of these nearby observations with a request that the proponent be vigilant for the presence of both Bank and Barn Swallows during all wildlife monitoring conducted during the general nesting periods from early May to mid August. Staff have previously informed ECCC that environmental staff are recording bird observations at Ekati.</p> <p>However, ECCC notes that these species are missing from the WMMP. Further, the WMMP does</p>	<p>ECCC recommends that Bank and Barn Swallows be added to paragraph two under section 4.1.1 which lists avian species at risk that may be present within the mine site and regional area.</p> <p>In addition, within the relevant section of the WMMP, particularly section 6.7.1 or 6.7.2, ECCC recommends the proponent include Bank and Barn Swallow surveillance monitoring as part of their existing wildlife monitoring programs. This includes:</p> <ol style="list-style-type: none"> 1. Defining the scope of the monitoring which should include: <ul style="list-style-type: none"> • Regular monitoring (i.e. at least 2 times per week) during the general nesting period (mid May to mid August) of all areas and structures at the mine site containing suitable attributes or features attractive to Bank and Barn Swallows. 2. Collecting the following information should Bank or Barn Swallows be observed: <ul style="list-style-type: none"> • Date of arrival on-site and/or date first 	<p>ECCC alerted Arctic Canadian to the potential presence of these two federally listed species in review comments to the 2020 WEMP annual report (ECCC3). Arctic Canadian appreciates the information on the two federally listed species and acknowledges their potential occurrence at Ekati. Section 4.1.1 will be updated to reflect this.</p> <p>However, Arctic Canadian does not consider it prudent nor an efficient use of resources to instigate monitoring for species that have yet to be detected in proximity to Ekati. General wildlife awareness training is a part of the general introduction training all staff at Ekati receive when arriving to site the first time. As such, all staff are aware of the potential for nesting birds, their protected status, and procedure for contacting Arctic Canadian's Environment Team, which includes proficient birders. Arctic Canadian will report any confirmed detections of barn and bank swallows to CWS as soon as possible to ensure adequate mitigation and monitoring measures are put in place.</p>
Environment and Climate Change Canada (ECCC) - Jennifer Sabourin	3	<p>Topic: Effects of Dewatering and fish-out activities</p> <p>Reference:</p> <ul style="list-style-type: none"> - Section 4.2.1.3 (pp. 33) 	<p>ECCC has noted that previous fish-outs at the Ekati site, and other northern mines, have resulted in by-catch of diving birds and has led to commitments to engage ECCC in the development of strategies to mitigate these effects. The risk of by-catch applies to the Point Lake Project referenced within the WMMP.</p>	<p>The referenced section is a summary paragraph of what was originally identified as potential effects of mine development on migratory birds.</p> <p>Arctic Canadian has worked closely with ECCC on appropriate mitigations to minimize the risk of by-catch for the Point Lake fish-out plan. Resultingly, no diving bird mortalities occurred during dewatering for that project and Arctic Canadian has every intention to continue the close collaboration with ECCC on future dewatering plans, should it become an actuality.</p>

Environment and Climate Change Canada (ECCC) - Jennifer Sabourin	4	Topic: Migratory Bird Mitigations Reference: - Section 5.1 (pp. 36) - Section 5.3.2 (pp. 38)	Under Mitigations – Habitat Alteration and Loss and Wildlife Incidents and Mortality, the WMMP notes that clearing of vegetation is to occur outside of the breeding season (May 15 to July 31) where practical. ECCC notes that the project is located in nesting zone N9, where the general breeding period extends from mid May to mid August.	ECCC recommends the general nesting period of mid May to mid August be used when implementing mitigation measures for nesting migratory birds, including defining periods where clearing should be avoided.	Arctic Canadian appreciates the information and will update the WMMP accordingly.	
Environment and Climate Change Canada (ECCC) - Jennifer Sabourin	5	Topic: Standard Operating Procedures Reference: - Appendix A8	Appendix A8 details protocols for incidental wildlife monitoring and provides a general list of key species that staff should be aware of while conducting the incidental wildlife surveys. As Bank and Barn swallows are a novel species to the area and newly introduced into the WMMP, these should be referenced specifically under task description section so that staff are aware and vigilant of their presence during these surveys.	In addition, the wildlife and habitat reference sheets mentioned in the appendix do not appear to be provided within the WMMP and it is unclear if Bank and Barn swallows have been added to these resources.	ECCC recommends Appendix A8 be amended to include specific reference to Bank and Barn Swallows within the task description. Further, the proponent should ensure that these species have been added to the wildlife and habitat reference sheets.	The Standard Operating Procedures for Incidental Wildlife Survey does not spell out each and every species that can potentially be encountered at Ekati. Instead, all Environment Team staff are trained and have resources available to them to identify wildlife at the mine site, including resources on bank and barn swallows.

Environment and Climate Change Canada (ECCC) - Jennifer Sabourin	6	<p>Appendix A16 on Arctic Pit Bird</p> <p>Monitoring provides a list of known cliff nesting bird species that may be encountered during the surveys.</p> <p>As Bank Swallows are a novel species to the area and newly introduced into the WMMP, specific reference to the species should be included in this list to ensure staff are aware and vigilant of their presence during these surveys.</p> <p>Bank Swallows generally dig their burrows in near-vertical banks that are more than 2 meters in height. Although pit walls may not be the most suitable nesting feature for Bank Swallows due to the hard rock and potential presence of predatory bird species, there is potential for the species to nest where they are able to find softer materials to dig into. As deterrents are being used to keep predator species away from pit walls, this may also make the locations more attractive to Bank</p>	<p>ECCC recommends Appendix A16 be amended to include specific reference to Bank Swallows within the list of species that may be encountered during pit wall surveys. Further, the proponent should ensure that this species has been added to the supplementary resources available to staff including the identification book, laminated photos, and PowerPoint presentation referenced in the task descriptions.</p> <p>In addition, ECCC recommends additional notes or training be provided to staff on Bank Swallow nesting behavior as this is unique from those of other typical cliff nesting species. Similar protocols to those detailed under the execution steps for cliff nesters should be provided for monitoring of Bank Swallows at these locations.</p>	<p>As also noted in the comment itself, Arctic Canadian does not consider pit walls potential nesting habitat for bank swallows (i.e., there is no soft material to dig into in sheer granite walls).</p>
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Environment and Climate Change Canada (ECCC) - Jennifer Sabourin	7	Topic: Data Forms Reference: - Appendix B	<p>Data forms contained in Appendix B are difficult to read and interpret due to their current formatting. The forms also lack context or descriptions that would assist in better understanding their use. In particular:</p> <ul style="list-style-type: none"> • For Appendix B3 Wildlife Incident Data Form, it is unclear if there is a single form spread over two pages, or if these are two distinct data forms as they appear to be tracking different types of incidences. • Appendix B6 Wildlife Mortality Data Form does not appear to track wildlife mortality, but instead fence collisions and repairs. The form should contain fields to collect information detailed in section 6.3.2.2 on monitoring wildlife mortalities. 	<p>ECCC recommends that all data forms in Appendix B be revised and reformatted such that;</p> <ul style="list-style-type: none"> • They contain a description under the heading of their purpose and intent; • Track the appropriate and relevant items; and • Are clear and understandable. 	<p>Appendix B are snippets of data forms (i.e., not the data forms themselves) intended solely to illustrate which metrics are being collected during respective surveys, thus they are per definition taken out of context. Arctic Canadian will review the presentation of Appendix B to ensure there are no formatting or labeling errors.</p>
Environment and Climate Change Canada (ECCC) - Jennifer Sabourin	8	Topic: Incident Reporting Reference: - Section 6 - Section 8	<p>The WMMP does not appear to contain a consolidated table of all management authorities and interested parties that should be contacted in the event of an incident or mortality involving a species within their mandate or interest.</p>	<p>ECCC recommends the proponent include a table in the monitoring or incident reporting section containing information on which groups will be contacted and under which situations. The table should include the most up-to-date information on contact information for these parties. For all wildlife issues relevant to ECCC, the proponent is asked to contact us at cwsnorth-scfnord@ec.gc.ca.</p>	<p>Arctic Canadian will add a table for management authorities to contact in the event of wildlife mortalities and incidents that require immediate notification or guidance.</p> <p>However, Arctic Canadian will not be contacting "interested parties" for all incidents. All wildlife mortalities and incidents are reported on in the annual WMMP report for all stakeholders and/or interested parties to review.</p>
Environment and Climate Change Canada (ECCC) - Jennifer Sabourin	9	Cover Letter	Cover Letter	N/A	Arctic Canadian would like to thank ECCC for their review.

