

**GNWT Response to:  
WRRB IR#4**

**Topic**

Barren-ground Caribou – Temporal Boundaries

**Comment**

The ASR (sec 4.1.3.2) describes a 2-4 year construction phase and an operation phase anticipated to be indefinite. However, the implications for monitoring and adaptive mitigation of an indefinite operational phase are not discussed. No information is supplied on how, and if, definite operational phases are considered in other environmental assessments for roads. For example, there is no commentary regarding the advantages of periodic appraisals triggered by thresholds (such as a doubling in traffic frequency), or the attributes of the VCs (such as generation times as used by COSEWIC) that could be applied to sub-divide an indefinite operational phase into shorter time periods.

**Recommendation**

Please summarize in tabular form precedents set in previous environmental assessments for roads and how indefinite operational phases have been treated, for example how an indefinite period may be sub-divided into shorter operational phases.

**GNWT Response**

The Tłıcho All-Season Road (TASR) will be a public road. Precedents set in environmental assessments (EAs) for other NWT public roads include the Inuvik to Tuktoyaktuk Highway (ITH). Similar to the ASR, the ITH Environmental Impact Statement considered ITH operation indefinite (HTITGNWT 2011). Roads for private enterprises have also been assessed in the NWT (e.g., Dominion Diamond 2014), but roads of private enterprises are operationally definite, which makes them distinct from a public road that will be managed by the GNWT as part of a much broader network of public roads. Ongoing natural resource monitoring and management is governed by existing legislation in the NWT (such as the *Wildlife Act*, the *Forestry Act* and legislation that may be enacted under the Tłıcho Agreement) and can be applied to mitigate potential or realized impacts.

Adaptive mitigation will occur according to established management actions by government agencies for specific wildlife or environmental issues with respect to public infrastructure. This would include periodic appraisals and adjustments based on the results of ongoing monitoring for the TASR. Examples of current adaptive mitigation on NWT roads include barren-ground caribou harvest restrictions in the North Slave region and restrictions on bison harvest adjacent to Highway 3 and

throughout the Mackenzie Bison Sanctuary in response to population monitoring of caribou and bison. Specified firewood harvesting areas have also been defined adjacent to Highway 3. Moreover, as part of the EA process, WRRB will have the opportunity to provide input into the updated Wildlife Management and Monitoring Plan, which will cover the operation phase of the TASR and will include information about the timing of periodic appraisals.

**References**

Dominion Diamond (Dominion Diamond Ekati Corporation). 2014. Jay Project Developer's Assessment Report.

HTITGNWT (Hamlet of Tuktoyaktuk, Town of Inuvik, Government of the Northwest Territories). 2011. Environmental Impact Statement for the Construction of the Inuvik to Tuktoyaktuk Highway. Prepared by Kiggiak-EBA, Inuvik, NWT.

**GNWT Response to:  
WRRB IR#5**

**Topic**

Caribou (boreal and barren-ground) – Access re: increased potential for harvest

**Comment**

The ASR mentions that impacts to caribou from the TASR may include increased harvest pressure, as well as possible changes in behavior in response to hunting, which can amplify or modify responses to all traffic. However, there is a lack of detailed quantitative data to establish baseline levels for harvest, making assessment of the potential impacts of access more difficult. Use of additional available data could increase the prediction of impacts from increased access. In addition to information provided in the Tłıchǵ Government Traditional Knowledge study (PR#28), data on the harvest of barren-ground caribou are available in the form of harvest summaries from recent years (e.g. see: [http://wrrb.ca/sites/default/files/2013-2014%20BGC%20Harvest%20Summary%20Report%20%20FINAL Oct15 2015.pdf](http://wrrb.ca/sites/default/files/2013-2014%20BGC%20Harvest%20Summary%20Report%20%20FINAL%20Oct15%202015.pdf)), and from the 1987-93 Dogrib harvest study. For boreal caribou, there are modelling approaches which could be combined with traditional knowledge of harvest sites to assess the likely encounter rates of boreal caribou with the TASR corridor and to improve the predicted vulnerability to harvest. For example, the estimated density of 0.17 to 3.44 boreal caribou/100 km<sup>2</sup> (Hillis and Cluff 2005) provided in the ASR (sec 4.4.2.1) can be extrapolated to encounter rates and vulnerability to harvesting and compared to known harvest sites.

**Recommendation**

Compile and collate existing caribou harvest data (boreal and barren-ground) to establish baseline levels and provide a commentary of its spatial and temporal applicability to the TASR corridor.

