

## Tłıçhǫ Government Intervention

Re: Dominion Diamond Corporation- Jay Project EA1314-001

The priority concern for the Tłıçhǫ Government is the present state of and future protection of the **Bathurst caribou herd**. As already identified in the IEMA Jay Project Technical Report (2015) and as known from our own TK studies; the proposed location of the Jay Project is within an important migration and habitat area for caribou. The Tłıçhǫ Government therefore offers comments on the EA from Dominion Diamond on the following issues:

- Caribou
- Tłıçhǫ access to caribou

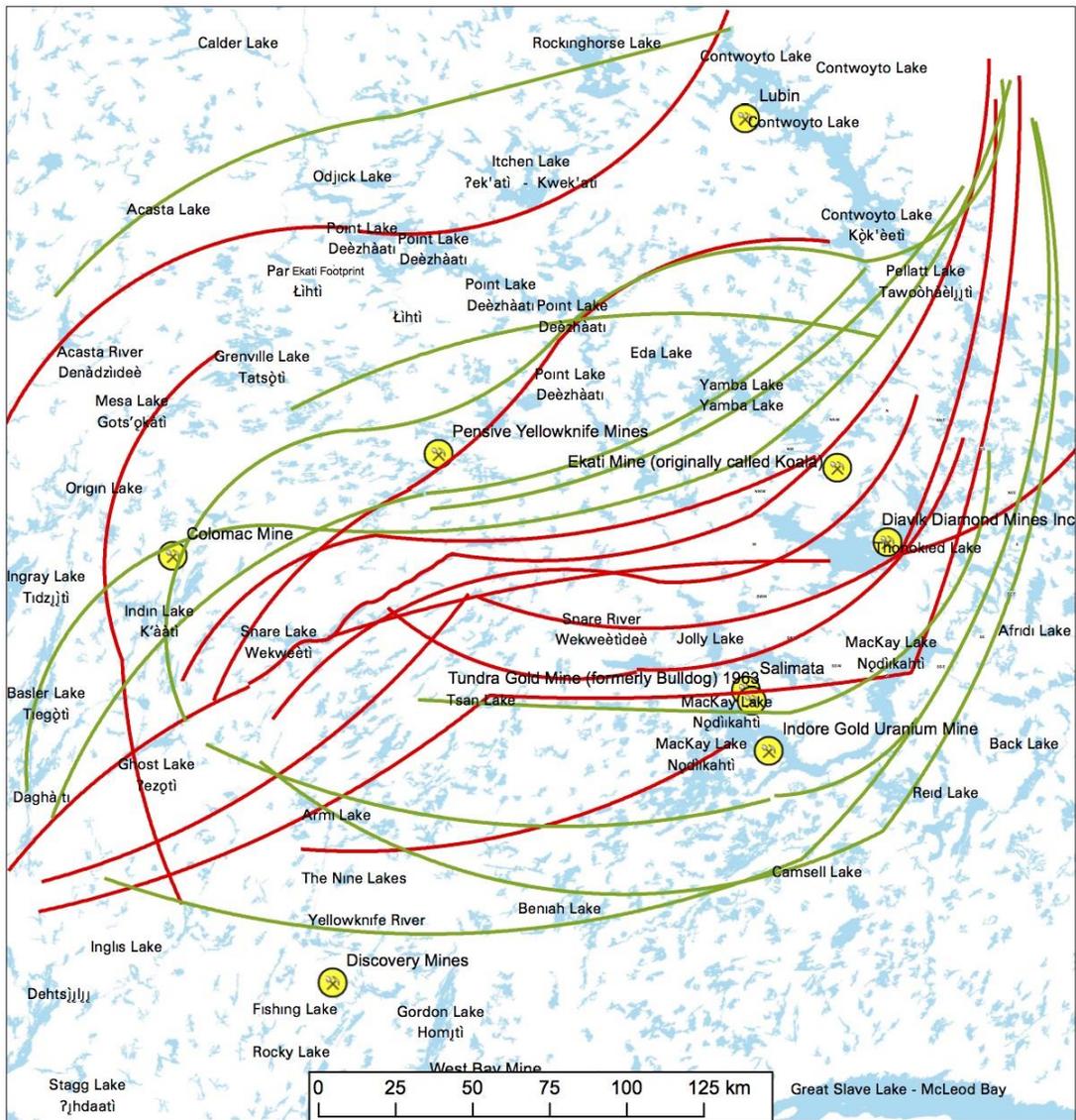
In discussing Caribou and Tłıçhǫ access to caribou, this technical report will also comment on impacts to vegetation from dust, impacts from the proposed Jay Road, and impacts from the proposed Waste Rock Storage Area (WRSA).

