Mackenzie Valley Review Board

EA2021-01

August 13, 2021

Note to file – Presentation of the draft Terms of Reference

Pine Point Mining Project- Pine Point Mining Ltd.

Review Board staff met with Pine Point Mining Ltd. (PPML) staff and consultants on Thursday, August 12, 2021 to provide an overview of the Review Board's draft Terms of Reference for the Pine Point Mining Project (the ToR).

Topics of conversation included:

- overall structure of the ToR
- general requirements of the ToR and
- next steps including the public review process and finalization of the ToR

Slides from the presentation are appended to this Note to file. Review Board staff stated that PPML should provide any specific questions or clarifications on the contents of the ToR to the Review Board in writing. Any requests from PPML and Board responses will be put on the public registry. If you or your organization are interested in a similar meeting with Review Board staff, please contact Chuck Hubert at 867-766-7052 (chubert@reviewboard.ca) or Mark Cliffe-Phillips at 867-766-7055 (mcliffephillips@reviewboard.ca).

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Pine Point Mine Project

Pine Point Mining Limited

Overview of the draft Terms of Reference

for Meeting with PPML August 12, 2021

Outline

1. What is new/different in this draft Terms of Reference?
2. Summary of main topics
3. Next steps

What is new/different in this *Terms of Reference*?

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1. Overall organization
2. Focus on important aspects of assessment
   - holistic consideration of key valued components
   - legacy effects and contribution to lasting well-being
   - climate change

Review Board's approach to the draft ToR

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- Review Board wants feedback on the draft
  - PPML can offer its own comments as well as responses to comments from other reviewers
- ToR is objectives driven; discretion for PPML to organize the required information in the DAR

Overall organization of effects assessment

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- Section 4.1 asks how the project will physically change air, land and water

air, noise, visual, soil, water, plants

- Section 4.2 examines what impacts those changes will cause to valued components

birds, water uses, moose, caribou, furbearers, fish , aquatics, communities, culture, trad land use, health, economy

- Section 4.3 looks at how those different kinds of impacts fit together, for certain key issues

keeping water clean

lasting well-being

boreal caribou

Terms of Reference Assessment Methodology

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1. Describe baseline conditions and the existing environment
2. Identify predicted changes to the environment
3. Assess impacts on valued components
4. Identify mitigation
5. **Assess impacts holistically and systematically**
6. Use and incorporate Traditional Knowledge
7. Cumulative effects assessment
8. **Closure and legacy effects**
9. **Climate Change**

Assess impacts as a holistic system

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Purpose:

- Use systems thinking to **integrate impacts of the whole project** on multiple valued components.
- Assess the **connections and inter-relationships** between impacts on ecological, social and cultural valued components.

PPML will:

- consider role each valued component plays in broader system
- assess overall changes to system functioning
- mitigate to protect system functioning

