Conservation Council *of* New Brunswick
Conseil de conservation *du* Nouveau-Brunswick

February 2026

The Sisson Mine: Environmental impacts that last

What is the Sisson Mine?

The Sisson Mine is a large open-pit tungsten and molybdenum mine proposed northwest of Fredericton, in the upper Nashwaak and Wolastoq (Saint John River) watershed.[1] New Brunswickers rely on this water for drinking, fishing, recreation, and cultural use.

Federal assessment documents estimate the mine would operate for about 27 years.[2] However, mining projects often fall short of their projected lifespans due to metal price volatility, rising costs, or financing challenges.[3,4,5,6] We have seen this before in New Brunswick, where the Mount Pleasant tungsten mine, for example, closed in 1985 after only two years.[7]

Once a mine is approved, public responsibility does not end if the project closes early.[8]

Who controls the mine — and who bears the environmental risk

The Sisson Mine is controlled by Northcliff Resources, which holds most of the controlling interest in the project.[9]

Northcliff Resources is majority-owned by the Todd Corporation, a privately held New Zealand company owned by one of that country's wealthiest families.[10,11]

Why ownership matters:

- Environmental impacts are local
- Long-term management of mine waste remains in New Brunswick
- Financial benefits largely flow outside the province and country

Ownership may change over time, but the environmental liabilities do not.

What remains when the mine closes

Even if the mine operates for fewer than 27 years, the physical footprint remains: [4]

- **Open pit:** About 145 hectares (about 200 soccer fields)[2]
- **Pit depth:** About 370 metres (deeper than the CN Tower is tall)[2]
- **Tailings storage facility area:** About 751–785 hectares (about 1,400–1,500 soccer fields; larger than many New Brunswick towns)[2]
- **Tailings dam**: About eight kilometres long and 90 metres high (almost 16 times the length and twice the height of the Mactaquac Dam)[2]
- **Total industrial footprint:** About 1,253 hectares (12.5 km², about the same size as Fredericton).[2]

This would permanently transform forested land, wetlands, and streams into an industrial site dominated by waste storage and containment infrastructure.

---

1. Permanent damage to water and fish

Fisheries and Oceans Canada identifies the Nashwaak River as the largest Atlantic salmon–producing tributary of the Wolastoq below the Mactaquac Dam.[12]

The construction of Sisson Mine means:[2]

- The loss of multiple brooks, including parts of Bird Brook and Napadogan Brook
- Permanent destruction of habitat for species such as Atlantic salmon, brook trout, slimy sculpin, and the American eel[13]
- Altered water flows downstream

These are not temporary impacts. Once streams are filled or diverted, they do not come back.

Loss of water upstream has cascading effects downstream, affecting water quality, fish populations, and ecosystem resilience throughout the watershed.

---

2. Massive tailings ‘ponds’ are a permanent risk

The largest part of the Sisson Mine is not the pit.

It is the tailings storage 'ponds', where mining waste would be stored.[2]

- The tailings area would cover about 751–785 hectares. That's:
  → larger than many New Brunswick towns
  → roughly 1,400–1,500 soccer fields
- It would hold millions of tonnes of wet mining waste that would need to be treated before it is discharged into the Nashwaak watershed
- The waste would be contained by large earth dams

Tailings ponds must be managed forever and are always risky. They do not become safe when mining ends.[14]

Around the world, tailings facilities have:

1. Leaked slowly, poisoning water over time
2. Failed suddenly, releasing polluted water and sludge downstream

When failures occur, rivers can be polluted for kilometres, fish habitat can be wiped out, and communities can lose access to clean water, fishing, and recreation for years or decades.

