



Nahanni National Park Reserve
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September 30 2016

Mackenzie Valley Environmental Impact Review Board
4910 50th avenue, 2nd Floor
P.O. Box 2130
Yellowknife, NT
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**Re: Proposed Prairie Creek All Season Access Road Environmental Assessment
(EA1415-01) Baseline Information Gaps**

Dear Mr. Cliffe- Phillips:

Parks Canada would like to identify to the Mackenzie Valley Environmental Impact Review Board (the Board) that there are specific baseline information requirements within the Prairie Creek All Season Road Environmental Assessment (EA1415-01) that have not been met and which are necessary to allow full examination of the potential for significant adverse effects. With regards to specific wildlife species and vegetation within Nahanni National Park Reserve (NNPR), the following letter outlines the current baseline information that has been provided within this EA process and Parks Canada's analysis of the resulting gaps. Based on this analysis, Parks Canada has outlined the remaining baseline work that the proponent will need to provide to allow for a full analysis of significant adverse impacts.

Under the *Canada National Parks Act*, Parks Canada is responsible on behalf of the people of Canada for the protection and presentation of nationally significant examples of Canada's natural and cultural heritage and to foster public understanding, appreciation and enjoyment in ways that ensure their ecological and commemorative integrity for present and future generations. The *Canada National Parks Act* states that "maintenance or restoration of ecological integrity, through the protection of natural resources and natural processes, shall be the first priority of the Minister when considering all aspects of the management of parks". According to the *Canada National Parks Act*, "ecological integrity" means, with respect to a park, a condition that is determined to be characteristic of its natural region and likely to persist, including abiotic components and the composition and abundance of native species and biological communities, rates of change and supporting processes. In other words, Parks Canada is tasked with maintaining all of the naturally occurring species and communities, and the processes that sustain them.

Nahanni National Park Reserve of Canada was established in 1976, and at that time consisted of an area of 4,766 square kilometers. In 2009, NNPR was expanded to an area of approximately 30 000 square kilometers, making it the third largest national

park in Canada. The expansion occurred to protect a significant portion of the South Nahanni River Watershed, the unique features of the Ram plateau, and the globally unique North Nahanni Karst.

Nahanni National Park Reserve of Canada exists within the Dehcho, a traditional homeland of the Dene for centuries. The tradition of Indigenous use continues to this day in NNPR and is provided for under the *Canada National Parks Act*, Section 40. The lands that are now NNPR have benefited from the past, and ongoing, stewardship of the local First Nations. The Dehcho First Nations and the Government of Canada are negotiating self-governance, land use planning and resource management issues through the Dehcho Process. As part of this process, Dehcho First Nations and Parks Canada created the Naha Dehé Consensus Team comprised of representatives from both organizations. This team allows the Dehcho First Nations and Parks Canada to work together cooperatively on park management issues.

The following are a few of the objectives identified in the Nahanni National Park Reserve of Canada Naha Dehé Management Plan¹ which are relevant to this EA process:

The high level of biodiversity in Naha Dehé² is retained, including naturally occurring plant and animal species. Unique and sensitive landscape features are protected. A specific target for this objective is that species composition and distribution remains representative of the Mackenzie Mountains Natural Region.

Natural ecological processes remain the primary forces shaping the ecosystem. The cultural heritage and values of Naha Dehé are protected and management respects traditional users and interests.

The waters of Naha Dehé are high quality and unimpaired by activities inside and outside park boundaries.

In addition to the Parks Canada specific legal authorities and policies, Parks Canada is a competent Minister under the *Species at Risk Act* and therefore shares the federal responsibility to manage and protect species at risk under this Act. Section 79 (2) of the SARA requires the identification of adverse effects of the project on the listed wildlife species and its critical habitat and, if the project is carried out, must ensure that measures are taken to avoid or lessen those effects and to monitor them.

Wildlife

Forest Birds, Waterfowl, Migratory Birds and Avian Species at Risk

The Terms of Reference for EA 1415-01 Section 3.2.3 point 3 lists impacts to Nahanni National Park Reserve as a key line of inquiry, Section 5.1.4 Species at Risk (including birds) and Section 5.1.6 Wildlife and Wildlife Habitat (including birds) requires the

¹ Parks Canada. 2010. *Nahanni National Park Reserve of Canada Naha Dehé Management Plan*.