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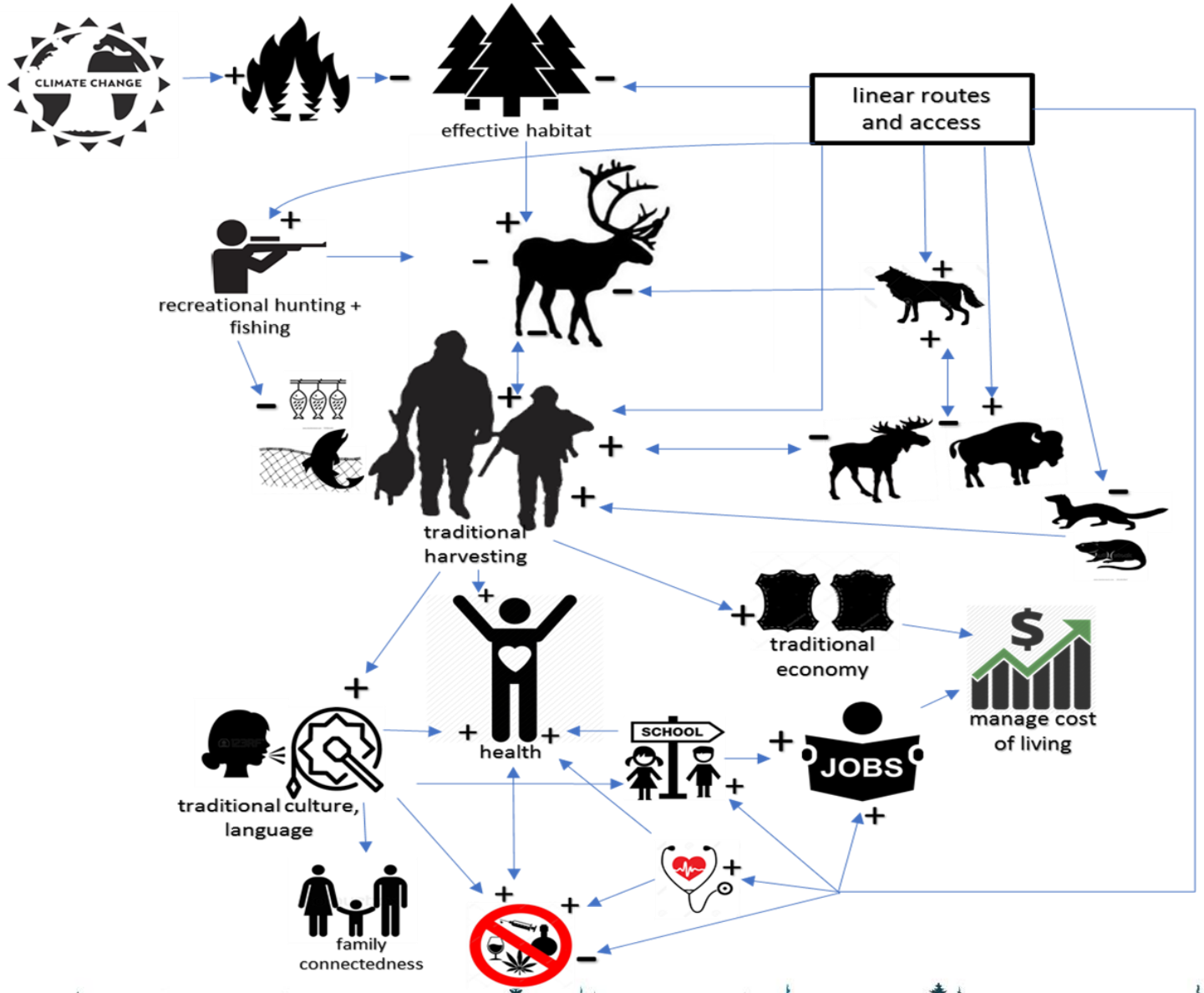

Assess impacts as a holistic system

How do the impacts add up and combine in the real world?

from : Tlicho All-Season Road Report of EA

Closure and lasting impacts of this project

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During community scoping meetings people said:

- we are frustrated that no one seems to be responsible for cleaning up the past mess
- communities absorbed negative impacts of past mining but saw few benefits
- past impacts from the mine to wildlife, people and the land still there and this matters for cumulative effects assessment (past, present, future)
- the new Pine Point Mine should contribute to sustainability and lasting well-being

Climate change

PPML to describe and assess:

- use of future climate scenarios for predicting effects
- emissions of GHG
- resilience and adaption in project design
- climate change considerations in follow-up and monitoring

Where is climate change addressed in the ToR?

- **3.1 Baseline-** provides information on using future climate scenarios for predicting project impacts on valued components
- **3.9 Climate change-** provides an overview of climate change in environmental assessment
- **4.1.1 Projects emissions-** describe and quantify project emissions
- **5.6 Effects of the environment on the project-** focuses on resilience and adaption of project components
- **5.7 Monitoring, evaluation and follow-up-** The objective of this section is ensure that changes in environmental conditions are identified and if needed changes to the project are made to avoid impacts.

Section 4.1

Changes to the environment

Changes to air

- PPML will describe changes to air from pollutants, dust, and smells
- PPML assesses these changes on:
  - wildlife, fish, vegetation, traditional & recreational land users
  - human health and well-being, contribution to climate change
- PPML provides:
  - choice of air quality model with rationale
  - comparison of air quality results with NWT/Can standards
  - methods to reduce and control emissions

Air quality monitoring station at Pine Point

Changes to sounds

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- PPML will describe changes to noise and vibration from the project
- PPML assesses these changes on:
  - wildlife, fish, traditional land users, recreational land users,
  - human health and well-being
- PPML provides:
  - noise locations, frequency, duration to fish, wildlife and people
  - sensitive time periods such as nesting, calving, traditional harvesting
  - methods to reduce impacts

Changes to view-scape

- PPML will describe changes to view-scape
- PPML assesses these changes on:
  - traditional land users, recreational land users, wildlife
  - people traveling along the Buffalo River,
    Little Buffalo River and on Great Slave Lake
- PPML provides:
  - night-time lighting during different seasons, show on a map
  - changes to topography, vegetation, dust plumes
  - locations where people and wildlife using the area may be impacted

Changes to terrain and soils

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- PPML will describe characteristics of terrain and soils:
  - pits used for storage of tailings, waste rock, or water management
  - permafrost, karst geology, soil used for future reclamation
  - the physical and chemical characteristics of mine rock, waste rock and tailings
- PPML will assesses:
  - changes to soil that may affect the type of reclamation that can occur, both during operations and at closure
  - stability of mine components over the long term
  - uncovering unknown contamination from past mining activities

