

Remediating Trails: Addressing Toxicities from Pitchblende Transportation

Laura Goyhenex

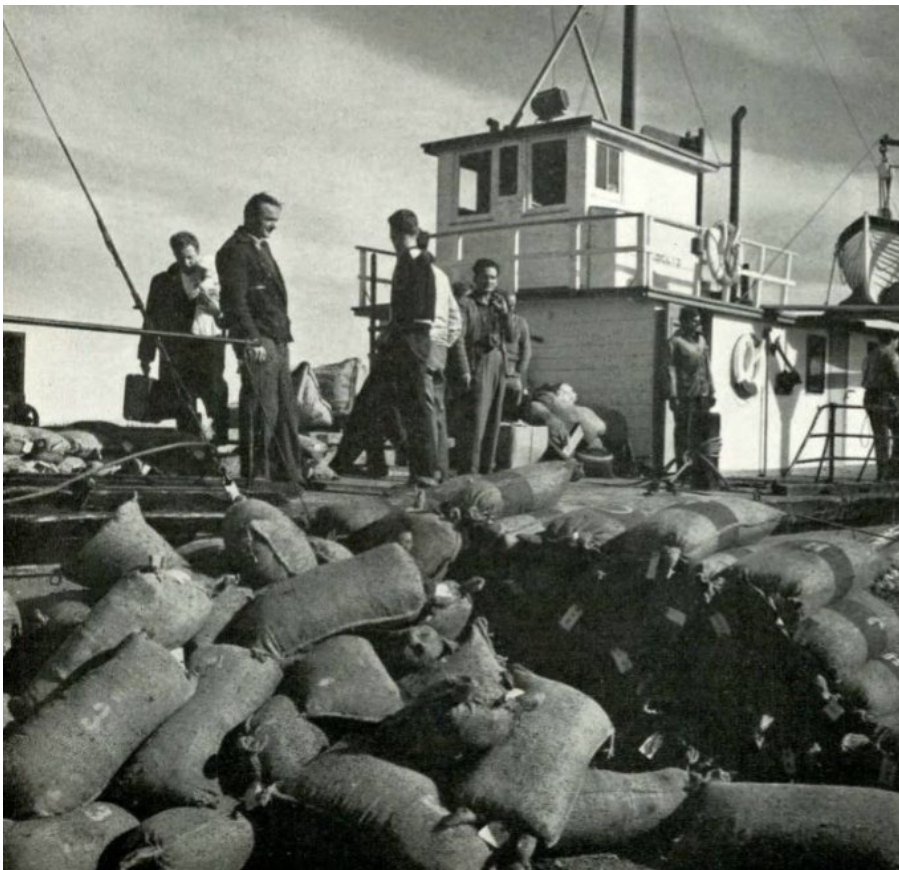
Spring is slowly coming back in the North. Earlier in the evening, the thick layer of ice on the river broke up and was rushed away in a sound of thunder. As the sky is slowly turning pink, people have gathered in the community hall for an open house to discuss the clean-up of historical spilled uranium-ore initiative on the First Nation's reserves.¹ Open houses such as this are times for the community to be presented information by internal (e.g. Band Office) or external (e.g. consultancy companies) agents, and to discuss and give directions for how projects should be conducted on their land. During the discussion, an Elder calls attention to how spilled uranium-ore exemplifies larger issues of pollution and waste disposal that are adversely affecting his life on the land, pointing out that "We live on poisoned land right now." (Fieldwork diary, May 2022)

¹ In this article, I mostly use English names for places and people to maintain the anonymity of the First Nations and individuals.

In this article, I look at the toxicities stemming from historical transportation and spillage of uranium-ore on Indigenous lands mentioned in the vignette above. I argue that the pollution and toxicity described as “poison” by the Elder can be understood both as contaminated materials and the colonial relations (Geissler and Prince 2020) embodied by toxic infrastructure.

Transportation of Pitchblende: New Toxicities

Between the 1930s and 1960s, pitchblende, a uranium-rich mineral, was extracted from Great Bear Lake, in the Northwest Territories, the traditional lands of several Indigenous communities. This raw material was then transported along river routes and portage trails to Waterways (Alberta), and then by railroad through Edmonton (Alberta) and finally to Port Hope (Ontario) to be refined—mostly for medical treatments and industrial applications, as well as atomic energy and weaponry. The route from Great Bear Lake to Waterways was known as the Radium Line or Radium Trail, in reference to the material transported and the name of the fleet owned by the transportation company. On that route, gunnysacks containing pitchblende were portaged over land trails around a set of impassable river rapids, on the territory of local Indigenous communities. Very little, if anything at all, was communicated to workers and communities—Indigenous and non-Indigenous—about the dangers of carrying pitchblende. On portage trails,



Gunnysacks containing uranium ore were transported via water routes and overland trails.

