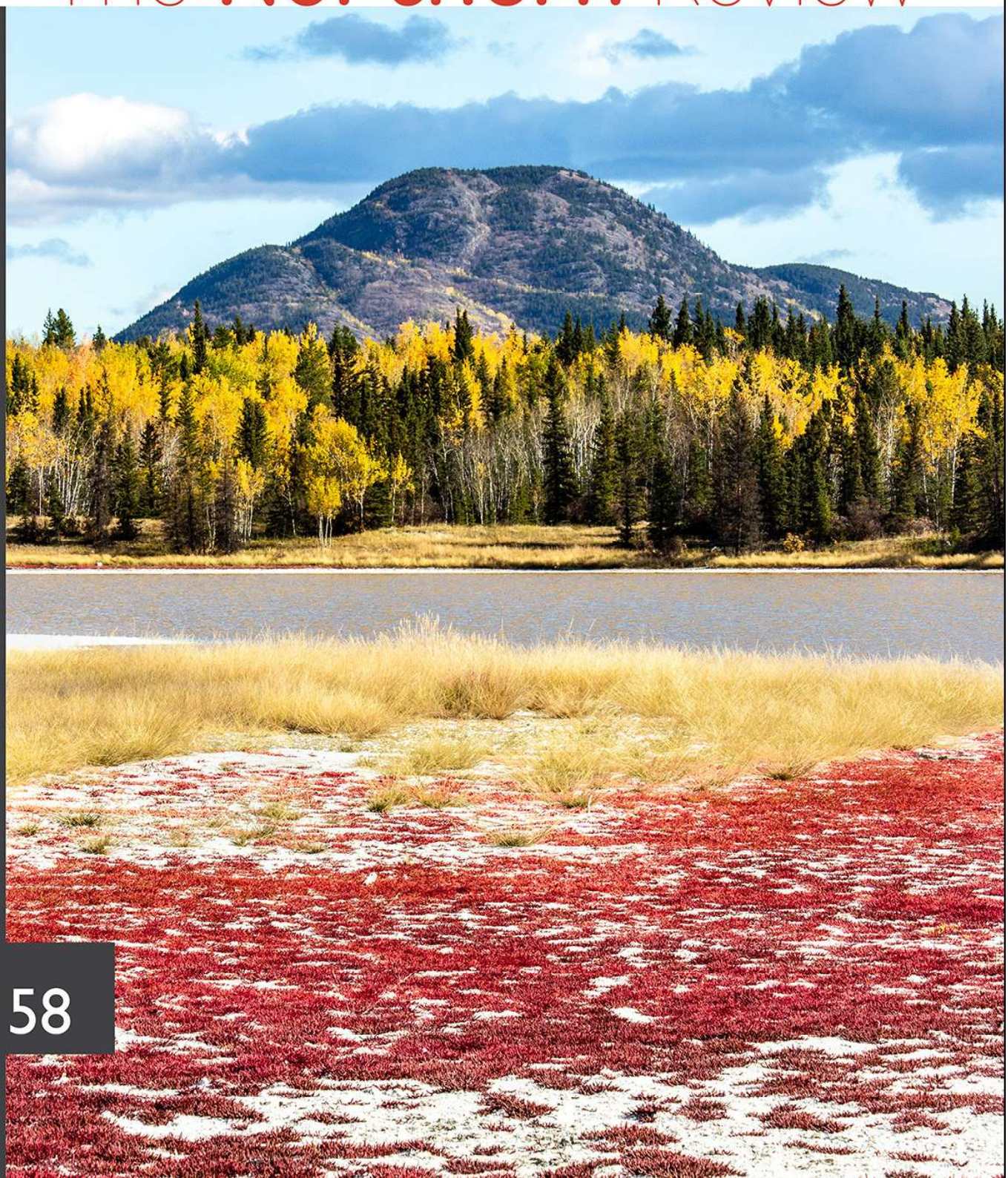
Exploring human experience in the North 2025

The **Northern** Review



58

Number 58 | 2025
https://doi.org/10.22584/nr58.2025.100
https://thenorthernreview.ca
Cover: Layers of Autumn Splendour at the Takhini Salt Flats | Ray Marnoch, Whitehorse

The *Northern Review* is published at the School of Social Sciences and Humanities, Yukon University.
YukonU.ca/northern-review