Changes to vegetation

- PPML will describe changes to vegetation from project
- PPML assesses these changes on:
  - plants with medicinal, cultural, or economic importance
  - wildlife habitat, wildlife use of area
- PPML provides:
  - state of vegetation regrowth at areas disturbed by past mining (mapped)
  - clear definitions of “greenfield” and “brownfield” with rationale
  - any known past reclamation or remediation efforts

Section 4.2

Impacts to individual valued components

Wildlife in the draft Terms of Reference

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Understanding changes to ground & surface water quality and quantity, vegetation, air, noise and visuals (Section 4.1)

Understanding impacts of these changes on valued components (Section 4.2)

Changes to fish and aquatic life (4.2.2)

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PPML will:

- describe the existing fish populations, behaviours and habitats
  - includes existing pit lakes
- describe lower trophic level communities (plankton and benthic communities)
- assess impacts on fish, fish habitat and aquatic life due to:
  - vibrations and noise
  - changes in water quality or quantity
  - new fishing access, if any
  - habitat loss, destruction or alteration
- describe any required authorizations
- describe mitigations, management plans, monitoring programs

Birds and their habitat (4.2.3)

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PPML to describe changes to:

- **birds** and their habitat:
  - vegetation disturbance and removal
  - deposit of harmful substances
  - construction and operation of tailings ponds, wastewater ponds, or others containing substances harmful to birds
  - possible changes to contaminant concentrations (HHERA)
- availability for traditional use purposes (community-led indigenous knowledge study)
- the timing of vegetation removal and construction to avoid critical periods for birds
- technologies/approaches (including deterrent systems) to minimize the impacts of tailing ponds, other attractants on birds

Moose, Furbearers and other wildlife (4.2.4)

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PPML will:

- describe the effects the project may have on:
  - direct and indirect mortality
  - potential effects of dusting
  - increased attraction to the project
  - sensory disturbance (noise, light, smell, viewscape)
  - disruption or changes to wildlife movements and migration
  - disruption or changes to predator-prey relationships
  - possible changes to contaminant concentrations, including…
  - Impacts to ***moose*** and other ***furbearers*** of importance to indigenous groups, including…
- include a draft wildlife management and monitoring plan (WMMP)

Species At Risk Considerations (4.2.6)

- PPML will:
  - describe adverse effect, critical habitat including federal and territorial laws, and COSEWIC lists
  - identify critical timing windows, setback distances, or other restrictions;
  - describe all reasonable alternatives to the project;
  - describe all feasible mitigations;
  - describe residual effects after mitigation;
  - describe how project and mitigation measures consistent with species recovery strategies, action, or management plans

Whooping Crane (4.2.7)

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- ***PPML will describe:***
  - monitoring programs to detect whooping crane
  - any potential effects on whooping crane, considering the information collected.
  - direct and indirect effects
  - how they will prevent or fully mitigate any impacts to whooping crane that may use the project area and Wood Buffalo National Park

- ***PPML will describe existing environment and baseline***
  - Develop reasonable assessment boundaries in consultation with ECCC and Parks that will account for direct and indirect effects, and reflect population goals
  - Work closely with ECCC/Parks Canada to quantify potential habitat in assessment areas