### Caribou

The Tłıçhǫ Government agrees with the impacts to caribou identified by the IEMA technical report (2015) including cumulative impacts (see section 3.1 IEMA, 2015 p. 2) and expansion of the Zone of Influence (see section 3.2 IEMA , 2015 p. 5) and supports IEMA's suggestion for the establishment of compensatory mitigation (see section 3.3 IEMA, 2015 p.9). The Tłıçhǫ Government also has additional concerns regarding impacts to caribou and suggested amendments to IEMA's proposed measures.

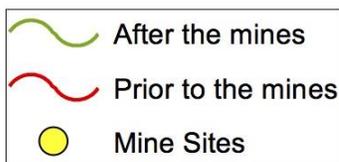
### Cumulative Impacts

Tłıçhǫ know and have experienced the cumulative impacts to caribou health and migration patterns in the area as a result of mining development, in contrast to the Developer's conclusions that the cumulative impact from the Jay Project and other activities is not significant (PR#132 DA Section 12.6.2, p. 12 -135). Tłıçhǫ Elders have observed both significant changes to migration patterns and "increasing amounts of caribou that are no longer healthy" (Tłıçhǫ Research and Training Institute, 2013 p. 44).



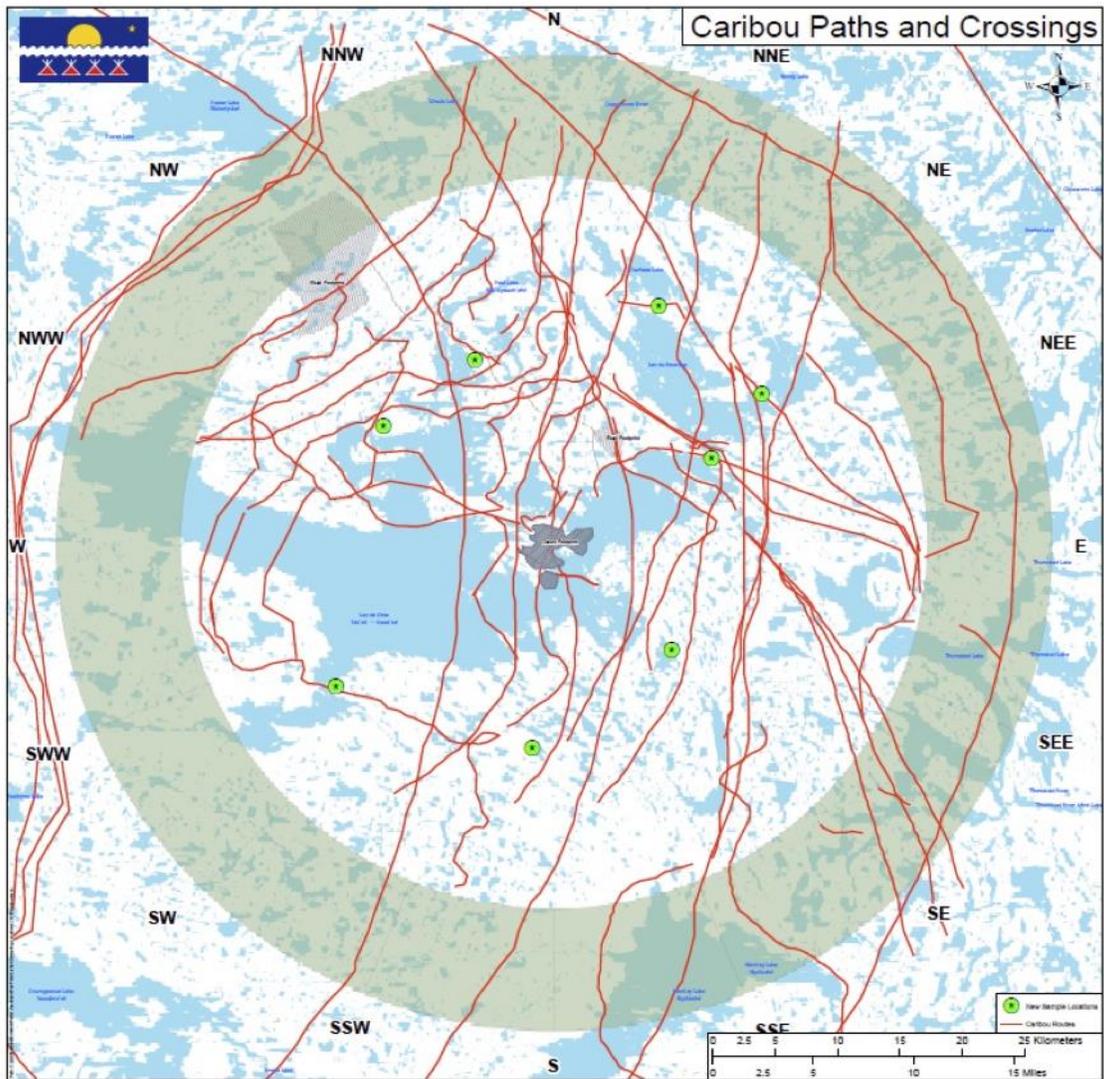
## Bathurst Caribou Migration Trails

### Tłı̨çhų Traditional Knowledge



Map 1: Bathurst Caribou migration changes as identified by Tłı̨çhų Traditional Knowledge

SOURCE: Tłı̨çhų Research and Training Institute, 2013.



Map 2: Important caribou paths and crossings including those in the vicinity of Lac De Sauvage

SOURCE: Tłı̄ch̄o Research and Training Institute, 2013.

The Tłıçhǫ have an intimate relationship with the land as, “maintaining a successful and healthy economy based solely on knowledge of the land requires the hunters to be deeply aware of any changes in animal behavior and habitat conditions” (Tłıçhǫ Research and Training Institute, 2013 p. 12). Elders have noted the abandonment of formally important caribou habitat around existing mine sites as evidenced from the Tłıçhǫ concept of DÈ ǀǀ GOÈHSHÌ (Caribou have thrown this land/area away) meaning caribou now avoid areas that were once important for forage because the food source is now poor and the concept of EKWǀ YEKA AT’I-LE ADZÀ (Caribou do not walk on this land anymore) generally referring to areas around mine sites that the caribou no longer go to (Tłıçhǫ Research and Training Institute, 2013 p. 11). Cumulative changes to caribou migration are also demonstrated in Map 1.

