



Athabasca Denesuline Né Né Land Corporation

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15 June, 2023

Nunavut Impact Review Board
via email: info@nirb.ca

RE: ADNLC Technical Review Comments 12MN036 Back River Project Energy Centre

Introduction

The Athabasca Denesuline NéNé Land Corporation (ADNLC) represents the three Denesuline First Nations of Fond du Lac, Black Lake, and Hatchet Lake. Our communities are located in northern Saskatchewan, and our lands, called Nuhenéné in our language, extend into what is today Northwest Territories and Nunavut. Caribou are the cornerstone of our culture, and the life-blood of our people. We have lived in relationship with two of the herds potentially impacted by this Project, the Bathurst and the Beverly herds, since time immemorial. The Athabasca Denesuline have thousands of years of experience and observations of living together with these herds, with their fall and wintering habitats overlapping with our homelands. Any activities on the land throughout their annual range that may result in an impact to these herds, have the potential to have an impact on our people, our culture, way of life and rights.

We are involved in this review as potentially impacted parties, due to the potential impacts to our way of life, our food sovereignty, culture, and Section 35 rights. As caribou people, our communities have Traditional Knowledge, experiences, and observation to share regarding the caribou. Athabasca Denesuline communities have already begun to experience the impacts of the declining herds. The Bathurst, which have most recently been assessed by the Government of Northwest Territories as at “Critically Low Status” (Bathurst Caribou Management Plan 2021) have undergone a decline of nearly 98% since 1986. The Bathurst Caribou used to come right into our communities and lands in the winters and now due to the severe population decline, we

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no longer see them. The Beverly Herd has also seen steep declines and range contraction as a result, and we see them less than we used to and have to travel further to harvest. The Beverly and Qamanirjuaq Caribou Management Board (BQCMB) has assessed the Beverly Caribou herd as highly vulnerable and states that more needs to be done to address the pressures it is facing (BQCMB 2018). Any potential negative impact to these herds is significant to our communities and significant to already struggling populations.

Our review of this project focused on the potential impacts to caribou. The primary concerns about the proposed project are the potential for disruption to caribou movement and associated population health impacts, and loss of functional habitat due to the addition of wind turbines and associated roads and transmission lines. Due to the high level of uncertainty about how wind turbines affect barren-ground caribou, and our knowledge that caribou are highly sensitive to new disturbances on the landscape and to sensory disturbances, we believe a high level of caution is needed. Many of our specific concerns are addressed through the proposed monitoring, mitigation, and adaptation activities described in the Back River Project Wildlife Mitigation and Monitoring Program Plan (Version 12) and the 2023 FEIS Addendum. In addition, that Inuit Qaujimaningit and Traditional and local knowledge did not identify critical caribou habitats such as crossing locations, key movement corridors, or camps identified within the proposed development area, and that local communities appear to be largely supportive of the project, were important to our review of the project.

We have two specific comments which are outlined below.

Specific comments

Review Comment Number	AD-TC-01
Subject/Topic	Wind Turbine Mitigation and Monitoring for Sensory Disturbance
References to the FEIS Addendum (i.e. volume/document, section/sub-section, page number, etc.)	WMMPP Version 12 Section 7.1.11.2 Mitigation, Management, and Monitoring for Sensory Disturbance 2023 FEIS Addendum Section 2.1.1 Noise and Vibration Effects 2023 FEIS Addendum Section 2.3.2 Caribou
Summary (include Proponent's conclusion if relevant and conclusions of commenting party)	In the WMMPP, the following thresholds to trigger management actions associated with noise from wind turbines are described: <ul style="list-style-type: none"> - <i>During the calving, post-calving and early summer seasons (June 5 to July 31), if large groups of caribou (more than 250) are observed by wildlife monitors within 1 km of the activity, then the wind turbines will be stopped until caribou move through the area.</i> - <i>During the calving, post-calving and early summer seasons (June 5</i>