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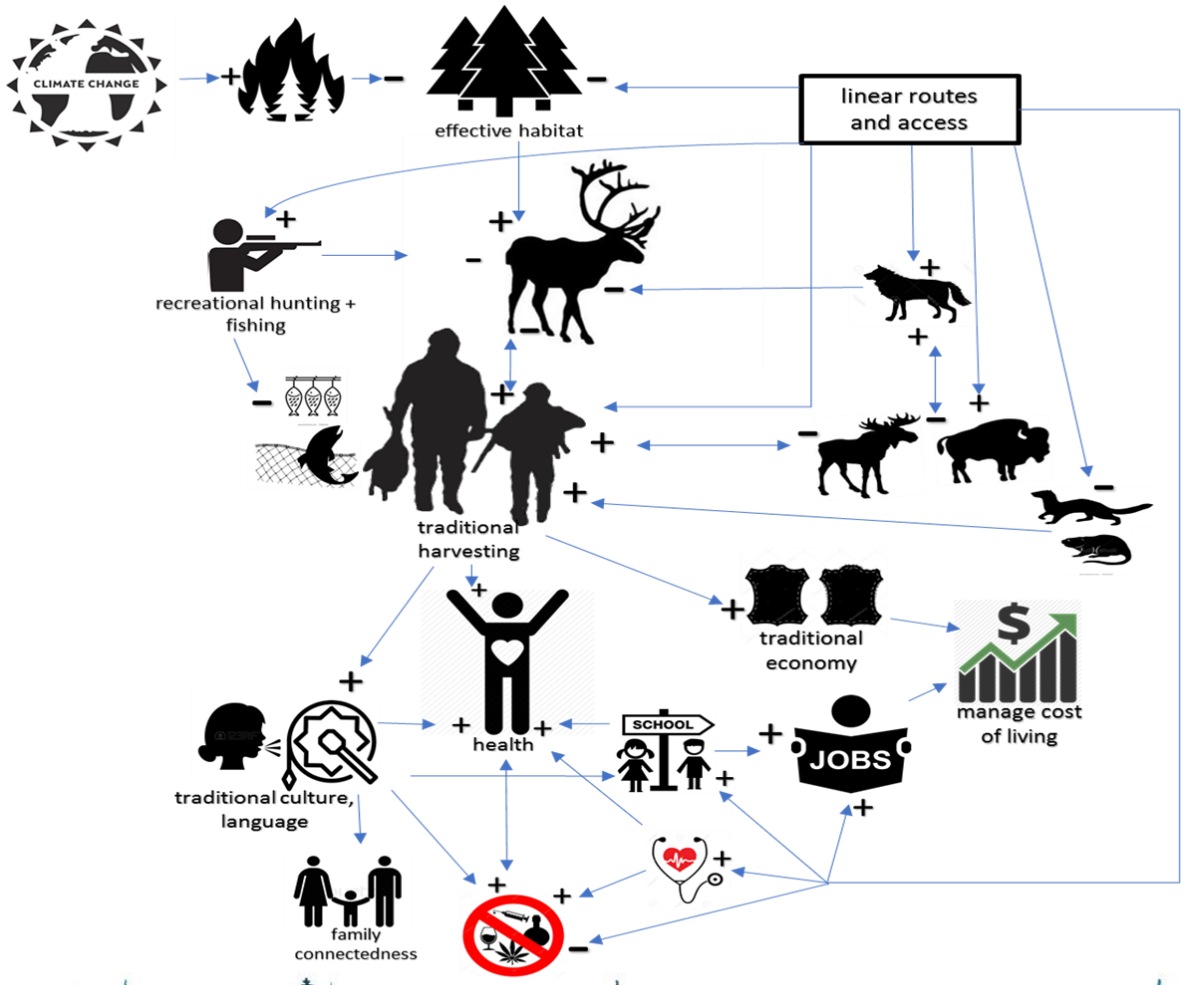
Section 4.3

Holistic consideration of key lines of inquiry



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Holistic approach to understanding impacts on water

Overall approach: considering surface and groundwater together

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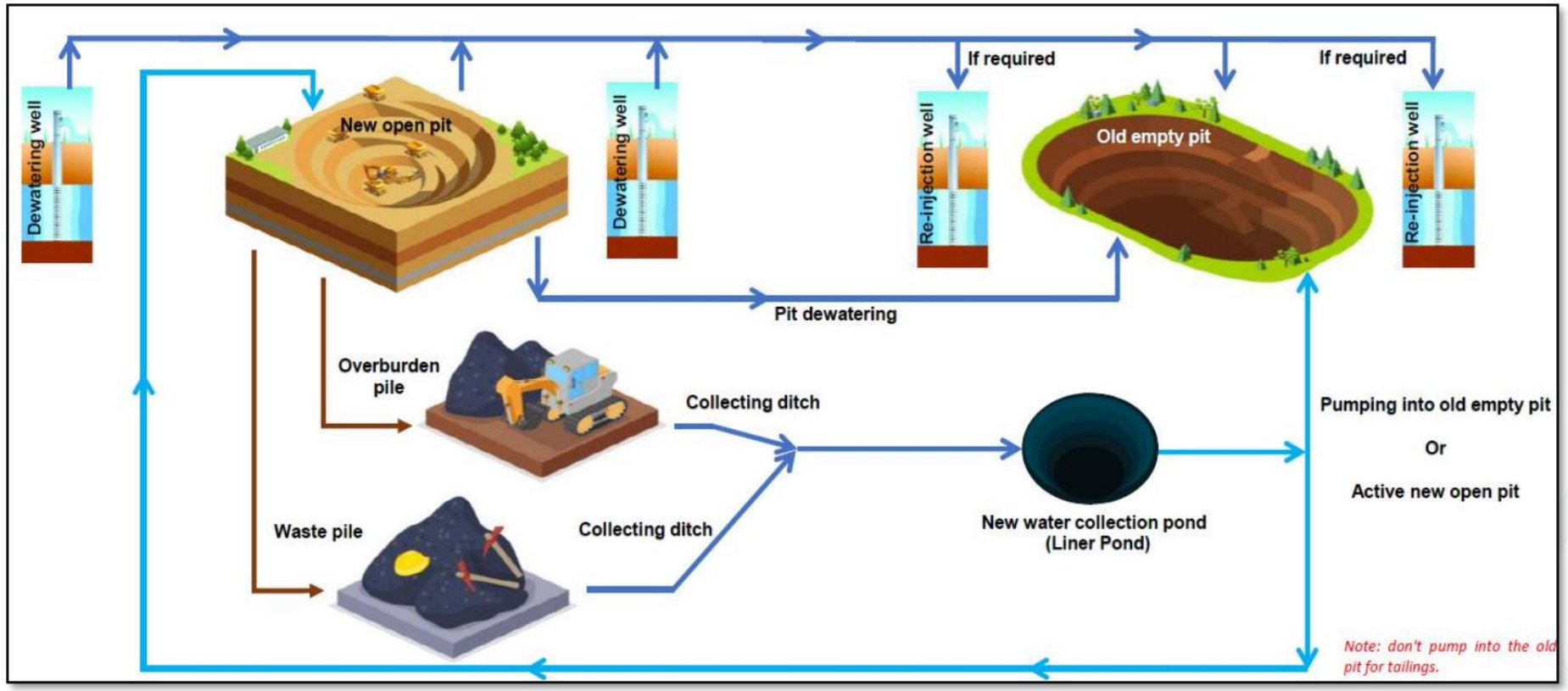
- highly connected systems
- minewater management strategies may move water between surface and underground