A better understanding of how the Jay Project will add to existing impacts is required. Legat et al. (2000) notes the concerns of Tłıçhǫ Elders for the caribou and the need to research the changes that have occurred as a result of development (note: the geographic area for this TK study includes the proposed site of the Jay project as well as both the Diavik and Ekati mines). A key finding from Legat et al. (2000) is that, “Realistic environmental management is unlikely unless documentation of the baseline data and the changes that have occurred over time is complete” (p. 37).

In summary, the Tłıçhǫ have witnessed changes to the migration patterns of the caribou, as indicated in the first map. These changes, in combination with the effect from the new road, pipe development and waste rock piles, will continue to add to the avoidance of caribou of this land. The caribou will “continue to throw the land away”, and this effect will go much longer than was previously estimated. Given that the caribou are intimately related to the Tłıçhǫ, there will be effects on the communities of this avoidance, including dietary and social stress. Tłıçhǫ elders and many families are reliant on caribou as a source of food. The ban of the past few years has caused significant family level and community level stress and strife, requiring austerity measures to be applied. The Tłıçhǫ are extremely concerned with any new potential stressors on the migration patterns, behavior and health of the caribou.

### **Zone of Influence**

The Tłıçhǫ Government disagrees with developer’s suggestion that current methods for determining the distance of the ZOI are adequate ((PR#461 response to DAR-IEMA-IR2-06 as referenced in IEMA, 2015). The Tłıçhǫ Government is also concerned about the magnitude of change within the ZOI given the importance of Lac de Sauvage to Caribou habitat. The Jay Project will impact Caribou habitat by Lac de Sauvage through the building of the Jay road through an Esker, the creation of waste rock pilings, and the contamination of caribou forage with dust.

