

Mount Klappan Coal Project: February 2006 Update Series
**Highlights of Ongoing Ecosystem Mapping
and Vegetation Assessment**



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Background

As part of the ongoing environmental and socio-economic baseline study and impact assessment being conducted for the proposed Mount Klappan Coal Project, this document will review results to date for the Ecosystem Mapping and Vegetation Assessment component. Work in this area of study began in July 2005 by RTEC and will continue through 2006. Documents will be submitted to all levels of government and affected First Nations later this year. This document provides a review of our program, a map of the study area, and a summary of the work completed to date. Further field work and analysis to be conducted through 2006 is also presented.

The purpose of the ecosystem mapping and vegetation assessment component is to provide a description of the common and rare plants and ecosystems in the study area. Ecosystem mapping is a way of stratifying a landscape according to a combination of ecological attributes such as climate, surficial material, soil, and vegetation. It is an effective approach based on standards and procedures that have been in place and tested throughout the province for many years. It provides a framework that integrates the living and non-living ecosystem components of the landscape, from which interpretations can be made.



Ecosystem maps have been used in British Columbia for a number of functions, including the identification of areas of multiple resource use, landscape sensitivity, and wildlife habitat potential. One outcome of the Mount Klappan Ecosystem Mapping will be wildlife habitat suitability maps (see Wildlife Report). These maps will display areas in the vicinity of the proposed development with high wildlife suitability ratings for species of interest, including moose, mountain caribou, Stone sheep, mountain goat, and grizzly bear.

Study Components

Five main study components are included:

1. **Predictive Ecosystem Mapping (PEM)** – this mapping methodology uses topographic modelling, satellite imagery, ecological knowledge, and field surveys to predict and display the spatial distribution of ecosystems.
2. **Terrestrial Ecosystem Mapping (TEM)** – this mapping methodology uses air photos, photo interpretation, ecological knowledge, and field surveys to predict and display the spatial distribution of ecosystems.
3. **Rare natural plant communities** – rare plant communities tracked by the BC Conservation Data Centre are researched and surveyed for.

4. **Rare plants** – rare plants tracked by the BC Conservation Data Centre are researched and surveyed for.
5. **Baseline metals concentrations in plant tissue** – plants that are important food for wildlife are collected from various locations within the potential mine footprint and along the access corridor to establish baseline metals concentrations. The samples are collected at the same location as soil samples so that the results can be integrated (see Soils Report).

Results to Date

The first phase of ecosystem mapping and vegetation assessment was conducted during July and August of 2005. Crews were comprised of a soil/terrain scientist, vegetation ecologist, wildlife biologist, and Tahltan field assistant. , To assess vegetation, soils, and wildlife habitat suitability, 317 plots were completed. The majority of the plots were located within the proposed mine footprint (TEM area), while the remainder were located throughout the rest of the study area (PEM area).



Biogeoclimatic Ecosystem Classification is a provincially used system that uses regional climate, topography, soil and vegetation to identify ecosystems within different biogeoclimatic zones. The proposed mine footprint is located within the non-forested Alpine Tundra biogeoclimatic zone and the sparsely forested Spruce Willow Birch zone. Both of these zones have very cold, slow-growing climates. The remainder of the study area includes these two zones, in addition to two subalpine forested zones (the Engelmann Spruce-Subalpine Fir zone and the Sub-Boreal Spruce zone), and one lower elevation forested zone (the Interior Cedar-Hemlock Zone).

Surveys for rare ecological communities and rare plants were carried out in conjunction with the ecosystem mapping field surveying in 2005. No rare plants or ecological communities were identified to date. Twenty nine plant tissue samples were collected throughout the proposed mine footprint to establish baseline metals concentrations prior to development. These samples were analyzed for metals concentrations. Final results and analysis will be presented in the forthcoming baseline reports.

Work Planned for 2006

Field assessments are set to include four trips during July and August, 2006, focusing primarily on the proposed road route and finalizing the proposed mine footprint.

Surveys for rare ecological communities and rare plants will again be carried out in conjunction with the ecosystem mapping field surveying. More plant samples will be collected throughout the proposed mine footprint and access route to establish baseline metals concentrations prior to development. Data analysis, report writing, and final map production will be completed in the fall of 2006.

End Results

The final baseline data will characterize the ecosystems, identify rare elements, and establish baseline metals of the area that are likely to be affected by the proposed mine development. The resulting ecosystem information will be used to highlight important wildlife habitat within the study area. As required by federal and provincial laws, the mine operators are then obligated to monitor the ongoing environmental impacts and report on changes over time. If mining-related impacts are unacceptable, the operator has to resolve the situation immediately. The reference point for these decisions is the baseline work we are conducting now.