The holistic consideration of water in the draft *Terms of Reference*

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Understanding changes to ground and surface water quality and quantity (Section 4.1)

Other impacts

Understanding impacts of these changes on human uses of water (Section 4.2)

Other impacts

Other impacts

Key questions: Keeping water clean (Section 4.3)

Other impacts

Surface and groundwater information requirements (4.1)

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Enough baseline information to describe:

- how and where water moves through the environment
- key controls on water flow
- characteristics of water quality
- how evidence about water can inform assessments of other things that matter
- how and where baseline data has been collected

Understanding changes to ground and surface water quality and quantity (4.1)

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The developer must describe **changes** to ground and surface waters including:

- how and where water will be withdrawn or discharged
- how project features and activities could affect the flow and quality of waters
  - open pits
  - waste rock piles
  - underground workings
  - fugitive dust emissions
- how contaminants of concern might move through the environment
- monitoring, management and mitigation plans for both anticipated and unanticipated changes
- assumptions, uncertainties, limits and rationale for all modelling approaches

Understanding changes to people's uses of water (4.2)

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The developer must describe **impacts** to the uses of water by people including:

- description of baseline about water use
  - places and ways that people have used water in the past
  - physical and chemical description of waters as it relates to applicable guidelines
- impacts on people's ability to use ground and surface waters in traditional ways
  - based on characterization of changes described in 4.1
- all required permits, licences, authorizations
- all planned mitigations, monitoring and adaptive management plans

Holistic assessment about keeping water clean (4.3)

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Keeping water clean requires a **holistic consideration** of:

- surface and groundwater quality and quantity,
- the interactions between surface and groundwater systems, and
- the relationships between these systems and other parts of the environment including:
  - ✓ cultural use and values
  - ✓ traditional harvesting and land use
  - ✓ human health
  - ✓ wildlife
  - ✓ fish and aquatic life
  - ✓ community well-being
  - ✓ vegetation

Key questions about keeping water clean (4.3)

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Will the project affect ways local Indigenous people to take care of and steward the land and water?

Will the project affect traditional uses of water?

Will water on and around the mine be safe and clean for people, fish, aquatic life, vegetation and wildlife?

Will the project affect ground or surface waters in ways that might harm ecosystem function(s)?

Will changes to water affect how local Indigenous people feel on and about the land?

Will people have confidence that the water is clean, as a sign that the land is healthy?

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Holistic approach to understanding impacts on caribou

Boreal Caribou (4.2.6) – Existing/baseline conditions

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- Work with GNWT-ENR to incorporate latest collar data: Pine Point population
- Multiple spatial scale assessment (NT1, SNWT region, Pine Point population, possible intermediates)