² Naha Dehé is the Dene name for Nahanni National Park Reserve and the South Nahanni watershed as a whole

proponent to provide a description of wildlife species presence, distribution and abundance, habitat types including local and regional distribution and abundance, habitat or sites of special value or sensitivity, including species use and timing, and use of the project area by resident and migratory birds, in addition to other information.

The Developer's Assessment Report (DAR) and DAR addendum provide components of wildlife baseline data collected in a few different studies, including Beak (1981, 1982), Rescan (1994), Chilbourne (2007) and EBA (2009). Our reviews of the documents have identified several major data deficiencies. In brief summary:

- Wildlife studies done by Beak in 1981-82 did not include bird surveys.
- The bird study reported by Rescan (1994) was limited to aerial surveys of wetland to locate waterfowl and shorebirds as well as surveys to locate raptors near the winter road alignment. These studies did not include systematic surveys of song birds, the vast majority of which are migratory birds.
- The wildlife survey reported by Chilbourne (2007) completed in late winter, represented an exceedingly limited sampling effort (i.e., only one day) and focussed primarily on detecting ungulates and furbearers. The timing of the survey to winter precluded the collection of any meaningful data on bird species, including migratory birds.
- The EBA (2009) surveys comprised two days of field work on the road, to look for rare plants and record incidental wildlife observations. It was not systematic in terms of surveying birds, and occurred in July, outside of the breeding season survey window.
- In July 2016, TetraTech EBA completed some additional vegetation and wildlife surveys along the proposed road alignment. This work was not structured to assess migratory birds, and was outside the breeding season window.

Taken together, it is Parks Canada view that the current baseline data does not adequately address the requirements of the TOR. The DAR, DAR Addendum and response to Information Requests have not included baseline information to confirm which bird species are present, estimated population size or the use of habitats within the project area.

Canadian Zinc Corporation (CanZinc) has identified some of the bird species that may be present in the project area, and stipulates that the limited footprint of the All Season Road beyond the approved winter road alignment (EA0809-02) is approximately 45 Ha (DAR Addendum Appendix E, page 163), which they indicate will limit negative impacts to birds because of the relatively small footprint. Parks Canada notes that the baseline data provided for the winter road alignment does not meet the requirements of the TOR for the current proposed all season road EA. The baseline work must cover the entire proposed all season road alignment (not just the realignments) and include the required seasonal surveys for forest birds, waterfowl, migratory birds and avian Species at Risk.

Potential impacts and mitigations

Without an accurate and thorough description of baseline conditions within the geographic scope of the propose all-season road as outlined in the TOR, it is impossible to assess potential environmental impacts of the proposed development. Potential

significant impacts to wildlife could result from both direct and indirect impacts, for example:

- clearing the right of way and borrow pits causing direct loss of habitat and fragmentation
- construction, blasting, and traffic noise impacts on mating and breeding success
- potential for direct mortality
- alteration of habitat increasing edge effects, including predation and brood parasitism
- habitat change altering species composition from forest interior to edge species
- soil compaction and water diversion impacting natural drainage and habitat effectiveness in wetland areas
- dust impacts on bird habitat and food sources

It is a concern that direct habitat loss, or loss of habitat effectiveness, could have a significant impact on local populations of native species, or composition of biological communities, in the project area.

The developer has proposed mitigations to reduce potential impacts to birds which include:

- Limiting the project footprint,
- avoiding wetland areas to the extent possible,
- maintaining natural drainage patterns,
- avoiding water removal from ponds where Trumpeter Swans are nesting,
- avoiding clearing and construction activities within 1.5 km of known raptor nests,
- requiring aircraft operation to maintain a minimum 600m AGL except for takeoff and landing and 650 m away from active raptor nests,
- avoiding known Olive-sided Flycatcher nests and Common Nighthawk nests by 300 m and 250 m respectively,
- dust suppression,
- fire prevention and response training for staff,
- low traffic volumes,
- low speed limits

Parks Canada supports the implementation of these mitigation measures however, additional specific mitigations to reduce the significance of impacts on individual species may be required depending on the lifecycle and sensitivity of species. For example, the time to fledging may vary between species which would alter timing windows for specific sections of the road depending on where particular species are present.

