



April 30, 2021

Mr. Andrew Williams
Environment Manager
Pine Point Mining Limited
1100 Avenue des Canadiens-de-Montreal, Bureau 3000
MONTREAL QC H3B 2S2
acwilliams@live.ca

Dear Mr. Williams:

Wildlife Act Section 95(1) determination of the requirement for a Wildlife Management and Monitoring Plan for Pine Point Mining Ltd.'s Confirmation and Exploration Program

The Minister of Environment and Natural Resources (ENR) of the Government of Northwest Territories (GNWT) has considered the potential impacts to wildlife and wildlife habitat associated with Pine Point Mining Ltd.'s (PPML) proposed Confirmation and Exploration Program (CEP), as presented in submissions to the public registry (MV2020C0017, MV2020L8-0012) of the Mackenzie Valley Land and Water Board (MVLWB), discussion at MVLWB's Technical Session held February 24-25, 2021, PPML's responses to information requests, and the Memorandum submitted to ENR by PPML on March 19, 2021.

The Minister of ENR has determined that, in accordance with the *Wildlife Act* and for the purposes of requiring a Wildlife Management and Monitoring Plan (WMMP), the proposed CEP is likely to satisfy criteria (a), (b) and (d) of subsection 95(1) of the *Wildlife Act* which states:

"A developer or other person or body may be required, in accordance with the regulations, to prepare a wildlife management and monitoring plan for approval by the Minister, and to adhere to the approved plan, if the Minister is satisfied that

a development, proposed development, or other activity is likely to

- (a) result in a significant disturbance to big game or other prescribed wildlife;*
- (b) substantially alter, damage or destroy habitat; and*
- (d) significantly contribute to cumulative impacts on a large number of big game or other prescribed wildlife, or on habitat."*

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In accordance with Section 3.1.1 of the Wildlife Process and Content Guidelines, advanced mineral exploration projects requiring a Type A water licence are deemed always likely to satisfy one or more of the Section 95 (1) (a-d) criteria, thereby requiring a WMMP. Departmental review of PPML's CEP application provides further confirmation of the necessity of a WMMP. Activities associated with the proposed project that have the potential to satisfy the criteria under subsection 95(1) of the *Wildlife Act* include:

- Clearing, heavy equipment use, and drilling at over 3300 locations and blasting at up to 20 sites – *potential for significant sensory disturbance to caribou.*
- Clearing of vegetation at up to 3000 drill sites, 200-300 test pit locations, and widening or creation of an undetermined number of 10-m wide access trails - *potential for substantial alteration, damage or destruction of habitat and contribution to cumulative impacts on caribou.*

The determination of the need for a WMMP largely reflects the potential impacts of the project on boreal woodland caribou, which are listed as a threatened species under both the federal *Species at Risk Act* and the *Species at Risk (NWT) Act*. According to science and traditional knowledge¹, key threats include direct habitat loss, degradation and fragmentation from human activities and fire on the landscape which increase caribou vulnerability to predation and climate change and contribute cumulatively to impacts to caribou habitat and populations.

A key factor in concluding that the potential impacts of the CEP on boreal caribou are of sufficient importance to warrant an approved WMMP is that GNWT data indicate that boreal caribou in the Pine Point area may represent a small local population with little chance for rescue from adjacent local populations if their numbers decline. ENR started monitoring boreal caribou in the Pine Point and Buffalo Lake areas in 2015 using GPS collars. ENR also currently monitors boreal caribou to the west of the Hay River in the Hay River Lowlands study area. Boreal caribou monitoring programs across the South Slave administrative region indicate relatively little movement of boreal caribou from east to west across the Hay River, as well as little spatial overlap between caribou collared in the Pine Point area and those collared west of Buffalo Lake. This suggests that boreal caribou in the Pine Point area represent a small local population within the broader NWT boreal caribou range. As such, impacts to even a small number of individuals affect a greater proportion of the local population than might be the case in other areas.

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¹ Conference of Management Authorities. 2017. Recovery Strategy for Boreal Caribou (*Rangifer tarandus caribou*) in the Northwest Territories. Conference of Management Authorities, Yellowknife, NWT.

Central and western parts of the proposed project area overlap with areas used by caribou during critical life stages such as late winter, calving and post-calving as well as important movement corridors. While many of these areas have been characterized as “brownfield”, collar data and observations on the ground indicate that regenerating, previously-disturbed areas are being used by this population. As such, carefully considered and enforceable measures to avoid or reduce sensory disturbance during critical periods, minimize habitat damage and avoid or discourage access into the area for predators and hunters are necessary to avoid the risk of decline or displacement of caribou from the area.

The Minister has determined that the CEP meets the criteria of section 95 (1) paragraph (d) respecting significant contribution to cumulative impacts on a large number of big game and habitat. Levels of current human disturbance within the southern NWT planning region already exceed thresholds identified in GNWT’s *Framework for Boreal Caribou Range Planning*². Timber harvesting operations are currently planned for areas adjacent to PPML’s mineral leases in the area. While regional range planning is currently underway, any increase in the direct footprint of habitat disturbance in addition to other past, present or reasonably foreseeable developments are considered significant given that habitat loss is considered to be a key factor in the conservation status of boreal caribou as a Threatened species. Furthermore, PPML has been unable to precisely quantify the amount of functional caribou habitat (i.e. undisturbed and regenerating) that will be disturbed through its activities, hampering the ability to properly assess the extent of those habitat impacts. As such, the project will have legacy impacts to boreal caribou from the creation of new access, or widening existing linear features, within areas of high concentrations of collar locations and movement paths.

ENR acknowledges that PPML has included a Wildlife Protection Plan – Ver. 1.0 in its application for the proposed CEP. This is consistent with advice provided in the WMMP Process and Content Guidelines that it is a best practice for all Proponents to submit a basic (Tier 1) WMMP with their application for authorizations. As indicated in comments submitted by the GNWT to the MVLWB public registry, the information initially provided in the Wildlife Protection Plan and other documents was insufficient to characterize the spatial and temporal nature of the impacts of the proposed activities on boreal caribou (as required by Section 95(2)(a)) which is necessary to support a robust approach to mitigation and monitoring and ultimate assessment of residual impacts to caribou.

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² Government of the Northwest Territories. 2019. A Framework for Boreal Caribou Range Planning. Environment and Natural Resources, Government of the Northwest Territories, Yellowknife, NT. 87pp.

Through the Technical Sessions, PPML subsequently identified specific locations within their mineral claim and mining lease boundaries which will be explored in the next 3 years. In a meeting between ENR, MVLWB and PPML on March 2, ENR identified four specific areas of PPML interest that overlapped with areas of high concentration of boreal caribou satellite collar locations. On March 12, PPML provided a memo to ENR outlining proposed updates to their Wildlife Protection Plan to include a more detailed approach to minimizing impacts to collared caribou during sensitive periods (**Attachment 1**). ENR notes that PPML has not committed to refrain from exploration activities in the four areas discussed (which would spatially avoid impacts to habitat and disturbance impacts in those areas), nor have they explicitly committed to schedule activities outside of the late winter and calving periods (which would temporally avoid disturbance impact during critical times, but not potential legacy impacts to habitat). In general, ENR is of the opinion that, with some revisions outlined in **Attachment 2** to this letter, the proposed approach could minimize sensory disturbance impacts to collared caribou during sensitive time periods, but that the proposed measures are insufficient to avoid impacts.

ENR wishes to highlight that, as stated in the WMMP Process and Content Guidelines (Section 3.2.1, pages 19-20), if a development entails unavoidable impacts to wildlife and habitat, the Minister will evaluate whether the impacts would meet the tests under section 95(1)(a-d) prior to the application of other types of mitigation to minimize or rectify these impacts. Even when proposed mitigations would minimize or rectify the unavoidable impacts to the point where the tests under Section 95 (1) (a-d) would no longer be met, a WMMP will be required to make the mitigation measures enforceable under the *Wildlife Act*, particularly given that the proposed measures cannot be captured as conditions in a water licence or land use permit.