ISSN (Online): 1929-6657

The **Northern** Review
Exploring human experience in the North

58 | 2025

General Issue

Reflection

Commentary

Book Reviews

Cover Art

The Northern Review
Exploring human experience in the North
The Northern Review 58: 3–4
https://doi.org/10.22584/nr58.2025.001
Published at Yukon University, Canada

Editorial, Number 58

Ken Coates*

Northern political affairs are, to put it mildly, in "transition." Political turnover continues in the Territorial North. American President Donald Trump continues his chaotic ways, most recently (November 2025) through the release of the "America First" national security strategy that raises serious questions about Canadian sovereignty in the Arctic. Russian adventurism in the Far North remains a looming threat. Climate change is having an outsized impact across the region.

It is not all worrisome. Indigenous re-empowerment and self-determination across the Circumpolar North continues to broaden, along with expansions in governance. There are significant commercial successes for northern Indigenous economic development corporations (and Alaska Native Corporations). The establishment of First Nations education and health authorities and Indigenous-led wildlife management regimes in Canada, among other initiatives, promise a different and exciting future in the North.

For the *Northern Review*, it has been a distinct privilege to be a small part of the Arctic futures re-imagining process, helping to challenge the status quo. We encourage, in a variety of transnational and multidisciplinary perspectives, wide-ranging and thought-provoking analysis and commentary on northern issues. While we make a concerted effort to tap the exceptional knowledge and expertise of people living and working in the North, we also welcome contributions from scholars and professionals currently based elsewhere. We all share a concern for the just, inclusive, and creative evolution of the Arctic.

*Professor Emeritus, Johnson Shoyama Graduate School of Public Policy, University of Saskatchewan
Founding and Senior Editor, *Northern Review*

Our 58th volume continues in this vein. We start by celebrating the life and professional contributions of Mary Ehrlander, a superb Alaskan scholar and since 2013 a valued member of our editorial board, who sadly passed away earlier this year. Mary had also published articles in the journal in 2007 and 2010, with fascinating comparative research exploring the history of alcohol in the Circumpolar North. Mary will be missed by many, for reasons that her University of Alaska Fairbanks colleague Brandon Boylan makes very clear. We appreciated her kind and insightful contributions, and we're grateful that she connected us with Brandon, who has now joined the *Northern Review* as a senior editor. We are already finding his expertise and measured advice very helpful. There is much to learn from and share with our Alaskan neighbours and friends, and we are glad to continue this valuable collaboration across our international border.

The research papers in this volume cast a broad net over northern issues, from legends in the South Nahanni River Valley and the role that stories can play in colonization, to the raging current debate about critical minerals and the complexities of our relationship with them. Another contribution explores the challenges of data collection in northern communities, and contemplates how the evidence and methodologies used can skew policy making. These are all, in markedly different ways, issues of wide concern and importance across the North.

The *Northern Review* continues to invite commentaries on Indigenous research frameworks and academic scholarship. A research perspective paper explores one of these frameworks and how it was applied in a project in Old Crow, Yukon, offering guidance for what is still sometimes seen as an uneasy intersection of knowledge systems. A unique reflection paper also brings an important and valuable perspective, making the case for researchers and practitioners to bring their heart to conservation science, as well as the numbers.

Finally, a thoughtful commentary on the urgent push to develop northern Ontario resources argues for the importance of continuing baseline studies to protect scientific integrity, health, and Indigenous self-determination. This paper also speaks to themes of pan-northern significance.

Constructive provocation remains a hallmark of the many and varied contributions to the *Northern Review*. We look forward to welcoming ever more perspectives from researchers and thinkers, North and South, as we ponder the grand and important issues of our time. If northern policy is to change—and it is, and will continue to shift in coming years—it is vital that we have informed, insightful, and creative commentary on best paths forward for the Peoples of the North.

The Northern Review
Exploring human experience in the North
The Northern Review 58: 5–6
https://doi.org/10.22584/nr58.2025.002
Published at Yukon University, Canada

In-Memoriam

Mary F. Ehrlander, Professor of History and Arctic & Northern Studies, 1953–2025

Brandon M. Boylan*

Long-time University of Alaska Fairbanks (UAF) professor, a *Northern Review* senior editor, and my close mentor and friend Mary F. Ehrlander passed away on July 16, 2025, at the age of 72. In her career, Mary educated generations of Alaska and Arctic specialists; wrote biographies of pioneering Alaskans; and co-developed the Model Arctic Council, a simulation program that educates on the Arctic Council and pressing Arctic challenges.