Baseline Request

Parks Canada is requesting the collection of baseline data as outlined in the Terms of Reference (Sections 3.2.3, 5.1.4 and 5.1.6), for the following:

1. Species presence, distribution, relative abundance, use of the project area by species, and use of habitat in the project area for forest bird communities, waterfowl, migratory birds and avian species at risk (Population characteristics and habitat use of the project area by forest bird communities, waterfowl, migratory birds and avian species at risk)

- We define population characteristics as including species presence, distribution and relative abundance
- We define habitat use as including use of habitats for foraging, reproduction and rearing of offspring and that includes seasonality in their use.
- Data describing population characteristics and habitat use can be collected, simultaneously, through the use of automatic recording units, which can be deployed in the field and later retrieved, then transcribed and analyzed.
- Survey methodology must include the appropriate spatial distribution and seasonal timing for adequate representation of species along the entire proposed all season road alignment (not just the realignments).
- Survey methods and overall sampling design must be developed in consultation with both Parks Canada and Environment and Climate Change Canada.

2. Species presence, distribution, relative abundance, and use of the project area by Collared Pika

- Survey methodology must use recognized and standard methods
- Survey methods and overall sampling design must be developed in consultation with Parks Canada

Collared Pika

The Collared Pika is a species listed as Special Concern by the Committee On the Status of Endangered Wildlife in Canada (COSEWIC), with known occurrence in the project area. The assessment of Collared Pika in the DAR was considered inadequate, as there was no field survey work done on the species. Previous mine access road studies made no reference to the species, yet there were multiple incidental reports in 2012, indicating that previous assessments did not suitably determine occurrence of the species.

Field work was initiated in July 2016, but was limited to seven borrow sites, and pika were detected at 4 / 7 sites visited. The report states (p. 15) that "Suitable talus habitat was not observed near the proposed all-season road and borrows from KP 0 – 16"; however, there are documented records of pika in this area (approx. km 14 & 15). No survey work was completed on the new proposed re-alignment portion from approx. KP 24 – KP 29, which is steep mountainous terrain, and may contain pika habitat. This suggests that the species may have a much greater occurrence along the proposed road than indicated in the submitted information.

Potential impacts and mitigations

Without an accurate and thorough description of baseline conditions within the geographic scope of the proposed all-season road as outlined in the TOR, it is impossible to assess potential environmental impacts of the proposed development. Potential significant impacts to Collared Pika, could result from both direct and indirect impacts, for example:

- clearing the right of way (esp. KP 24 – 29) and borrow pits causing direct loss of habitat and fragmentation
- construction, blasting, and traffic noise impacts on mating and breeding success
- snow plowing and other maintenance activities affecting habitat

- potential for direct mortality
- alteration of habitat increasing edge effects, including predation and brood parasitism
- introduction of invasive species to the alpine environment
- dust impacts on pika habitat and food sources

The developer has proposed mitigations to reduce potential impacts to wildlife which include:

- dust suppression,
- low traffic volumes,
- low speed limits

Parks Canada supports the implementation of these mitigation measures, as they may help to reduce impacts to Collared Pika, however, additional specific mitigations to reduce the significance of impacts may be required depending on the lifecycle and distribution of the species.

Baseline Request

Parks Canada recommends that the entire road alignment and proposed borrow sources from approx. KP 12 – 39 be surveyed to determine species presence, distribution and relative abundance of Collared Pika.

Vegetation

The Developer's Assessment Report (DAR) and addendum to the DAR provides components of baseline vegetation data collected in three separate studies of: Beak Consultants (1981), EBA (2009), and EBA (2011). Additional baseline data is contained in a fourth study completed in July 2016 by Tetra Tech EBA.

On July 7, 2016, Allison Stoddart, on behalf of Parks Canada, emailed key representatives of Canadian Zinc to clarify Parks Canada's expectations with respect to meeting the TOR and ensuring an appropriate level of baseline information when determining potential impacts of the proposed all season road (attached).

The Terms of Reference for vegetation baseline requires the following components:

“Provide a description of the existing vegetation within the study area, including the following points:

- Point 1. Vegetation and vegetation assemblages
- Point 2. Classification system followed, as appropriate
- Point 3. Identification of species or assemblages that are rare, valued, protected or designated (e.g., vulnerable, threatened, endangered)
- Point 4. Location and abundance of rare plants”

In consideration of all baseline data collected to date, the baseline data does not adequately address points 3-4 from Section 5.1.7 in the TOR. Further, there are uncertainties related to data quality and comparability among studies. A complete

synthesis (i.e. the net results, discussion, conclusions, and impact assessment taking all studies into account) of all baseline vegetation data by the proponent may help to demonstrate how the TOR have been met.