In accordance with subsection 95(2) of the *Wildlife Act*, the WMMP submitted for approval must include:

- (a) a description of potential disturbance to big game and other wildlife included in the regulations, potential harm to wildlife and potential impacts on habitat;*
- (b) a description of measures to be implemented for the mitigation of potential impacts;*
- (c) the process for monitoring impacts and assessing whether mitigative measures are effective; and*
- (d) other requirements that are outlined in the regulations.*

The WMMP should be consistent with the current version (July 2019) of the ENR's WMMP Process and Content Guidelines available at <https://www.enr.gov.nt.ca/en/services/wildlife-management-and-monitoring-plans>.

ENR acknowledges PPML's view, expressed in its response to GNWT comments and the Memo to ENR, that efforts towards further mitigation planning, engagement of interested parties and a WMMP approval process would be better focused on developing a WMMP for the recently-triggered environmental assessment (EA) of its proposed mine rather than on the proposed CEP. However, ENR is required to consider the CEP as a development in its own right, separate from the proposed mine, and has identified that it meets the criteria in Section 95(1). This is particularly important given that CEP activities are expected to begin well before the EA process for the proposed mine is completed. Furthermore, ENR suggests that the WMMP for the CEP could inform the draft WMMP for the mining project which PPML will need to submit during the EA process.

Typically, in accordance with the WMMP Guidelines, the uncertainty associated with impacts to boreal caribou of the CEP as well as its potential contribution to cumulative effects would warrant a Tier 3 WMMP. However, in recognition of PPML's current engagement in an environmental assessment for a proposed mining project that encompasses the CEP area, **ENR will require a Tier 1 WMMP for the CEP.**

ENR anticipates that the EA process will better inform the development of a more comprehensive, full-scale WMMP that includes project-specific effects monitoring, consideration of all steps of the mitigation hierarchy, and contributions to regional scale wildlife monitoring and/or cumulative effects assessment or management, as stipulated in the WMMP Guidelines to address the full scope of PPML's activities in the area. ENR notes that PPML's commitment to collaborate with ENR on a caribou population survey, as expressed in response to ENR's initial comments on the ORS, will be most useful for informing mitigation activities and effects evaluations if completed in the survey season of 2022.

As such, ENR requires PPML to submit a Tier 1 WMMP to ENR and the MVLWB public registry for approval by the Minister of ENR at least 30 days prior to the commencement of CEP activities. It is expected that the WMMP submitted by PPML for approval by the Minister of ENR will address comments made on the Wildlife Protection Plan – Ver. 1.0 posted to the ORS during the MVLWB's public review phase, comments made by participants in the technical sessions as well as the comments identified in PPML's March 12 Memo to ENR, and include the required revisions outlined in **Attachment 2** to this letter.

In accordance with the WMMP Process and Content Guidelines, the MVLWB's public review phase has satisfied the requirement for public review on the proposed mitigation and monitoring approaches for minimizing impacts to wildlife and wildlife habitat from the CEP, and therefore no further formal public review will be conducted by ENR.

Once a WMMP has been received and following any subsequent revisions, if required, ENR will provide PPML with a written notice of approval, conditional approval or rejection of the WMMP within 30 calendar days. The notification will also be posted to the MVLWB public registry.

Please contact Dr. James Hodson, Manager, Habitat and Environmental Assessment, Wildlife and Fish Division at (867) 767-9237 ext. 53227 or james.hodson@gov.nt.ca if you have any questions.

Sincerely,

A handwritten signature in blue ink that reads "Erin Kelly".

Erin Kelly, Ph.D.
Deputy Minister
Environment and Natural Resources

Attachments

- c. The Honourable Caroline Cochrane
Premier

Ms. Shaleen Woodward
Principal Secretary

Minister Shane Thompson
Environment and Natural Resources

Chief April Martel
K'átl'odeeche First Nation

Chief Louis Balsillie and Band Council
Denínu Kúé First Nation

Chief Darryl Marlowe and Band Council
Łutsel K'e Dene First Nation

Chief Edward Sangris and Band Council
Yellowknives Dene First Nation (Dettah)

Chief Ernest Betsina and Band Council
Yellowknives Dene First Nation (Ndıłq)

Chief Joachim Bonnetrouge
Deh Gáh Got'ie First Nation

Chief Lloyd Chicot
Ka'a'gee Tu First Nation

Chief Kenny Cayen
West Point First Nation

Chief Gerry Cheezie
Smith's Landing First Nation

Chief David Poitras
Salt River First Nation #195

President Garry Bailey
Northwest Territory Métis Nation

President Lloyd Cardinal
Fort Resolution Métis Government

President Trevor Beck
Hay River Métis Government Council

President Allan Heron
Fort Smith Métis Council

President William (Bill) Enge
North Slave Métis Alliance

Mr. Martin Goldney
Secretary to Cabinet/Deputy Minister
Executive and Indigenous Affairs

Dr. Brett Elkin, Assistant Deputy Minister, Operations
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Mr. John MacDonald,
Assistant Deputy Minister, Environment and Climate Change
Environment and Natural Resources

Ms. Shawn McCann
A/Deputy Secretary, Indigenous and Intergovernmental Affairs
Executive and Indigenous Affairs

Ms. Heather Sayine-Crawford, Director, Wildlife and Fish Division
Environment and Natural Resources

Mr. Tony Vermillion, Superintendent, South Slave Region
Environment and Natural Resources

Ms. Melissa Pink, Manager, Project Assessment
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Mr. Mark Cliffe-Phillips, Executive Director
Mackenzie Valley Review Board

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Ms. Debbie Miller
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Ms. Linda Piwowar
Finance Manager
Hay River Métis Government Council

Mr. Marc Whitford
Vice President
North Slave Métis Alliance



MEMORANDUM

To: Government of the Northwest Territories, Department of Environment and Natural Resources, Wildlife Division

From: Andrew Williams

Date: 12 March 2021

Subject: Proposed Updates to the Wildlife Protection Plan for the Pine Point Confirmation and Exploration Program Applications

1.0 Introduction

During the Mackenzie Valley Land and Water Board (MVLWB) Technical Session on the Pine Point Mining Limited (PPML) Confirmation and Exploration Program Applications (Land Use Permit MV2020C0017 and Water Licence MV2020L8-0012) on February 25 and 26, 2021, several concerns were raised regarding wildlife, particularly boreal caribou (*Rangifer tarandus caribou*). PPML submitted a Wildlife Protection Plan with the application. This memo outlines revisions proposed to the Wildlife Protection Plan to further avoid and minimize effects to wildlife, particularly boreal caribou during the Confirmation and Exploration Program at the Pine Point site (the Project).

Comments received during the public review of the Wildlife Protection Plan through the MVLWB Online Review System and PPML's resulting commitments to Wildlife Protection Plan revisions are provided in Appendix A (Table A-1). As boreal caribou are of particular concern for the Project, caribou-specific mitigations will be implemented as part of the Project and are discussed in more detail below.

PPML has indicated the intent to re-open mining operations at Pine Point. An environmental assessment (EA) for the proposed mining project was initiated on 12 February 2021 by the Mackenzie Valley Environmental Impact Review Board following the submission of an EA Initiation Package. An assessment of effects to wildlife (including caribou) will be within the scope of the EA, and it is assumed that the mining operations will trigger the provisions of Section 95 of the *Wildlife Act*, giving Government of the Northwest Territories, Department of Environment and Natural Resources (GNWT-ENR) authority to approve the wildlife monitoring plan for the mining project.

PPML submits this document to GNWT-ENR to provide evidence that a Section 95 review of the Wildlife Protection Plan for exploration is not required at this time. PPML is of the opinion that these additional measures will avoid and mitigate impacts to wildlife (and boreal caribou in particular) to the extent that Section 95 is not triggered.

2.0 Background

2.1 Historical Exploration Activities at the Pine Point Site

Pine Point is a former mine, operational between 1964 and 1988. It is considered a 'brownfield' site, particularly for the areas east of the Buffalo River, where there are numerous roads, haul roads, seismic lines, waste rock piles, and open pits at the site. Following the end of mining in 1988, renewed mineral exploration at Pine Point has been ongoing since 2004, including annual programs since 2016. A total of 1,182 holes were drilled from 2017 to 2019, and drilling is ongoing under existing authorizations. The 2020 applications allow for continued drilling, in addition to an expansion of the exploration camp and other exploration activities such as groundwater tests, bedrock sampling, and geotechnical investigations.

