



Key Risks & Lessons at the Red Chris Mine

Charting a path forward for responsible mining development in northwest British Columbia

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Summary

In northwest British Columbia (BC), home to some of the world’s last remaining salmon stronghold watersheds, exploration and investment in large-scale open-pit mining is rapidly expanding and is supported by [infrastructure advancements](#), federal [financial support](#), and provincial [commitments](#) to expedite permitting. Several open-pit mines producing “critical minerals”—copper and other metals considered necessary to support the renewable energy transition—are proposed or already permitted but not yet operating. Many will also produce gold, a luxury commodity, not a critical mineral. Large-scale mining development exacerbates risks to wild salmon populations vulnerable to rapid climate change and could contribute to the “[undocumented extinction](#)” of certain populations. Physical disruption of habitat, chemical water pollution, and the possibility of tailings dam failures from mining in remote northwest BC watersheds jeopardize recreation and tourism, world-class Pacific salmon fisheries, and salmon’s ability to adapt to climate change.

The Red Chris Mine, an open-pit copper-gold-silver mine in the headwaters of the salmon-bearing Iskut and Stikine Rivers, began operating in 2015. In 2023, its owners began pursuing an expansion of its operations. In February 2025, in response to US tariff threats, the provincial government included the Red Chris expansion project on its list of projects to fast-track. SkeenaWild Conservation Trust’s review of the Red Chris operation offers valuable insights into potential issues at future mines in the region, helping to ensure that mining for critical minerals does not compromise human health, clean water, healthy ecosystems, or wild salmon populations. Now is also a critical time to address outstanding problems at Red Chris’ existing operations prior to any expansion.

Based on mine monitoring data and reporting, this report reviews key technical and scientific issues at Red Chris Mine, focusing on its impacts on downstream aquatic ecosystems, tailings facility, and proposed expansion. It also relates these issues to potential additional mines in the region. Most records related to Red Chris Mine are not publicly available and were accessed via requests under the *Freedom of Information Act*. Based on the information obtained, our review discusses the following key findings:

AQUATIC ECOSYSTEM IMPACTS



- Significant gaps exist in data transparency, understanding of mine site conditions, environmental monitoring, and mitigation thresholds for preventing negative aquatic impacts.
- An unexpected water deficit has complicated site water management and amplified aquatic impacts.
- The mine is releasing significantly more contaminated seepage from its tailings facility and waste rock pile to the environment than was predicted.
- The mine has caused documented physical degradation and elimination of productive fish habitat.
- Numerous mine contaminants, such as selenium, copper, nitrate, and sulphate, are increasing in surrounding creeks and lakes and are often high enough to negatively affect aquatic life.
- Selenium concentrations in local fish tissues are increasing in two lakes affected by the mine, and this may negatively affect both the fish and the humans consuming them.
- The mine will generate widespread acid rock drainage (low-pH mine effluent containing very high contaminant concentrations).
- Effective water treatment plans to protect the downstream environment have not been developed.

TAILINGS SAFETY



- The tailings dam foundations contain glaciolacustrine layers, the same foundation materials associated with the Mount Polley dam failure.
- Construction of the tailings dams has repeatedly failed to meet construction targets, which may increase the likelihood of a dam failure due to overtopping.
- Seepage from the tailings facility poses risks to physical dam stability and may increase the severity of acid rock drainage from the tailings.
- A major tailings dam failure at Red Chris would significantly destroy or deteriorate critical fish or wildlife habitat and could result in the loss of human life.
- Multiple shortcomings in dam failure modelling and emergency planning at Red Chris increase risks to downstream human populations and the environment.

MINE EXPANSION



- The expansion of Red Chris Mine will shift the mine's focus from copper to gold extraction.
- The mine's initial proposed shift to underground mining would have fewer environmental impacts than open-pit mining; however, risks and uncertainties related to landslides, degradation of aquatic habitat, and significant pre-existing issues remain.
- Mine operators are considering additional future expansions that would further destroy aquatic habitat and raise the consequences of a tailings dam failure.

Many of the above issues can be directly tied to shortcomings in provincial regulatory requirements and oversight, resulting in:

- inadequate monitoring, predictions, and planning,
- failure to minimize the scope and scale of the project,
- disregard of independent expert advice, and
- delays in thoroughly assessing and managing mine environmental effects.

Ultimately, the risks and impacts of the Red Chris Mine to fish, aquatic ecosystems, and humans are greater than necessary. Without more attention, these risks and impacts will persist long after Red Chris closes and be compounded by regional stressors like climate change and other extractive development. To remedy current issues at Red Chris, especially as mine expansion is pursued, we recommend that regulators strengthen their requirements relating to:

- understanding of site conditions and mine contamination sources,
- aquatic monitoring,
- mitigation of greater-than-expected mine seepage and the mine's impacts on water, fish, and other aquatic resources,
- planning for acid rock drainage and future water treatment needs,
- reducing risk factors associated with the tailings facility, and
- planning for tailings dam failures and other emergencies.

Regulators must also ensure that addressing the mine's existing problems and rigorously assessing future risks—including trade-offs between social and environmental risks in exchange for producing non-essential commodities like gold—is prioritized over fast-tracking the mine's expansion.

Many large-scale open-pit mines similar to Red Chris aspire to operate in watersheds of northwest BC. All mining developments in this region will carry similar risk factors and face many of the same complex issues revealed in this report, which could create far-reaching consequences for high-value wild salmon habitats and local communities. This is especially true for the many mine projects under development close to salmon-bearing rivers, human settlements, and international borders. It is ultimately the responsibility of provincial and federal decision-makers to do what is needed to reduce the direct and cumulative pressures of further mining in northwest BC. This includes more substantial requirements at current and future mines for:

- public transparency about mining risks and impacts,
- preventing environmental risks by understanding site conditions before approving mine designs,
- precautionary approaches to predicting, monitoring, and mitigating environmental effects,
- accountability to independent expert recommendations, and
- reducing the overall scope, scale, and risk profile of mine projects.

Environmental Assessments must also be based on strong data, meaningful engagement with the public, and full consideration of cumulative effects. Decision-makers must not permit risks or impacts to the environment or human safety in exchange for mining gold and other precious metals, which are not critical minerals.

A balance must be struck between pursuing economic prosperity, procuring metals to support daily technology requirements and the renewable energy transition, and the essential need to safeguard the natural resources that sustain our communities. Based on this review of the last ten years of operations at Red Chris Mine, it is clear that current approaches to mine planning, design, operations, and oversight in northwest BC put

downstream environments and people at unnecessary risk. However, solutions are available to ensure more responsible future mining development throughout the region that will protect the long-term health and strength of these world-class watersheds. See below for a complete list of the recommendations made in this report.



Tailings facility at Red Chris Mine with open pit, waste rock pile, and Kluea and Todagin Lakes in background. COLIN ARISMAN | COLINARISMAN.COM