While still raising her three boys Staffan, Wyatt, and Marcus with her husband Lars, Mary began her post-secondary education, earning a BA in Political Science and an MA in Northern Studies from UAF, and an MA and PhD in Government from the University of Virginia (UVA). At UVA, she received a James Madison Memorial Fellowship for graduate work on the U.S. Constitution. She taught at Lathrop High School in Fairbanks before embarking on a professorial career at the University of Alaska Fairbanks where she rose to professor of history and director of the Arctic and Northern Studies Program. She retired from UAF in 2020 as professor emerita.

From my vantage point, Mary was most passionate about three aspects of her work. First, she took great pride in leading and shaping the Arctic and Northern Studies Program for two decades. She especially loved working with graduate students, mentoring dozens over the course of her career. Having developed a strong reputation for her teaching and advising, she won UAF's highest teaching honour, the Emil Usibelli Distinguished Teaching Award, in 2016. Several of Mary's former students attended her celebration of life on August 11, 2025, which is testament to the legacy she leaves and the impact she had on their lives.

*Professor, Department of Political Science; Director, Arctic & Northern Studies Program, University of Alaska Fairbanks; Senior Editor, *The Northern Review*

Second, Mary became enthralled with the story of Walter Harper, the Irish-Athabascan man who was the first person to summit Mount Denali. She once joked while writing her celebrated book on his life, *Walter Harper: Alaska Native Son*, that she developed a crush on him. Her book was instrumental in the establishment of Walter Harper Day, which Alaskans celebrate on June 7, and for the commissioning of the bronze statue of Walter and his dog Snowball that sits outside Doyon in Fairbanks. For her book, Mary won the 2018 Alaskana Award from the Alaska Library Association and was named the 2018 James H. Drucker Alaska Historian of the Year from the Alaska Historical Society. She was so humble that she didn't even mention these awards, and I remember learning about them later on. She also wrote, with Hild M. Peters, *Hospital and Haven: The Life and Work of Grafton and Clara Burke in Northern Alaska*, which tells the story of an Episcopal missionary couple who devoted several years in the early twentieth century to the well-being of the Gwich'in Peoples of northern Alaska.

Third, Mary cared deeply about the UArctic Model Arctic Council, a program she co-developed, which brings together university students from across the Arctic to learn about Arctic issues, international relations, and the Arctic Council through simulation and role playing. She enjoyed running programs at UAF, Dartmouth College, and the University of Lapland in Finland. In this sense, she expanded her teaching beyond UAF to educate the next generation of students on the Arctic, a region she deeply loved.

Mary lived a full and meaningful life. She gave to everyone, and everyone loved her. She was a model on how to be a good person. Even at the end of her life, she exemplified dignity and grace. I will miss her terribly but knowing her has been a great gift in my life, and for that I am grateful.

The Northern Review
Exploring human experience in the North
The Northern Review 58: 7–34
https://doi.org/10.22584/nr58.2025.003
Published at Yukon University, Canada

Research Article

"A Mixture of History, Myth, and Bullshit": The Legend of Headless Valley and the Colonization of Nahʔą Dehé, the South Nahanni River Valley

Robert Vranich*

Abstract: In February 1947, Pierre Berton led a daring, mid-winter expedition into the South Nahanni River Valley (Nahʔą Dehé) in the Northwest Territories to find a secret tropical paradise. Berton's syndicated reports for the *Vancouver Sun* created one of the most exciting and bizarre media spectacles of the early postwar period, and it set in motion a series of events that would lead to the establishment of Nahanni National Park Reserve. Placing Berton's expedition to the Nahanni in a broader context, this essay traces and examines the narrative origins and evolution of a series of lurid tales about the Nahanni wilderness that are collectively known as the Legend of Headless Valley. The Legend of Headless Valley—which includes stories about a secret tropical valley, a lost gold mine, murdered and decapitated prospectors, evil spirits, prehistoric cave-dwelling monsters, and a tribe of head-hunters—remains one of the most enduring legends in the Canadian North and a fundamental feature of the Nahanni wilderness. In examining the narrative history of this northern legend, this essay helps reinforce the idea that stories about northern Canada—however lurid, speculative, or even untrue—are constitutive parts of northern geographies, both real and imagined, and mediating factors in their colonization by outside forces.

