Whitebark Restoration and the Mining Industry: Potential for collaboration?

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Industrial development in whitebark pine habitats is a cause for concern due to the potential for increased damage or mortality to a species with rising mortality rates from white pine blister rust and mountain pine beetle. Even when an industrial development has the potential for minimal impact, the cumulative effects of the development along with the above mortality agents must be considered. However, given the right industrial partner, there is potential to develop a long-term restoration strategy designed to reduce the impacts of industry, while also enhancing local whitebark pine populations outside of the development area. These potential collaborations between whitebark pine restoration ecologists and industry should be a source of cautious optimism in light of industrial development in whitebark pine habitats.

In 2011, we began working at the proposed Blackwater mine owned by New Gold Inc, located on Mt. Davidson in central British Columbia. This collaboration could become an example of how industry can engage with whitebark pine restoration practitioners to potentially yield a positive outcome for whitebark pine during and after mining. This proposed gold mine sits on an isolated mountain on the western edge of the Nechako plateau; approximately 40km north of the nearest pockets of whitebark pine in Itcha Ilgachez Provincial Park , and 70km from the nearest sizeable populations of whitebark, in Tweedsmuir Provincial Park. Mt. Davidson is 1850m in elevation, with whitebark pine beginning to appear at about 1575m on the north-facing slope, in the vicinity of the proposed open pit. Whitebark pine on Mt. Davidson is found in a mix of stand types: closed forests comprised of old trees with little whitebark pine regeneration; open parkland with abundant regeneration, saplings and mature trees; and abundant whitebark pine in the vicinity of the treeline. These stands have been affected by blister rust and mountain pine beetle; the treeline and subalpine parkland identified as a potential mitigation area has a rust infection rate of 36%. The combination of mortality due to blister rust and proposed industrial development on Mt. Davidson suggests the need for preventative measures to mitigate impacts of mining by planning for future recovery of this isolated population of whitebark pine.

As this mine is moving through the environmental assessment process and is not yet operational, we are able to propose management strategies for whitebark pine at the exploration phase that extend right to mine closure. To mitigate exploration activities, our work has focused on reducing impacts on live whitebark pine seed trees and conducting transplanting trials. Given the relative isolation of the population on Mt. Davidson, local pollen and seed sources may be very important to maintain the population outside of the mine footprint. We have marked individual healthy trees for retention that workers are to avoid during clearing activities. For the transplant trials, 20 seedlings of varying sizes were excavated by hand to test their ability to survive transplanting. Given the time it takes for whitebark pine trees to reach maturity and bear cones, we hope these transplants will produce cones sooner than those from our seedling production.

In advance of full mine development and as a component of long-term planning, we will also collect seed from the healthiest trees in the impacted population for use in seedling production, on and off-site restoration trials, field-based rust screening, and

possibly more intensive rust screening. This collection has been delayed until 2013 due to a lack of seed in 2012 across northern populations of whitebark pine. New Gold is already planning future site reclamation by conducting research trials around the use of whitebark pine seedlings in restoration, and it plans to bank seed for use in future reclamation efforts.

Collaborating with mining companies can provide benefits to whitebark pine restoration capacity in terms of financial contributions. Additional benefits may occur when a company is willing to increase the knowledge base through supporting restoration research, as is the case with New Gold. In this case there may be positive outcomes for whitebark pine well beyond the area affected by a given mine. If the Blackwater mine project is constructed, during its lifetime it could support long-term blister rust screening and restoration trials in addition to the work required to mitigate the whitebark pine habitat affected by the mine footprint.

Mining companies as well as individual mines generate public opinion in the local area and larger regions in which they operate. A positive opinion can lead to a 'social license to operate', whereby the public views the mine as doing more than just providing jobs and profits to shareholders. Although social license is somewhat conceptual, it is generally gained through concrete actions such as gaining feedback from locals, sponsoring community initiatives, and through environmental contributions; demonstrating care for the regions in which the mines operate. Mines cannot act unilaterally, but need to incorporate community concerns and needs in order to gain social license. As the public becomes increasingly aware of whitebark pine and its ecological significance, contributions to whitebark pine conservation may be a viable option for mining and exploration companies to gain social license in order to operate in these high elevation ecosystems. Although it is easy to view industrial development for its negative impacts on whitebark pine ecosystems, industrial partners could potentially enhance our capacity for research, restoration, and educational outreach.

People may view whitebark pine as occurring primarily in pristine protected areas such as national parks, but the reality is that whitebark pine also occurs within areas prone to development for mining. Developing cooperative relationships with industrial partners is a critical means to ensure effective mitigation of impacts to whitebark pine habitats. New Gold is heading in this direction, and other companies impacting whitebark pine should be encouraged to take similar action. (see figures 1 & 2) ■

Figure 1. Mature whitebark pine retained during exploration clearing on-site thanks to pre-clearing flagging.

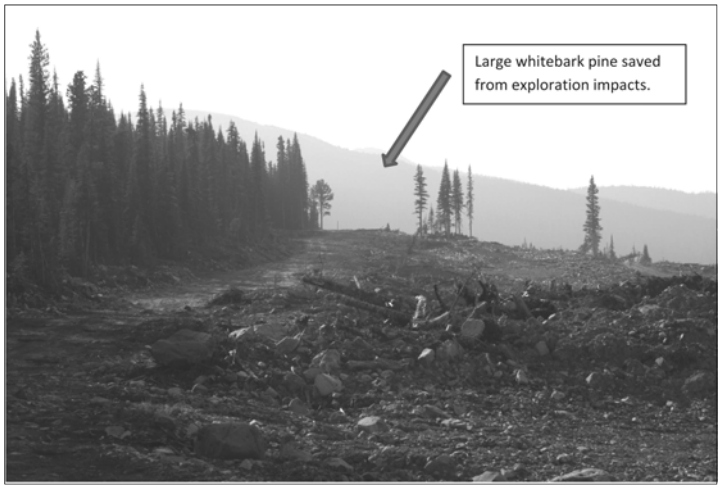

Figure 2. Salvaged seedlings to be used in restoration trials.