ROSEBERY TO SUMMIT LAKE RAIL TRAIL AND MOTO-BYPASS ENVIRONMENTAL IMPACT ASSESSMENT

PHASE 3

Prepared for:

Recreation Sites and Trails British Columbia

Prepared by:

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Executive Summary

Recreation Sites and Trails BC (RST) has approved in principle a proposed multi-use trail network between Rosebery, BC and Summit Lake, BC. The trail would include the existing trail system along the old rail line, several existing and proposed forest service roads, and the construction of two new trails. The trail system will support both non-motorized and motorized recreational uses. Motorized sections will be limited to quad and side-by-side style all-terrain vehicles (ATV). This area has been identified as a priority for conservation in the Slocan Watershed, and has a large number of high profile ecological values, such as the annual western toad migration from Summit Lake.

EcoLogic Consultants Ltd. and Masse Environmental Consultants Ltd. were contracted to provide guidance to ensure that ecological values are identified and protected in development and management of the trail network. This report provides an ecological overview for the proposed motorized trail sections from Highway 6 east to the ridge above Wilson Creek. Management recommendations are supported by available information, existing research, and field observations.

Most of the proposed trail follows existing roads, though some of these will require some upgrades. New construction will be required for ~2.4 km. The primary ecological values identified include a stream crossing between Sections 5 and 6 with unique calcareous deposits and sensitive riparian areas; ungulate winter range (all sections), songbird and cavity nester habitat (trail sections 6 and 8), and a rich gastropod fauna featuring 3 at-risk species.

Based on the current trail design and available information, there are no significant risks posed to the identified values from the proposed motorized trail, provided the recommendations are followed. These include:

- Establish a proper stream crossing on Section 5 to protect a unique calcareous creek and riparian values. The crossing should include a barrier to prevent ATV access above to avoid impacting the sensitive riparian area.
- Restrict snowmobile access in the winter to protect ungulate winter range values;
- Mitigate for the spread of invasive plants;
- Survey for bird nests for any vegetation removal during the breeding season.

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1 INTRODUCTION

Recreation Sites and Trails BC (RST) has approved in principle a proposed multi-use trail network between Rosebery, BC and Summit Lake, BC. The trail system will support both non-motorized and motorized recreational uses. Motorized sections will be limited to quad and side-by-side style all-terrain vehicles (ATV).

Ryan Durand, R.P.Bio (EcoLogic Consultants Ltd.) and Tyson Ehlers, R.P.Bio (Masse Environmental Consultants Ltd.) were consulted to provide guidance to ensure that ecological values are identified and protected in development and management of the trail network. This report follows two previous reports by the same authors, the overview (Phase 1) report *Rosebery to Summit lake Rail Trail and Moto-Bypass Environmental Impact Assessment* (October 2018), and an addendum (Phase 2) report (November 2018) that focused on motorized trail sections south of highway 6 from the north end of Slocan Lake to Summit Lake Ski Hill. The results of these reports were incorporated into trail designs for those sections. This report focuses on motorized trail sections on the north side of Highway 6 intended to connect to Wilson Creek forest service roads.

2 BACKGROUND

The Bonanza Corridor has been identified as one of the top conservation priorities in the Slocan Lake Watershed (Slocan Lake Stewardship Society 2017). The Bonanza Biodiversity Corridor (BBC) Working Group has been established recently with a mandate to seek a conservation designation for the Bonanza corridor, to "enhance landscape connectivity and protect critical habitat and biological diversity from Bonanza Marsh to Summit Lake" (Mahr 2018). In 2015, the Rosebery-Summit Lake Rail Trail Steering Committee developed an initial proposal for management of the rail trail from the north end of Summit Lake to Rosebery and conducted a community poll. Trail uses at the time were identified and included:

- mountain biking – all sections;
- hiking/walking/jogging/running – all sections;
- beach access – high use along Slocan Lake;
- cross-country skiing, snowshoeing - high use along Bonanza Creek and Summit Lake sections, limited along Slocan lakeshore due to low snowfall;
- ATV riding, dirt-biking – occasional in all sections;
- fishing – all sections;
- snowmobiling - rare in all sections;
- wildlife and bird viewing – high in all sections;
- horseback riding - occasional at Summit Lake end, rare along Slocan Lake and Bonanza Creek;
- adjacent landowner use for moving equipment, access to property – occasional in the Rosebery, Hills, and Summit Lake areas;
- educational use by local students/teachers, nature study groups – all sections; and
- scientific wetland research – Bonanza Marsh, Hunter Siding, Summit Lake Marsh