TATAÀ

The Tłı̨çhǫ define the areas between lakes or land bridges as TATAÀ, which are a determining factor in the migration routes of caribou as “numerous lakes on the caribou migration route create boundaries which forces caribou to migrate on specific tataà between the lakes” (Tłı̨çhǫ Research and Training Institute, 2013 p. 11). The TATAÀ where the Jay Project is proposed is a significant route for caribou during fall migration (see Map 2). Elders have stressed the importance of this TATAÀ and how it is already impacted:

*The tataà, the caribou are using this. From the north, caribou come this way. Going through where the land connects with each other. Huge caribou herds come through right here. If [caribou] are coming from the north going south, this is where they go. Some [caribou] cross the lake, some doesn't cross the lake, they go through this tataà. Here they go across the creek, in the river there. There is a shallow place where they can cross. This is a good spot that the animals used a lot because of good food. But now there is a mine close by so I guess the dust flies everywhere* (Tłı̨çhǫ Research and Training Institute, 2013, p. 29)

Changes to forage from dust contamination are already starting to deter the caribou from using this TATAÀ. Not only will the dust contamination from the Jay Project add to this impact but the physical structures associated with the project will also impose physical barriers to this critical migration route.

### Jay Road

The Proponent has proposed working with Aboriginal communities to determine appropriate caribou crossings for the ‘final road design’ of the Jay Road but has not considered working with the Tłı̨çhǫ to determine the appropriate cut-through for the esker or location of the road itself (Project Description, Section 3.5.1.5, p. 3-46). The Proponent notes that the, “The portion of the road crossing the esker is designed as a cut through a naturally occurring narrow section” (Project Description, Section 3.5.1.5, p. 3-46). Eskers are an important habitat for caribou as they are often part of their migration trails and provide an escape from heat and pests in the summer and fall. Tłı̨çhǫ Elders have spoken about how caribou prefer to walk on the high ground and, “use the eskers as their [caribou] trails” (Tłı̨çhǫ Research and Training Institute, 2013 p. 15). Tłı̨çhǫ Elders, with their intimate knowledge of caribou trails and their use of eskers, must be included in any road planning.

### Rock Piles

The location of waste rock piles also impact caribou migration decisions. The Developer has proposed creating a waste rock pile to accommodate a volume of 120 million m<sup>3</sup> and proposes a set-back from Lac de Sauvage of 100 m and a set-back from other water bodies of 30 m (Project Description, Section 3.5.6, p. 3-63). Given that the Project will also interfere with the Esker located within the herd’s migration route it is vital that the

Tłıçhǫ are involved in the planning for the placement of the rock pile. Tłıçhǫ Elders have stressed how caribou will avoid rocky areas: “The caribou have really strong legs, some of them have really strong legs, you know. But if they see rocky area like that they will not go” (Tłıçhǫ Research and Training Institute, 2013 p. 14). The Proponent has stated that the waste rock storage area will be a permanent structure that will include caribou emergency egress ramps (Project Description, Section 3.5.8.1, p. 3-67) but has not stated how ramps will be planned. Elders have also noted that caribou also seek out shorelines in the fall and summer to escape pests (Tłıçhǫ Research and Training Institute, 2013 p. 13). The location of the WRSA and its ramps will therefore, if planned without input from the Tłıçhǫ, prevent caribou from seeking shelter both in the Esker and along the shoreline of Lac de Sauvage further degrading their migration route.