Parks Canada's review of the baseline data provided concludes that the following key issues and data gaps remain:

- no assessment of rare plant and assemblage potential was used to target areas of higher potential
- rare plant surveys were limited in their geographic scope (there are significant portions of the proposed all-season footprint that have not been surveyed, including realignments from the winter road alignment and camps)
- Rare plant surveys were not repeated within or between growing seasons to achieve optimal levels of detection, using best practices for vegetation and rare plant surveys (ex. Alberta Native Plant Council. 2012. Guidelines for Rare Vascular Plant Surveys in Alberta, available on-line at <http://www.anpc.ab.ca/content/resources.php>)
- Rare and valued (locally significant) assemblages have not been adequately identified or described through desktop and field assessments
- no adequate explanation of how past surveys along the winter road alignment for EA0809-002 contribute to the baseline data for this EA (new footprint for direct impacts, plus indirect impacts from year round timing of construction and traffic).
- No synthesis of the four baseline studies the resulting impact assessment has been provided

Discussion of Points 3 and 4 from the TOR

Components of field surveys conducted by EBA (2009, 2011) and Tetra Tech EBA (2016) address aspects of the TOR. The 2009 study represented three person days of surveys for rare plants directly on or adjacent to the winter road alignment. A short span of the alignment (approximately KP 17-27) is reported to have been intensively surveyed by ATV, with 5 additional survey sites on the remainder of the alignment. No rationale is provided for the selection of these sites. Consequently, the ability to extrapolate from the study to other areas of the road are compromised. The 2011 report describes a survey in 2010 for rare plants and communities restricted to the Polje Bypass realignment (approximately 9 km), which identified a post-fire jack pine regeneration stand. This area represents only ~10 % of the entire length of the road within NNPR.

Additional information was provided by studies completed by Tetra Tech EBA (2016) on a) rare plants and b) rare assemblages.

- a) Rare plant transects were completed in conjunction with detailed plots at proposed borrow pits and at several other locations. Survey methods indicate that rare plant transects were also completed at unusual features (substrates and vegetation patterns), with a focus on three priority areas (alluvial, wetlands, subalpine/alpine). A meander transect was walked at each survey location.

The report provides limited detail on the rationale for rare plant survey locations, and the survey methodology. There is little discussion of how the sampling locations contribute to adequate coverage of representative and high priority (sensitive, rare, microhabitats) areas. In general, the rare plant transects appear to be located at proposed borrow pit locations. Some meander transects were located outside of borrow pit locations, but there is no description of why this location was selected for survey. Unusual features were said to be targeted for surveys, however there is no description of the unusual features identified and surveyed. If wetland, alluvial and subalpine/alpine ecotypes were considered unusual features, survey effort was very limited i.e. 1 plot each for wetland and alluvial, several for subalpine/alpine. In terms of survey methodology, limited detail is provided on the meander transect methodology. For example, the methods do not detail survey effort, strategy for meander transects (portion of the right of way covered by the transect) or survey limitations (detectability, timing of survey taking plant phenology into account).

- b) The report presents a list of less common vegetation classes (alluvial, wetland, subalpine/alpine) that are to be considered rare assemblages. Limited surveys of these classes were completed. The assessment of rare assemblages concludes that they have limited footprint in study area and are avoided by the project footprint.

In the Northwest Territories, there is no tracking or watch list for rare plant communities. In this situation, it is incumbent on the proponent to adequately survey the study area to identify and describe locally rare communities. Adequate surveys require a desktop or pre-survey assessment to identify the composition and potential locations of rare and valued assemblages, so that appropriate and high priority areas can be targeted for survey. The survey effort and results are not consistent with this level of detail. Best practices for surveys (Allen 2011) were not used or referenced.

Potential impacts and mitigations

Without an accurate and thorough description of baseline conditions within the geographic scope of the proposed all-season road as outlined in the Terms of Reference, it is difficult to assess potential environmental impacts of the proposed development.

The lack of an overarching methodology for describing current baseline conditions makes it difficult to gauge the quality of the existing data. Further, the individual study methods described to date do not indicate that surveys have been structured to get appropriate spatial coverage and representative sampling of the study area, including appropriate coverage of rare and sensitive areas.

Potential significant impacts to plant communities could result from direct impacts (e.g., clearing of vegetation for the project footprint of road, borrows, camps) and indirect impacts (e.g., changes to drainage patterns [surface and groundwater], permafrost degradation, erosion, introduction and establishment of invasive species in disturbed areas, and dust deposition). Net impacts to vegetation could result in potential significant impacts on wildlife through changes to the quality of their habitat.