The purpose of the 2015 Management Plan Proposal was to:

- officially establish the Rosebery-Summit Lake rail trail as a recognized provincial recreational trail,
- protect and foster an appreciation for the trail's ecological and cultural values,
- provide safe and high quality recreational opportunities,
- recognize and support the pattern of established local trail uses,
- provide a suitable framework for public input, and
- limit development to what is necessary to meet these objectives.

In January 2018, an application under Section 57 of the *Forest and Range Practices Act* (FRPA) proceeded with the addition of a separate moto-bypass trail and motorized crossing of Bonanza Creek in the Hills community. Section 57 of FRPA requires authorization for constructing, maintaining or rehabilitating trails or recreation facilities on Crown land. The 2015 Management Plan Proposal and the S.57 Application for recreational development included the requirement to conduct independent Environmental Impact Assessments (EIA) on all sections of the trail (motorized and non-motorized) prior to construction or development of any of the proposed trail sections. This EIA is intended to meet those requirements.

2.1 Study Area

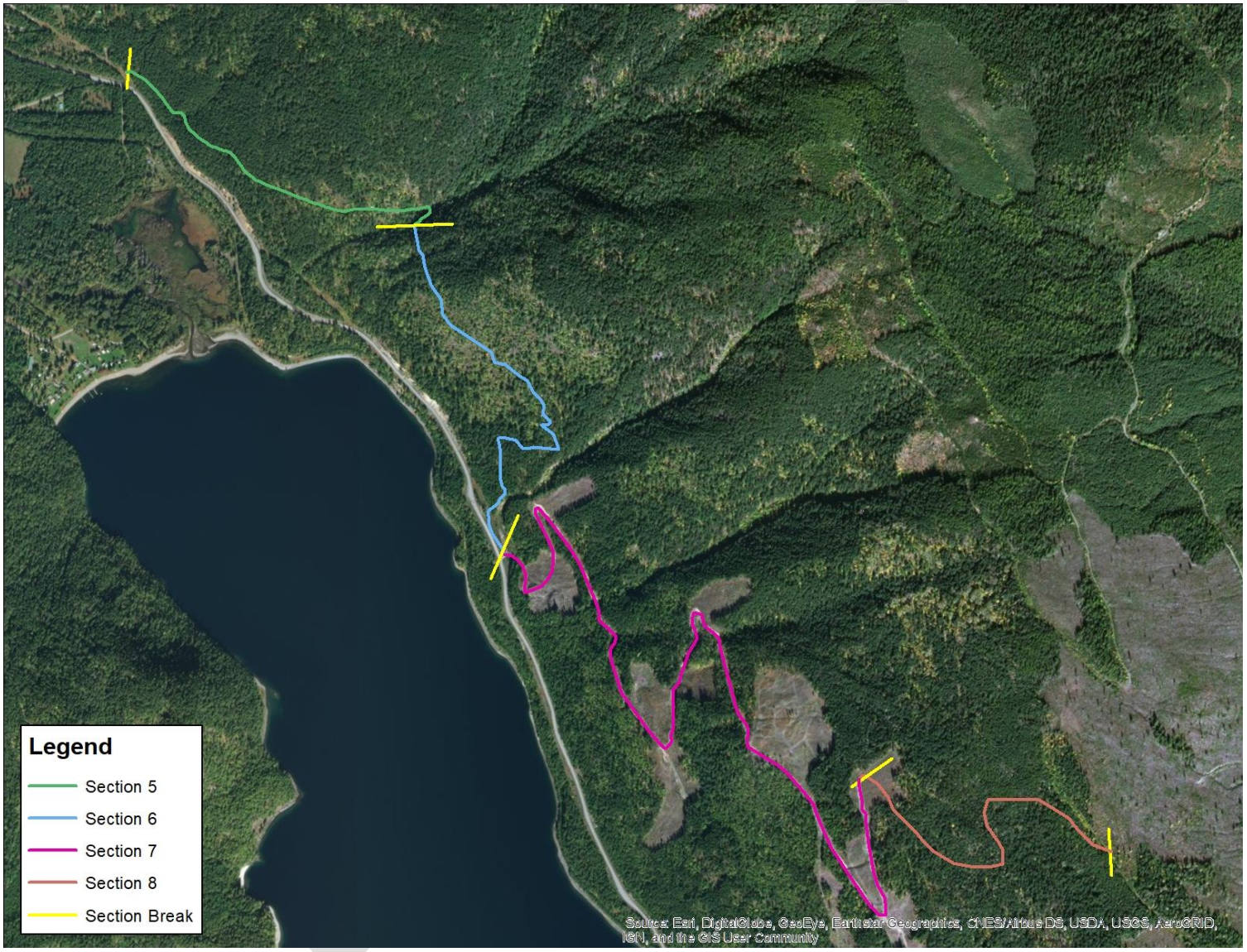
The study area is broadly defined as the Bonanza Creek corridor, including the north end of Summit Lake to Rosebery (west side of Wilson Creek). For Phase 3 of the project, the focus was on a section of new trail and existing roads from the north end of Slocan Lake to the height of land, for a total length of 7.9 km.