2.2 Caribou Seasonal Periods

Although boreal caribou may be sensitive to disturbance from exploration activities throughout the year, GWNT-ENR considers there to be two key periods when boreal caribou should receive additional protection from sensory disturbance to increase the likelihood of successful calving and thus recruitment of new individuals into the population. The following sensitive periods are based on the seasonal activity periods reported in Table 6 in the Status Report for Boreal Caribou in the NWT (Species at Risk Committee 2012), but some year-to-year variation should be expected based on snow and weather conditions:

- **Late-winter (16 March – 04 April):** Boreal caribou are exhibiting their shortest daily movements at this time of year, likely reflecting the increased energetic costs of travelling through deep snow or limited areas that provide easier access for foraging on ground lichens (e.g., wind-swept areas and closed canopy forests with shallow snow). As boreal caribou are depleting their stores of fat throughout the winter, and movement through deep snow or displacement from good foraging habitat could have high energetic costs, disturbance events at this time of year could have negative impacts on female body condition and, subsequently, calf survival.
- **Calving (05 April – 15 July):** Female boreal caribou spread out during the pre-calving period (05-30 April) and increase daily movements to find suitable calving locations. Once a calving location is selected, daily movement rates drop considerably during calving (30 April – 06 June). During the calving period, sensory disturbances that may cause energetic stress to the calving female or cause the calving female to flee and leave her calf temporarily, which may reduce the probability of calf survival. Caribou tend to avoid suitable calving locations that are close to sensory disturbance from development (Carr et al. 2007; Schaefer and Mahoney 2007; Vors et al. 2007; Vistnes and Nellemann 2008), so they may avoid calving close to active exploration activities. However, in instances where exploration activities may advance upon or be close to an area where a female has chosen to calve, displacement of the female from that area could have negative impacts on calf survival. Calves appear to be most vulnerable to predation during the first six weeks after birth (Pinard et al. 2012), therefore the calving season includes the period up to 15 July (i.e., to address the case that calves are born as late as 30 May).

Boreal caribou are considered less sensitive to sensory disturbance at other times of the year, as they are moving greater distances on a daily basis and will likely avoid active exploration areas or move away from them quickly if they encounter them.

3.0 Caribou-Specific Avoidance and Minimization Measures

In a standard mitigation hierarchy, the first two preferences to limit effects on a receptor are: 1) avoidance of effects, and 2) minimization of effects. PPML is committed to avoiding effects on boreal caribou as much as possible. PPML proposes the following measures to avoid and reduce impacts to boreal caribou.

3.1 Clarification of the Areas of Interest for Exploration

During the MVLWB Technical Session, PPML presented maps that showed the revised, and much reduced, 2021 to 2023 exploration locations within PPML's mineral claim and mining lease boundaries. Most of the areas that will be explored by PPML during the next three years will be within the highly disturbed areas of PPML leases that are avoided by the Pine Point boreal caribou herd (as indicated by 2015 to 2020 satellite collar data) (Figure 1). However, there are some exploration areas that are in less disturbed areas and have potential for boreal caribou occurrence (Figure 1).

During a follow-up meeting on March 2, 2021, GNWT-ENR identified four exploration areas that are of particular concern because of the high amount of overlap with satellite collar locations from the Pine Point herd (Figure 1). PPML re-evaluated these four areas to determine how exploration in these areas can be modified to minimize or avoid impacts on caribou within the context of the overall exploration program and believes that work in these areas can be scheduled when impact to caribou can be minimized or possibly avoided altogether.

3.2 Use of Weekly Collar Maps to Guide Activity

PPML has requested that the GNWT-ENR provide caribou satellite collar location data weekly during the late winter and calving seasons, or more frequently if possible. PPML will only consider commencing exploration activities if satellite collar data indicates that there are no collared caribou within pre-defined "Cautionary Zones" around site of the exploration activity (Table 1). These Cautionary Zones are pre-defined spatial buffer areas around exploration sites that will:

- Reduce sensory disturbance and unnecessary energy expenditure by caribou during the most sensitive periods (i.e., late-winter and calving);
- Avoid sensory disturbance that would reduce the likelihood of calf survival during the calving period; and,
- Avoid injury or mortality of caribou.

Cautionary Zones for sensitive and less sensitive periods for caribou are presented in Table 1.

PPML recognizes that approximately 10% of the Pine Point boreal caribou herd will be collared during any year (aim of 15 collars active annually; GNWT 2021). Therefore, an absence of collar locations in proximity to exploration activities cannot be considered to indicate an absence of boreal caribou near exploration activities. Also, the collar data will be received weekly and so will not represent real-time

data. As such, boreal caribou could move into the Cautionary Zones around activity between receiving collar data updates. Therefore, collar data will be supplemented by ground-based pre-clearing surveys. During the late winter and calving seasons, if collared caribou are identified within Cautionary Zones around exploration activity, PPML will initiate a pre-clearing survey within 500 m of exploration activities to verify that no boreal caribou are present (Table 1).

During the remainder of the year, pre-clearing wildlife surveys to look for caribou and recent caribou sign will be completed within 500 m of new exploration sites in advance of exploration crews moving to a new site (Table 1). No pre-clearing surveys will be completed after the exploration crew arrives at the new exploration site because boreal caribou move greater distances during the summer to mid-winter and it is assumed that the disturbance associated with exploration activities will cause caribou to avoid the area.

Exploration activities will be suspended if caribou are observed by exploration crews. Activities will be resumed after the animal has moved away from the exploration site.

Table 1: Cautionary Zones and Search Zones Around Exploration Sites and Resulting Mitigation During Boreal Caribou Seasons

Boreal Caribou Period	Cautionary Zone	Search Zone	Mitigation
Late winter (16 March to 04 April)	2 km	500 m	If collared caribou are within the Cautionary Zone, search for caribou and fresh caribou sign within 500 m of the site of exploration activities. Exploration activities will be delayed or suspended in the area concerned if fresh caribou sign or individuals are observed within 500 m of the exploration site. Pre-clearing surveys to look for caribou and caribou sign will be completed daily until no caribou sign or individuals are observed within 500 m or collar data indicates that there are no collared individuals in the cautionary zone.
Calving (05 April to 15 July)	2 km	500 m	If collared caribou are within the Cautionary Zone, search for caribou and fresh caribou sign within 500 m of the exploration activities. Exploration activities will be delayed or suspended if fresh caribou sign or individuals are observed within 500 m. Pre-clearing surveys to look for caribou and caribou sign will be completed daily until no caribou sign or individuals are observed within 500 m or collar data indicates that there are no collared individuals in the cautionary zone. If collared caribou are within 1 km of exploration sites, delay activities for 48 hours to determine if individuals are calving (i.e., relatively stationary [e.g., 48-hour collar locations <1 km apart]).
Summer, Fall, Early to Mid-Winter (16 July to 15 March)	500 m	500 m	If a caribou is seen within 500 m of exploration crews, operations will be temporarily suspended in the immediate vicinity to allow wildlife to move away from the area of their own accord. If a caribou is reluctant to leave the area, this could be a sign that it is a female that is hiding a calf in close proximity. If this is the case, exploration activities will be suspended and the regional GNWT-ENR biologist will be contacted for advice.