Tlicho Governmen t - Longinus Ekwe	1	<p>Comment: this paragraph provides an Arctic Canadian perspective on zone of influence monitoring, and does not cite or refer to any previous discussion, work, and guidance prior to 2021. The section does not provide any insight or direction from a GNWT-Industry ZOI Technical Task Group that was established ca. 2014 and which presumably recommended a pathway for addressing issues related to mine-specific monitoring effects to caribou (https://nwtdiscoveryportal.enr.gov.nt.ca/geoportaldocuments/SGP_Wildlife_Workshop_Patenaude_Zone_of_Influence_Task_Group_Update_Mar2015.pdf). Further reference to this Task Group may be found in a GNWT-ENR 2018 report titled “Summary Report: Slave Geological Province Regional Wildlife Monitoring Workshop, April 24-26, 2018,” and relevant sections of the report are: 6.3 Recent Zone of Influence (ZOI) Analyses (John Boulanger, Integrated</p>	<p>The WMMP should provide a succinct and objective overview of “Historical Zone of Influence monitoring”, which may be added as a brief technical Appendix. The WMMP should seek to be more comprehensive and with less appearance of bias in describing the research and monitoring on ZOI that have been conducted, and the reasons for the current emphasis on its telemetry analyses.</p>	<p>Arctic Canadian appreciates the request for a wider discussion of this topic presented in the WMMP; however, the WMMP is intended to document Arctic Canadian’s own mitigation and monitoring efforts and associated projects, e.g., Arctic Canadian’s ZOI work (ERM 2021) or telemetry work. The referenced table (Table 1.2-1) contains a brief section for what Arctic Canadian has historically done on ZOI research for background information only, while setting the stage for why continued efforts are now being allocated to the telemetry project instead, which is in agreement with stakeholder recommendations (e.g., see IEMA 25 Recommendation).</p>
Tlicho Governmen t - Longinus Ekwe	2	<p>Table 1.2-1: Specific Wildlife Monitoring Program Objectives (p.5) – Wolf: Den occupancy and productivity</p>	<p>The WMMP states that “Wolf monitoring is specific to incidental observations and incidents as previous studies did not indicate impacts were occurring at a regional scale.”</p>	<p>Since previous studies are mentioned, can Arctic please provide a brief overview of the previous studies (with citations) that showed wolves were not impacted at a regional scale?</p> <p>Arctic Canadian provided ongoing support to regional wolf monitoring initiatives coordinated by ENR over the years until program completion in 2014. Results of ENR’s wolf den productivity surveys suggested that between 1995 and 2014, wolves continued to den in close proximity to Ekati and successfully raised pups (Klaczek 2015).</p> <p><i>Reference:</i> Klaczek, M. R. 2015. Denning Ecology of Barren-Ground Wolves in the Central Canadian Arctic. Master of Science diss., University of Northern British Columbia</p>

Tlicho Governmen t - Longinus Ekwe	3	Figure 2.2-1: Ekati Diamond Mine Wildlife Study Area (p. 10)	<p>The figure shows the Ekati Study Area Boundary with landcover types but does not incorporate the current mine footprint as depicted in Figure 2.1-1, nor the Proposed Point Lake Project (Figure 2.1-2). The three figures presently show different data layers at different scales which disaggregates the information and reduces comprehension for readers</p>	<p>The figure should include the habitat – landcover types with the current % future mine footprints to illustrate the cumulative footprint on the landscape in one map</p>	<p>The purpose of each of these three figures is different. While Figure 2.2-1 is intending to present the Ekati Wildlife Project Footprint (hence no habitat layer to enhance footprint visibility), Figure 2.1-2 was developed specifically to show detailed infrastructure on the landscape for the Point Lake Project, and Figure 2.2-1 is intended to present the Ekati Wildlife Study Area at the regional level with habitat classes. As such, these three figures are not on the same scale and intended to show the same thing (e.g., the scale of Figure 2.2-1 cannot show details of Point Lake footprint, nor would a habitat layer be conducive on Figure 2.1-1, but pertinent for showing landscape features surrounding Point Lake infrastructure).</p>
Tlicho Governmen t - Longinus Ekwe	4	4.1.1.1 Caribou (p. 16)	<p>“Information from satellite collared adult female caribou collected by ENR and TK indicates that two barren-ground caribou herds, the Bathurst herd, and to a lesser extent the Beverly/Ahiak herd (formerly known as the Ahiak herd), have historically overlapped the area of the Ekati Diamond Mine wildlife study area (Figure 4.1-1).”</p> <p>In recent winters, collared caribou from the Bluenose East herd have substantially overlapped with Bathurst and Beverly/Ahiak caribou</p>	<p>An additional map or Range Data layer for the Bluenose East herd should be shown in Figure 4.1-1 along with a brief description of the recent spatial trends in its winter distribution relative to Ekati mine</p>	<p>Arctic Canadian acknowledges that individual collared caribou from the Bluenose East herd can at times be found in the ranges of Bathurst and Beverly/Ahiak herds. However, while the Bluenose East range may be shifting, it still does not routinely overlap with Ekati. When or if it does, Arctic Canadian consider the appropriateness of including this herd as well in Figure 4.1-1 along with a brief description; however, to clarify all caribou at Ekati warrant the same level of mitigation and monitoring, irrespective of herd adherence.</p>