### Dust

The developer’s conclusion suggests effects to air quality are not significant ((PR#256 pg. 31-32 as referenced by IEMA, 2015). The impacts from dust are already apparent within caribou habitat and this is a concern to Tłıçhǫ given the sensitivity of caribou to the impacts from additional dust contamination. Tłıçhǫ Elders have identified healthy forage/food sources as a critical component for caribou habitat selection. Caribou forage as they travel so it is important to have healthy vegetation along their migration routes: “The elders explained that caribou forage everywhere all the time. While walking through any kind of terrain, the animal will always look for forage at the same time” (Tłıçhǫ Research and Training Institute, 2013 p. 13). Tłıçhǫ Elders also use the health of plants to assess the fitness of caribou and their use of an area as they have stated, “the growth of plants is also a way of gauging and monitoring the health and fitness levels of animals such as caribou” (Legat et al., 2000 p. 21). In the Tłıçhǫ Research and Training Institute (2013) TK study Elders visited sample sites formally known as high quality caribou habitat and instead found poor quality, dust covered lichen/vegetation and the absence of caribou in the vicinity of the Diavik mine. In this study Tłıçhǫ Elders identified a relationship between the impacts from dust to caribou forage and changes in caribou migration: “The caribou will taste and smell a difference in lichen quality, and thus avoid locations where the lichen is of poor quality” (Tłıçhǫ Research and Training Institute, 2013 p. 18). In discussing areas in close proximity to Diavik they also commented that, “the caribou know that their forage is currently in poor condition at this location and choose not to use and forage on the island” (Tłıçhǫ Research and Training Institute, 2013 p. 14). Air quality assessments and monitoring can be improved by including Tłıçhǫ Elders in identifying sampling locations and visually assessing those sites.

