

Assessing Climate Change Risk on Abandoned or Orphaned Mine Sites in Ontario, Yukon and Northwest Territories

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Climate Risk Institute (CRI)

The Climate Risk Institute is a not-for-profit, academic-based entity that provides climate change impacts and adaptation decision and planning support.

Northern Climate ExChange

Established in 2000, the Northern Climate ExChange partners with communities, industry, First Nations, academics and government leaders to explore and respond to climate change impacts on northern communities and their infrastructure.

Advisory Committee Representatives

- Government of Northwest Territories
- Yukon Government
- Ontario Ministry of Northern Development and Mines
- Mining Innovation, Rehabilitation and Applied Research Corporation (MIRARCO)
- Camborne School of Mines, University of Exeter

Abandoned/Orphaned Mines and Climate Change

For orphaned and abandoned mines, climate change has the potential to compound existing risks to ecosystems and communities and, in general, raise levels of risk for governing jurisdictions. It is possible that in many cases, levels of current and planned rehabilitation may be insufficient to account for future climate and extreme weather.

While some assert that these facilities have been “over engineered” from the beginning, many mines in Ontario, Northwest Territories, and Yukon originally operated when there was little or no awareness that climate change was a relevant consideration and when environmental regulations provided little oversight on measures to mitigate risks to the environment.

The result is a legacy of orphaned and abandoned mines where climate change may be creating hazards that had not been previously considered during the planning and operational phases of mines.

About the Project

This project will identify climate change risks applicable to abandoned and orphaned mines in Canada, and will also assess risk in greater detail at three abandoned or orphaned mine sites. Specifically, the project will:

- 1) Review rehabilitation plans for 15-20 abandoned or orphaned mine sites in Canada to determine whether or how they account for climate change;
- 2) Conduct three climate change risk assessments on abandoned or orphaned mine sites in 3 jurisdictions in Canada (Ontario, Northwest Territories and Yukon);
- 3) Based on factors of climate hazard, degree of change, mining type and main risks, report on the degree to which risks change in the context of climate change; and
- 4) Propose adaptation measures to help reduce climate change risk for all three mine sites.

For more information:

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