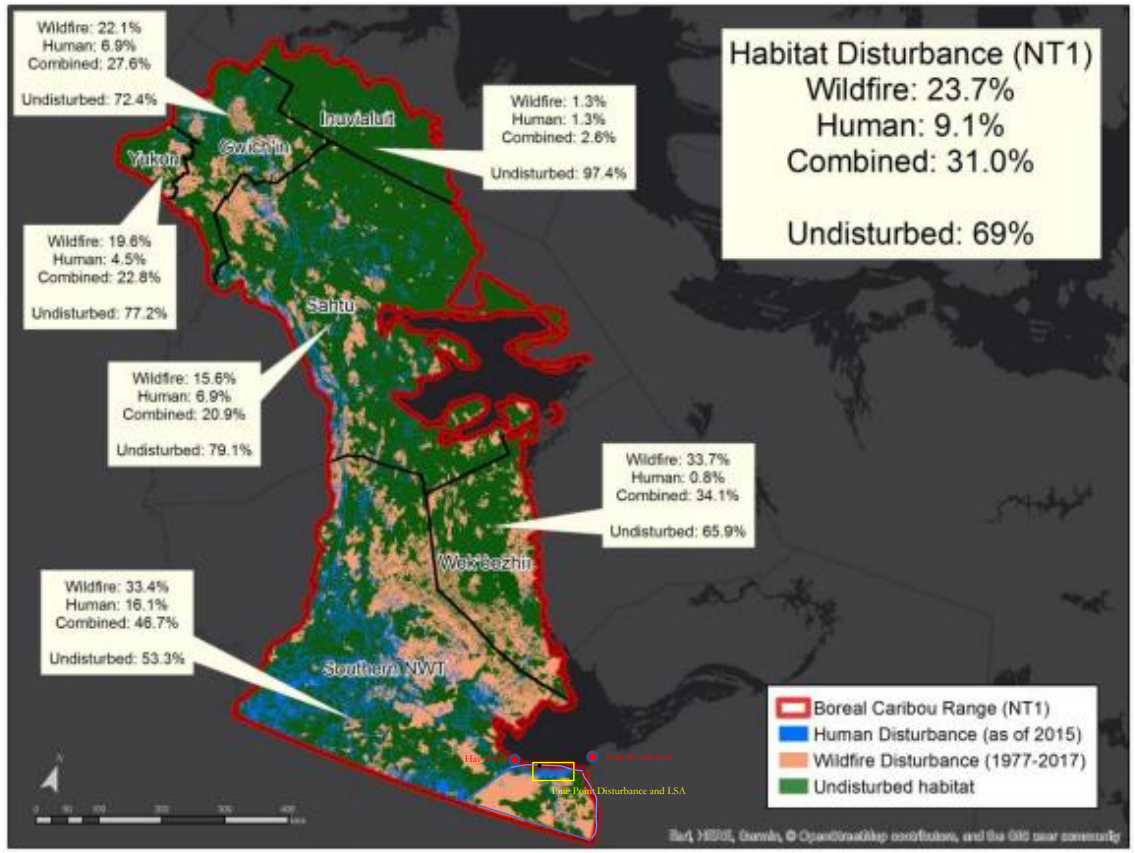

Figure 4. Disturbance by region as of fall 2017. Human disturbance is based on 2015 disturbance data published by Environment and Climate Change Canada. Wildfire disturbance is based on a

Boreal Caribou – Multiple spatial scale considerations

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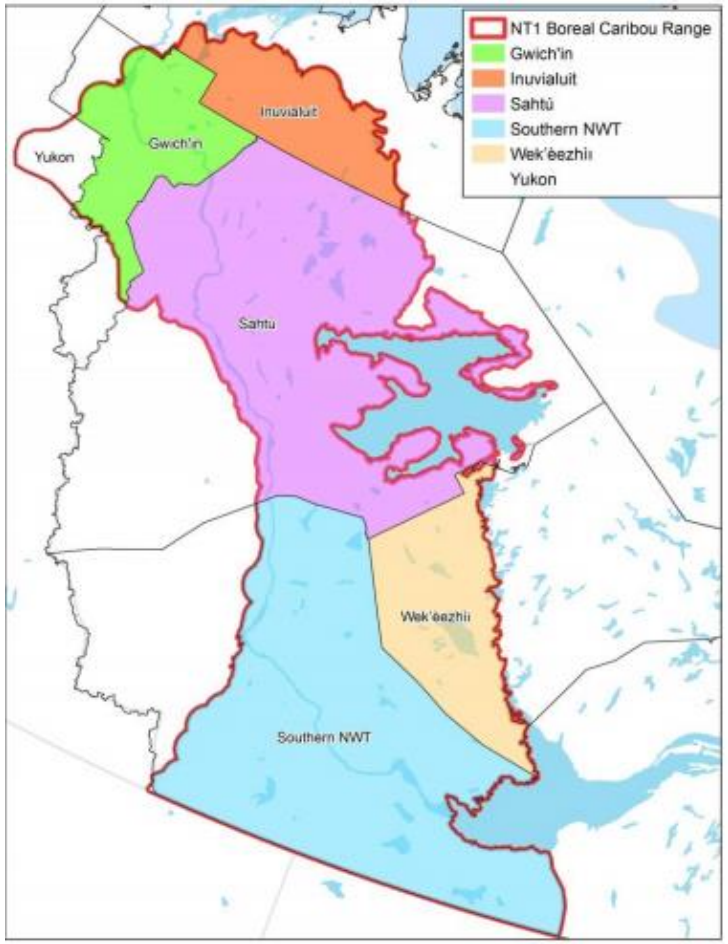