Specific environmental assessments are concerned with individual sections of the proposed trail network as defined below. The trail network has been divided into three groups based on the proposed future use, and multiple sections within each group based on potential ecological values and sensitivities. The assessment areas are as follows (Figure 1.1-1):

Phase 3 Motorized Trail (MT)

- MT Section 5 – Pete's Road
- MT Section 6 – Pete's Road to Herman's Berm (new construction)
- MT Section 7 – Existing Logging Road
- MT Section 8 – End of Logging Road to West Wilson Ck. Road Network (new construction)

FIGURE 1.1-1. OVERVIEW MAP OF THE TRAIL SECTIONS USED FOR PHASE 3 OF THE ENVIRONMENTAL IMPACT ASSESSMENT



2.2 Scope

The purpose of this report is to:

1. Identify and describe ecological values that could be impacted by the proposed Phase 3 portion of the Rosebery to Summit Lake recreation trails, and
2. Provide recommendations to protect and conserve those ecological values.

This EIA is guided by the following terms of reference:

1. Catalogue ecological values along the trail network supported by field work. Prioritize ground-truthing based on perceived impacts from trail development, recognizing that the majority of this trail network is on existing road/rail way.
2. Incorporate additional ecological and biodiversity values as identified in existing Bonanza Corridor research, including but not limited to, species at risk, fish and fish habitat, migratory birds and related habitats.
3. Identify threats and risks to those identified values, including impacts of motorized and non-motorized recreational use, emissions, dogs, etc.
4. Develop and recommend best practices to mitigate identified threats, including signage, trail closures and other trail management policies like bells on bikes, dogs on leash, etc.

All archaeological, cultural, or geotechnical assessments are outside the scope of this EIA. These reviews and assessments are being conducted and reported separately to the Implementation Team. This report specifically excludes any coverage of jurisdictional and/or regulatory approvals that would be required given the design and nature of the proposed trail system. The onus is on the Implementation Team to ensure all jurisdictional and regulatory approvals have been obtained prior to construction proceeding.

3 ECOLOGICAL OVERVIEW

As described in the Phase 1 report (Ehlers and Durand 2018), the trail system is located in the Bonanza Corridor. The corridor is well known to be an important ecological area in the Slocan Watershed that has attracted attention from numerous conservation groups (Mahr 2017). The area contains numerous occurrences of at-risk species and ecosystems, and serves as an important landscape level east-west movement corridor for wildlife between the Valhalla and Central Selkirk ranges (M. Proctor, in: Mahr 2018).