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When visitors to Nahanni National Park Reserve in the Northwest Territories gaze upon the South Nahanni River Valley, the "Grand Canyon of Canada," they see a landscape made of rivers, mountains, canyons, waterfalls, forests—and *stories*. There are many stories about the Nahanni Valley, but none is more famous, or perhaps infamous, than the Legend of Headless Valley. The Legend of Headless Valley is a collection of lurid tales about a secret tropical valley, a legendary gold mine, murdered and decapitated prospectors, evil spirits, cave-dwelling monsters, and a lost tribe of head-hunters. Once described by historian A. B. McKillop as "a mixture of history, myth, and bullshit," the Legend of Headless Valley is not only a sensationalized series of stories about the Nahanni wilderness, but a constitutive part of it. As the historian Simon Schama might say, it is "part of the scenery."[1]

Over the course of the twentieth century, the Legend of Headless Valley took root and grew into the Nahanni wilderness, colonizing the landscape like an invasive weed. While it was Parks Canada that ultimately asserted the authority of the Canadian state over the South Nahanni River Valley with the establishment of Nahanni National Park Reserve in 1974, it was the Legend of Headless Valley that initially brought the Nahanni to the nation's attention as a landscape worth protecting. In the early 1970s, when southern Canadian conservation organizations and citizens groups fought to save the South Nahanni River from a hydroelectric development, their goal was not only the preservation of a spectacular and seemingly empty northern wilderness, but the preservation of a storied landscape, "a land of murders, monsters, and mysteries."[2] In this sense, the Legend of Headless Valley operated as an agent in the internal colonization of the Canadian North, a narrative means by which the settler colonial project in Canada asserted its authority over the lands traditionally known to the Dene as Nahʔą Dehé.[3]

In this essay, I trace and examine the origins and evolution of the Legend of Headless Valley and its colonization of the Nahanni wilderness. My analysis starts in the nineteenth century with the search for fur and gold, enterprises that lend themselves nicely to the creation of tall tales about strange occurrences in remote landscapes. As the Legend of Headless Valley took root and grew into the Nahanni wilderness, it picked up other stories along the way, including the myth of the tropical valley. Arguably the most famous tale in the collection of stories that make up the Legend of Headless Valley, the myth of the tropical valley revolves around the notion that hidden somewhere deep in the Nahanni wilderness is a secret tropical oasis. The myth gained traction in the Nahanni region in the 1930s and 1940s and then erupted into a global media frenzy in 1947, when Pierre Berton, a young reporter at the *Vancouver Sun*, led a daring, mid-winter

ski-plane expedition to the Nahanni to find—or better yet debunk—the secret tropical valley. The media spectacle that ensued set in motion a series of events that culminated in the establishment of Nahanni National Park Reserve. Far from trivial, then, the Legend of Headless Valley illustrates the subtle yet powerful ways in which sensationalized stories have colonized parts of the Canadian North.

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Located in the southwestern corner of the Northwest Territories, the South Nahanni River (Nahʔą Dehé) cuts a meandering path through the Mackenzie Mountains before it joins the Liard River (Nácháh Dehé), a major, north-flowing tributary of the Mackenzie River (Dehcho). The Nahanni is a fast-flowing mountain river with many dangerous rapids, a ninety-six-metre-high waterfall (Virginia Falls, or Náįlįcho), and a series of four spectacular canyons, the deepest river canyons in Canada. The surrounding landscape is comprised of rugged mountains, high plateaus, and dense forests. Navigating in and through this remote landscape is, and always has been, a difficult and dangerous undertaking.[4]

The search for new fur-bearing territory brought European traders into the Nahanni region around the turn of the nineteenth century. In 1803, the North West Company established Fort of the Forks at the confluence of the Mackenzie and Liard rivers, approximately 150 kilometres downstream from the mouth of the Nahanni. Soon afterwards, W. F. Wentzel, chief factor at "the Forks," learned about a remote people in the mountains to the west called the "Naha." Wentzel recorded the name of this group and the river valley where they supposedly lived as "Nahany." Unbeknownst to Wentzel, though, Naha was not a self-designation for any one Indigenous People in the region. Rather, it was a term used by several Dene Peoples to denote a "remote" and "hostile" group living to the "west," usually somewhere in the mountains.[5] That this term was regularly used by and applied to different Indigenous Peoples created confusion in the minds of newcomers like Wentzel. "The only information I can get concerning these Natives," Wentzel wrote, "is that they inhabit these rocks, live upon caribou and goat flesh, and make war upon each other."[6]