Five Possible Spatial Scales

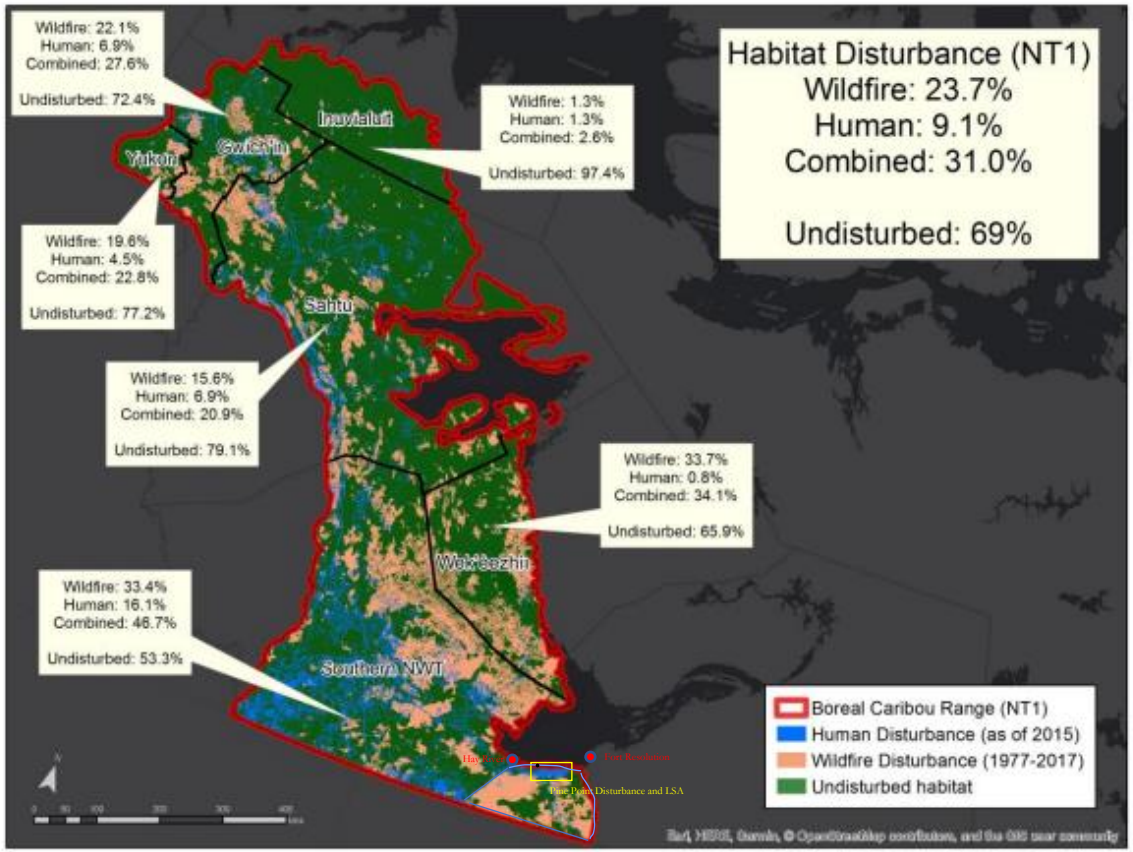
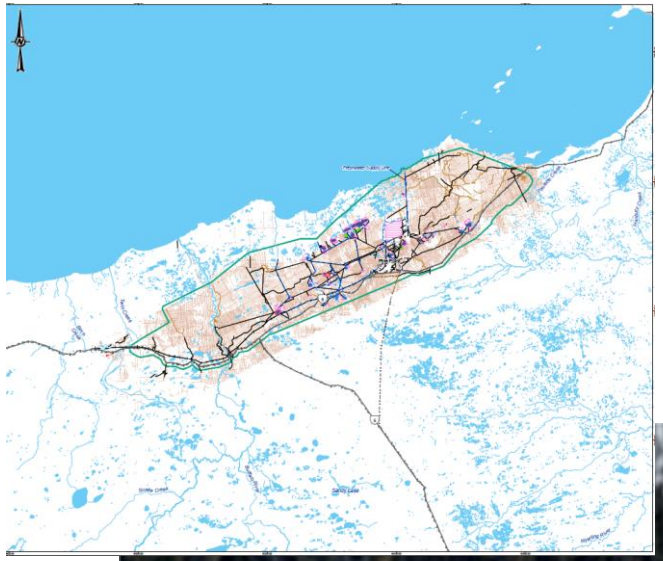