The trail system runs through two biogeoclimatic subzone/variants: the West Kootenay Dry Warm Interior Cedar-Hemlock (ICHdw1) and the Slocan Moist Warm Interior Cedar-Hemlock (ICHmw2). The ICHdw1 occurs along the northeast end of Slocan Lake from valley bottom to about 1,300 m on neutral-warm aspects, and is replaced in similar locations to the north by the ICHmw2. The ICHdw1 is characterized by moist, warm springs, hot to very hot dry summers, and mild, dry winters with moderate to shallow snowpacks. This unit is highly productive and tree diversity is high, including western hemlock (*Tsuga heterophylla*) and western redcedar (*Thuja plicata*), Douglas-fir (*Pseudotsuga menziesii*), western larch

(*Larix occidentalis*), lodgepole pine (*Pinus contorta*), paper birch (*Betula papyrifera*) and trembling aspen (*Populus tremuloides*). Old-growth stands are rare in the ICHdw1 due to human and fire disturbance, with young to mature stands dominating most of the unit. The ICHdw1 provides an abundance of wildlife habitat, including numerous species-at-risk, as well as important ungulate winter habitat. (MacKillop & Ehman 2016)

The ICHmw2 is one of the most common biogeoclimatic units in the Southern Interior and it includes the valley bottom to mid-slopes along most of Slocan Lake. It typically occurs from valley bottom to around 1,200 metres where it transitions into the Engelmann Spruce Subalpine Fir (ESSF) zones. The ICHmw2 is located in a climate that is characterized by warm, moist summers and cool, moist winters with moderately deep, persistent snowpacks. The ICHmw2 is both productive and species-rich. Mature and old zonal forests are typically dominated by western hemlock and western redcedar, with minor amounts of Douglas-fir and western larch. Early seral stands and sites in dryer areas can contain trembling aspen, lodgepole pine, and paper birch. Wetter sites, and higher elevation areas typically contain Engelmann spruce (*Picea engelmannii*) and subalpine fir (*Abies lasiocarpa*), while floodplains are often dominated by black cottonwood (*Populus trichocarpa*). The ICHmw2 supports a wide range of habitat, with mature and old stands in particular providing habitat for numerous species, including species-at-risk (MacKillop & Ehman 2016).

4 ASSESSMENT APPROACH AND METHODOLOGY

Field studies were focused on reconnaissance-level walk-through of those portions of the proposed trails requiring new construction. Information that was collected included general site descriptions, existing conditions, identification of significant or sensitive ecosystems, at-risk species and ecosystems, vegetation communities, wildlife habitats and stream crossings. The proposed routes were assessed to determine the potential impact of trail construction, future usage and maintenance requirements. In addition, existing knowledge and expertise was also provided by the authors' direct experience in the area conducting ecological research in the subject area and as recreational users of the corridor.

5 THREAT AND IMPACT ANALYSIS

5.1 MT Section 5 – Pete's Road

MT Section 5 is 1.3 km and follows an old partially overgrown road that is locally known as Pete's Road, which starts across from Bonanza Road where the BC Hydro transmission line intersects the highway. The road appears to have recently been cleared for ATV access, with large logs cut as necessary. It is in generally good condition, with erosion and rock fall present in some areas.

Pete's Road crosses an un-named creek (watershed code 340-047200-99300) just before the start of Section 6 (UTM 11 U 467309 5549127; Plate 4.1-1 and 4.1-2). This location has significant ecological value and a high potential to contain multiple species at risk due to the natural calcium deposits (tufa) in the creek and a waterfall upstream of the crossing (Plate 4.1-3 and 4.1-4). The creek has a 2-3 m wetted width at the crossing, with saturated soils on the east side up to the waterfall.

The old road has evidence of use by ungulates, and is likely seasonally utilized by bears and other mammals. Alligator lizard (*Elgaria coerulea*) was observed in the eroding cutbank above the road, 200 m from the creek crossing (11 U 467134 5549139). Moist riparian sites near the creek feature black cottonwood trees and deciduous shrubs, with rattlesnake fern (*Botrypus virginianus*) and other understory species indicating hygric soil conditions and a cool microclimate. This habitat is likely to support amphibians, potentially including the SARA-listed Coeur d'Alene Salamander (*Plethiodon idahoensis*).

A single occurrence of the blue-listed Coeur d'Alene Oregonian (*Cryptomastix mullani*) was observed on the edge of the road roughly 100 m west of the un-named creek (11 U 467250 5549121; Plate 4.1-5 and 4.1-6).

The road passes though stands of mature conifer and broadleaf forests, with numerous high value wildlife trees.

