

Tar sands tailings “ponds”: five decades of toxic legacy

FACT SHEET

March 2023



environmental
defence

Context

The leak from Imperial Oil’s tailings pond in Alberta spilled over [5.3 million litres of toxic wastewater](#) into the environment. Oil production in Canada’s tar sands is unsafe and harms biodiversity and downstream Indigenous communities. Tailings ponds are industry-made reservoirs the size of lakes in which the toxic byproduct of oil extraction from tar sands is stored. They have been growing and leaking for decades.

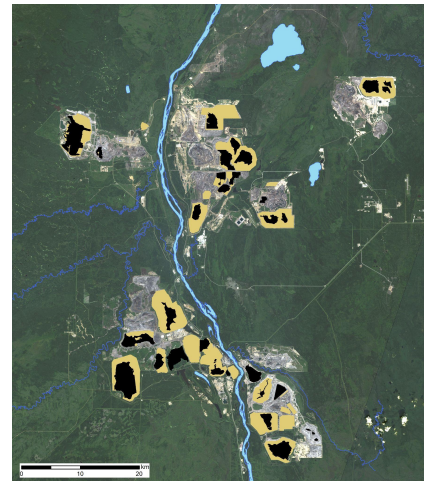
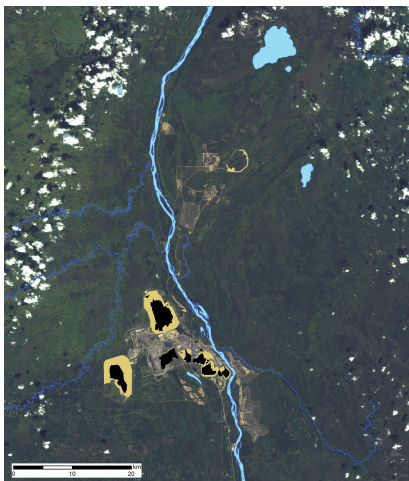
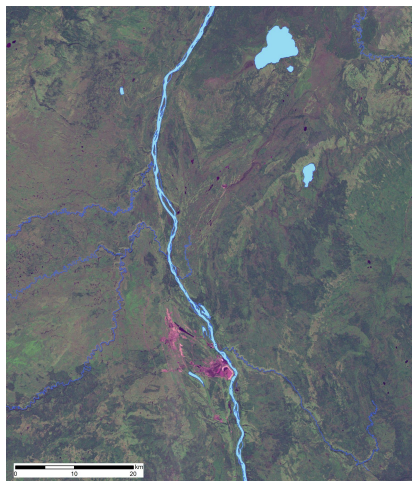
Size

- Toxic tailings contain over [1.4 trillion litres](#) of toxic fluid and sprawl [over 300 km²](#) – an area 2.6 times the size of Vancouver.

Growth

- The total tailings footprint has [grown nearly 300% in the last 20 years](#).
- Since 1975, the tailings area has grown significantly, despite new policies aimed at reducing them. On average, tailings grew 42 per cent every 5 years since 2005. ([Maps available](#))

Photos: Satellite imagery showing tailings growth from 1975, 2000 and 2020



Toxicity

- The tailings “ponds” hold chemically complex mixtures unique to the tar sands, including dangerous levels of mercury, arsenic, lead, ammonia, benzene and naphthenic acids.
- [Studies have found](#) that repeated exposure to naphthenic acids leads to adverse health effects in animal species. They are lethal to the migratory birds who land on

them, and the long-term impact of exposure to tailings water on human and environmental health has been severely understudied.

- The same communities are experiencing [higher levels of rare cancers and respiratory diseases](#) than the rest of the country.

Threat to biodiversity

- Oil production in the tar sands is [documented to negatively impact water quality](#). Local Indigenous communities [observe](#) stark degradation in water and air quality, the presence of fur-bearing animals, and the ability to harvest food since industrial operations started in the region.
- Following an investigation request by Mikisew Cree First Nation (MCFN), the [UNESCO's World Heritage Committee confirmed](#) in 2019 that the ongoing deterioration of Wood Buffalo National Park could result in the park being added to UNESCO's List of World Heritage in Danger", and called on Canada to conduct a systematic risk assessment of oil sands tailings ponds.

Seepage

- Industry data [shows](#) operators have known that tailings have been leaking since the start of the oil sands. One study used industry data to estimate that by 2008 the tailings ponds were leaking four billion litres each year.

Reclamation

- Oil sands projects are approved [with the condition](#) that the mine and tailings will be reclaimed to "equivalent land capability," meaning that the land can support land uses similar to those that existed before the industrial activity.
- [Less than 0.1 per cent](#) of the oil sands have received a formal reclamation certificate from the provincial regulator (AER). No tailings pond has received a certification that the area has been returned to its pre-disturbed state.
- Industry is now pushing for regulations that would authorize the release of minimally treated tailings into the Athabasca River and its tributaries, a proposal judged unacceptable by downstream Indigenous nations and by scientists.

Financial liability

- Despite public-facing estimates of the cleanup costs being pegged around \$30 billion dollars, internal AER documents have estimated the cost of cleaning up the oil sands (most of which relates to tailings) could [be as high as \\$130 billion](#).
- Less than [4 per cent](#) of the estimated clean-up cost is currently held by governments as security. Taxpayers may be liable for the rest.

Indigenous resistance:

- Indigenous Nations downstream have voiced concerns about the impacts of tailings since the [beginning of operations](#).
- In 2008, MCFN and Athabasca Chipewyan First Nation (ACFN) launched their [own community-based monitoring program](#).

- Between 2010 and 2014, Indigenous nations and organizations hosted annual Healing Walks, a 16 km walk around the mining operations to call attention to the toxic tailings while also building relationships between the area's Indigenous and non-Indigenous people.

Government failures

- In 2008, the Alberta Energy Regulator's Directive 074 required operators to reduce tailings volumes and reclaim the landscape on an ongoing basis. All operators failed to meet their targets, and the Directive was replaced by the much weaker Directive 085.
- No risk assessment on oil sands naphthenic acids has been done by the federal government.
- In 2020, the Commission for Environmental Cooperation - an environmental watchdog created under NAFTA - concluded there is ample evidence that tailings ponds are leaking into groundwater. It found that tailings ponds appeared to be operating in violation of the federal *Fisheries Act*.