Figure 4. Disturbance by region as of fall 2017. Human disturbance is based on 2015 disturbance data published by Environment and Climate Change Canada. Wildfire disturbance is based on a

Boreal Caribou -- Impacts



- Assess impacts to habitat, at multiple spatial and timescales
- Habitat connectivity & movement corridors, sensory disturbance
- Predator/Prey ecology
- Holistic contaminant concentration work
- Consultation and feedback with GNWT-ENR and ECCC
- Monitor PP population health over time with indigenous groups and their feedback

Rationale for conducting Holistic Assessment -- Boreal Caribou (4.3)

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1. Indigenous communities, government, and Developer recognize importance of caribou to the Dene and Métis way of life and the environment.
2. Caribou ecological keystone species linked to the health of boreal forest, and well-being and way of life of land-users.
3. Review Board required to consider the importance of conservation to the well-being and way of life of Indigenous Peoples. The Review Board has heard in previous EA's that boreal caribou and its stewardship are important parts of this.

Rationale for conducting Holistic Assessment -- Boreal Caribou

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Consider valued end-uses of and changes to relationships between caribou and:

- vegetation
- water
- traditional harvesting
- cultural uses and values
- human health
- wolves, moose and predator-prey relationships
- community well-being

Key questions about sustainable boreal caribou (4.3)

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Will this project help or hinder the local caribou?

Will the project reduce caribou harvest by Indigenous people?

Will harvested caribou be safe to eat?

Will the project contribute to further understanding about boreal caribou?

Will the project affect indigenous stewardship of the Pine Point population, both now and in the future?

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Holistic approach to understanding impacts on people

Approach to impacts on people in the draft Terms of Reference

Indigenous Land Use (4.2.8)

PPML must assess impacts or changes related to:

- country foods and traditional medicines
- perception of the land by traditional users
- the experience of being on the land
- quality and availability of water
- use of cabins or camps
- transmission of Traditional Knowledge, language, community traditions of sharing, and community cohesion

Other Land Use (4.2.9)

PPML must assess impacts or changes related to:

- recreation, hunting, and fishing
- access and travel routes
- use of seasonal cabins or other recreation locations
- quality and availability of water
- safety of using the area

Heritage Resources (4.2.10)

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PPML must assess impacts or changes related to:

- physical damage to any heritage resources
- how known sites will be preserved and managed
- how Traditional Knowledge was incorporated
- discovery of new resources during construction and operations

Measurement Indicators: suggested PPML consider using *physical changes to heritage resources, community concerns regarding heritage resources*, or *sites successfully avoided or mitigated*

Culture (4.2.11)

PPML must assess impacts or changes related to:

- language
- transfer of knowledge
- Indigenous law and governance
- traditions and values
- sacred, ceremonial, or culturally important places
- community concerns

Social and Community Conditions (4.2.12)

PPML must assess impacts or changes related to:

- increasing or decreasing population
- use of a work camp
- social cohesion
- infrastructure and services
- existing social issues
- stress and worry
- boom-bust cycle of mining
- how different groups will experience benefits and impacts

Economy and Employment (4.2.13)

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PPML must assess impacts or changes related to:

- local and regional hiring
- training
- procurement and contracting
- traditional economy
- inflation
- overall economic impacts

Human Health (4.2.14)

PPML must assess impacts or changes related to:

- health indicators
- community health and availability of health resources
- how will different groups experience impacts
- water quality
- traditional harvesting
- desirable health impacts

Lasting well-being (4.3.2)

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PPML must consider:

- social, cultural, and economic well-being
- well-being and way of life of Indigenous Peoples
- locally relevant and developed definitions of well-being
- any particularly important factors for community well-being and resilience
- how potential impacts to well-being could be felt differently by diverse groups within each community
- Indigenous traditions, perspectives, values, worldviews, and knowledge

Lasting well-being: Key Questions

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Do communities and individuals have the resilience to adapt to project changes?

Will the project support health and well-being, as defined by communities?

Will communities be able to achieve their goals?

Will the project support sustainable development in the region?

What will be the long-term effects on cultural well-being?

What is the overall effect on lasting well-being?

General Terms of Reference requirements

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- Use of material from the PPML's EA Initiation Package
- Purpose and need for the project
- Alternative means of carrying out the project
- Effects of the environment on the project
- Accidents and malfunctions
- Follow-up and monitoring plans
- Appendix A: Guidance documents
- Appendix B: Assessment methodology

Next steps

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1. Parties
   - 1 month review time to submit recommendations using NEW ORS
2. Pine Point Mining Ltd.
   - 2 weeks to respond to party recommendations
3. Review Board
   - possible show and tell workshops with other parties
   - review/incorporate recommendations and responses
   - issue final Terms of Reference and draft workplan
   - host topic-specific workshops if requested or required