Canada has one of the worst records for tailings failures[15], including:

- **Mount Polley, B.C.**, where 24 million cubic metres of mine waste were released.[15]
- **Mount Pleasant, N.B.**, where heavy rainfall in 1998 caused a tailings dam failure, releasing mining waste into Piskahegan Stream.[16]

The Sisson Mine would be located at the headwaters of the Nashwaak watershed. That means a similar failure to Mount Pleasant would send millions of cubic metres of toxic waste downstream and affect the entire river system, including Fredericton's drinking water. This would also damage fish habitat, flood communities, and leave polluted sediments across large areas of land and water for decades

A waste facility of this size in the headwaters of a major watershed represents a permanent environmental risk, not a temporary one.

---

3. Mining waste releases long-lasting contaminants

Hard-rock mining exposes large volumes of rock to air and water. Over time, this can generate contaminants that do not break down and can persist for decades or longer.

Waste from Sisson Mine will include:

- **Toxic heavy metals** such as arsenic
- **Acidic drainage**, which dissolves and mobilizes metals
- **Dissolved salts and processing residues**, which alter water chemistry

Once released, these contaminants can:

- Travel through surface water and groundwater
- Accumulate in sediments and fish
- Create long-term exposure risks for ecosystems and people downstream

This is why ongoing water treatment and monitoring are required indefinitely.

---

4. High water use could threaten streams and affect private wells

Large open-pit mines require significant amounts of water. The Sisson Mine would use millions of cubic metres of water annually to support ore processing, dust suppression, tailings management, and pit dewatering.[2.]

This water would be drawn from surface and groundwater sources in sensitive headwater areas that are critical for maintaining stream flows, especially during dry periods.

- Reduce water levels in nearby brooks and streams
- Lower groundwater tables that feed surface waters
- Increase the likelihood of streams drying up or becoming intermittent during droughts
- Affect the quantity and reliability of wells used by nearby residents

These risks are not limited to the mine's operating life. Pit dewatering and groundwater management may be required for decades, potentially changing natural water flow long after mining ends.

In an area where many homes rely on wells rather than municipal systems, even small declines in groundwater levels can lead to well failures, reduced water quality, or costly well deepening.

Water removed from the watershed is water that is no longer available to sustain healthy streams, aquatic life, and local water supplies.

---

5. Long-term air pollution

Large open-pit metal mines generate significant air pollution during both construction and operation. At the proposed Sisson Mine,[2] key air quality concerns include:

- Fine particulate matter ($PM_{2.5}$ and PM_{10})
- Metal-containing dust
- Nitrogen oxides (NOx), sulphur dioxide (SO2), hydrogen sulphide (H2S), ammonia (NH3)

Dust from blasting, crushing, haul roads, and tailings can travel short distances before settling on nearby land and water, while exhaust gases are released continuously from diesel-powered equipment and processing activities. Once deposited, these pollutants can accumulate in soils, vegetation, and surface waters, creating repeated or chronic exposure for surrounding ecosystems.

Fine particulate matter and dust can coat leaves and needles, blocking sunlight and interfering with photosynthesis and plant respiration. Over time, this reduces plant growth and weakens forest health. Dust may also carry trace metals that build up in soils and sediments and are absorbed by plants and soil organisms, allowing contamination to move through the food chain.[17,18,19]

Other air pollutants add further stress:

- **Nitrogen oxides (NOx) and sulphur dioxide (SO_2)** are associated with acidifying deposition, which can lower the pH of soils and waters. This can leach important nutrients from soils while releasing harmful metals like aluminum, making it harder for trees and crops to grow and stressing fish and other aquatic species.
- **Ammonia (NH_3)** can contribute to nutrient enrichment (eutrophication), which may overstimulate plant and algal growth and disrupt wetlands and streams.
- **Hydrogen sulphide (H_2S)** is linked to odour and localized toxicity, and at elevated levels can stress or irritate plants and wildlife near the source.