Plate 4.1-1 showing the un-named creek crossing (UTM 11 U 467309 5549127) looking west, and Plate 4.1-2 looking east.

Plates 4.1-3 and 4.1-4 showing the tufa waterfall and upstream of the crossing.

Plate 4.1-5 and 4.1-6. Blue-listed Coeur d'Alene Oregonian snail.

Construction Impacts:

- Construction could impact the sensitive calcium deposits along the un-named creek.
- Direct impact to Blue-listed Coeur d'Alene Oregonian habitat from trail construction. This effect is considered to be minor, as the habitat along the existing road is limited and the species is locally abundant.

Operational Impacts:

- The road passes though areas with high value ungulate winter range.
- The northern portion of the road contains significant invasive and introduced weed cover, while the southern portion of the road and proposed trail at Section 6 are largely weed free. The construction and use of the old road is expected to spread weeds and invasive species.
- Ongoing wildlife (bear and ungulates) interactions will be a concern.
- Danger tree removal will be an ongoing concern.

Maintenance Impacts:

- This section will require maintenance of the stream crossings to ensure they are properly functioning and not resulting in downstream siltation, or degrading the sensitive calcium deposits.

Management Recommendations:

- A proper crossing should be constructed at the creek crossing to prevent damage to the sensitive ecological feature. As well, barriers and signage should be constructed to prevent motorized access and use to the wet area upstream of the crossing.
- The Coeur d'Alene Oregonian should be salvaged prior to construction and re-located in an adjacent suitable habitat.
- The road should be closed during the winter and snowmobile use restricted to limit the impact to ungulate winter range.

5.2 MT Section 6 – Pete's Road to Herman's Berm

MT Section 6 is a 1.1 km section of new construction. The route ascends a steep section from the end of Pete's Road, then contours along the southwest-facing hillside, following in part along old overgrown roads, before descending down steep slopes to a berm above the highway ("Herman's Berm").

The route passes through stands of mature open Douglas-fir with large patches of paper birch/shrub communities (Plates 4.2-1, 4.2-2 and 4.2-3). Armillaria root disease is evident throughout the area and has likely shaped the current mixed forest condition and generated numerous dead standing trees. Lower down are typical 'zonal' cedar-hemlock forests. The representative ecosystem types along this section range from the very dry ICHdw1-103 to the 104 and 101 site series.

Plate 4.2-1 and 4.2-2. Typical broadleaf and confier stands along MT Section 6.

Plate 4.2-3. MT Section 6 follows the top of the broadleaf forest show in the photo, starting at the gully on the left and ending at the logged area on the right.

The area is within a mapped Ungulate Winter Range (UWR#U-4-001), and there was ample evidence of ungulate use in the area, including elk and mule deer. The numerous high value wildlife trees provide habitat for cavity nesters. The deciduous patches provide excellent songbird nesting habitat.

Two blue-listed species of snails were located in multiple areas along Mt Section 6; Coeur d'Alene Oregonian and Subalpine Mountainsnail (*Oreohelix subrudis*) (Plate 4.2-4 and 4.2-5). Other snails commonly observed along Section 6 included Rocky Mountainsnail (*O. strigosa*), Idaho Forestsnail (*Allogona ptychophora*), Disc snail (*Discus* sp.) and the introduced Grovesnail (*Cepaea nemoralis*). Introduced slugs were also common in this section, including Chocolate Arion (*Arion rufus*) and Dusky Arion (*A. subfuscus*).

Plate 4.2-4 (left) showing blue-listed *Oreohelix subrudis* and Plate 4.2-5 (right) showing yellow-listed *O. strigose*.

Construction Impacts:

- Direct impact to blue-listed Coeur d'Alene Oregonian and Subalpine Mountainsnail habitat from trail construction. This effect is considered to be minor, as the habitat along the proposed trail route is common and the species is locally abundant.
- Potential loss of wildlife trees.
- Direct and indirect impact to high value ungulate habitat.
- Potential for localized erosion due to steep slopes.
- Potential for the introduction of invasive species.

Operational Impacts:

- Ongoing wildlife (bear and ungulates) interactions will be a concern.

Maintenance Impacts:

- Falling of wildlife trees to maintain a safe trail may be required.
- Trail erosion due to steep slopes will be an on-going issue.