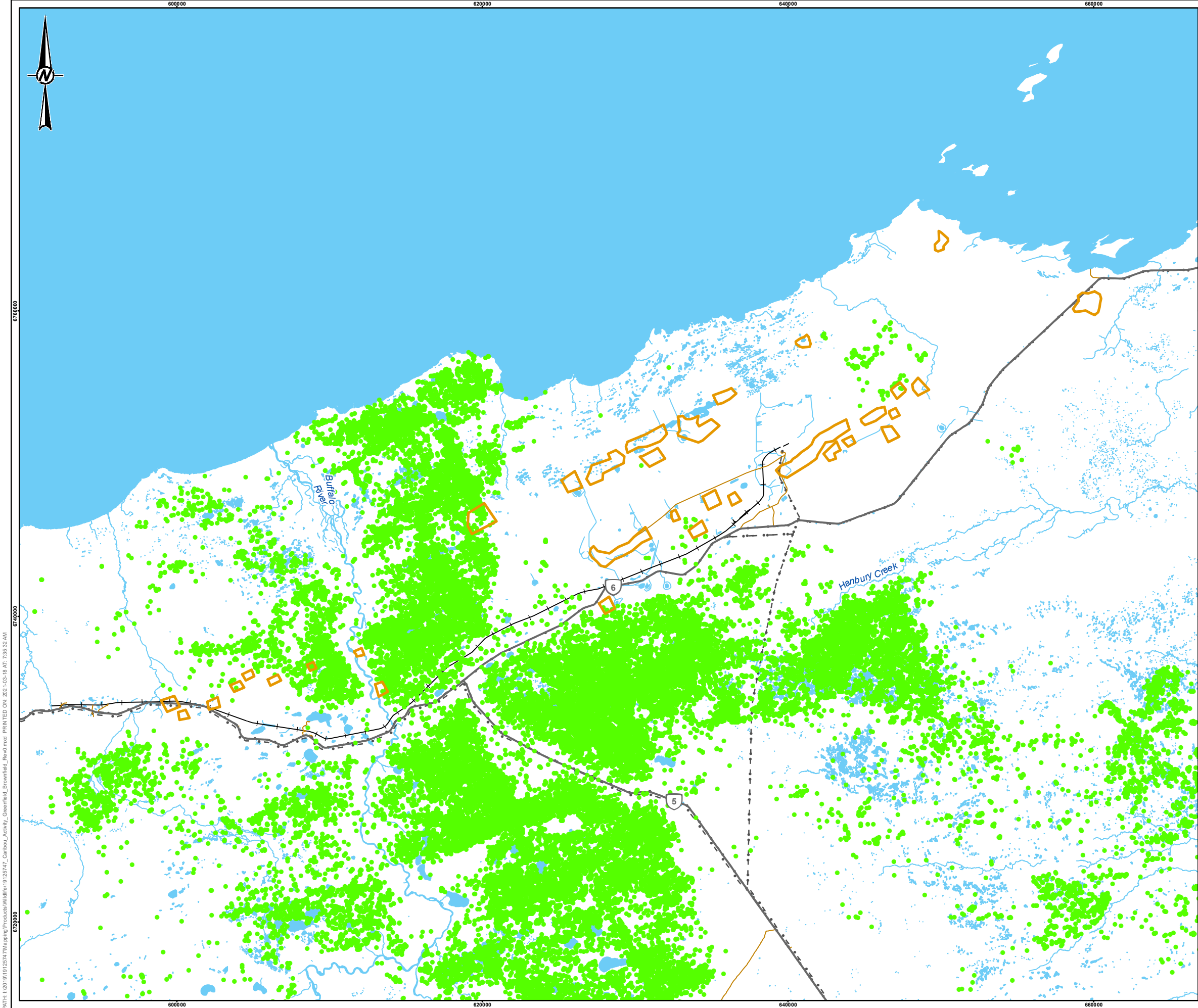
km = kilometres; m = metres; < = less than; ≥ = great than or equal to

Note: Caribou periods that are *italicized* are “Sensitive” periods.

3.3 Delineation of Areas with Higher Caribou Probability

Although the highest potential for caribou occurrence is at the four exploration areas identified above, there is potential for boreal caribou to be present at all exploration sites that are outside of the highly disturbed Pine Point area. Potential for occurrence varies depending on the time of year. As part of further caribou avoidance measures to be implemented at the Project, satellite collar data from the Pine Point boreal caribou herd will also be used to identify the probability of caribou presence within all exploration areas.

The satellite collar data from the Pine Point herd will be analyzed in a GIS to determine exploration areas that have been occupied/unoccupied by collared individuals from 2015 to 2020. Caribou will be considered to have occupied an area if a movement path or GPS collar location (from any year) intersects the area. A logistic regression model, which will consider habitat covariates such as habitat type and forest age, will be applied to the occupied/unoccupied data in a GIS. The habitat covariates will be obtained from the most recent vegetation classification dataset available from the GNWT - Forestry Division. The logistic regression model will assign a probability of caribou occurrence value to each exploration area, which will be used to create probability of occurrence maps. Probability values will be assigned based on a literature review of habitat selection by boreal caribou. These maps will be used by PPML to determine the exploration sites that have higher probability of caribou occurrence and, therefore, higher potential for application of mitigation (Table 1). The outcome of this step may lead to a re-evaluation of the Areas of Interest (Section 3.1) and the Cautionary Zones and Search Zones (Section 3.2; Table 1).



LEGEND

- CARIBOU COLLAR LOCATION - PINE POINT HERD
- HIGHWAY
- LOCAL ROAD
- RAILROAD CORRIDOR
- TRANSMISSION LINE
- WATERCOURSE
- EXPLORATION AREA
- WATERBODY

0 5 10
1:250,000 KILOMETRES

REFERENCE(S)
BASE DATA OBTAINED FROM GEOGRATIS, © DEPARTMENT OF NATURAL RESOURCES CANADA. ALL RIGHTS RESERVED. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: UTM ZONE 11N DATUM: NAD83

CLIENT
PINE POINT MINING LTD.

PROJECT
PINE POINT PROJECT

TITLE
PINE POINT MINING LTD. 2021 - 2023 GREENFIELD AND BROWNFIELD EXPLORATION AREAS, GREENFIELD EXPLORATION AREAS OF CONCERN, AND PINE POINT BOREAL CARIBOU SATELLITE COLLAR LOCATIONS

CONSULTANT	YYYY-MM-DD	2021-03-18
	DESIGNED	LD
	PREPARED	MM
	REVIEWED	DP
	APPROVED	DP

PROJECT NO.	CONTROL	REV.	FIGURE
19125747		0	1

PATH: I:\2018\19125747\Maping\Products\Wildlife\19125747_Caribou_Activity_Greenfield_Brownfield_Rev0.mxd PRINTED ON: 2021-03-18 AT: 7:35:32 AM

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4.0 Closure

PPML hopes that GNWT-ENR agrees that the additional measures proposed here will reduce impacts to boreal caribou to the extent that a Section 95 process is not required. PPML looks forward to working with GNWT-ENR and the interested community groups to refine these commitments, and to incorporate them into an updated version of the Wildlife Protection Plan for the ongoing exploration activities at Pine Point.

5.0 References

- Carr NL, Rodgers AR, Walshe SC. 2007. Caribou nursery site habitat characteristics in two northern Ontario parks. *Rangifer Special Issue No. 17*: 167-179
- GNWT (Government of the Northwest Territories). 2021. Comments on the Pine Point Mining Limited Confirmation and Exploration Program Applications (Land Use Permit MV2020C0017). Received by Golder Associates on 27 January 2021.
- Pinard V, Dussault C, Ouellet J-P, Fortin D, Courtois R. 2012. Calving rate, calf survival rate, and habitat selection of forest-dwelling caribou in a highly managed landscape. *Journal of Wildlife Management* 76: 189-199.
- Schaefer JA, Mahoney SP. 2007. Effects of progressive clearcut logging on Newfoundland caribou. *Journal of Wildlife Management* 71:1753-1757.
- Species at Risk Committee (Northwest Territories Species at Risk Committee). 2012. Species Status Report Boreal Caribou (*Rangifer tarandus caribou*). 176 p.
- Vistnes I, Nellemann C. 2008. The Matter of Spatial and Temporal Scales: a Review of Reindeer and Caribou Response to Human Activity. *Polar Biology* 31:399-407.
- Vors LS, Schaefer JA, Pond BA, Rodgerson AR, Patterson BR. 2007. Woodland caribou extirpation and anthropogenic landscape disturbance in Ontario. *Journal of Wildlife Management* 71:1249-1256.