Together, these pollutants can reduce habitat quality, alter ecosystem chemistry, and place long-term pressure on forests, soils, and freshwater systems surrounding the mine.[17,18,19]

---

6. High electricity demand increases environmental pressure

Large open-pit mines require very large amounts of electricity[20] to:

- Crush and grind rock
- Pump and treat contaminated water
- Operate tailings facilities and monitoring systems

Meeting this demand can create more environmental pressure, including:

- Increasing pressure on power generation and transmission infrastructure
- Increasing greenhouse gas emissions if fossil fuels are used
- Expanding the environmental footprint of energy infrastructure

Electricity demand does not end when mines close. Power is needed for decades or longer to manage contaminated water and maintain waste facilities.

---

7. Climate impacts from greenhouse gas emissions

The Sisson Mine would also be a long-term source of greenhouse gas emissions, primarily from diesel-powered haul trucks, heavy machinery, generators, and the energy required to crush and process ore. This will generate 47,700 tonnes of carbon dioxide equivalent per year, with about 27,200 tonnes more during construction.[1]

The mine's annual emissions equal about 10,000–10,500 cars on the road each year. Over the project's estimated 27-year operating life, operational emissions would total roughly 1.3 million tonnes. Construction emissions raise the total to about 1.31 million tonnes — around 280,000 'car-years'.

These emissions represent a long-term, continuous source of fossil fuel pollution that adds to Canada's carbon footprint when reductions are needed. The environmental consequences are indirect but significant, including warmer temperatures, changing rainfall patterns, and more frequent extreme weather, which can stress forests, wetlands, and cold-water fish habitats such as salmon streams in central New Brunswick. The mine's climate impacts extend well beyond the project boundary, affecting ecosystem health and community resilience at a regional scale.

---

8. Climate change increases long-term risk

More frequent extreme rainfall and flooding caused by climate change can increase the risk of:

- Tailings dam erosion or overflow
- Containment system failure
- Water treatment system breakdowns

We've seen what extreme weather can do to a mining operation in New Brunswick, as with the Mount Pleasant Tungsten Mine. There, a tailings dam failed after heavy rainfall, and mining waste flowed into the Piskahegan Stream. [16]

Approving a permanent waste facility without certainty that it can withstand future climate conditions puts land and water at serious risk.

---

9. Large-scale damage limits future land use

The Sisson Mine project will convert over 1,200 hectares of forested land, wetlands and headwater areas to an industrial mine site

- Forests and wildlife habitats will be permanently destroyed
- Recreation and tourism opportunities will be lost
- Future land-use options will be permanently reduced

This damage limits what the region can support long after mining ends.

Bottom line

The Sisson Mine would:

- Permanently destroy streams and habitat
- Create a massive, long-term waste problem
- Put clean water at ongoing risk
- Leave future generations with environmental liability

Environmental impacts stay in New Brunswick.

Ownership and profits do not.

References

1. Impact Assessment Agency of Canada (IAAC). *Summary of the Sisson Tungsten–Molybdenum Mine Project.* Government of Canada, accessed January 2026. https://iaac-aeic.gc.ca/050/evaluations/proj/63169

2. Canadian Environmental Assessment Agency (CEAA). *Sisson Project Comprehensive Study Report.* Government of Canada, April 15, 2016. https://iaac-aeic.gc.ca/050/documents/p63169/113759E.pdf

3. MiningWatch Canada. *Mine waste in Canada: A growing liability.* October 5, 2020. https://miningwatch.ca/blog/2020/10/5/mine-waste-canada-growing-liability

4. Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC). *Mine closure, reclamation, and monitoring.* Government of Canada, updated June 6, 2022. https://www.rcaanc-cirnac.gc.ca/eng/1646321588912/1646321643743

5. Crown-Indigenous Relations and Northern Affairs Canada. *Cantung Mine Closure and Reclamation Project.* Government of Canada. Updated July 3, 2025. https://www.rcaanc-cirnac.gc.ca/eng/1750186632463/1750186655385

6. Hunter, Justine. Economics, not politics, main reason mines fail to materialize in B.C., researcher suggests. CBC News, March 7, 2023. https://www.cbc.ca/news/canada/british-columbia/mines-fast-tracking-1.7452976