Management Recommendations:

- Seasonal closures (winter) of the trail to preserve ungulate winter range.
- Restrict snowmobile use.
- Seed with native grasses the first and last 100 m of the trail to create an invasive species buffer.

5.3 MT Section 7 – Existing Logging Road

MT Section 7 is located along an existing logging road for 3.7 km (Plate 4.3-1). No new construction of modification of the road is required for this section.

Plate 4.3-1. Logging road and recent clear cuts that MT Section 7 follows.

Construction Impacts:

- No construction activities required.

Operational Impacts:

- The use of the road for ATVs has the potential to introduce and spread invasive and weedy species.
- The area has high ungulate use, including the existing road system.

Maintenance Impacts:

- Falling of wildlife trees to maintain a safe trail may be required.

Management Recommendations:

- Promote seasonal closures of the road to avoid disturbing winter ungulate use. As it is a logging road, it is assumed that the management of the road will fall under other agencies.

5.4 MT Section 8 – End of Logging Road to West Wilson Ck. Road Network

MT Section 8 starts at a clear cut at the end of a logging road (Plate 4.4-1) and climbs to the height of land to the northeast. This ~1.3 km section is conceptual only, with the exact route not yet determined. The proposed route was not field checked, but based on airphotos, drone photos, and the site visit to the general area, there is unlikely to be any sensitive features present. The proposed route passes though mature ICHmw2 Douglas-fir, western redcedar and western larch stands, with lesser amounts of paper birch and trembling aspen for most of the route. At higher elevations the forest appears to be dominated by lodgepole pine, as the proposed route connects to an old clearcut and logging road network along the top of Wilson ridge.

No watercourses or areas with sensitive soils are expected in this area. The conifer forests have high winter ungulate range values, and the blue-listed Coeur d'Alene Oregonian snail is likely to occur in places.

Plate 4.4-1. Start of MT Section 8 through a clear cut at the end of the logging road.

Construction Impacts:

- Removal of some mature forest.
- Potential impact to blue-listed Coeur d'Alene Oregonian habitat.
- Impact to winter ungulate habitat.
- Localized soil erosion.
- Removal of danger wildlife trees.

Operational Impacts:

- Potential for the introduction of invasive and exotic species.
- Disturbance of ungulate habitat.

Maintenance Impacts:

- Invasive species control.
- Removal of wildlife danger trees.

Management Recommendations:

- Seasonal closures (winter) of the trail to preserve ungulate winter range.
- Restrict snowmobile use.
- Seed with native grasses the first and last 100m of the trail to create an invasive species buffer.

6 RECOMMENDATION SUMMARY

Based on the current trail design and available information, there are no significant risks posed to the identified values from the proposed motorized trail, provided the recommendations are followed. These include:

- Establish a proper stream crossing on Section 5 to protect a unique calcareous creek and riparian values. The crossing should include a barrier to prevent ATV access above to avoid impacting the sensitive riparian area.
- Restrict snowmobile access in the winter to protect ungulate winter range values;
- Mitigate for the spread of invasive plants;
- Survey for bird nests for any vegetation removal during the breeding season.

7 REFERENCES

Ehlers, T. and R. Durand. 2018. Rosebery to Summit Lake Rail Trail and Moto-Bypass Environmental Impact Assessment; Phase 1. Prepared for Recreation Sites and Trails British Columbia.

MacKillop, D.J. and A.J. Ehman. 2016. A Field Guide to Site Classification and Identification for Southeast British Columbia: The South-Central Columbia Mountains. Prov. B.C., Victoria, B.C. Land Management Handbook. 70.

Mahr, M. 2017. Slocan Lake Watershed Priority Conservation Actions Summary Report: Step#2 for an Ecosystem-based Conservation Action Framework for Slocan Lake. Report to Slocan Lake Stewardship Society. 30pp.

Mahr, M. 2018. High-level Overview of the Bonanza Biodiversity Corridor. Report prepared for the Kootenay Conservation Program.

APPENDICES

Appendix 1 – Comprehensive list of species observed along the proposed trail.

Appendix 2 – Species and ecosystems at risk with confirmed or potential occurrence in the study area.