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	<p><i>to July 31), if groups of caribou (25 or more) are observed within 1.4 km of the activity, then caribou behaviour will be monitored, as per Section 7.2.2.2. If caribou exhibit disturbance behaviours, the wind turbines may be stopped for one day, or until the caribou move through the area. The distance of 1.4 km was chosen because it is larger than the distance at which noise of 40 dBA is emitted from the wind turbines (1 km).</i></p> <ul style="list-style-type: none"> - <i>During all seasons, if groups of caribou (25 or more) are observed within 500 m of the wind turbines, then they will be stopped until caribou move through the area.</i> <p>We question whether these thresholds and triggers are sufficient, and recommend that a larger distance be implemented, and smaller group sizes to trigger action. We welcome the proposed studies to determine appropriate Zones of Influence (WMMPP 7.2.2.4) and to determine group size for triggering management action (WMMPP 7.2.1.11) but in the interim suggest a lower numbers of 25 or more caribou within 4km of the wind turbines, that they be shut down.</p> <p>The above conclusions of 500m, 1km, and 1.4km trigger thresholds by the proponent do not consider:</p> <ol style="list-style-type: none"> 1. That low frequency noise may cause annoyance/stress/disturbance in caribou at lower levels than 40dBA, and that wind turbine sound can travel greater distances depending on topography, weather, time of day, and climate. While there is a great lack of information regarding how the noise of wind turbines might impact caribou, a recent study by Perra et al. (2022), showed that semi-domesticated reindeer in a laboratory setting responded to sounds at least as low as 30hz (limited by equipment that couldn't go lower) at 30dB SPL. Caribou might be more sensitive to lower frequency sounds of wind turbines at a greater distance than detected when using a human-scale and therefore a more cautious approach is warranted 2. That caribou have different visual ranges than humans (Tyler et al 2016) and perceive the landscape differently than humans and therefore our understanding of caribou response to shadow flicker and the visual presence of wind turbines cannot be based on human perception. This unknown calls for greater caution.
Importance of issue to impact assessment	<p>Without the information available about how wind turbine noise and visual disturbance might impact caribou and at what distance, and with the knowledge that caribou are sensitive to changes on the landscape, more conservative trigger thresholds should be utilized until more information can be gathered.</p> <p>Further, the estimated Zone of Influence of 4km may not be adequate given</p>

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	that the wind turbines are likely visible well beyond that distance (In the 2023 FEIS addendum, the artists rendition of the wind turbines shows they are clearly visible at a distance of 5.5km) and caribou avoidance of wind turbines due to view-scape is uncertain. We note that there is a proposed study to determine the appropriate Zones of Influence and caribou avoidance using collar data and we agree that such studies are needed as an important part of ongoing monitoring and adaptive management.
Recommendation/Request	<ol style="list-style-type: none"> 1. We recommend that the distances to trigger mitigation actions, specifically, shutting down the turbines, to be increased to the distance of 4km and that ongoing monitoring determines if that distance needs to be changed. 2. We also have questions about the group sizes selected to trigger each phase of mitigation action (250 caribou, 25 caribou) and would recommend a smaller number (25) be utilized rather 250, recognizing that there is a proposed study in the WMMPP to address this question. 3. We recommend that a caribou-specific study be developed to better understand how the selected wind turbine sensory disturbances impact caribou, and at what distances.

Review Comment Number	AD-TC-02
Subject/Topic	Stress Hormone Study
References to the FEIS Addendum (i.e. volume/document, section/sub-section, page number, etc.)	WMMPP 7.2.2.3 Stress Hormone Study
Summary (include Proponent's conclusion if relevant and conclusions of commenting party)	<p>Within the WMMPP Version 12, a proposed stress hormone study is described. The objectives of this study are stated to be:</p> <p><i>Objective: The objective of the stress hormone study is to test the FEIS and EC Addendum prediction that caribou may be disturbed by activities near the Project site. This program will determine what physiological responses caribou have to the Project site.</i></p> <p><i>The stress hormone study will occur once during operations of the Project when there are caribou on or near the Project site. If possible, this study will occur in the first two years of operations.</i></p>
Summary (include Proponent's conclusion)	We are very supportive of a study to measure stress in caribou as a response to the proposed project activities. One question we have is why the study

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if relevant and conclusions of commenting party	<p>will only be carried out once early in the operations.</p> <p>Factors influencing whether and how caribou experience stress as a result of a project may differ depending on the year and conditions. Conducting this study throughout the life of the operations, either continuously or at intervals, would provide much more accurate information about how the project may be impacting stress levels.</p>
Importance of issue to impact assessment	More accurate information can be gathered by conducting the study throughout the life of the project. Conclusions that can be drawn from a one-time study are limited.
Recommendation/Request	<ol style="list-style-type: none"> 1. How was the determination made to conduct the Stress Hormone Study for one year only? 2. We recommend considering extending the project for the duration of the project.

Conclusions and Summary of Concerns

In our review we focused on the Project's potential impacts to caribou. Our review was informed by the fact that local knowledge, IQ and TK were incorporated into the analysis of the project, and specifically, the data that demonstrated key caribou movement corridors and crossings, highly sensitive habitat such as calving and post-calving grounds, and cultural gathering locations were not identified within the project site. The Wildlife Mitigation and Monitoring Program Plan Version 12 includes a number of studies that we believe will be important in addressing the uncertainty associated with the installation of a medium-sized wind turbine facility within the ranges of the barren-ground caribou herds. Ongoing research, monitoring, evaluation, and good communication will be critical as there is little concrete evidence available to understand how the installation of wind turbines will impact caribou.

We have outstanding concerns that the proposed distance and group size thresholds for triggering mitigation actions (shutting down the wind turbines) are not adequate and do not take into consideration the uncertainties of how caribou may perceive these disturbances on the landscape and recommend that those be reconsidered.

Sincerely,



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