

Information Request 34

Information Request 34

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IR 34 – Mitigation Measures for Rare Plants and Ecological Communities of Conservation Concern

References:

EIS Guidelines, Section 2.7.2.7
EIS, Sections 2.7.2.7 and 2.8.3
2009 EIS, Section 5.3.5.3

Rationale:

In Section 2.7.2.7 (p.51) of the EIS Guidelines requires a “detailed assessment of baseline vegetative communities, species groups or ecosystems that have intrinsic ecological or social value, are representative of overall ecosystem condition and are sensitive to project activities”. These should include:

- rare plants;
- ecological communities of conservation concern (e.g. Red and Blue listed ecological communities tracked by the BC Conservation Data Centre).

Additionally, the EIS Guidelines require the Proponent to document efforts to avoid sensitive communities and to develop mitigation strategies and measures to minimize or eliminate project effects on vegetation and ecosystem function.

In the EIS, Section 2.7.2.7 (p. 1029), the Proponent indicates that the Project has the potential to affect the following two rare plant species (Blue listed as per BC Conservation Data Centre):

- three occurrences of the birdfoot buttercup (*Ranunculus pedatifidus* ssp. *affinis*), and
- one occurrence of the blue moss (*Schistidium heterophyllum*).

The EIS, in Table 2.7.2.7-19 (p. 1033) lists the two ecological communities of conservation concern within mine Regional Study Area (RSA):

- Blue-listed - Hybrid white spruce/horsetails-western meadowrue, and
- Red-listed - Lodgepole pine/trapper’s tea/crowberry (also within mine Local Study Area (LSA).

Additionally, Table 2.7.2.7-20 (p. 1035) identifies that the following two rare ecological communities are within the Transmission Line RSA:

- Blue Listed - Hybrid white spruce – Prickly rose – Palmate coltsfoot, and
- Red Listed – Baltic Rush – Common silverweed.

The vegetation mitigation measures listed in Section 2.7.2.7 (p. 1041) of the EIS, include specific procedures for the blue moss (*Schistidium heterophyllum*), which involve movement of the boulders on which it grows. The EIS, however, does not include any specific mitigation measures pertaining to the other Blue and Red listed rare plants and ecological communities of conservation concern.

Taseko does indicate that it will: “Mitigate residual effects of mining with respect to wildlife habitat, at risk plant communities, and the habitat of species at risk through reclamation approach as described in the decommissioning plan (Commitment 13.5)”.

The EIS Section 2.8.3 (p. 1498) also states that monitoring for shifts in vegetation communities and soil moisture will be conducted in new sensitive ecosystems.

Furthermore, in the 2009 EIS (Section 5.3.5.3, p. 5-181), Taseko states it will “wherever practicable, avoid loss of identified rare plant populations through environmentally sensitive construction practices”.

Information Requested:

With regards to the rare plant species and ecological communities of conservation concern identified in section 2.7.2.7 of the EIS, the Panel requests that Taseko:

- a. Provide additional information on mitigation measures or strategies to avoid or minimize the effects on the:
 - i. rare plant species, and
 - ii. ecological communities of conservation concern
- b. Describe the practicable, environmentally sensitive construction practices that will be adopted and implemented in order to avoid the loss of identified rare plant populations.

Information Request #34a

With regards to the rare plant species and ecological communities of conservation concern identified in section 2.7.2.7 of the EIS, the Panel requests that Taseko:

Provide additional information on mitigation measures or strategies to avoid or minimize the effects on the:

- i. Rare plant species
- ii. Ecological communities of conservation concern

Response

The mitigation measures and strategies presented in the 2009 and 2012 EIS are represented below.

- Taseko will transplant the blue listed *Schistidium heterophyllum*.
- With regard to the red listed lodgepole pine / trapper's tea / crowberry community within the MDA, Taseko will conduct pre-construction surveys to delineate this community, with the intention of avoiding intact areas of this plant community wherever possible.
- Taseko will consider locations of potential habitats (wetlands and grasslands) for rare plant species and communities of concern for avoidance during the final alignment of the transmission line and selection of pole placement sites.
- Taseko will apply general mitigation measures during construction to minimize effects on habitats for rare plant species and communities of conservation concern (see response to IR34b).

Discussion

Mitigation measures to avoid or minimize effects on rare plants and ecosystems are determined in relation to their conservation status. Red listed species and ecosystems are *extirpated*, *endangered*, or *threatened* in British Columbia, whereas blue listed species and ecosystems are *special concern* because of characteristics that make them sensitive to natural events and human activities (BC CDC 2013). As such, specific mitigation measures are planned to avoid or minimize the effects to red listed species and ecosystems, with the intention of avoiding effects wherever possible, whereas general mitigations are applied to blue listed species and ecosystems, such as using environmentally sensitive construction techniques (see response to IR 34b).

Rare Plant Species

Two blue listed plant species occur in the New Prosperity mine site maximum disturbance area (MDA), as indicated in section 2.7.2.7 of the 2012 EIS.