Tlicho Governmen t - Longinus Ekwe	5	4.1.1.3 Wolf (p. 29)	<p>Wolf management actions are being undertaken by Tłı̨chǫ Government and GNWT to reduce wolf predation on the Bathurst and Bluenose-East caribou herds because of ongoing conservation concerns related to significant population declines over the past 10-15 years. Ground-based harvest of wolves within the North Slave Enhanced Wolf Harvest Incentive Area is ongoing.</p>	<p>The section on wolves should be updated to reflect the current wolf management actions.</p>	<p>Arctic Canadian will update the WMMP as requested.</p>
Tlicho Governmen t - Longinus Ekwe	6	5.0 Mitigation (p. 34)	<p>Arctic Canadian uses WRSA as an example of “avoidance” in the mitigation hierarchy: “Avoid: actions taken to completely avoid creating impacts from the outset, such as careful spatial or temporal placement of elements of infrastructure and engineered designs of facilities (e.g., waste rock storage areas).”</p> <p>Based on recent Tłı̨chǫ Government staff and Elders workshops that developed specific recommendations on options for locating WRSA and overburden piles for the proposed Point Lake Project, placement and configuration of WRSA is an example of reducing or minimizing “impacts that cannot be avoided” due to the project.</p>	<p>WRSA should be referenced as an example to minimize impacts to caribou, not completely avoid impacts</p>	<p>Arctic Canadian will correct this error in the WMMP.</p>

Tlicho Government - Longinus Ekwe	7	Table 5.4-1: Action Levels (Triggers) and Associated Caribou Road Mitigation and Monitoring (p. 44)	<p>Arctic Canadian describes four Action Levels that would trigger Wildlife Road Mitigation measures. For Levels 2 (Orange) and 3 (Red), a trigger of 0.25% of the total cows of the Bathurst herd is presented as a rationale for a caribou abundance threshold near roads. It is unclear why a proportion of 0.25% was selected and it implies that the threshold rate is constant irrespective of population size, and is subject to change based on updated Bathurst population estimates.</p>	<p>1. Please Describe the biological rationale for the trigger and why the risk threshold is presented as a proportion of the number of female caribou in the Bathurst population. Distinguish whether the threshold is based on an objective tied to reducing risk to Bathurst caribou or minimizing exposure of any barren-ground caribou to disturbance at the mine site? Provide the threshold as a measure of caribou abundance that applies for this version of the WMMP.</p> <p>2. Please describe how these trigger levels are consistent with the objective of enabling caribou to move freely through the mine site area.</p>	<p>These criteria came out of stakeholder consultation for the Jay Project (i.e., they were not the invention of Arctic Canadian). The purpose of these triggers is to ensure protection of the most sensitive elements of the population, i.e., potentially pregnant cows. The initial proposal of 1% of the total cows as the trigger value was discussed as being too high and 0.25% was instead agreed upon as a more suitable value.</p> <p>As has been discussed at the February 3 and 10 workshop and widely agreed (e.g., IEMA Intervention Point Lake Water License Amendment Public Hearing, 2021), discussion regarding the existing mitigations in the CRMP will be conducted after the telemetry project has been completed.</p>
Tlicho Government - Longinus Ekwe	8	6.4.7 Traffic Monitoring (p. 64)	<p>Arctic Canadian committed to traffic monitoring as part of the Point Lake WEMP Addendum (Arctic Canadian 2021a) and anticipates a full traffic monitoring dataset beginning in 2023. The objectives of this program are:</p> <ul style="list-style-type: none"> • determine hourly traffic volumes; and • analyze traffic volumes associated with caribou crossings identified from wildlife cameras and caribou collar data. <p>Monitoring methods will rely on traffic counters established on Misery, Sable and on the Lac du Sauvage Road both east and west of the Point Lake Access Road. The counters will record time and date of each vehicle passage and will not differentiate among types of vehicles or direction of travel.</p> <p>Arctic Canadian has since indicated that remote cameras will be used and information on vehicle type and direction of travel will be</p>	<p>mine vehicles. Implement GPS monitoring of individual haul trucks that provides data on haul cycle variability and characteristics that can be used to provide mine traffic activity levels aggregated at daily, weekly, monthly and seasonal scales. These data would be used as key co-variates in effectiveness monitoring analyses of caribou-centric datasets including behavioral scans, camera trap data and caribou collar movements.</p> <p>-As part of compliance and implementation monitoring on AC's Road Traffic Mitigation and Monitoring strategy (Figure 5.4-2), data on vehicle traffic and haul cycle characteristics should be summarized to show the patterns of mine vehicle speeds and temporary road closures as they relate to caribou occurrence at the mine site as outlined in the CRMP and four Action Levels (Table 5.4-1).</p> <p>-Pending implementation of individual-based vehicle monitoring, AC should conduct a spatially explicit assessment of vehicle traffic characteristics (timing, volume, and speed profiles), at key road locations (i.e., caribou crossings, random locations, historic high</p>	<p>To confirm, Arctic Canadian is not monitoring only based on traffic and remote camera data, e.g., road surveys, collar data, and incidental observations are also key monitoring methods to ensure compliance and implementation in terms of caribou monitoring at Ekati. As stated in the answer to TG 7, the telemetry project will provide valuable information on the scale of effects to caribou, and inform the need for revision of mitigations, including if undertaking the level of monitoring and analyses suggested in the comment is warranted.</p>