In 1823, two years after the North West Company merged with the Hudson's Bay Company (HBC) and Fort of the Forks was renamed Fort Simpson, HBC trader John McLeod made contact with the so-called "Nahany Indians." That June, McLeod led an expedition up the Liard River and into the lower reaches of the Nahanni, where he met a group of fourteen Nahanys. The people McLeod met were likely Kaska Dena hunters from what is now southeastern Yukon, Tahltan from northern British Columbia, or Sahtu Dene from the Keele River watershed north of the Nahanni. Regardless of who these people were, McLeod described

them in favourable terms. "The Nahanys appear to be a manly race of men and good hunters," he reported, "they are smart, active and quick in their motions, and they are haughty, but seem to be peaceably inclined without the appearance of fears or meanness." The Dene Zhatıé (South Slavey) speaking Dehcho guides who led McLeod to the Nahanni had other opinions, though. The Naha were long-time enemies who regularly raided Dehcho (South Slavey) encampments in the Liard and Mackenzie river lowlands.[7]

The air of mystery that hung over the identity of the people John McLeod met on the Nahanni in June 1823 spawned lasting rumours about these elusive Indigenous traders. Two rumours persisted into the twentieth century. One claimed that the so-called "Nahanni Indians" were led by a "White Queen," a kind of Amazonian warrior princess of European descent. This rumour originated in the journals of HBC trader Robert Campbell, who described meeting the "chieftainess" of the "Trading Nahanies" (likely the Tahltan) along the Stikine River in northern British Columbia in 1838. "She commanded the respect not only of her own people, but of the tribes they had intercourse with," Campbell wrote. "She was a fine looking woman rather above the middle height & about 35 years old. In her actions & personal appearance she was more like the Whites than the pure Indian race."[8] Campbell's description of the unnamed leader of the Nahanies morphed into a story about their "White Queen." The "White Queen" is mentioned in Michael H. Mason's description of the "Nahanni Indians" in *The Arctic Forests* (1924), as well as in several magazine articles about the Nahanni Valley written in the 1930s by Philip H. Godsell (more on Godsell later).[9]

The second rumour of note claimed that the "Nahanni Indians" were fierce head-hunters who guarded the river's rich gold deposits. Part of this rumour is derived from Dehcho (South Slavey) descriptions of their Naha enemies. The gold and head-hunting elements entered the equation only after a handful of prospectors had used the Liard and Nahanni rivers in the late 1890s as part of an "all-Canadian" route to the Klondike goldfields. Of the couple dozen men that likely attempted this difficult route to the Yukon, only a few are said to have succeeded. Most of the men who did not make it failed because of the long and arduous nature of the upstream canoe journey and the strenuous portage around the Nahanni's great waterfall. Some of those men freely admitted their defeat, but others came up with alternative explanations. Poole Field, a former North-West Mounted Police officer in the Yukon and long-time Nahanni trader, reported hearing would-be Klondikers' stories about being chased off the river by a wild group of head-hunters. What were these head-hunters trying to protect? According to Field, it was the Nahanni's gold.[10]

The rumours about the Nahanni that emerged out of the gold rush turned into self-fulfilling prophesies in the early twentieth century. In the summer of