The rare plant species include one occurrence of *Schistidium heterophyllum*, which occurs on patches of rock in semi-shaded shrub-steppe, grasslands and pine forest. At the time of the 2009 EIS this species was considered red listed. At that time, because of its status as red listed, and in recognition of the importance of rare plants as key contributors to species diversity, Taseko committed to relocating the basalt boulders on which it occurs within the mine site maximum disturbance area (MDA) to suitable sites outside of the mine site MDA. The BC status was revised to blue listed in 2011 because of new information on number of occurrences and range extent (Stipek, K. CDC 2012, pers. comm.). Although Taseko is not generally proposing specific mitigations for blue listed plants and ecosystems, as it was a previous commitment, Taseko still commits to transplanting the boulders.

The second blue listed plant identified within the mine site MDA is birdfoot buttercup (*Ranunculus pedatifidus ssp. affinis*). This plant was identified in three locations within the New Prosperity MDA, and is associated with wetlands. Outside the MDA, over 100 individuals were also identified in seven locations within the vegetation RSA. At the time of the 2009 EIS birdfoot buttercup was also blue listed and therefore transplanting was not proposed; this is still the case. The reconfiguration of the New Prosperity mine site relative to the Prosperity mine site avoids four occurrences of birdfoot buttercup that would have been affected under the previous configuration.

There are no identified red-listed plant locations within the access road area or transmission line corridor.

Ecological Communities of Conservation Concern

The New Prosperity MDA affects to one red listed community. The mine site MDA contains 4.4 ha of young forest (structural stage 5) of the red listed lodgepole pine / trapper's tea / crowberry community. This equates to 1.3% of the total area of this community (342.3 ha mapped in the TEM), within the Project RSA. The reconfiguration of the New Prosperity mine site relative to the Prosperity mine site reduces the effect by 2.3 ha (6.7 ha affected in 2009). Taseko proposes to undertake surveys prior to construction to verify and delineate the location of this plant community with the intention to avoid it as much as possible.

There are no predicted effects to the blue-listed hybrid white spruce – horsetail – western meadow rue community within the mine site MDA (refer to Table 2.7.2.7-21 of the 2012 EIS).

With respect to the proposed transmission line LSA, only one blue-listed ecological community of conservation concern (the hybrid white spruce - prickly rose - palmate coltsfoot plant community) is identified within the current proposed transmission line corridor. Communities of concern will be considered for avoidance during final alignment of the transmission line and selection of pole sites.

Information Request #34b

Describe the practicable, environmentally sensitive construction practices that will be adopted and implemented in order to avoid the loss of identified rare plant populations.

Response Summary

Taseko will employ environmentally sensitive construction practices to minimize effects to habitats supporting rare species, as outlined in the 2012 EIS, Section 2.8 Environmental Management. For clarity, these mitigation measures are summarized below.

It is Taseko's opinion that this level of detail is sufficient for an Environmental Assessment, with further details being developed in the form of Standing Operating Procedures as part of Environmental Management Plans prior to construction and as part of permitting.

Discussion

In addition to the species or community specific mitigation measures noted in IR 34a above, the following environmentally sensitive construction practices, presented in Section 2.8.1 of the 2012 EIS, will be adopted to avoid or minimize effects to the identified rare plant populations and the supporting habitat.

Activity specific measures will be developed for contractors to minimize damage to vegetation at each of the Project components, but several general measures include:

- Minimize vegetation loss (including rare plants and ecosystems of conservation concern) through environmentally sensitive Project design, particularly with regard to the transmission line final alignment
- Implement best management practices including the creation of buffer zones around wetland habitats, maintaining connectivity among wetlands within wetland complexes, and restricting employee and contractor access to wetlands outside of construction or work areas
- Where possible, minimize the extent of grubbing, stripping and the removal of shrubs and herbaceous species, and retain the humus layer and vegetation root mat.
- Re-establish vegetation on disturbed areas as soon as reasonably possible
- Ensure water flow around work site is not interrupted
- Wherever possible, schedule any construction to occur in sensitive wetland and riparian areas to occur when potential impacts are minimized

- Specific to the transmission line, minimize disturbance by timing construction to occur when soils are frozen or dry, delivery of transmission poles to wetland and grassland areas by helicopter, and minimizing the area of disturbance during pole installation
- Specific to the access road, dust deposition on plant communities arising from traffic will be minimized by measures such as using dust suppressants when conditions warrant, and ensuring that loaded concentrate trucks are covered to prevent dust escaping during transit
- Encourage slope stability and minimize soil quality degradation through grass seeding and slope re-vegetation
- Re-establish vegetation on disturbed areas as soon as reasonably possible
- Implement the Invasive Plant Strategy (Appendix 2.7.2.7) which outlines procedures to be followed during all phases of mining, some of which are specific to contractors that will be arriving on site with equipment
- Natural drainage patterns will be maintained by:
 - minimizing the linear extent of roads crossing or paralleling wetlands
 - wherever practicable, avoid diverting natural stream courses
 - placing appropriate road culverts for waterways, and maintaining and monitoring culverts as outlined in Section 2.8, Environmental Management, in the 2012 EIS
 - scheduling any construction in sensitive wetland and riparian areas to occur during seasonally dry or frozen ground conditions (i.e., negligible risk of ground disturbance/compaction)
 - during instream construction, maintaining water flow around the work site
- Assign environmental monitors during construction to oversee implementation of measures

References

BC Conservation Data Centre (CDC) 2013. Provincial Red and Blue Lists. BC Ministry of Environment, Victoria, BC. Available at: <http://www.env.gov.bc.ca/atrisk/red-blue.html>. Accessed: January 30, 2013.