Tlicho Government - Longinus Ekwe	9	Traditional Knowledge	AC should continue to update Tłı̨chǫ Elders of results of studies conducted and how they relate to traditional knowledge. Details should be refined based on TK and Science. This update is requested because Tłı̨chǫ Elders had specific guidance on the Point Lake project through the WLWB licencing/permitting process	TG recommends that pending completion of AC's telemetry analyses , it would be useful for Arctic Canadian to host a workshop to share and discuss those results with technical staff, along with knowledge holders	Arctic Canadian is committed to continuing engagement on all the Ekati wildlife monitoring programs. The telemetry analyses are currently underway and whether a specific workshop on the results is a suitable format or best presented at a larger scope wildlife focused workshop is more appropriate remains to be determined.
Tlicho Government - Longinus Ekwe	10	barrier effect of the infrastructure on the migration.	There are some indications of regrowing caribou trails south of the Misery road, showing how caribou don't use the land south/east of the road, which may have resulted from physical barriers or sensory disturbance.	Can AC further study the effects of infrastructure on the migration and make improvements to that. And in order to best optimize mitigations, both (1) the effects of physical developments including infrastructure and (2) sensory disturbance need to be well-understood. This does not mean we have to wait to implement more mitigations, but better understanding can inform which mitigations will make the most difference and thus how to optimize efforts.	Regarding the regrowing caribou trails south of Misery Road, at the February 3 workshop, Arctic Canadian pointed out that with a reduced population size comes reduced range usage, i.e., regrowing trails is not necessarily linked to a physical road barrier effect. However, as discussed at the workshops on February 3 and 10 2023, as well as clarified in responses to comments TG 7 and 8, Arctic Canadian is committed to undertaking the advanced telemetry analyses to evaluate caribou interactions with the mine and its infrastructure.
Tlicho Government - Longinus Ekwe	11	Use of previous monitoring outcomes	N/A	We would like to see application of lessons learned from the monitoring and mitigation activities in the previous version of the plan, to ensure that successful monitoring activities and mitigations are well utilized in this new plan, where those with less success are improved through performance evaluation.	Certain monitoring programs have been deemed completed and thus discontinued based on program conclusions (e.g., wolverine, wolf, bear, falcon surveys). However, Arctic Canadian maintains that it is not always possible to demonstrate mitigation effectiveness. Thus, mitigating in the absence of the ability to demonstrate effectiveness is sometimes an inevitability, e.g., sample sizes may not permit a meaningful statistical analysis. Notwithstanding, Arctic Canadian takes a collaborative approach with stakeholders to monitoring efforts for optimizing chances of effectiveness and success, e.g., developing a study to evaluate potential effects to its most important VEC, caribou, (i.e., the telemetry project), despite the fact that no mortalities of carnivores or caribou have occurred at the mine.

Tlicho Governmen t - Longinus Ekwe	12	recommendation for the WLWB.	Habitat is clearly in the Board's jurisdiction. We recommend that in areas where the WLWB has jurisdiction, the Board should exercise its discretion in order to fulfill objectives and considerations of section 22.3.9 of the Tłı̨chǫ Agreement. For wildlife habitat, this means setting conditions to ensure that ekwò habitat – including use of, access to, and migration through ekwò habitat – is protected as much as possible. Tłı̨chǫ Government has made specific recommendations about ekwò habitat and other issues for the Board to consider.	Arctic Canadian agrees with the importance of protection of habitat and recognize the Board has jurisdiction in this regard. However, Arctic Canadian believes at this time that specific conditions in the Ekati Water License are not required and that the WMMP is the appropriate tool for monitoring and management of potential effects to wildlife and wildlife habitat, without unnecessary, duplicated reporting requirements. This would cause redundant and inefficient review, burdening both the company and reviewers. Arctic Canadian would also like to point out that conditions do exist in our current permits and licenses that are intended to limit unnecessary impacts to habitat. For example Land Use Permits do not allow for the building of parallel roadways. Additionally major project infrastructure like roadway and waste rock storage areas require approved designs prior to construction, which allow parties to review and comment prior to WLWB approval.
Independen t Environmen tal Monitoring Agency - Jamie Mistry	1	Please see attached letter that contains full comments with reference links		No response required.

Independent Environmental Monitoring Agency - Jamie Mistry	2	<p>The Independent Environmental Monitoring Agency (Agency) has reviewed Arctic Canadian Diamond Company Ltd.'s (Arctic Canadian) November 2022 submission of the Ekati Diamond Mine updated Wildlife Management and Monitoring Plan (WMMP). The Agency provided initial comments and recommendations on December 14, 2022. The Agency also participated in Arctic Canadian-led workshops on the WMMP held on February 3 and 10, 2023. Based on those workshops and discussions, we restate our initial comments and recommendations for the record, and provide post-workshop updates respecting each topic summarized under 'Outcome', for your consideration:</p>	n/a	<p>Arctic Canadian would like to thank IEMA for their review.</p> <p>It seems a system glitch have duplicated IEMA comments; hence Arctic Canadian responses will just occur at the updated "Outcome" questions and reference to responses will be in accordance with their comment numbers as appearing in the ORS at the time of response submission.</p>
Independent Environmental Monitoring Agency - Jamie Mistry	3	<p>Many sections of the proposed WMMP refer to traffic issues or monitoring along the Misery and Lac du Sauvage roads (e.g., S 5.4, pg 39; Table 5.4-1, pg 44). The Agency is unclear why the Sable Road has been left off the list of roads. This WMMP should be operational in late 2023. The life of mine plan from the 2021 Environmental Agreement and Water Licence Annual Report suggests mining of the Sable Pit will continue into late 2024, while recent communications with Arctic Canadian suggest this date may be pushed back to early 2025.</p>	<p>Arctic Canadian should include information about traffic issues, monitoring and mitigation of the Sable Road in the WMMP, or clarify why the Sable Road has not been included when addressing roads at the mine site</p>	<p>No response required (duplication).</p>