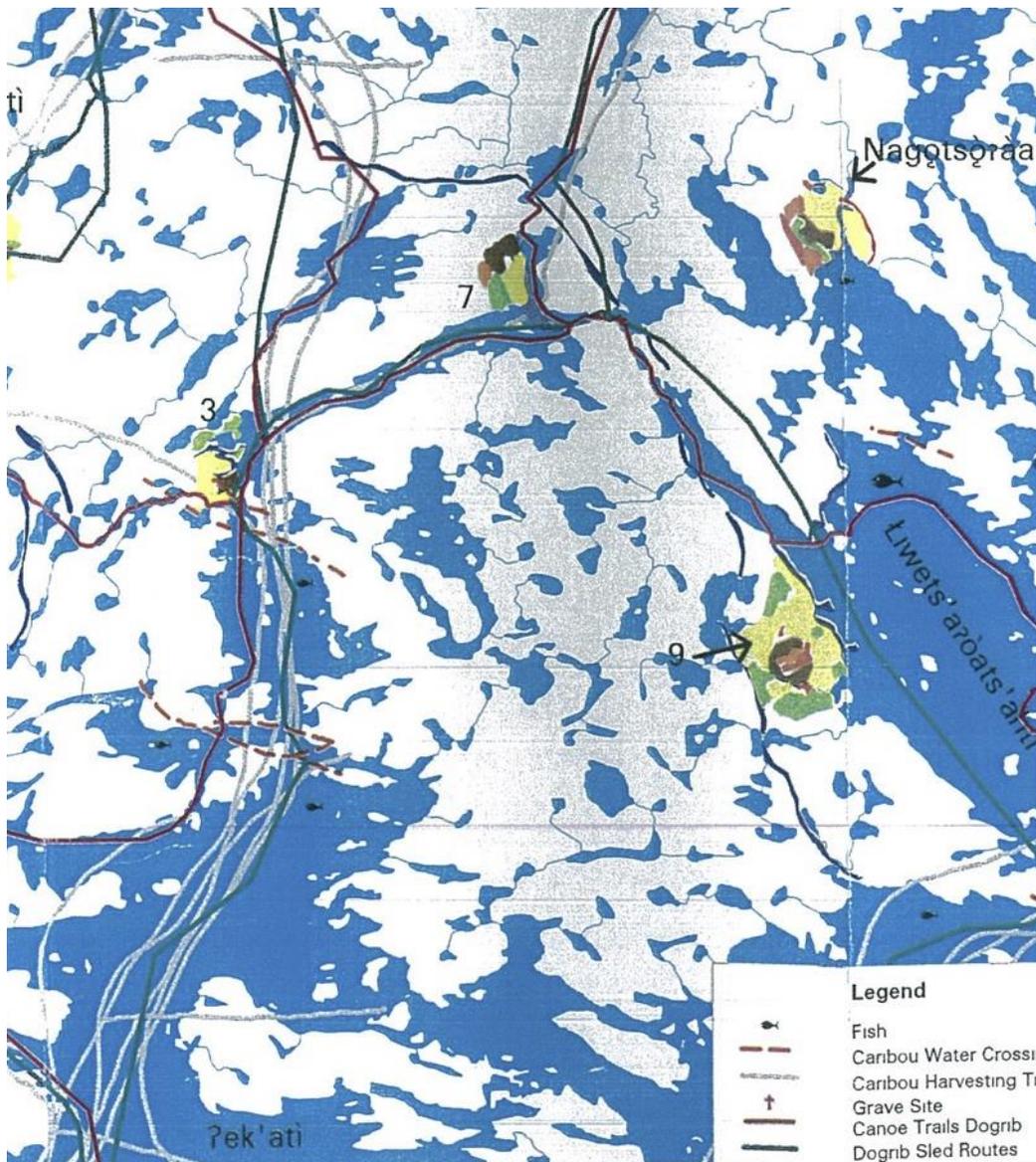
### **Tłıçhǫ access to caribou**

Access to healthy caribou is vital to the Tłıçhǫ and needs to be recognized by the proponent. Legat et al (2000) recognized that any negative impact to one resource in

the area will impact the land as a whole and, “in turn means the loss of resources for the Tłı̨çhǫ and their descendants” (p. 35). Caribou is of particular importance to the Tłı̨çhǫ as, “the caribou is of central importance to the Dene economy and knowledge of seasonal movement and habitat preference for caribou is vital for successfully securing meat” (Tłı̨çhǫ Research and Training Institute, 2013 p. 6). Changes to migration routes and contamination of caribou forage limits the access the Tłı̨çhǫ have to caribou. It should be noted that access to caribou not only means the availability of healthy caribou in known hunting locations but also the ability of the Tłı̨çhǫ to hunt them safely. Contamination of dust from the mines not only impacts caribou but also the people seeking them on the land. Tłı̨çhǫ fall hunting camps are selected based on the location of clean berries and abundant fish (Legat et al. 2000). Elders in the 2013 TK study would not eat the berries near Diavik due to fears of contamination. Elders also discussed contamination of berries in the region in Legat et al. (2000) as the author noted that Elders, “who have visited the area in recent years, have commented on the limited number of berries and the dust covering the plants” (p. 35). The Jay Project will add to the impacts to Tłı̨çhǫ resources required for hunting caribou.

Tłı̨çhǫ Elders have identified a camp-site preference for open areas with a variety of vegetation, including Barren land leaves/ Hozìit’ òaare (used for wrapping caribou meat) as well as Eskers for sighting caribou in the lowlands (Legat et al. 2000; Tłı̨çhǫ Research and Training Institute, 2013). Legat et al. 2000 also identified ideal areas for hunting camps in the vicinity of Lac de Sauvages where the Jay Project is to be located (see Map 3). The Misery pit has also already impacted Tłı̨çhǫ hunting beside Lac de Sauvage. Legat et al. (2000) reveals that, “traditionally an important hunting spot [area west of Lac de Sauvage] due to caribou crossings, has now been replaced by the road to Misery Pit” (p. 35). Further development in this area means that more preferred hunting and camping areas will be taken away.

The developer does not account for implications immediately outside of the ZOI. Any changes to migration routes within the ZOI will later affect caribou migration outside of the ZOI thereby further impacting Tłı̨çhǫ access to caribou. As the TATAÀ (space between lakes) channel the direction of caribou, avoiding a TATAÀ will alter the selection of TATAÀ further along a migration route. Changes in migration patterns are a paramount concern for Tłı̨çhǫ Elders. In the 2013 TK Study, sample sites far from Diavik had healthy vegetation but the caribou migration routes to these areas had changed and Tłı̨çhǫ Elders expressed that they were, “concerned of the implications for caribou migrations to areas further away” (Tłı̨çhǫ Research and Training Institute, 2013 p. 44). Close work with the Tłı̨çhǫ Government and Tłı̨çhǫ Elders is required to avoid further impacts to caribou migration routes within the ZOI and compensate where routes are irrevocably altered.



Map 3: Tłı̄chǫ perspectives on biodiversity – ideal camp locations marked in yellow.  
 SOURCE: Legat et al. 2000

## Recommendations

The Tłı̨çhǫ Government is highly concerned about the health of the Bathurst Caribou herd and in turn the ability of the Tłı̨çhǫ to access the herd. For the the Tłı̨çhǫ, a healthy environment on the barrenlands is comparable having a freezer full of meat for ones availability. “When the freezer is empty means that the environment on the barrenlands is deteriorating and that caribou are not healthy and available to the Tłı̨çhǫ hunters as they used to be. The land is a freezer that the Tłı̨çhǫ can go and acquire their food. When the freezer is empty, it means that the land is not healthy and country food is not as easily accessible to Tłı̨çhǫ as it was”( Tłı̨çhǫ Research and Training Institute, 2013, p. 12). Proceeding with the project as planned will significantly impact both the Bathurst herd and the Tłı̨çhǫ by creating physical barriers on the landscape and by contaminating important vegetative resources for caribou and the Tłı̨çhǫ.