7. McCutcheon, Steven, John Reddick, Tim McKeen, Stephanie Scott, Dorota El-Rassi, and Michael Kociumbas. *Amended Technical Report on the Mount Pleasant Property Including Mineral Resource Estimates, Southwestern New Brunswick.* Prepared for Adex Mining Inc., October 11, 2013. Available at: https://minedocs.com/12/Mount%20Pleasant_10112013.pdf

8. Office of the Auditor General of Canada. *Chapter 3 — Abandoned mines in the North.* In *Report of the Commissioner of the Environment and Sustainable Development to the House of Commons*, 2002. Government of Canada. https://www.oag-bvg.gc.ca/internet/English/parl_cesd_202404_01_e_44468.html

9. Sisson Partnership. *The Sisson Project.* Sisson Partnership, accessed January 2026. https://www.sissonpartnership.com/the-sisson-project

10. Todd Corporation. *About Todd Corporation.* Todd Corporation (New Zealand), accessed January 2026. https://todd.co.nz/

11. Todd Corporation. *Todd Corporation — company profile.* Wikipedia, accessed January 2026. https://en.wikipedia.org/wiki/Todd_Corporation

12. Reader, J. M., D. C. Hardie, S. McWilliam, E. B. Brunsdon, and M. Gautreau. *Updated information on Atlantic salmon (Salmo salar) populations in southwest New Brunswick: Scientific Research Document 2024/051.* Fisheries and Oceans Canada, Canadian Science Advisory Secretariat Research Document FS70-5/2024-051, September 2024. https://publications.gc.ca/collections/collection_2024/mpo-dfo/fs70-5/Fs70-5-2024-051-eng.pdf

13. Stantec Consulting Ltd. *Sisson Mine: Updated MMER Offsetting Plan (submitted).* Prepared for the Conservation Council of Canada, March 2018. Available at: https://www.conservationcouncil.ca/wp-content/uploads/2018/03/2.-Sisson_MMER_offsetting_submitted-Stantec.pdf

14. Environment and Climate Change Canada. *Environmental code of practice for metal mines — Chapter 3: Environmental concerns.* Government of Canada, updated September 10, 2017. https://www.canada.ca/en/environment-climate-change/services/canadian-environmental-protection-act-registry/publications/code-practice-metal-mines/chapter-3.html

15. MiningWatch Canada. Canada has the second-worst mining record in the world. October 27, 2017. https://miningwatch.ca/news/2017/10/27/canada-has-second-worst-mining-record-world-un#:~:text=Imperial%20Metals%20British%20Columbia%20Alaska,the%20livelihoods%20of%20many%20communities

16. Government of New Brunswick, Department of Environment and Local Government. Flood Details – 1998-03-09 to 1998-03-14. Flood History Database, Government of New Brunswick. https://www.elgegl.gnb.ca/0001/en/Flood/Details/112

17. Environment and Climate Change Canada (2018) *Air pollution: effects on wild animals*, Government of Canada, 14 November. Available at: https://www.canada.ca/en/environment-climate-change/services/air-pollution/quality-environment-economy/ecosystem/wild-animals.html

18. Environment and Climate Change Canada (2018) *Air pollution: effects on soil and water*, Government of Canada, 14 November. Available at: https://www.canada.ca/en/environment-climate-change/services/air-pollution/quality-environment-economy/ecosystem/effects-soil-water.html

19. Government of Canada. (2018, November 14). *Vegetation and air pollution*. Environment and Climate Change Canada. https://www.canada.ca/en/environment-climate-change/services/air-pollution/quality-environment-economy/ecosystem/vegetation.htm

20. Statistics Canada. *Mining industries, energy consumption by NAICS, Canada (Table 16-10-0029-01).* Government of Canada, accessed January 2026. https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1610002901