Independent Environmental Monitoring Agency - Jamie Mistry	4	Inclusion of Sable Road	<p>Many sections of the proposed WMMP refer to traffic issues or monitoring along the Misery and Lac du Sauvage roads (e.g., S 5.4, pg 39; Table 5.4-1, pg 44). The Agency is unclear why the Sable Road has been left off the list of roads. This WMMP should be operational in late 2023. The life of mine plan from the 2021 Environmental Agreement and Water Licence Annual Report suggests mining of the Sable Pit will continue into late 2024, while recent communications with Arctic Canadian suggest this date may be pushed back to early 2025.</p>	<p>Recommendation: Arctic Canadian should include information about traffic issues, monitoring and mitigation of the Sable Road in the WMMP, or clarify why the Sable Road has not been included when addressing roads at the mine site.</p> <p>Outcome: Arctic Canadian has agreed to change the phrasing in the plan to include the Sable Road.</p>	<p>Arctic Canadian confirms that the phrasing in the WMMP will be changed to ensure it is clear the CRMP applies to all roads, including Sable Road.</p>
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Independent Environmental Monitoring Agency - Jamie Mistry	5	<p>Construction of caribou crossing structures (ramps) is one of the core mitigation measures used at the mine (S 5.4, pg 39; S 6.4.6, pg 61). Caribou ramps have been long claimed by the mine as an effective mitigation strategy to facilitate caribou movement through the mine site, yet there has been no robust examination of the effectiveness of these structures. The effectiveness of caribou ramps is especially questionable given the findings of the camera study[1] that indicated roadside slope or rock sizes did not affect caribou crossing success – in other words, caribou did not preferentially cross in areas with low roadside slope or fine surface crush rock size. Since the caribou ramps are designed with low side slope and finer surface crush, then the camera study findings do not directly support caribou ramps as an effective mitigation tool for caribou movement.</p>	<p>Arctic Canadian should conduct an assessment of the effectiveness of caribou crossing structures to facilitate caribou movement through the mine site.</p>	<p>No response required (duplication).</p>
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Independent Environmental Monitoring Agency - Jamie Mistry	6	<p>Construction of caribou crossing structures (ramps) is one of the core mitigation measures used at the mine (S 5.4, pg 39; S 6.4.6, pg 61). Caribou ramps have been long claimed by the mine as an effective mitigation strategy to facilitate caribou movement through the mine site, yet there has been no robust examination of the effectiveness of these structures. The effectiveness of caribou ramps is especially questionable given the findings of the camera study[1] that indicated roadside slope or rock sizes did not affect caribou crossing success – in other words, caribou did not preferentially cross in areas with low roadside slope or fine surface crush rock size. Since the caribou ramps are designed with low side slope and finer surface crush, then the camera study findings do not directly support caribou ramps as an effective mitigation tool for caribou movement.</p>	<p>Recommendation: Arctic Canadian should conduct an assessment of the effectiveness of caribou crossing structures to facilitate caribou movement through the mine site.</p> <p>Outcome: Arctic Canadian argues that low data resolution will not allow for quantification of the effectiveness of crossing structure mitigation, especially if the roads themselves are not a barrier to crossing. The Agency believes that the effectiveness of caribou crossing structures can be evaluated using a well-designed (likely camera-based) study. The Agency supports the initial examination of study design power and effect size to address this issue.</p>	<p>Arctic Canadian maintains that low sample size will likely not permit a meaningful evaluation of ramp effectiveness, especially considering how the degree of effectiveness is dependent on the road barrier effect, which is not strong per Arctic Canadian monitoring results (e.g., 2020 Wildlife Camera Monitoring Summary Report). As stated in response to TG 11, it is not always possible to demonstrate mitigation effectiveness, but that doesn't imply that not implementing feasible mitigations is the better choice and Arctic Canadian notes that ramp placements were determined in collaboration with stakeholder input and according to TK.</p> <p>Arctic Canadian is committed to working with stakeholders on a holistic approach to site mitigations per the Point Lake Project Hearing, but as has been discussed at the February 3 and 10 workshops and widely agreed (e.g., IEMA Intervention Point Lake Water License Amendment Public Hearing, 2021), the evaluation of specific mitigations can be conducted after the telemetry project – the objective of which is to evaluate site mitigation effectiveness holistically – has been completed.</p>
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Independent Environmental Monitoring Agency - Jamie Mistry	7	Adaptive management and the comprehensive telemetry project	<p>S 5.4.1.1 (pg 41) states that “<i>Adaptive management will be informed by the results of the comprehensive telemetry project that will determine the effectiveness of mitigation measures for caribou at a regional scale</i>”. The Agency is unclear why the “regional scale” has been added to this statement (although it may be related to end-point assessments whether caribou successfully attain the calving grounds and winter range). Most stakeholders reviewing progress of the current telemetry project are concerned with caribou movements near and through the Ekati mine site, the scale of which is <15 km or even <3 km from mine infrastructure.</p>	<p>Arctic Canadian should ensure that the current telemetry project provides an assessment of caribou movements near and through the Ekati mine site, not just movements at a regional scale.</p>	No response required (duplication).
Independent Environmental Monitoring Agency - Jamie Mistry	8	Adaptive management and the comprehensive telemetry project	<p>S 5.4.1.1 (pg 41) states that “<i>Adaptive management will be informed by the results of the comprehensive telemetry project that will determine the effectiveness of mitigation measures for caribou at a regional scale</i>”. The Agency is unclear why the “regional scale” has been added to this statement (although it may be related to end-point assessments whether caribou successfully attain the calving grounds and winter range). Most stakeholders reviewing progress of the current telemetry project are concerned with caribou movements near and through the Ekati mine site, the scale of which is <15 km or even <3 km from mine infrastructure.</p>	<p>Recommendation: Arctic Canadian should ensure that the current telemetry project provides an assessment of caribou movements near and through the Ekati mine site, not just movements at a regional scale.</p> <p>Outcome: Outcome: Arctic Canadian clarified that the telemetry analysis will also examine movements close to and through the mine. The Agency suggests that at this finer scale, a dose versus response type of examination (such as using distance from mine infrastructure as the ‘dose’), may be more enlightening than comparing movement parameters to some distant control/reference movements.</p>	Arctic Canadian can confirm the scale of the telemetry projects is not just regional in scale, but also evaluates movement trajectories close to and through the mine site. Arctic Canadian notes that the objectives and methods for the telemetry project have been developed through collaborative workshops with stakeholders during 2022 and that Stage 1 of the project is in its final stages at the time of writing, hence recommendations to change methodology at this point are untimely and out of place. This discussion is best considered in the context of the results, when available.

Independent Environmental Monitoring Agency - Jamie Mistry	9	Caribou road mitigation and monitoring: Action Level triggers	<p>The Caribou Road Mitigation Plan (CRMP) uses collared caribou as an Action Level (trigger) to initiate intensified levels of monitoring and mitigation (Table 5.4-1, pg 44), but how often and when these collars have been used as triggers is not provided. Triggers include the approach of collared caribou or observations of caribou near infrastructure. As it is, there is no way to evaluate the effectiveness of monitoring methods to trigger enhanced mitigation and of the applied mitigation, limiting the ability to evaluate adaptive management.</p>	<p>Arctic Canadian should ensure that the WMMP will present data on the triggers to changes in, or maintenance of, alert levels in order to assess monitoring effectiveness.</p>	No response required (duplication).
Independent Environmental Monitoring Agency - Jamie Mistry	10	Caribou road mitigation and monitoring: Action Level triggers	<p>The Caribou Road Mitigation Plan (CRMP) uses collared caribou as an Action Level (trigger) to initiate intensified levels of monitoring and mitigation (Table 5.4-1, pg 44), but how often and when these collars have been used as triggers is not provided. Triggers include the approach of collared caribou or observations of caribou near infrastructure. As it is, there is no way to evaluate the effectiveness of monitoring methods to trigger enhanced mitigation and of the applied mitigation, limiting the ability to evaluate adaptive management.</p>	<p>Recommendation: Arctic Canadian should ensure that the WMMP will present data on the triggers to changes in, or maintenance of, alert levels in order to assess monitoring effectiveness.</p> <p>Outcome: Outcome: To clarify, the Agency is looking for more detailed reporting on the actual day to day triggers to changes in or maintenance of Alert Levels. For example, Table 4.1-3 (given as an example in the Arctic Canadian presentation response to IEMA #4), lumps 9 months of Alert Level Red into a single row. How and when collar data versus observations contributed to this ongoing Alert Level would be useful in order to assess monitoring effectiveness.</p>	<p>Arctic Canadian appreciates the clarification as to what is requested in addition to the information already included in Table 4.1-3 in the annual WMMP Report. As presented in Table 5.4-1 in the WMMP, the action triggers are based on collar data and site observations. Arctic Canadian will make the distinction in Table 4.1-3 of future annual reports whether a level was changed due to site observations or based on collar data. However, Arctic Canadian notes that a conservative approach to these alert level triggers are taken, hence Ekati is typically in the highest alert level for the vast majority of the year, even though this may result in unwarranted monitoring efforts (e.g., Ekati does not drop from Red level on a day to day basis because a caribou was not seen that day).</p>