Table A-1: Information Requests and Responses from the Mackenzie Valley Land and Water Board Technical Session on the Pine Point Mining Limited Confirmation and Exploration Program Applications

Information Request ID	Topic	Comment	Recommendation	Proponent Response
Deninu K'ue First Nation				
4	Wildlife Monitoring Plan	The project area overlaps boreal caribou critical habitat, which is defined as: 1) the area within the boundary of each boreal caribou range that provides an overall ecological condition that will allow for an ongoing recruitment and retirement cycle of habitat, which maintains a perpetual state of a minimum of 65% of the area as undisturbed habitat; and 2) biophysical attributes required by boreal caribou to carry out life processes. At the broad scale, these biophysical attributes include mature forests (jack pine, spruce, and tamarack) of 100 years or older, and open coniferous habitat. Large areas of spruce peat land and muskeg with preference for bogs over fens and upland and lowland black spruce forests with abundant lichens, and sedge and moss availability.	The biophysical attributes for boreal caribou critical habitat are within the project area; therefore the selection of drill and test locations and their associated access (e.g., trails) should consider direct impacts to these attributes. We recommend a reconnaissance of proposed investigation sites and access be conducted to confirm the presence of biophysical attributes important to boreal caribou. Where these are present, alternate investigation sites and/or access should be explored.	The Pine Point area is a highly disturbed brownfield site, and its reduced functionally as critical habitat for boreal caribou by historical mining operations is known. As indicated in Figure 2 and Appendix B of the Project Description, and in the Mapbook provided with the application, the area is defined by existing haul roads, access roads, trails, seismic lines, open pits, waste rock piles and tailings. There is also significant use of the Pine Point road system by the public. PPML intends to confine the exploration activities to previously disturbed areas to the extent possible. The Wildlife Protection Plan outlines measures that will be implemented for the limited occasions where new vegetation clearing may be required. Nonetheless, boreal caribou have been observed in the area and PPML will continue to work with the DKFN to better understand the concerns and find ways to further mitigate impacts.
5	Wildlife Management and Monitoring Plan	Wildlife Management and Monitoring Plan	Based on the above noted recommendations, we recommend PPML prepare a Wildlife Management and Monitoring Plan, per section 95 of the Wildlife Act, in collaboration with the DKFN.	The Wildlife Protection Plan submitted provides a template for a document that could eventually be approved as a Wildlife Management and Monitoring Plan under Section 95 of the <i>Wildlife Act</i> , and was developed using the GNWT Wildlife Management and Monitoring Plan (WMMP) Process and Content Guidelines. The application currently under consideration is for continued mineral exploration to gather information for a future mine. This exploration will continue to be seasonal, will cause limited new disturbances, will focus on brownfield sites and will require limited personnel, and will be updated to incorporate the comments provided here. As such, PPML prefers that the Section 95 focus on the mine rather than the ongoing exploration. Regardless, PPML welcomes any specific suggestions for the Wildlife Protection Plan by the DKFN.
7	Species at risk potentially interacting with the project References: Wildlife Protection Plan, Section 4.0, Table 2: Wildlife species of concern that may interact with the Project. Screening-Level Environmental Assessment for the Confirmation and Exploration Program – Pine Point Project, Section	Species at risk are assessed by the Committee on Status of Endangered Wildlife in Canada (COSEWIC) or added to Schedule 1 of the Species at Risk Act (SARA) on a regular basis. It is important for the proponent to ensure they are aware of what species are present in the project area and take appropriate actions to avoid or minimize project impacts. A list of wildlife species of concern is provided in Table 2 of the Wildlife Protection Plan. ECCC notes that Red-necked Phalarope, Short-eared Owl and Lesser Yellowlegs are missing and should be added to Table 2. Lesser Yellowlegs was recently assessed by COSEWIC as Threatened in November 2020. The Proponent should also confirm with Government of the Northwest Territories - Environment and Natural Resources (GNWT-ENR) the likely presence of Suckley's Cuckoo Bumble Bee and Transverse Lady Beetle as the range of these species also overlaps the project.	ECCC recommends that Table 2 be updated with Red-necked Phalarope, Short-eared Owl and Lesser Yellowlegs and that the Proponent consult with GNWT-ENR on the likely presence of Suckley's Cuckoo Bumble Bee and Transverse Lady Beetle. ECCC also recommends that the Proponent review Table 2 on a regular basis by consulting the Species at Risk registry and update the mitigation and monitoring measures of the Wildlife Protection Plan, as necessary, throughout the duration of the project.	The Wildlife Protection Plan will be updated to include these species.
8	Mitigation for migratory birds Reference: Wildlife Protection Plan Section 6.3 Bird Nesting and Bat Roosting Monitoring and Appendix B	ECCC notes that efforts will be made to use existing disturbed areas and to avoid the migratory bird nesting period for any additional vegetation clearing. However, as noted in the Wildlife Protection Plan (WPP), there may be situations where this is not possible due to schedule changes or unforeseen circumstances. Non-intrusive pre-clearing surveys for migratory birds will be developed on a case-by-case basis for these situations. ECCC is supportive of non-intrusive surveys as a mitigation measure, but based on the information provided in the WPP is concerned about potential residual impacts. As currently written, the protocols are unclear as to whether indication of nesting (e.g. territorial calls heard, etc.) is a criteria for postponing or avoiding clearing activities and whether Pine Point Mining Ltd. (PPML) staff will be skilled and experienced enough bird observers to detect the presence of inconspicuous birds. The likelihood of finding a bird nest is quite low, even with experienced observers, in more complex habitats such as forested areas. In addition, there is no mention of the potential time lag between surveys and clearing which also influences the effectiveness of these surveys.	ECCC recommends that additional details be added to the non-intrusive pre-clearing survey protocols to minimize potential residual impacts and ensure compliance with regulations. Additional details for these types of surveys should include: • Clearer criteria for postponing or avoiding activities • Use of skilled and experienced bird observers • Minimizing the time-lag between surveys and clearing	PPML will provide more detail on nest monitoring and the pre-clearing monitoring as requested by ECCC in the next version of the Wildlife Protection Plan.
9	Wildlife Protection Plan, Appendix B, Wildlife Incidental Reporting Procedure	There is a typo in the ECCC email address to report wildlife incidents.	ECCC recommends the email to report wildlife incidents be corrected to: ec.dalfnord-wednorth.ec@canada.ca	This update will be made in the next version of the Wildlife Protection Plan.
10	Species at Risk – Bank Swallow Reference: Wildlife Protection Plan Section 6.3 Bird Nesting and Bat Roosting Monitoring and Appendix B	Bank Swallow is listed as Threatened on Schedule 1 of the federal Species at Risk Act. Bank swallows are known to nest at quarries and on stockpiles and have been observed at Pine Point in the past (Table 2). Prevention is an important means to minimize operational delays. There is no mention in the Wildlife Protection Plan of an intent to maintain slopes for stockpiles and overburden at less than 70 degrees (i.e. unsuitable habitat for bank swallows) in active areas during the breeding	ECCC recommends that the Wildlife Protection Plan be revised to include additional measures for the protection of bank swallows and to prevent operational delays. Additional measures should include: • Maintaining stockpile and overburden slopes in active areas at less than 70 degree, where possible • Increase nesting monitoring by PPML Environment staff in active quarries and borrows pits between late May and early July • Ensure PPML	This update will be made in the next version of the Wildlife Protection Plan.

