



## MEMORANDUM

**TO** Brian Thomson, SCEK

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**CC** Steve Wilson, REMB

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**PROJECT No.** 1313720037

### EXECUTIVE SUMMARY FOR BOREAL CARIBOU HABITAT RESTORATION TOOLKIT

Boreal caribou are a threatened species in Canada (EC 2012) and a red-listed Priority Species in British Columbia (BC MOE 2011a). The province has outlined their plans to increase the population and manage the impact of the industrial footprint in their *Implementation Plan for the Management of Boreal Caribou (Rangifer tarandus caribou pop. 14) in British Columbia* (the Plan) (BC MOE 2011a).

Linear features, in particular, have been identified as having a strong impact on caribou survival and distribution because of the increased mobility that predators, especially wolves, can gain in areas of high linear feature density. The *Interim Operating Practices for Oil and Gas Activities in Identified Boreal Caribou Habitat in British Columbia* (BC MOE 2011b) was developed in response to the Plan (BC MoE 2011a); it outlines operational guidelines for oil and gas activities in Boreal Caribou Ungulate Winter Range (UWR), and states that reclamation and restoration is a requirement for oil and gas infrastructure and footprint.

Restoration efforts should be streamlined and collaborative amongst industries and individual operators to maximize efficiency and available resources. Large-scale habitat restoration programs focused on linear features have not yet been implemented in BC. To build an operational toolkit, the research and results from various large-scale programs implemented in Alberta's boreal ecosystem are used to guide BC's oil and gas operators as province-wide restoration efforts begin. Golder Associates Ltd. developed an operational toolkit to guide restoration efforts and assist operators and reclamation specialists maximize efficiency, available resources, and meet the provincial requirements. A workshop with provincial regulators and relevant stakeholders ensured the adaptation of Alberta restoration learnings was appropriate within the context of BC's ecological and regulatory environment.

The *Boreal Caribou Habitat Restoration Operational Toolkit for British Columbia* (the Toolkit) (Golder 2015) provides an overview of the considerations to make for planning and implementing restoration projects specific to oil and gas linear disturbance. The Toolkit focuses on restoration where the primary objectives are to limit access of predators and humans, and allow for regeneration of native species.

Advanced planning for habitat restoration helps guide the operator to meet provincial requirements. The Toolkit outlines the considerations that must be made prior to starting a restoration project, including but not limited to disturbance type, site attributes such as soil and forest composition, and future development plans for the area. These characteristics help inform which restoration prescription to employ. Acquiring permits and undergoing consultation with the appropriate stakeholders is another key part of the planning stage.

The field specifications of each treatment type, along with positive and negative aspects to consider for each, are detailed in the Toolkit. Treatments include excavator mounding, ripping, tree/shrub seedling planting, tree felling/bending, and installing wooden fences. Monitoring the effectiveness of treatments is an important final



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step that is outlined in the Toolkit; companies are encouraged to use consistent monitoring methods to increase the statistical power of the monitoring.

The Toolkit is intended to be a reference manual for operators during the planning, implementation and monitoring phase of a restoration program. It is a living document, to be updated regularly as habitat restoration objectives, targets and regulations evolve because of learnings from monitoring of caribou habitat restoration programs and studies.

### **References**

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