The Tłı̨çhǫ Government supports IEMA’s (2015) recommendations to the Review Board pursuant to s. 128(1)(b) of the *Mackenzie Valley Resource Management Act (MVRMA)* that a determination of a significant adverse cumulative impact of the Jay Project on the Bathurst caribou herd be made and that compensatory mitigation be required as part of the developer’s Wildlife Management Plan.

The Tłı̨çhǫ Government offers the following measures:

### Cumulative Impacts to Caribou

In order to better understand and prevent a significant adverse impact to caribou:

- Minimize the project footprint’s ecological disturbance (IEMA (2015) Section 3.0 Measure 1)
- Further research (including Traditional Knowledge) by the developer on caribou reviewing the pre-development baseline to study the changes that have occurred as a result of development.

### Zone of Influence

To better understand and minimize the area and magnitude of the Zone of Influence:

- Regional research program to better understand the Zone of Influence (with Aboriginal involvement). (IEMA (2015) Section 3.0 Measure 2)
- Use of aerial survey data to estimate ZOI distance and Magnitude. (IEMA (2015) Section 3.0 Measure 3)
- Input from Tłı̨çhǫ Elders be used to develop a caribou monitoring strategy as part of the Developer’s Wildlife Management Plan

## TATAÀ

In order to minimize impacts on caribou migration:

- Developer to conduct a project specific study concerning factors contributing to the distance and magnitude of the ZOI and the subsequent impacts on caribou migration patterns.

## Jay Road

In order to minimize impacts from the Jay road to caribou:

- Developer to work with the Tłıçhǫ Government and Tłıçhǫ Elders on siting the location of the Jay road prior to finalization of the design plans.
- Developer to include the Tłıçhǫ in determining caribou road crossing areas.
- Developer to work with Tłıçhǫ Elders to determine the location of the cut-through of the esker.

## Rock Piles

To minimize impacts from the Waste Rock Storage Area:

- Developer to include Tłıçhǫ Elders in the location and design of all caribou emergency egress ramps, and application of the findings from the Tłıçhǫ Study on eskers.
- Develop a revised Waste Rock and Ore Storage Management Plan and submission to the Wek'eezhii Land and Water Board for approval. (IEMA (2015) Section 5.0 Measure 13)

## Dust

To minimize impacts from mine dust to vegetation important to caribou and Tłıçhǫ:

- Develop a revised Air Quality and Emission Monitoring and Management Plan (AQEMMP) - IEMA (2015) Section 6.0 Measure 14
- In addition to the details provided by IEMA to include in the AQEMMP:
  - The Developer to work with Tłıçhǫ Elders to identify sampling sites and plant species to sample.
  - Include the Tłıçhǫ Government and Tłıçhǫ Elders in development of the plan as a whole and monitoring of critical caribou habitat.

## Tlicho Access to Caribou

To minimize a degradation of Tłı̨çhǫ access to caribou and compensate for irreparable losses of access to caribou:

- Compensatory Mitigation Plan for caribou (with the Tłı̨çhǫ Government collaboratively developing the plan). (IEMA (2015) Section 3.0 Measure 5)

## Conclusions

Given these significant impacts, the Tłı̨çhǫ Government supports IEMA's (2015) recommendations to the Review Board pursuant to s. 128(1)(b) of the *Mackenzie Valley Resource Management Act (MVRMA)* that a determination of a significant adverse cumulative impact of the Jay Project on the Bathurst caribou herd be made and that compensatory mitigation be required as part of the developer's Wildlife Management Plan.

## References

DDEC. 2015. Jay Project – Project Description. Prepared for the Mackenzie Valley Environmental Impact Review Board.

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Legat, A., Chocolate, G., Mackenzie-Scott, G., Sprecher, D., and S. A, Zoe. 2000. A Tłı̨çhǫ Perspective on Biodiversity. Prepared for BHP Diamonds.

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