Table A-1: Information Requests and Responses from the Mackenzie Valley Land and Water Board Technical Session on the Pine Point Mining Limited Confirmation and Exploration Program Applications

Information Request ID	Topic	Comment	Recommendation	Proponent Response
		season. ECCC also notes that the proposed frequency of nesting monitoring in the Wildlife Protection Plan (Section 6.3) is insufficient, particularly at active quarries and borrow pits. This should be increased to 2-3 times per week during peak nest initiation period (approx. late May to early July) to allow the timely implementation of protective measures should colonization by bank swallows occur. Adequate prevention and monitoring are necessary at active quarry and borrow sites as birds can initiate nests within a few short days, especially if there is a pause or slow down of project activities during the peak of the nesting season. Ensuring operational staff are aware of the potential presence and interaction with bank swallows is also very important and lacking in the Wildlife Protection Plan. Daily inspections by operational staff before starting any disruptive activities in active quarries and borrow pits should also be implemented. The Proponent should consult the attached ECCC pamphlet for additional information. https://www.canada.ca/en/environment-climate-change/services/species-risk-public-registry/related-information/bank-swallow-sandpits-quarries.html	operational staff and contractors are aware of potential presence and interactions with bank swallows and conduct daily inspections before starting disruptive activities in active quarries and borrow pits. The Proponent should consult the attached ECCC pamphlet for additional information.	
11	Species at Risk – Whooping Crane Reference: Wildlife Protection Plan Section 6.4 Pre-Clearing Monitoring and Appendix B	Whooping Crane is listed as Endangered on Schedule 1 of the federal Species at Risk Act. Whooping cranes, particularly non-breeding sub-adults, may be present on site or in the surrounding area and have been observed in the past (Table 2). Whooping Cranes are sensitive to disturbance. Given their conservation status, additional measures are required to mitigate and/or minimize sensory disturbances from project activities. Whooping Cranes should be added to the list of wildlife species being searched for within 500m during pre-clearing surveys (Section 6.4 of the WPP) during the entire period when they may be present near the project. This search radius is currently only reserved for large mammals and raptor nests. This is more protective than the proposed search radius of 30m applied for all migratory birds. There are currently no measures in the Wildlife Protection Plan to mitigate potential sensory disturbance to Whooping Cranes from the proposed drilling or blasting activities of the CEP Program. Such measures would also be beneficial for other species at risk (e.g. Boreal Caribou and Wood Bison).	ECCC recommends that Whooping Cranes be searched for during pre-clearing surveys within 500m of an area to be cleared (Section 6.4). ECCC recommends that the Wildlife Protection Plan be revised to include mitigation measures for Whooping Cranes and other species at risk (e.g. Boreal Caribou and Bison) for the proposed drilling and blasting activities to minimize disturbance.	This update will be made in the next version of the Wildlife Protection Plan.
GNWT - Lands				
2	1. Wildlife: Potential Impacts to Boreal Woodland Caribou	The Proponent has not provided sufficiently detailed information in their application for GNWT to assess the potential for significant adverse impacts to boreal caribou, or whether potential impacts to boreal caribou can be mitigated. Pine Point Mining Ltd.'s (PPML) Confirmation and Exploration Program (CEP) is within the range of boreal woodland caribou, which are listed as a threatened species under both the federal Species at Risk Act and the Species at Risk (NWT) Act. The CEP will involve drilling at over 3000 sites at unspecified locations within the Proponent's mineral claims and leases, as well as clearing new 10m wide access trails, clearing drill sites and test pit locations, blasting or using a rock breaker attachment on an excavator at an unspecified number of sites to obtain metallurgical samples, digging test pits at 200-300 sites using dozers, excavators, loaders and dump trucks, and construction of temporary water pipelines. These activities have the potential to cause sensory disturbance, direct habitat loss, indirect habitat loss through avoidance of areas of sensory disturbance, creation or widening of new access trails which could facilitate access for predators, hunters, and recreational land users, and potential for direct mortality from wildlife-vehicle collisions. Although the Proponent has provided a high-level assessment of these types of impacts in their Screening Impact Assessment or Wildlife Protection Plan, they have not specifically assessed their implications for boreal caribou, nor have they proposed specific mitigation measures for boreal caribou that could help to minimize some of these impacts. The Government of Northwest Territories (GNWT) is of the view that impacts to boreal caribou could be significant, because the GNWT data indicates that boreal caribou in the Pine Point area may represent a small local population with little chance for rescue from adjacent local populations if their numbers decline. The GNWT started monitoring boreal caribou in the Pine Point and Buffalo Lake areas in 2015 using GPS collars, with the goal of having at least 15 active collars in each of these areas on an annual basis. The GNWT also monitors boreal caribou to the west of the Hay River in the Hay River Lowlands study area, and monitored in the Cameron Hills area up until 2010. Boreal caribou monitoring programs across the South Slave administrative region indicate relatively little movement of boreal caribou from east to west across the Hay River, as well as little spatial overlap between caribou collared in the Pine Point area and those collared west of Buffalo Lake. This suggests that boreal caribou in the Pine Point area represent a small local population within the broader NWT boreal caribou range. Annual spring classification surveys of boreal caribou conducted in the Pine Point area between 2018- and 2020 have recorded 42- to 63 boreal caribou in the area. Although the spring composition surveys are not designed to estimate abundance, given that multiple collared caribou often occur within the groups classified, the GNWT believes that most of the caribou groups in this area have been counted in these surveys. The GNWT suggests that a	1) The GNWT recommends that PPML provide more detailed information on the specific locations, timing and frequency of activities proposed for this project, as well as an estimate of how much new habitat disturbance will occur as a result of widening existing trails, creating new access trails, and clearings for drill sites, test pits, and water pipelines, so that impacts to boreal caribou and their habitat can be properly assessed.	Exploration and delineation of target areas will be identified in advance of equipment mobilising to the site. We expect the work presented in the project description to largely take place in 2022 and 2023 based on current requirements. The nature of exploration is that plans are developed based on results as they come in during the course of the exploration season. This may necessitate changes to the initial plans. Future exploration targets and/or additional delineation targets may also be identified based on the results from this work. Geotechnical and metallurgical test pits will also be identified ahead of the actual program. PPML and ENR can review the proposed areas of work and the activity contemplated during the planning stages and modify the programs based on the current or anticipated presence of caribou. This would allow PPML to schedule the program to avoid seasons and locations when caribou are congregating near proposed target areas. This would include planning any access trail work and site clearing. The field work would typically take place in the winter and summer periods generally avoiding freeze up and spring thaw. In addition areas that are known to be used calving can be avoided during the sensitive periods.