**GNWT Response**

The approach used in the Adequacy Statement Response (ASR, [PR#110](#)) was to qualitatively assess boreal and barren-ground caribou harvest based on information about baseline human use provided in the PDR ([PR#7](#)) and the spatial distribution of caribou and harvest provided in the Traditional Knowledge Study Report ([PR#28](#)). This approach was appropriate given uncertainty about the number and location of caribou harvested under existing conditions, including limited spatial specificity with respect to the Project in the harvest data identified by Wek'èezhì Renewable Resource Board (WRRB) in the IR. These uncertainties are discussed for boreal and barren-ground caribou in the following sections.

### **Boreal caribou harvest**

Harvest records are limited to hunter survey records completed by resident hunters and do not account for Aboriginal harvest. The geographic details of areas hunted or where caribou were harvested are highly variable, ranging from nearby lake names to Administrative zone, if provided. Woodland caribou (boreal ecotype) resident harvest survey data indicate that between 2001-2015 there were nine instances of boreal caribou harvested in the R management zone, which overlaps the Wek'èezhì region. In 14 out of 15 years, at least one or more hunters reported hunting along the Old Lac La Martre Winter road, but there was only one reported successful harvest of boreal caribou in this area. The Traditional Knowledge Study Report ([PR#28](#)) provides information about the distribution of boreal caribou harvest, but not the number or year. Thus, there is a high degree of uncertainty about quantities of boreal caribou harvested or hunting effort specific to the area around the Tłıchǫ All-Season Road Project during the Base Case.

### **Barren-ground caribou harvest**

The Revised Joint Proposal on Caribou Management Actions in Wek'èezhì ([http://wrrb.ca/sites/default/files/2013-2014%20BGC%20Harvest%20Summary%20Report%20%20FINAL Oct15 2015.pdf](http://wrrb.ca/sites/default/files/2013-2014%20BGC%20Harvest%20Summary%20Report%20%20FINAL%20Oct15%202015.pdf)) indicates that Aboriginal harvest of barren-ground caribou in management zones R/BC/01 and R/BC/02 occurred during winters 2012 to 2014, but these management areas do not overlap with the ASR barren-ground caribou study area. Harvest of Bathurst caribou for winter 2012, 2013 and 2014 included 135, 166 and 167 animals (bulls, cows and calves combined), respectively, in zone R/BC/02. Harvest of Bluenose east caribou in these same winters was 1,316, 1,492 and 1,474, respectively, in zone R/BC/01. A harvest distribution map included in this report indicates that no barren-ground caribou were harvested in the ASR barren-ground caribou regional study area in winter 2014.

The Dogrib Harvest Study was a collaboration between the Government of the Northwest Territories and the Dogrib Treaty Council, which collected wildlife harvest data from 1987 to 1993 for the Rae Lakes, Snare Lake, Rae-Edzo and Lac La Martre areas. The publically available report does not include the wildlife harvest information because this is proprietary property of the Tłıchǫ Government and WRRB. Although area-specific harvest rates were not provided in the report, the report states that *“Location data was not consistently collected throughout the course of the study. In the early years of the study some locations for some of the communities were assigned coordinates. The tendency in assigning locations was to go with lake names or community vicinity for the smaller communities and to use coordinates for Rae-Edzo harvests until 1992 when Rae-Edzo began to follow the style of the other communities. It appears that in late 1989 a decision was made to not continue input of the location data to the harvesting database.”* Whether or not harvest took place

in the vicinity of the Project is unknown but the report suggests that harvest locations may not be specific enough to provide baseline estimates for the Project. Although harvest data from this study were not directly accessible, these data have been described by Adamczewski et al. (2009), which is summarized in the following paragraph.

Adamczewski et al. (2009) reports that in the early 1990's Aboriginal harvest may have been 18,000 animals annually (Dogrib Harvest Study cited) from the Bathurst herd. These authors' estimated that 2,000 caribou were harvested by residents in the early 1990's and that 7,000 Bathurst caribou combined were harvested by resident, Aboriginal and outfitter hunters from 2006 to 2009. No geographic-specific harvest location or numbers of animals harvested specific to the Bluenose east caribou herd was discussed. Report figures 5.21a and 5.21b include harvest distribution during 2008 and 2009 and do not show that barren-ground caribou were harvested in the ASR barren-ground caribou regional study area. The maps do indicate that hunters traveled from Fort Providence, Fort Resolution, Fort Smith, Hay River, and Yellowknife to harvest caribou near the communities of Gamètì, Wekweètì and Whatì in the Base Case.

The Traditional Knowledge Study Report ([PR#28](#)) identifies barren-ground caribou harvest near the Project, but indicates that harvest was limited to the early 1990's when barren-ground caribou herds were near peak abundances and present in the area near the Project.