Independent Environmental Monitoring Agency - Jamie Mistry	11	<p>Caribou distance thresholds and speed limits</p> <p>The WMMP states “<i>As a general rule for drivers, speed limits are decreased</i></p> <p>distance thresholds and speed limits. The basis for the distance thresholds and speed guidelines are not provided. Level 2 (Orange) states that when “<i>0.25% of total cows in the Bathurst caribou herd are observed at 200 to 500 m from the road</i>” there is a speed reduction to 40 kph (S 5.4.1.5, pg 47). [Based on the 2021 estimate of 3,800 Bathurst cows (Adamczewski et al. 2022), the current threshold should be ~10 cows]. The larger Beverly/Ahiak caribou herd has been near Ekati more often in recent years, often during winter, but the smaller size of the Bathurst herd provides a conservative threshold for a trigger level. However, since the road surveys are only conducted daily (Table 5.4-1, pg 44), much of the judgement calls will rest on the truck drivers to adequately review caribou presence, sex, and numbers out to 500 m distance, which seems like a tall order for a driver focussed on safely moving a heavily loaded truck along a gravel road.</p>	<p>Arctic Canadian should provide the basis for the distance thresholds and speed limits provided in the WMMP and clarify how the distance thresholds will be adequately monitored with daily road surveys.</p>	<p>No response required (duplication).</p>
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Independent Environmental Monitoring Agency - Jamie Mistry	12	<p>Caribou distance thresholds and speed limits</p> <p>The WMMP states "As a general rule</p> <p>distance thresholds and speed limits. The basis for the distance thresholds and speed guidelines are not provided. Level 2 (Orange) states that when "0.25% of total cows in the Bathurst caribou herd are observed at 200 to 500 m from the road" there is a speed reduction to 40 kph (S 5.4.1.5, pg 47). [Based on the 2021 estimate of 3,800 Bathurst cows (Adamczewski et al. 2022), the current threshold should be ~10 cows]. The larger Beverly/Ahiak caribou herd has been near Ekati more often in recent years, often during winter, but the smaller size of the Bathurst herd provides a conservative threshold for a trigger level. However, since the road surveys are only conducted daily (Table 5.4-1, pg 44), much of the judgement calls will rest on the truck drivers to adequately review caribou presence, sex, and numbers out to 500 m distance, which seems like a tall order for a driver focussed on safely moving a heavily loaded truck along a gravel road.</p>	<p>Recommendation: Arctic Canadian should provide the basis for the distance thresholds and speed limits provided in the WMMP and clarify how the distance thresholds will be adequately monitored with daily road surveys.</p> <p>Outcome: The Agency reiterates that more objective-based mitigation should be developed, for example, by conducting research to determine distance and/or vehicle speed thresholds that will facilitate crossing by the majority of caribou that approach within a certain distance of roads.</p>	<p>As stated in response to TG 7, these criteria were the result of stakeholder consultation for the Jay Project and stopping distance was agreed as one way to demonstrate physical safety to caribou. Further, the distances were also based on what can reasonably be observed from the roadway.</p> <p>As has been discussed at the February 3 and 10 workshop and widely agreed (e.g., IEMA Intervention Point Lake Water License Amendment Public Hearing, 2021), the potential evaluation of existing mitigations in the CRMP will be conducted after the telemetry project has been completed.</p>
Independent Environmental Monitoring Agency - Jamie Mistry	13	<p>Level 3 (Red) triggers</p> <p>Level 3 is triggered "when 0.25% or more of total cows in the Bathurst herd are travelling 60 km/h) i.e., the maximum stopping distance of a loaded haul truck travelling 60 km/h i.e., the maximum stopping distance of a loaded haul truck travelling 60 km/h [emphasis added], or one or more caribou are crossing or attempting to cross the Misery or Lac du Sauvage roads" (S 5.4.1.6, pg 47). This statement suggests that the distance trigger is based primarily on haul truck stopping distance to reduce risk of vehicle strike, and not to facilitate movement across the roads.</p>	<p>Arctic Canadian should clarify how the 200 m trigger is used to limit the effects of semi-permeable barriers to caribou movement from roads.</p>	<p>No response required (duplication).</p>

Independent Environmental Monitoring Agency - Jamie Mistry	14	<p>Level 3 (Red) triggers</p> <p>Level 3 is triggered “when 0.25% or more of total cows in the Bathurst herd are travelling 60 km/h) i.e., the maximum stopping distance of a loaded haul truck travelling 60 km/h i.e., the maximum stopping distance of a loaded haul truck travelling 60 km/h [emphasis added], or one or more caribou are crossing or attempting to cross the Misery or Lac du Sauvage roads” (S 5.4.1.6, pg 47). This statement suggests that the distance trigger is based primarily on haul truck stopping distance to reduce risk of vehicle strike, and not to facilitate movement across the roads.</p>	<p>Recommendation: Arctic Canadian should clarify how the 200 m trigger is used to limit the effects of semi-permeable barriers to caribou movement from roads.</p> <p>Outcome: Acknowledging that the mine has demonstrated an excellent record of physical safety to caribou, the Agency would prefer to see mitigation triggers linked to effectiveness monitoring to limit the effects of semi-permeable barriers to caribou movement from roads.</p>	Please see response to IEMA 11.
Independent Environmental Monitoring Agency - Jamie Mistry	15	<p>Short-term or long-term road closures</p> <p>“0.25% of total cows in the Bathurst herd is within 200 m of the Lac du Sauvage or Misery roads” (S 5.4.1.6, pg 48). The difference between Level 2 (Orange) and Level 3 (Red) is a simple (and sometimes rapid) movement of caribou from 200–500 m to <200 m from the road. The Agency is unclear how the shift to Level 3 can occur fast enough to facilitate caribou crossing of roads. Deciding to close roads when caribou are already less than 200 m of a road is likely too late, leading to delays or deflections at distances greater than 200 m distance. Indeed, decisions by caribou whether to cross roads may be made at much greater distances (Poole et al. 2021)[1]. Also, many of the decisions appear to be “determined by the Environment Department” and “based on the discretion of the Environment Department”, which are uncomfortably vague. This discretion includes when “it is anticipated that the caribou intend to cross the road” (S 5.4.1.6, pg 48).</p>	<p>Arctic Canadian should:</p> <ol style="list-style-type: none"> clarify how a change from Level 2 to Level 3 will happen rapidly enough to facilitate caribou passage through roads; clarify how it is determined that the caribou intend to cross the road; and provide in annual reporting specific data on triggers for work stoppage or road closures, location and length of road segments affected, and mitigation outcomes. 	No response required (duplication).