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Information Request ID	Topic	Comment	Recommendation	Proponent Response
		reasonable population estimate for boreal caribou in the Pine Point area may be 100- to 150 individuals. Boreal caribou movement data collected over the past 5 years (up to end of June 2020) indicates substantial use of the Proponent’s CEP area, particularly to the west and south of the most heavily disturbed areas of the former Pine Point Mine site. Attached are two figures showing collar locations and movement paths of individual boreal caribou colour coded by behavioural season. Figure 1 and Figure 2 display movement data from 27 caribou collared between 2015 and 2020, and indicate year-round use of the western half of PPML’s mineral leases and mineral claims, with a prominent north-south movement corridor across mineral leases NT-4858, NT-4859, NT-5258, NT-5259, NT-5260, NT-4861, NT-4862, NT-4863, NT-4864, NT-4871, NT-4872, and NT-4873, and mineral claims (those that don’t overlap with the mineral leases listed above) M10835, M10837, M10838, M10842, M10844, M10845, M10550, M10551, M10552, M10553, M10554, M10862, M10868, M10869, M10877, M10878, M10879, M10880, M10514, M10515, M10516. Figure 3 illustrates the minerals leases and claims with the highest densities of collar locations. Although PPML’s Screening Impact Assessment acknowledges that the project area overlaps with the range of boreal caribou, it is insufficient to properly assess the impact of their operation on the local boreal caribou population. The screening assessment identifies that there will be direct habitat loss, sensory disturbance to wildlife, and potential for direct mortality; however, it does not specifically assess the potential significance of these impacts on boreal caribou, nor does it consider the cumulative impacts of their project alongside other past, present and reasonably foreseeable developments in the context that boreal caribou is a threatened species in the NWT. PPML’s Screening Impact Assessment concludes that most effects will be localized, and reversible, based on the assumption that many potential impacts will be mitigated by preferentially using previously disturbed areas. Given that much of the disturbance in the western portion of the project area consists of narrow linear features (likely trails associated with former prospecting and exploration activities) that may have regenerated sufficiently to be used by caribou, relying on preferential use of historic disturbances may not offer the mitigation advantage it might in other areas. The extent of new habitat disturbance that will result from creating new access and clearings for various activities, as well as clearing of existing narrow and partially-regenerated trails to a width of 10 m, has not been adequately quantified in PPML’s application. The duration, timing, frequency, and location of activities that will cause sensory disturbance to boreal caribou (drilling, blasting, excavating, hauling, etc.) also have not been adequately defined. PPML has not included facilitation of predator and human access into areas currently used by boreal caribou in their Screening Impact Assessment (but it is mentioned in their existing Wildlife Protection Plan). While the GNWT acknowledges that PPML has prepared a Wildlife Protection Plan, the plan does not include any specific measures to mitigate impacts of sensory disturbance to boreal caribou such as timing their activities in specific locations to avoid the most sensitive seasons for boreal caribou such as late-winter (16 Mar – 1 Apr), calving and post-calving periods (1 May – 30 Jun). Table 3 in the Wildlife Protection Plan cites the use of “conventional and best-practice methods to suppress noise on components and equipment, including regular maintenance where required.” but does not specify what best practices might be employed. No pre-blast surveys are proposed to document the presence of boreal caribou, or other wildlife species, prior to blasting. Finally, monitoring proposed in the current Wildlife Protection Plan (Ver. 1.0) is insufficient to adequately guide PPML activities in the area to minimize impacts to caribou or to determine the extent of residual impacts to boreal caribou and habitat resulting from the proposed activities.		
6	3. Wildlife Management and Monitoring Plan (WMMP)	The GNWT appreciates that Pine Point Mining Ltd has included a Wildlife Protection Plan – Ver. 1.0 in its application for the proposed Confirmation and Exploration Program which is consistent with advice provided in the WMMP Process and Content Guidelines that it is a best practice for all Proponents to submit a basic (Tier 1) WMMP with their application for authorizations. The GNWT notes that PPML’s proposed Confirmation and Exploration Program is an advanced mineral exploration program requiring a Type A Water Licence which, according to Section 3.1.1 of the WMMP Guidelines, is a type of project deemed always likely to satisfy one or more of the criteria set out in Section 95(1)(a-d) of the Wildlife Act. As such, at the completion of the current public review period associated with PPML’s application, PPML can expect to receive a letter from the Minister of ENR containing the Minister’s likely determination that an approved WMMP will be required for this project to proceed, identification of which tier of WMMP is required, and confirmation of the process for fulfilling this requirement. The GNWT notes that if a Minister approved WMMP is required for the project, as per paragraph 13(3)(2) of the Wildlife Regulations, “No person or body required to prepare a wildlife management and monitoring plan may undertake or engage in the development, proposed development or activity until the plan is approved by the Minister”.	1) The GNWT recommends that PPML take into account all reviewers’ views on the sufficiency of the mitigation and monitoring measures outlined in PPML’s Wildlife Protection Plan Version 1.0 in revising its plan to develop a Wildlife Management and Monitoring Plan for this project that satisfies the Minister of The GNWT’s requirements as laid out in Section 95(2) of the Wildlife Act and the WMMP Process and Content Guidelines.	

Table A-1: Information Requests and Responses from the Mackenzie Valley Land and Water Board Technical Session on the Pine Point Mining Limited Confirmation and Exploration Program Applications

Information Request ID	Topic	Comment	Recommendation	Proponent Response
8	4. Disturbance and Harassment of Wildlife due to Blasting	The Project Description discusses drilling operations (Section 6.0 – Resource Definition and Exploration Core Drilling; Section 7.1 - Drilling) and blasting operations (Section 8.1 – Bedrock Sampling). However, mitigations for potential effects to wildlife from drilling and blasting operations are only briefly discussed under Table 3 and Section 6.4 (Pre-Clearing Monitoring) in the existing Wildlife Protection Plan (Ver. 1.0). The Proponent should ensure that greater detail on the procedure for pre-clearing monitoring of big game is discussed in the revised WMMP. It is important that no wildlife is within the range of drilling or blasting activities that would cause them disturbance or physical harm.	1) PPML should ensure the revised WMMP includes mitigations for potential negative impacts on big game while drilling or blasting. The following mitigations for drilling and blasting activities should be included in the WMMP: a) Survey the area for presence of big game prior to drilling or blasting; b) Drilling or blasting should be delayed until all big game have moved outside of the range of influence; c) If they do not move within 15 minutes, they may be gently encouraged to move away from the site; d) Deterrence should involve the slow approach by vehicle towards the animal or making your presence known by calling out and waving your arms to encourage them to move; and, e) This should be done from behind a vehicle or piece of equipment to prevent personnel from going too close to the animal.	PPML understands that the intent is to limit disturbance to wildlife, and will provide more detail on surveys for big game occur prior to the vegetation clearing that would precede drilling or blasting. Further detail will be provided on deterrent procedures in the next version of the Wildlife Protection Plan.
10	5. Wildlife: Bear Den Surveys	There is no mention in the Wildlife Protection Plan of the requirement to conduct surveys to determine if there are any known bear dens prior to earthworks, vegetation clearing, or blasting. Subject to sub-section 51(2) of the Wildlife Act, it is illegal to break into, destroy or damage a den unless you have an Aboriginal or treaty right, license or a permit to do so.	1) Within the revised WMMP, PPML should include pre-activity surveys within 800m of areas where vegetation clearing, earthworks or blasting is scheduled to occur between September 30 and March 30 to identify active bear dens. Surveys should be conducted in the fall shortly after the first snow fall to detect freshly dug dens.	PPML understands the need to protect bear dens. PPML will update the Wildlife Protection Plan to include investigations for bear dens where possible considering the timing of the activities.
13	6. Reporting Wildlife Sightings	Section 6.5 (Wildlife Incident Reporting) of the Wildlife Protection Plan includes mention that wildlife incidents should be reported to ENR. Additionally, Section 6.1.1 (Monitoring – Methods) discusses the requirement that all wildlife sightings be recorded on the Wildlife Sighting Procedure and Form (Appendix B). However, the Proponent is encouraged to include in the revised WMMP that information about wildlife sightings will be submitted to ENR’s Wildlife Management Information System (WMIS).	1) PPML is encouraged to include in the revised WMMP that information about wildlife sightings (species, date, time, location, number of individuals, sex, behavior, etc.) will be submitted to ENR’s Wildlife Management Information System (WMIS) at WMISTeam@gov.nt.ca. For further information on the WMIS consult: https://www.TheGNWT.gov.nt.ca/en/services/recherche-et-donnees/wildlife-management-information-system	PPML can provide ENR with copies of all raw data, which will include the parameters specified where possible, at the end of each year. This commitment will be added to the next revision of the Wildlife Protection Plan.
19	10. Species at Risk	Section 76 and 77 of the Species at Risk (NWT) Act requires the Minister of ENR to make a submission to the body responsible for assessing the potential impacts of a proposed development, or for considering a Land Use Permit or Water Licence application, respecting the potential impacts of the proposed development, Permit or Licence application on a NWT-listed or pre-listed species or its habitat. NWT-listed species are those that are on the NWT List of Species at Risk. Pre-listed species are those that have been assessed by the NWT Species at Risk Committee (SARC) but have not yet been added to the NWT List of Species at Risk. PPML should be aware that NWT-listed or pre-listed species at risk and their habitat may also be subject to protection under existing sections of the NWT Wildlife Act. The project area overlaps with the ranges of the following NWT-listed and/or pre-listed species; information on these species is available at the following link: https://www.nwtspciesatrisk.ca/SpeciesAtRisk : • Northern Leopard Frog – Threatened in the NWT • Wood Bison – Threatened in the NWT • Boreal Caribou – Threatened in the NWT • Little Brown Myotis (bat) – Special Concern in the NWT • Northern Myotis (bat) – Special Concern in the NWT Potential impacts to the species at risk listed above from the project include sensory disturbance, disturbance or destruction of habitat, risk of injury, risk of mortality, risk of contact with or ingestion of toxic substances, reduced habitat quality, and disruption or barriers to movements or migration. The GNWT has identified substantial concerns about the potential impacts of this project to boreal caribou, which are outlined in the boreal caribou-specific comments and recommendations above. The GNWT is satisfied that application of the mitigation measures outlined in PPML’s current Wildlife Protection Plan (Ver. 1.0) to conduct vegetation clearing outside of critical (nesting) periods for migratory birds, and to conduct pre-clearing surveys if vegetation will occur during the nesting season, will be sufficient to avoid disturbance to summer bat maternity roosts of Little Brown Myotis and Northern Myotis; however, clearing vegetation in winter still poses a risk of damaging or destroying trees that support maternity roosts, which is prohibited under sub-section 5.3.(1) of the Wildlife General Regulations. In the summer, NWT bats roost (rest) in tree hollows or crevices, under tree bark, among the leaves of trees, in caves, in rock crevices, and in buildings. Roosts in forested habitat typically occur in large, dead or decaying trees. Roosts provide shelter, protection from predators, and suitable temperature and humidity conditions. A single roost may be used by many reproducing females and their young. Many bats show strong fidelity to roosts, or to a group of roosts, returning year after year to the same roost or to the same patches of roosting habitat. Destruction or removal of a roost may be authorized typically on a case-by-case basis where required by a General Wildlife Permit which can be obtained from The GNWT. The potential presence of winter bat hibernacula within PPML’s project area is currently unknown. The western portion of PPML’s project area is close to the eastern boundary of the Bison Control Area. Although the project is unlikely to directly impact wood bison as the project area is just to the north of the Nyarling wood bison range, any sightings of wood bison within the project area should be immediately reported to the GNWT as this may indicate wood bison could potentially enter the Bison Control Area.	1) The GNWT recommends PPML’s revised WMMP include searching for potential bat maternity roost habitat during clearing surveys and to avoid clearing trees, or damaging habitat, that may support summer maternity roosts of bats, or bat hibernacula.	Searches for bat maternity roosts are already included in the Wildlife Protection Plan Bird Nesting and Bat Roosting Activity Procedure for summer operations and can be added to the Pre-Clearing Survey Procedure for other times of year.