1904 or 1905, three brothers, Frank, Willie, and Charlie McLeod, the sons of the chief factor of Fort Liard, ventured up the Nahanni in search of gold. The McLeods found a deposit of placer gold on a tributary of the Flat River, one of the Nahanni's main affluents. On their return trip downriver, their makeshift log raft capsized in a set of rapids on the Flat, and the brothers lost all their belongings, including a small glass bottle filled to the brim with coarse gold nuggets. Frank and Willie returned to the Flat River the next year, accompanied by a Scottish engineer named Weir or Wilkinson. Legend has it that the three men mined a large amount of gold at the same placer deposit the McLeods had worked the previous year. But when the trio failed to return to Fort Liard, Charlie McLeod figured something was amiss and set off up the Nahanni to find out what had happened to his brothers and the engineer. The youngest McLeod allegedly found the shot and decapitated corpses of his two older brothers on the banks of the Nahanni, at the confluence of a tributary that was later christened "Headless Creek," which enters the main river at the start of a wide valley known now as "Deadmen's Valley." Charlie had found only two bodies, though; there was no sign of the third. Police reports from the next year concluded that Frank and Willie McLeod had probably died of starvation, and that wild animals had likely separated their heads from their bodies. Charlie McLeod was never convinced his brothers died that way. He was certain that the engineer had murdered his brothers and stolen their gold, and he would spend the rest of his life trying, in vain, to prove it.[11]

As word of the McLeod mine spread, several dozen prospectors headed to the Nahanni. The region experienced two minor gold rushes as a result, one in the mid 1920s and another in the early 1930s. During those rushes, about half a dozen men died or disappeared along the Nahanni. One or two of them were even found, like the McLeods, *sans têtes*, adding fuel to the rumours about a group of head-hunters and the generally cursed nature of the valley. The deaths and disappearances also sparked a flurry of additional rumours. Some people thought that the victims had died or disappeared at the hands of evil spirits, or perhaps a cave-dwelling, Sasquatch-like creature known to the local Dene as Nakani. Others postulated that the deaths were the result of a rare strain of viral meningitis endemic to the Nahanni. The rumours continued to grow in the 1930s, propagated by occasional newspaper reports about Nahanni gold and the death of yet another prospector. Although most of the prospectors and travellers who entered the Nahanni region returned alive (and with their heads still attached), the Legend of Headless Valley continued to grow.

At this point, it is important to note that there were conflicting reports about who was primarily responsible for spreading these early rumours about the Nahanni. In addition to the tall tales made up by would-be Klondikers, Poole

Field also reported that the Dene Zhatıé speaking Dene he traded with along the Liard had perpetuated stories about evil spirits and head-hunters in the Nahanni Valley. They used these stories, Field said, as a way of keeping "outsiders" out of the region.[12] But other reports suggest that the Dene were just as taken in by these stories as any of the outsiders. According to a 1936 report in *The Globe*, a large prospecting expedition failed to get going because the thirty Dene hired as gold-panning labourers simply refused to go upstream on the Nahanni. "[T]he expedition failed," the report said, "because the Indians feared the legend that only death awaits prospectors entering the region."[13]

The myth of the tropical valley joined the Legend of Headless Valley around this point in its narrative development. On September 26, 1933, the *Toronto Daily Star* reported on the disappearance, and probable death, of Angus Hall, a prospector from Alberta, who had been searching for gold on the Nahanni. In "Prospector Vanishes in Dead Man's Valley," the author recounted a lurid tale of a haunted river valley in which half a dozen gold-seekers had either died or disappeared under mysterious circumstances. Making the report even more mysterious was the author's unsubstantiated claim that, unlike the surrounding wilderness, the Nahanni Valley was blessed with an unusually pleasant climate. "Despite its position in northern latitudes, Death Valley is said to be almost tropical in nature," the author wrote. "This is due to an abundance of hot sulphur springs in the region and rivers and streams of hot water that are semi-volcanic in origin."[14]

The 1933 report in the *Toronto Daily Star* was one of the first times in print that the Nahanni Valley had been associated with a tropical climate. Since the anonymous author of the report did not provide any sources to back up their claims, it is unclear precisely where and when this part of the Legend of Headless Valley began. What is clear, however, is that, unlike other stories circulating about the Nahanni at the time, most of which emerged out of events that happened inside the valley itself, the rumour of a tropical climate originated from outside the watershed.

