Request for Supplementary Information

Information Request Number 6

Assessment 2017-0083

BMC Minerals Inc.

Kudz Ze Kayah Project

YESAB
Yukon Environmental and
Socio-economic Assessment Board

June 23, 2020
Prepared by
Executive Committee
Yukon Environmental and Socio-economic Assessment Board

Background

The Executive Committee (EC) has received several comments regarding the project and potential effects on caribou. The Draft Screening Report concluded that there were no significant adverse effects to caribou; however, the EC is considering the potential for significant adverse effects to caribou due to comments received that suggest that effects may be significant.

Given the importance of caribou, both directly and in relation to traditional land use, the EC has carefully reviewed each comment in making its determination. The EC has determined that it requires additional information regarding caribou to characterize project effects in its final recommendation.

The EC acknowledges the help provided by Dr. Fiona Schmiegelow in reviewing submitted comments regarding caribou to inform this request for supplementary information.

Winter Habitat

The project proposal provides a habitat suitability model for post-calving and rutting periods. However no habitat suitability is calculated for winter habitat. The response to Information Request No. 2 indicates long term movement closer to the project area by the Finlayson caribou herd (FCH) and comments submitted to the Executive Committee suggest importance of winter interactions in terms of potential project effects on caribou. Winter provides particular challenges to caribou, “Deep or hard-packed snow interferes with northern mountain caribou feeding and movement, and colder temperatures require more energy to maintain body temperature, while additional energy demands are made of pregnant cows” (2017-0083-7338).

Proposal documentation suggests that “*at least* two life request seasons are mapped to understand the availability of suitable habitat for a species to grow, reproduce, and survive.” Given uncertainties regarding the FCH, the Executive Committee seeks information on winter habitat to complement existing information on post-calving and rutting habitats.

R6-1:

Model winter habitat suitability and corresponding habitat loss as has been done for post-calving and rutting habitat for the FCH. The model design should show consideration for shifting overwintering patterns for the FCH.

R6-2:

Discuss the potential implications of shifting winter range use on the assessment of project effects, including the efficacy of proposed mitigation measures

Calving Habitat

Calving is a critical period for caribou, as noted in comments “Direct and indirect impacts to calving habitat have the potential to decrease calf recruitment as a result of disturbance, reduced caribou cow fitness and increased calf mortality from predation, with potential implications for FCH population dynamics” (2017-0083-7338).

A habitat suitability model for calving was not generated for the Finlayson caribou herd, as no survey data were collected by the Proponent for this period due to concerns over disturbance to females and calves during this critical time. However, there may be other data sources that may inform the Executive Committee’s understanding of caribou distribution during calving.

R6-3:

Provide a summary of location data available from telemetry studies (VHF and GPS collars) during the calving period (May 7 to June 8), in:

a. The project area,
b. Various ZOI around the project area (see 7c, below), and
c. The Finlayson caribou herd range.

Caribou Movement and Corridors

The Executive Committee has received comments reinforcing the importance of the project area to caribou movement, “And that’s why they call it Kudz Ze Kayah because it’s a caribou crossing and it goes into the mountain where the mine, proposed mine is” (2017-0083-7338). Routes from late winter to calving and post-calving habitats may require traveling along or across the Tote access road, and a migration corridor has previously been identified extending “approximately 4 km above the Geona Creek Finlayson Creek confluence to approximately 4 km below this confluence”. Consequently there appears to be potential for substantial barriers to caribou movement from late winter to calving and post-calving habitats.

R6-4:

Provide a discussion of habitat connectivity from late winter to calving and post-calving habitat that:

a. Discusses barrier effects for caribou due to roads and project location.
b. Discusses known migration corridors in the project area.
c. Contemplates any proposed mitigation measures and their effectiveness.

Observations in Proximity to the Project

Several pieces of project documentation include a graphic depicting counts of caribou during rut surveys in 5, 10 and 15 km concentric rings (ZOI) around the project area. The graphic has been updated since its original submission; however, it has consistently shown apparently higher densities of caribou observations closer to the project than away from it.

R6-5:

Provide estimated density of caribou during rut surveys within the 1, 2 and 3 km distance ranges from the project, in addition to the number of groups, count of individuals, and their average group sizes.

R6-6:

Discuss the implications of any differences in density across each buffer (1, 2, 3, 5, 10, and 15km) on potential project effects.

Sensitivity of Effects' Predictions

Conclusions regarding the magnitude, geographic extent, and likelihood of project effects are sensitive to the assumptions made in evaluating these. These are particularly acute for the habitat components of the assessment. The EC requires information regarding the sensitivity of effects predictions in relation to these assumptions.

R6-7:

Provide a sensitivity analysis for the predictions of direct and indirect habitat loss from models of caribou habitat suitability that considers sensitivity to:

a. Removal of the 50% down-weighting for indirect habitat loss.
b. Inclusion of a wider range of habitat classes beyond moderately high and high quality.
c. Consideration of a wider range of buffer (ZOI)_distances, including 4, 5, 10 and 15 km on the project area and roads.

Cumulative Effects

Comments received reinforce the importance of wildfire in assessing cumulative impacts to caribou. The Executive Committee agrees that natural disturbance is an important consideration in the evaluation of total range disturbance, and associated disturbance thresholds, for caribou.

R6-8:

Provide an analysis of cumulative disturbance in the Finlayson caribou herds' range that includes consideration of historic fire activity and human disturbance within the range. Describe model sensitivity to the date range used for fires incorporated into the model.

Climate change

Climate change is recognized as a threat to caribou populations, and can interact with other population pressures to magnify effects. Comments also suggest that climate change are a factor in characterizing long term effects to caribou, as climate change is "anticipated to increase winter precipitation (i.e.snow) and icing events, as well as change the timing of spring green-up, the emergence of new diseases and parasites, and contribute to increased forest fire frequency" (2017-0083-7338) . Additionally, recent analyses suggest that the project area and surrounds are located in a regional climate corridor that may help support adaptation to climate change (https://adaptwest.shinyapps.io/climate-resilience-data-explorer).

R6-9:

Provide a discussion of potential project effects on the Finlayson caribou herd in relation to climate change, considering:

a. Changes to habitat suitability
    i. Including how the HSI model's formula, weightings, and output might vary given changes in climate.
b. Changes to movement patterns and migration corridors.