Attachment 2: ENR's comments and required revisions to PPML's March 12, 2021 Memo of Proposed Updates to the Wildlife Protection Plan for the Pine Point Confirmation and Exploration Program Applications

Topic: Collar map frequency

Comment: PPML has proposed the use of weekly collar data maps from ENR to identify when collared caribou are within seasonally-sized Cautionary Zones (2 km in late winter and calving and 500m in other seasons) to trigger additional ground searches or delays in activities. In the interest of supplying the most current information to PPML to support mitigation procedures during the most sensitive periods, ENR commits to supply PPML with collar maps every two days from March 16 to July 15. Otherwise, ENR will supply collar location maps on a weekly basis.

Requirement: PPML will revise their procedures to indicate that they will refer to collar location maps provided by ENR every 2 days during sensitive seasons (late winter, calving and post-calving) in making decisions about timing and location of activities.

Topic: Blasting and other disturbing activities

Comment: ENR notes that the procedures proposed in section 3.2 of the Memo only reference pre-clearing surveys. ENR expect that the procedures being proposed would also apply prior to blasting and other disturbing activities.

Requirement: PPML will apply the proposed procedures prior to blasting and other disturbing activities and ensure that this is reflected in the WMMP submitted for approval.

Topic: Triggers for ground searches

Comment: On page 4 of their Memo, PPML states: "During the late winter and calving seasons, if collared caribou are identified within Cautionary Zones around exploration activity, PPML will initiate a pre-clearing survey within 500 m of exploration activities to verify that no boreal caribou are present (Table 1)." As not all animals in the area are collared, ENR requires that during the caribou sensitive seasons, ground searches within 500m be conducted prior to initiating activities

even when collar maps **do not show the presence** of collared caribou in the 2km cautionary zone. Mitigations for when collared caribou are located within the cautionary zone are addressed in the next topic.

Requirement: During the late-winter and calving season, PPML will conduct ground searches within 500m prior to clearing new work sites, prior to returning to previously cleared sites that have been dormant more than 2 days to start up drilling or pitting, or prior to any blasting activities.

Topic: Delays or suspension of activities during calving

Comment: For the mitigations in Table 1 during the calving period, there appears to be a contradiction as to when ground searches will be conducted in relation to suspension of activities. It appears that PPML is proposing to conduct ground searches in the 500 m search zone if collared caribou are within the 2km cautionary zone. Further, PPML proposes to delay or suspend activities if a) fresh caribou sign are identified within the 500m search zone or b) “collared caribou are within 1km of exploration sites,” to determine if individuals are calving (e.g. relatively stationary, 48-hour locations <1km apart)”. If activities are suspended due to the presence of collared caribou, this should preclude the need to conduct ground searches within 500m. Ground searches within 500m should only be resumed as outlined in the table once collared caribou have left the cautionary zone.

As recommended in the previous comment, ground searches should be conducted if caribou are NOT in the cautionary area to check for the presence of non-collared caribou during the late-winter and calving season. If activities are suspended or delayed due to the presence of collared caribou, this will afford protection to any non-collared caribou in the area.

ENR believes that during the calving period the most precautionary approach is to delay or suspend activities if a collared caribou is shown to be in the 2km cautionary zone and not resume until the collared caribou has left the cautionary zone. This should be the primary mitigation approach and as such should appear first in the table before information about ground surveys during calving.

Requirement: PPML will revise their caribou mitigation procedures to stipulate that during the calving season, PPML will delay entry to new exploration sites (or sites that are dormant for more than 2 days), or suspend clearing and blasting activities if collared caribou are within the 2km cautionary zone.

Topic: Delineation of High Probability Areas

Comment: PPML is proposing to conduct further analyses of collar data to predict the probability of caribou occupancy within the PPML project area and identify exploration sites that have a higher probability of caribou occurrence. This information may be used to re-evaluate Areas of Interest and the Cautionary Zones and Search Zones. It is not clear to ENR how outcomes of these analyses would be used to inform decision making regarding scheduling of work, areas of interest or the application or modification of the proposed mitigation measures. If PPML is intending to base decisions about siting, areas of interest or mitigation on any type of predictive mapping, it would be helpful for PPML to provide some kind of decision tree to elucidate how this information would be used.

ENR suggests that the collar data does not lend itself to a used/unused type of analysis because it provides presence only data. A use/availability design may be more useful instead. ENR has developed predictive resource selection function (RSF) maps for the area which can be shared with PPML.

Recommendation: PPML should use ENR's RSF model predictive maps instead of conducting further analyses of boreal caribou collar data.

PPML should provide further details about how they would use predictive mapping to support decision making about areas of interest, scheduling and/or mitigation.

Topic: Identified Areas of Interest

Comment: PPML has provided maps that identify their areas of interest within their overall study area, however, these are not labelled in any way that facilitates discussion about them.

Recommendation: PPML should devise a numbering/labelling system to identify the exploration areas of interest so that they can be referred to more easily in collar data maps, discussion and reporting.

Topic: Restoration of linear features

Comment: While the mitigation approaches being proposed by PPML in the Memo may help to minimize disturbance to boreal caribou, ENR remains concerned about the legacy impacts to boreal caribou habitat from the creation of new access, or widening existing linear features, to carry exploration activities within the areas of greatest overlap with the collar locations and movement paths. Although PPML has indicated during the technical sessions that all sites where vegetation must be cleared and that will no longer be used will be restored, ENR has not been able to identify how PPML intends to functionally restore linear features to discourage access by people and predators.

Requirement: PPML will identify measures in the WMMP for onsite restoration of newly disturbed and regenerating areas that it has cleared, including how it will discourage access and lines of sight for predators and humans along new or widened linear trails.

Topic: Reporting

Comment: To evaluate the effectiveness of mitigation and to effectively work with PPML on minimizing impacts to boreal caribou, ENR requires information on where and when exploration activities are occurring within the Land Use Permit area, as well as results of any pre-clearing/pre-activity surveys, any incidental sightings of boreal caribou, and whether or not any mitigation measures were triggered and implemented as a result of the collar data maps or ground-based surveys.

Requirement: PPML will provide ENR with reports of where and when exploration activities are occurring within the Land Use Permit area (including dates and times of blasting), as well as results of any pre-clearing/pre-activity surveys, any incidental sightings of boreal caribou, and whether or not any mitigation measures were triggered and implemented as a result of the collar data maps or ground-based surveys. These reports shall be provided weekly during late winter and calving, and monthly during the remainder of the year.