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During the Klondike gold rush, the mass movement of migrants into and out of northwestern North America facilitated the spread of rumours and stories. Many tall tales made their way back to fur trading posts, mission rectories, police outposts, mining camps, and local saloons in the Yukon, Alaska, northern British Columbia, and the southwestern Northwest Territories. Some of those stories included fantastical things like phantom lights in the night sky, lost mines, woolly mammoths, and big hairy wild men. While many of these stories were summarily dismissed as the ravings of men who had spent far too much time alone in the

wilderness, one story was believable enough, and had gained just enough traction, to make it into regional newspapers.[15]

In the early decades of the twentieth century, multiple, independent news reports surfaced about a northern oasis, a steamy tropical valley filled with luxuriant vegetation and an abundance of wild game. The peculiar climate of these "tropical" valleys was usually attributed to active volcanoes, hot springs, or some other variety of geothermal activity. Newspaper reports about these places often included first-hand accounts from prospectors or travellers who claimed to have found an "oasis in the Arctic" or a northern "Valley of Eden." Though the exact location of the tropical valley was never disclosed, reports regularly situated it in the Cassiar Mountains of northern British Columbia.[16]

Extending from north-central British Columbia into southern Yukon, the Cassiar Mountains are the most northerly group of the Interior Mountains of the Western Cordillera. After the discovery of gold in the Cassiars in the 1870s, the Geological Survey of Canada (GSC) sent surveyors to the region to begin the long process of mapping the terrain. Surveying efforts in the northwest intensified after the discovery of gold in the Klondike, and although the GSC sent multiple survey crews to northern British Columbia and southern Yukon in subsequent decades, highly detailed maps of the regions were not completed nor publicly available until the 1940s. Further details would be added to regional maps in the mid 1940s and early 1950s, after the Royal Canadian Air Force conducted aerial surveys of the region. Prior to these surveys, regional maps contained many blank spaces where, for some imaginative and credulous folks, a geographical anomaly like a tropical valley might possibly exist.[17]

The possibility of a tropical oasis in the Far North is not as absurd as one now might think. In fact, for most of Western history, it was widely believed that a tropical paradise existed at the northern edges of the known world. The idea can be traced back to the ancient Greek myth of Hyperborea—literally the land above or beyond the boreas, the north wind—which described part of the Far North as a "distant paradise," a wonderful place of peace, plenty, and pleasure. The Hyperborean myth would be expressed in various forms of European culture over the centuries, from literature and poetry to cartography and philosophy. Though it would drift almost entirely into the realm of make-believe by the end of the nineteenth century, there were still some people who believed in the existence of a real northern oasis. Others were more incredulous and sought to disprove the rumours that were circulating at the time in the newspapers.[18]

Rumours of a tropical valley in northern British Columbia piqued the curiosity of American botanist Mary Gibson Henry. In 1931, on one of her many collecting expeditions to the Canadian Northwest, Henry explored the area around the confluence of the Racing and Toad rivers near Fort Nelson, a rumoured

location of a tropical oasis. Henry reported finding a small valley and a series of hot springs, as well as a "rank growth of delphinium often over 8 feet tall … raspberries, roses and vetches … growing in the thickest and most luxuriant tangle I ever saw." She explored the area on foot and on horseback for several days, and concluded that, although the hot springs warmed the ground considerably and made the vegetation particularly "lush," the valley was by no means "tropical."[19]

Charles Camsell drew a similar conclusion about another rumoured site of the tropical valley, the Liard River hot springs. Situated halfway between Fort Nelson and Lower Post in northern British Columbia, the Liard hot springs spill into a muskeg-bottomed valley to form a steaming swamp and two picturesque pools that remain free of ice year-round. Camsell explored the region extensively in 1896 during an expedition with the GSC, and again in 1935 while on an aerial tour of the region as the deputy minister of mines. "Having camped in the valley in February 1896 I have never been able to appreciate why it has been described as 'Tropical,'" Camsell remarked in an address to the Empire Club of Canada in 1936, "especially as during the two weeks I spent there the temperature ranged from 20 degrees to 40 degrees below zero." That Camsell spent about a quarter of his speech at the Empire Club addressing the rumour of the tropical valley is a testament to its popular appeal. Years later, he would dedicate a chapter of his autobiography to further debunking the myth of the tropical valley.[20]

By 1933, the rumoured site of the tropical valley had migrated out of the Cassiars and into the Nahanni Valley. Like parts of the Cassiars, the South Nahanni River watershed remained a large blank space on regional maps of northwestern Canada. In 1887, R. G. McConnell of the GSC mapped the mouth of the Nahanni during his survey of the Liard River. In 1928, American industrialist and amateur explorer Fenley Hunter made a crude but accurate map of the lower Nahanni, which served as the official map of the river until the 1950s. Hunter made no mention of a tropical valley in his published trip report, or in his presentation at the prestigious Explorer's Club in New York, but that did not prevent newspaper reporters from further speculating about its possible existence.[21]