Independent Environmental Monitoring Agency - Jamie Mistry	16	<p><i>"0.25% of total cows in the Bathurst herd is within 200 m of the Lac du Sauvage or Misery roads"</i> (S 5.4.1.6, pg 48). The difference between Level 2 (Orange) and Level 3 (Red) is a simple (and sometimes rapid) movement of caribou from 200–500 m to <200 m from the road. The Agency is unclear how the shift to Level 3 can occur fast enough to facilitate caribou crossing of roads. Deciding to close roads when caribou are already less than 200 m of a road is likely too late, leading to delays or deflections at distances greater than 200 m distance. Indeed, decisions by caribou whether to cross roads may be made at much greater distances (Poole et al. 2021)[1]. Also, many of the decisions appear to be <i>"determined by the Environment Department"</i> and <i>"based on the discretion of the Environment Department"</i>, which are uncomfortably vague. This discretion includes when <i>"it is anticipated that the caribou intend to cross the road"</i> (S 5.4.1.6, pg 48).</p> <p>Short-term or long-term road closures</p> <p>[1] Poole, K.G., A. Gunn and G. Pelchat.</p>	<p>Recommendation: Arctic Canadian should:</p> <ol style="list-style-type: none"> 1. clarify how a change from Level 2 to Level 3 will happen rapidly enough to facilitate caribou passage through roads; 2. clarify how it is determined that the caribou intend to cross the road; and 3. provide in annual reporting specific data on triggers for work stoppage or road closures, location and length of road segments affected, and mitigation outcomes. <p>Outcome: Arctic Canadian seems to rely on best professional judgement and experience to facilitate the best outcome for caribou. The Agency maintains our concern that with the current mitigation triggers, it is difficult to see how the shift from Level 2 to Level 3 (which include short-term or long-term road closures) can occur fast enough to facilitate caribou crossing of roads.</p>	<p>Arctic Canadian maintains that a certain level of professional judgement is inevitable when it comes to decision making to ensure caribou passage through roads as every scenario involves a multitude of parameters (e.g., individual animals, locations, infrastructure, landscape) and is therefore different. The people making decisions on triggers have worked many years with caribou at Ekati and are able to facilitate the best outcome for caribou.</p> <p>Further, all wildlife has the right of way at Ekati and all drivers are trained in relevant protocols and the rules are enforced. Radio communication enables instant relaying of wildlife observations to the Environment Team at Ekati that can direct instant road closures or other instructions to vehicle operators and other staff (i.e., changing of levels does not have to await physical deployment of staff or physical signs to take effect).</p> <p>Future annual WMMP reports will include a table with additional details of road closures for additional transparency.</p>
Independent Environmental Monitoring Agency - Jamie Mistry	17	<p>Mitigation for the Lac du Sauvage Road</p> <p>This paragraph clarifies how the Lac du Sauvage Road will be modified to <i>"further facilitate caribou passage while supporting future uses of the road"</i> (S 5.4.1.7, pg 48). The Agency is unclear why a similar section is not provided to address the Sable Road.</p>	<p>Arctic Canadian should provide a section on modifications to the Sable Road following cessation of mining at the Sable open pit to encourage caribou passage and reduce sensory disturbance.</p>	<p>No response required (duplication).</p>

Independent Environmental Monitoring Agency - Jamie Mistry	18	Mitigation for the Lac du Sauvage Road	<p>This paragraph clarifies how the Lac du Sauvage Road will be modified to “<i>further facilitate caribou passage while supporting future uses of the road</i>” (S 5.4.1.7, pg 48). The Agency is unclear why a similar section is not provided to address the Sable Road.</p>	<p>Recommendation: Arctic Canadian should provide a section on modifications to the Sable Road following cessation of mining at the Sable open pit to encourage caribou passage and reduce sensory disturbance.</p> <p>Outcome: Outcome: The Agency believes that the Sable Road area is far more heavily used than passage through the Lac du Sauvage Road, which in itself is an important historical movement area. The Agency wants to ensure that the Sable Road is fully considered for modification following cessation of mining at Sable Pit.</p>	<p>The referenced paragraph originates in the Point Lake WEMP Addendum, which details project specific mitigations for that project, resulting from stakeholder consultation. While Arctic Canadian agrees that Sable Road is likely more used for caribou passage, TK identified the Point Lake narrows as a potential bottleneck for caribou movements and Arctic Canadian agreed to implement enhanced monitoring for that project accordingly.</p> <p>Sable has its own mitigations resulting from stakeholder consultation for that project. As stated in the response to IEMA 5, Arctic Canadian is committed to working with stakeholders on a holistic approach to site mitigations, but as has been discussed at the February 3 and 10 workshops and widely agreed (e.g., IEMA Intervention Point Lake Water License Amendment Public Hearing, 2021), the evaluation of specific mitigations can be conducted after the telemetry project – the objective of which is to evaluate site mitigation effectiveness holistically, has been completed.</p>
Independent Environmental Monitoring Agency - Jamie Mistry	19	Examination of use of convoys	<p>There is no mention in the WMMP of convoying haul trucks to increase the interval between road disturbance events and possibly facilitate caribou passage through the site.</p>	<p>The WMMP should include examination of the effectiveness of convoying haul trucks to facilitate caribou movement through the mine site.</p>	<p>No response required (duplication).</p>

Independent Environmental Monitoring Agency - Jamie Mistry	20	Examination of use of convoys	There is no mention in the WMMP of convoying haul trucks to increase the interval between road disturbance events and possibly facilitate caribou passage through the site.	<p>Recommendation: The WMMP should include examination of the effectiveness of convoying haul trucks to facilitate caribou movement through the mine site.</p> <p>Outcome: Outcome: Arctic Canadian stated that convoys are not a sustainable operating practice for the mine, but clarified that traffic data are now being collected to quantify traffic patterns.</p>	<p>Arctic Canadian utilizes dual-powered road trains (DPRT) as a de-facto convoying tool as these vehicles carry six loaded beds of ore at the time. One road train is equivalent to 4.5 trips with previous long-haul equipment. However, delaying individual vehicles at the ore loader for simultaneous departure is not a sustainable operating practice for the mine. Arctic Canadian notes that that existing mitigations are conservative in approach (e.g., wildlife always has the right of way) to protect wildlife and that traffic data is being collected at Ekati since summer of 2022 and will enable analysis of potential traffic effects on caribou movements through the telemetry project.</p> <p>Arctic Canadian maintains stockpiles at the process plant to allow flexibility required to stop traffic on the roads when required to allow caribou to travel across the roads, which the company believes is a more conservative approach, until information from the telemetry project is available to inform the potential mitigation review.</p>
Independent Environmental Monitoring Agency - Jamie Mistry	21	Traffic monitoring	Section 6.4.7 (pgs 64–65) provides methodology for monitoring traffic in 2023. Traffic counters will be used, which will “ <i>record time and date of each vehicle passage and will not differentiate among types of vehicles or direction of travel will not differentiate among types of vehicles will not differentiate among types of vehicles or direction of travel [emphasis added]</i> ”. The Agency believes that differentiating a pickup truck from a long-haul train is an essential component to mitigating sensory disturbance from road traffic.	Arctic Canadian should use a traffic monitoring system that can differentiate haul trucks from other vehicles.	No response required (duplication).