Photo: George Hunter (Hunter 1953).

sacks sometimes broke and spilled their contents onto the ground or were stacked in public areas in direct contact with people.

Extraction of uranium in the region ceased in the 1960s. Simultaneously, the portage trails lost their importance following the construction of all-season highways and railroads. The spillage of uranium ore was not addressed until the 1980s, and the first remediation projects—i.e. the cleaning up of materials contaminating the environment—started in the 1990s. As a displaced, radioactive material, pitchblende constitutes a new kind of presence in the land of Indigenous communities, altering the sand and the clay, the moss and the roots, while also changing bodies. Pitchblende itself, however, is not the only thing that makes the portage trails toxic.

Remediating Toxic Infrastructures: The Clean-up Project

For Indigenous communities in the Northwest Territories and Alberta, trails are valued cultural places (Baker 2021; Armstrong et al. 2023), constituting networks between communities of humans and other-than-humans, joining campsites, familial berry patches, hunting grounds and sacred sites. The portage trails on which the pitchblende was transported were cut and maintained by local Indigenous communities, whose knowledge and already existing trails were foundational, commissioned by trading companies to facilitate transportation in the region. The trails themselves were the result of collaboration, establishing division of labour, shared knowledge and mutually reliant communities at both ends of the portage. However, by the 1960s, those collaborative relations partially collapsed with the development of imperial and industrial projects (Tsing et al. 2020), and the pollution of the trails by harmful materials and toxic politics.

To understand the toxicities revolving around the portage trails and their attendant relations, I consider the conceptualization of infrastructures articulated by Cowen (2023). Among other infrastructures, Cowen highlights how settler-colonial infrastructures are anchored in ontologies of supply, ruled by settler-colonial state, feeding colonial violence and extraction. Conversely, Indigenous infrastructures are connected to ontologies of care, ruled by Indigenous legal orders, feeding life and allowing for sustenance. In the context of the transportation routes, this division emphasizes the tensions between two different ontologies and usages of portage trails—even though it is difficult to strictly separate them into distinct categories, as they tend to overlap and entangle. On one hand, the portage trails were and still are supporting vital flows of movement that are so central to life on the land, for both Indigenous and other-than-human communities. Portage trails, as sustaining collective life, can be considered as a critical Indigenous infrastructure (Spice 2018). At the same time, parts of them were also assimilated into and monopolized by imperial and industrial development projects, which led to the displacement and marginalization of communities and pollution of the land. This is a toxicity that permeates both bodies and relations.

Indigenous scholars and activists have pointed out how violence on Indigenous lands is also violence against Indigenous bodies and relations (Shadaan and Murphy 2020), which is sometimes embodied by settler, invasive infrastructures. My understanding is that the once-collaborative portage trails, absorbed and saturated by imperial and

industrial projects, can be described as toxic infrastructures: physically, as land trails and water routes were rendered toxic by radioactive materials; and metaphorically, as the toxic relationships they supported resulted in the extraction, marginalization and dispossession of Indigenous communities and knowledge by industries and governments, reinforcing colonial inequalities. Considering the intrinsic violence of infrastructure of supply (Rodgers and O'Neill 2012), the accidental spillage of uranium ore is an unsurprising failure of such infrastructures (Spice 2018). These toxicities contribute to the cumulative contaminations of development projects, such as the tar sands mines and major river dams upstream, provoking drastic ecological changes which adversely and disproportionately impact inhabitants' lives (Liboiron 2021; Dhillon 2022). These direct encounters manifest very different understandings of toxicities for communities and for bureaucracies.

The remediation project led by the First Nation problematizes these toxicities and their legacies. The initiative centres community knowledge and relations, and people's personal experiences of toxicity.

Restoring Trails and Relations

The First Nation's community-based environmental monitoring is done in parallel to and with the support of Canadian Nuclear Laboratories (CNL) and aims to clean up contaminations caused by the transportation of pitchblende on land trails. The First Nation is supported by CNL, but assessments are done and reviewed independently, with the help of consultants hired by the First Nation.

The clean-up effort consists of finding pitchblende rocks and dust in the ground by conducting gamma-radiation measurements, unearthing contaminated soil and taking it to a designated government-designed nuclear waste disposal site. For the First Nation involved, the remediation project also encompasses ethics of care for the land as kin. Cleaning up is not bounded by thresholds of toxicity as it is for settler-government policies and Western-knowledge-driven agencies, but rather in terms of relations with and care for the land and for generations to come (Gross 2021; Todd 2022), all of which is framed by the community's own legal order. The First Nation's project takes account of local, holistic knowledge, e.g. how medicines and animals are affected by contamination, thus altering community practices. The project therefore encompasses sets of knowledge and relations that are not necessarily considered within settler bureaucratic orders.