Project components causing impacts to vegetation include clearing of the project footprint, construction of roadbed and associated infrastructure, road traffic and accidental spills, and reclamation activities. These project components span the construction, operations, closure and post-closure phases of the project. An increased prevalence of landslides mediated by the construction and maintenance of the road could also negatively affect plant populations.

Interaction of project components directly with vegetation, as well as other biotic and abiotic components of the ecosystem can initiate ecological feedbacks that further impact vegetation (e.g., ecosystem impacts associated with permafrost thaw).

With regards to mitigation of impacts to vegetation, CanZinc has indicated that the proposed all-season road alignment “is designed to avoid sensitive habitat features such as wetlands and karst formations where rare plants have a higher potential for occurrence” (Tetra Tech response to Parks Canada IR 45). However, given the gaps in baseline data and the higher potential for rare species and assemblages in rare terrain types (e.g., Karst, glacial refugia) it is difficult to accurately assess potential impacts, and thus difficult to determine if proposed mitigations would effectively limit impacts. If potential significant impacts to vegetation were identified after review of complete baseline data, potential mitigations that may be proposed could include re-routing to accommodate setbacks from rare, valued or sensitive species or communities.

Baseline Request

Parks Canada requests baseline vegetation surveys within NNPR to accurately describe vegetation within the proposed project area including the presence and characteristics of rare plants and assemblages. Our request addresses the need to conduct fine-scale field assessments in representative habitats and high priority areas for rare, valued and protected plants and assemblages. High priority areas include those deemed to be highly sensitive to disturbance, those that support uncommon plant communities or habitats, and small-scale features and microhabitats (Alberta Native Plant Council 2012).

Rare and valued assemblages include locally significant ecological communities. Locally significant ecological communities are, for example, communities at the edge of their known distribution, an extension of the known range of a specific community, mature or old growth forests or communities that are rare or uncommon in the local context (Allen 2011). Locally significant ecological communities contribute to local biodiversity even though they may not be ranked or designated as rare in the Northwest Territories. Locally significant ecological communities may be in the form of small-patch communities (Allen 2011). Small patch communities are usually associated with specific, specialized habitats within small, discrete areas, and may add significantly to the biodiversity of a site (Allen 2011).

Specifically, Parks Canada is requesting baseline data on vegetation as outlined in the Terms of Reference (Sections 5.1.7, 7.3.9), in the following format:

- 1) A desktop or pre-survey assessment of rare plant and rare community potential across the study area to inform a comprehensive rare plant assessment. This assessment would take the following information into consideration; the ground-

truthed vegetation classification (Tetra Tech EBA 2016), tracking and watch lists of designated species (GNWT, COSEWIC, SARA), relevant literature on the habitat of rare and designated species, information on rare and uncommon terrain features in the project area from analysis of remotely sensed images (ex. air photos, SPOT, etc.) and other information sources (ex. Parks Canada and other reports on karst, unglaciated terrain, permafrost, etc.).

These sources of information would be used to assess the presence of rare plant species and rare assemblages that could potentially occur along the project alignment (TOR Section 5.1.7, bullets 3 and 4), and would be used to identify high priority areas for field surveys. This desktop assessment should describe any rare plants or plant assemblages that may occur along the route including areas of high potential i.e. sensitive areas (wetlands, alluvial, permafrost), glacial refugia, unusual landforms (karst) or unusual substrates. Where there are no assemblages listed or designated, the proponent is required to evaluate plants and assemblages that may occur in the study area by ecotype, and generate a list of potential rare or valued (locally significant) assemblages.

- 2) Survey data to describe areas of high rare plant potential and high rare vegetation assemblage potential (TOR Section 5.1.7, bullets 3 and 4).

For the assessment of rare species and vegetation communities, we request that assessment methodologies are consistent with best practices outlined by Alberta Native Plant Council (2012) and for rare ecological communities by Allen (2011).

Note that survey methodology must include an appropriate spatial distribution and replication of sample sites to be an adequate representation of ecosystems along the proposed alignment. Survey methods and overall sampling design must be developed in consultation with Parks Canada.

A list of the documents referenced in this letter is provided as an attachment.

Parks Canada looks forward to continued participation in the environmental review of this project. If you should have any questions please feel free to contact Allison Stoddart at (819) 420-9188 or allison.stoddart@pc.gc.ca.

Sincerely,



Jonathon Tsetso
Superintendent, Nahanni National Park Reserve

Cc David Harpley, Alan Taylor, Adrian Paradis, J.F. Dufour

Attachments: References, July 7 Email to CanZinc

References

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