Independent Environmental Monitoring Agency - Jamie Mistry	22	Traffic monitoring	<p>Section 6.4.7 (pgs 64–65) provides methodology for monitoring traffic in 2023. Traffic counters will be used, which will “<i>record time and date of each vehicle passage and will not differentiate among types of vehicles or direction of travel will not differentiate among types of vehicles will not differentiate among types of vehicles</i> or direction of travel [emphasis added]”. The Agency believes that differentiating a pickup truck from a long-haul train is an essential component to mitigating sensory disturbance from road traffic.</p>	<p>Recommendation: Arctic Canadian should use a traffic monitoring system that can differentiate haul trucks from other vehicles.</p> <p>Outcome: Arctic Canadian stated that they will be unable to determine vehicle type from the current method of camera data being examined by Artificial Intelligence. However, ERM clarified that they may be able to quantify vehicle type from the current system. The Agency would like to see differentiation of vehicle types in the traffic data if analysis permits.</p>	<p>Arctic Canadian can confirm the expectation that the AI software can differentiate travel direction and vehicle type using the traffic data being collected at Ekati since summer 2022.</p> <p>The traffic database is being built for analysis purposes in e.g., the telemetry project; however, Arctic Canadian notes that its availability is not necessarily related to its utility, that is, how to integrate the dataset in the analyses is yet to be determined. The company envisions this information being of potential value as the telemetry project evolves over time.</p>
Independent Environmental Monitoring Agency - Jamie Mistry	23	Caribou occurrence around the Ekati mine	<p>Table 1.2-1 (pg 4) states “<i>In 2021, Arctic Canadian produced a technical report that used an innovative analytical approach to test the theory that caribou occurrence is strongly determined by the distribution of higher quality habitat (ERM 2021a). Overall, the analyses indicated that the occurrence of caribou on the landscape can reasonably be explained by the percent of land cover classes (i.e., habitat quality) alone</i>”. The conclusions of the ERM report have been criticized on a number of fronts as being not supported by the analysis (Boulanger et al. 2021)[1]. The Agency believes it is inaccurate and inappropriate to include this statement in the WMMP.</p> <p>[1]Boulanger, J., K. Poole, and A. Gunn. 2021. Review of Zone of Influence Analysis in “Evaluating the Role of Habitat in Caribou Distribution Relative to a Potential Zone of Influence around Mines”. Unpublished report for Government of the Northwest Territories, Department of Environmental and Natural Resources</p>	n/a	No response required (duplication).

Independent Environmental Monitoring Agency - Jamie Mistry	24	<p>Arctic Canadian produced a technical report that used an innovative analytical approach to test the theory that caribou occurrence is strongly determined by the distribution of higher quality habitat (ERM 2021a)[1]. Overall, the analyses indicated that the occurrence of caribou on the landscape can reasonably be explained by the percent of land cover classes (i.e., habitat quality) alone [1] [1]. Overall, the analyses indicated that the occurrence of caribou on the landscape can reasonably be explained by the percent of land cover classes (i.e., habitat quality) alone". The conclusions of the ERM report have been criticized on a number of fronts as being not supported by the analysis (Boulanger et al. 2021)[2].</p> <p>[1]ERM. 2021a. Ekati Diamond Mine and Diavik Diamond Mine. Evaluating the Role of Habitat in Caribou Distribution Relative to a Potential Zone of Influence around Mines. Prepared for Arctic Canadian Diamond Company Ltd. by ERM Consultants Canada Ltd</p>	<p>Recommendation: The Agency believes it is inaccurate and inappropriate to include this statement in the WMMP.</p> <p>Outcome: Outcome: The Agency maintains that the statement referenced above is inappropriate and should therefore be removed from the WMMP.</p>	<p>Arctic Canadian maintains that the Boulanger et al. (2021) review of the Arctic Canadian's ZOI report is not unbiased nor objective by definition, ERM (2021) builds on the methods in a previous report by Boulanger et al. To be clear, an independent review of scientific work cannot, per definition, be completed by scientists with invested work, irrespective of personal integrity. Arctic Canadian is preparing a response to the ENR commissioned review of ERM (2021), expected during spring 2023; however, if there is any desire for clarity on this topic, Arctic Canadian strongly encourages ENR to commission independent scientific experts as the scientifically appropriate approach for review of both the Arctic Canadian and Boulanger ZOI reports. However, Arctic Canadian is focused on garnering stakeholder consensus on the objectives and methods for the telemetry analysis which will provide a more comprehensive investigation of caribou movement with proximity to the mine. As part of the current telemetry analysis, distance to the mine will be the by-product of any detected change in caribou movement. This would render further focus on ZOI specific research redundant and constitute a path forward which seems to be in agreement with Boulanger et al. (2021) and IEMA (please see IEMA 25).</p> <p>References:</p>
Independent Environmental Monitoring Agency - Jamie Mistry	25	<p>Monitoring of annual Zone of Influence (new)</p>	<p>The proposed WMMP no longer includes a section on estimation of the annual Zone of Influence that the mine may have on caribou distribution and relative abundance, instead indicating that the current telemetry analysis replaces previous methodological approaches including Zone of Influence monitoring.</p>	<p>Recommendation/Outcome: The Agency believes that past survey and collar data adequately demonstrate that in most years when the caribou herds approach the broader mine area, the mine does influence caribou distribution and relative abundance (i.e., a measurable Zone of Influence occurs), but that this Zone of Influence is annually variable in distance and magnitude. The Agency does not, at this point, see a value in continuing to measure annual Zone of Influence, and supports other examinations of the potential influence of the mine on caribou movements and distribution, including the current telemetry analysis being carried out by Arctic Canadian.</p> <p>As stated in response to IEMA 23, Arctic Canadian is in agreement regarding the most viable path forward and would like to thank IEMA for making their position on this explicit with this comment.</p>