## References

Adamczewski JZ, Boulanger J, Croft B, Cluff D, Elkin B, Nishi J, Kelly A, D'Hont A, Nicholson C. 2009. [Decline of the Bathurst Caribou Herd 2006-2009: A technical evaluation of field data and modeling](#). Draft technical report December 2009. GNWT.

**GNWT Response to:  
WRRB IR#12**

**Topic**

Mitigation Measures – Adaptive Management

**Comment**

Throughout the ASR there are statements related to mitigation and reference to the draft Wildlife Monitoring and Management Plan (WMMP). However, the draft WMMP does not have a section on adaptive mitigation, and the proposed monitoring and mitigation in the ASR are relatively generalized (e.g. Table 8.5 provides a generalized list of mitigation without specific thresholds or linkage to monitoring). The EIRB Final Report for the Inuvik to Tuktoyaktuk Highway (see: <http://eirb.ca/projects/inuvik-tuk-highway/?document=final-panel-report-2013-01-25>) emphasised the importance of adaptive management especially given the uncertainties and gaps in the evidence to assess impacts. Additionally, recent environmental assessments demonstrate the linkage between monitoring and adaptive mitigation and would be useful models for TASR.

**Recommendation**

1. Provide a tabular summary of the proposed approach for adaptive mitigation for the All-Season Road Inuvik to Tuktoyaktuk;
2. Provide a tabular summary of the approaches used for adaptive mitigation in recent environmental assessments (such as NIRB's assessment for Sabina project).

**GNWT Response**

Adaptive mitigation is implemented in response to monitoring results. Where monitoring indicates an unanticipated adverse environmental effect, specific actions to avoid or minimize this effect are undertaken. For example, surveys undertaken prior to clearing vegetation might identify the nest of a migratory bird (the monitoring result), and adaptive mitigation would be applied to avoid harming the nest while it is active. Similarly, monitoring may indicate areas of greater risk of collision between wildlife and vehicles and adaptive mitigation might take the form of increased signage or reduced speed limits.

Adaptive mitigation has been applied to other roads in the NWT. For instance, the Environmental Impact Statements (EIS) for the Inuvik to Tuktoyaktuk Highway and Sabina Gold and Silver Corporation's Back River Project (Sabina 2015) include adaptive mitigation. Table WRRB IR12-1 lists the adaptive mitigation described for construction activities in the Inuvik to Tuktoyaktuk EIS and notes whether the Black River EIS and the ASR also included these adaptive mitigations.

**Table WRRB IR12-1: Adaptive Mitigation Included in the Inuvik-to-Tuktoyaktuk Highway Environmental Impact Statement (ITH) , the Project Adequacy Statement Response (ASR) and Back River Project Final Environmental Impact Statement (EIS)**

Inuvik to Tuktoyaktuk Adaptive Mitigation	Included in Back River EIS	Included in ASR
All workers will be instructed not to disturb any wildlife observed.	Yes	Yes
Wildlife monitors will be on-site during construction to monitor potential wildlife issues and manage risks.	Yes	Yes
Pre-construction surveys will be used to avoid sensitive wildlife areas	Yes	Yes
Spill contingency plans will be implemented to prevent and address leaks and spills. In the event of a spill, all efforts will be made to properly contain and manage the spill.	Yes	Yes
Wildlife have the right-of-way at all times. Monitoring is through visual observation and adaptive mitigation is by giving right-of-way.	Yes	Yes
The presence of wildlife in the areas of construction and access roads will be communicated to other drivers.	Yes	Yes

The adaptive mitigation presented in Table WRRB IR12-1 for ITH was also applied to the Project and is included in Table 4.3-1 of the ASR. Similar adaptive mitigation has also been applied in recent environmental assessments, such as the Jay Project Developer’s Assessment Report (Dominion Diamond 2014) and Gacho Kué Project EIS (De Beers 2011).

The adaptive management approach for the Tłıchó All-Season Road will be included in an updated Wildlife Management and Monitoring Plan ([PR#7](#), Appendix H), and will consider approaches used for other public roads such as the Inuvik to Tuktoyaktuk Highway. Adaptive management approaches used for private roads such as the Whale Tail Project haul road and roads associated with the Jay Project will be considered, although many mitigation measures for private roads are not applicable to public roads. This information will be submitted in the full context of the Wildlife Management and Monitoring Plan, rather than as a stand-alone summary in an Information Request response. As part of the EA process, WRRB will have the opportunity to provide input into the updated Wildlife Management and Monitoring Plan.

**References**

De Beers (De Beers Canada Inc.). 2011. Environmental Impact Statement for the Gahcho Kué Project.

Dominion Diamond (Dominion Diamond Ekati Corporation). 2014. Jay Project Developer's Assessment Report.

Sabina (Sabina Gold and Silver Corporation). 2015. Final Environmental Impact Statement for the Back River Project.