Beyond remediation, the First Nation-led initiative advocates for restoration, which is the attempt to return to the ecological conditions that existed before contamination (Keeling et al. 2015). This difference is essential, as simply cleaning up does not necessarily entail the possibility of restoring life as it was pre-contamination. As friends and Elders living in the region explained during discussions or open houses such as that mentioned above, spilled uranium ore affects first and foremost their relations with other-than-humans (for instance berries or moose) and their ability to live on the land. Beyond picking up contaminated soil, what matters most is to centre those relationships for



present and future generations. Thus, restoration seeks for collective life to thrive as it did before contamination events. For the community, this has to involve unrestricted access to the land, and the chance to foster relationships with other-than-human communities without the fear of toxicity. By nature, then, these clean-up projects are inscribed in different temporalities: while remediation is focused on shorter time periods, restoration finds an anchor in the long past to envision potential richer futures.

One end of the portage trails, and the site of the remediation project.

Photo: Laura Goyhenex
May 2024.

Within the framework of political ecology and environmental justice, the First Nation's project discussed can be understood as an effort to address the toxicity of infrastructures by attending to the toxic materials in the ground, as well as confronting the toxic relationships that were promulgated and reinforced on the portage trails. Looking at the portage trails as both critical Indigenous infrastructure and toxic industrial infrastructure allows us to place those trails within the larger historical context of imperial-extractive infrastructures that reshaped local relations, resulting in adverse and disproportionate effects on Indigenous communities. Rather than considering restoring relations as an effort to turn back time, this is a proposal to move beyond colonial orders and infrastructures. Remediating both material and relational toxicities is a reclamation of being at home, a way of imagining unrestricted futures on and with the land.

References:

Armstrong, Chelsey Geralda, Anne Spice, Mike Ridsdale and John R. Welch. 2023. "Liberating trails and travel routes in Gitksan and Wet'suwet'en Territories from the tyrannies of heritage resource management regimes." *American Anthropologist* 125 (2): 361–76. <https://doi.org/10.1111/aman.13817>

- Baker, Janelle Marie. 2021. "Logging company clears Cree Nation ancestral trail without recourse." *The Conversation*. <https://theconversation.com/logging-company-clears-cree-nation-ancestral-trail-without-recourse-154921>
- Cowen, Deborah. 2023. "Settler colonial infrastructures and infrastructure otherwise." Intervention: "Infrastructure, Jurisdiction, Extractivism: Keywords for decolonizing geographies." *Political Geography* 101: 102763. <https://www.sciencedirect.com/science/article/pii/S0962629822001779>
- Dhillon, Jaskiran (ed.). 2022. *Indigenous Resurgence: Decolonialization and Movements for Environmental Justice*. New York: Berghahn Books.
- Geissler, P. Wenzel and Ruth J. Prince. 2020. "'Toxic worldings': Introduction to toxic flows." *Anthropology Today* 36 (6): 3–4.
- Gross, Lena. 2021. "Fuelling toxic relations: Oil sands and settler colonialism in Canada." *Anthropology Today* 37 (4): 19–22.
- Hunter, George. 1953. "Uranium for Atomic Power." *The Beaver* (June): 14–21.
- Keeling, Arn and John Sandlos (eds). 2015. *Mining and Communities in Northern Canada: History, Politics, and Memory*. Calgary, Alberta: University of Calgary Press.
- Liboiron, Max. 2021. *Pollution is Colonialism*. Durham, NC: Duke University Press.
- Rodgers, Dennis and Bruce O'Neill. 2012. "Infrastructural violence: Introduction to the special issue." *Ethnography* 13 (4): 401–12.
- Shadaan, Reena and Michelle Murphy. 2020. "Endocrine-Disrupting Chemicals (EDCs) as industrial and settler colonial structures: Towards a decolonial feminist approach." *Catalyst: Feminism, Theory, Technoscience* 6 (1): 1–36. <https://doi.org/10.28968/cftt.v6i1.32089>
- Spice, Anne. 2018. "Fighting Invasive Infrastructures: Indigenous Relations against Pipelines." *Environment and society* 9 (1): 40–56.
- Todd, Zoe. 2022. "Fossil Fuels and Fossil Kin: An Environmental Kin Study of Weaponised Fossil Kin and Alberta's So-Called 'Energy Resources Heritage'" *Antipode* (early view): 1–25
- Tsing, Anna Lowenhaupt, Jennifer Deger, Alder Keleman Saxena and Feifei Zhou (eds). 2020. *Feral Atlas*. Stanford, CA: Stanford University Press. <https://www.feralatlas.org/>

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