In 1935, two years after rumours surfaced about the Nahanni's tropical climate, University of Alberta professor Alan Cameron set out to investigate. In his trip report, published the next year in the *Canadian Geographical Journal*, Cameron addressed the claims indirectly, neither confirming nor denying them. He described the region's climate as "not extreme," noting that Chinook winds often brought unseasonably warm winter weather, sometimes causing the Nahanni to thaw in January. During his stay at the river's mouth, he experienced summer weather comparable to regions in southern Canada, and in his description of the "valley of the hot springs" he concluded that it was the only part of the Nahanni that "most nearly approaches a tropical valley."[22]

Although explorers like Mary Henry, Charles Camsell, and Alan Cameron had cast doubts about the tropical valley, the myth continued to grow, especially in popular literature. John Buchan, the prolific author and one-time Governor General of Canada, used a visit to the Nahanni in the late 1930s as the inspiration for *Sick Heart River*, his last novel, published posthumously in 1941. The valley of the fictional Sick Heart River is a strangely inaccessible Hyperborean paradise adorned with magical properties and located in a remote part of Canada's northern territories. At the time of the book's publication, it was widely known that Buchan had modelled his northern paradise on the Nahanni Valley.[23]

John Buchan was not the only influential author to find inspiration in the Nahanni. Philip H. Godsell, a former inspecting officer with the Hudson's Bay Company, wrote several magazine articles about the mysteries of the Nahanni Valley. In fact, he was likely the one writer most responsible for keeping the Legend of Headless Valley and the myth of its tropical oasis alive into the 1940s. Using his service with the HBC to promote himself as an expert on all things northern, Godsell launched a successful writing career after his retirement from the fur trade, authoring many books and articles about northern Canada and his travels through the region.[24] Among his writings were a handful of articles about Nahanni legends like the Naha, the McLeods, and the secret tropical valley. Godsell eventually fused these articles into a single essay called "Dead Men's Gold," which he included as a chapter in his 1944 book, *The Romance of the Alaska Highway*. Thanks to public interest in the newly constructed highway to Alaska, Godsell's book became a North American bestseller, bringing the Legend of Headless Valley to an international audience.

Godsell never let facts get in the way of a good story. Although he never once set foot inside the Nahanni Valley, he recounts the "weird story of a tropical valley in the Arctic, and the search for dead men's gold," with expert authority and first-hand details. "It was a fantastic tale," he wrote,

> of prehistoric monsters disporting themselves in a steaming oasis to the northward that had escaped the impact of the Ice Age; of a lost mine, murdered prospectors, outlaw Indians and hidden gold. It sounded doubly strange coming from the lips of a hard-bitten trader like old Beatton, who hadn't an ounce of imagination in his entire make-up, and I little thought as I listened to his gruff voice that my future wanderings were destined to bring me into intimate contact with the people and places he spoke of, or that, years later, I would report to Hudson's Bay headquarters the actual existence of this so-called tropical valley which I had considered a figment of redskin [*sic*] fantasy.[25]

Godsell never visited the Nahanni Valley, so he couldn't possibly have had any proof to support his claims about the existence of its tropical oasis.[26] Nevertheless, his stories about the Nahanni popularized the Legend of Headless Valley and kept the myth of a northern oasis alive through to the end of the Second World War.

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In the summer of 1946, word reached Margaret "Ma" Murray, the gruff and outspoken publisher of the *Alaska Highway News*, the paper of record for Fort St. John, British Columbia, that three prospectors were missing in the Nahanni Valley. Murray assigned the scoop to her daughter, Georgina, who appears to have used Philip Godsell's chapter about the Nahanni in *The Romance of the Alaska Highway* to write a series of sensationalized articles about the mysterious valley and the missing men. Chalked full of claims about murdered and decapitated prospectors, a lost gold mine, and a secret tropical valley, Murray's articles were picked up by wire services and reprinted in several Canadian and American newspapers. By the end of the summer, stories about the Nahanni with "Fort St. John" bylines had appeared in the *Globe and Mail*, *Toronto Star*, *Winnipeg Free Press*, *Edmonton Journal*, *Vancouver Sun*, *Los Angeles Examiner*, and *Chicago Tribune*.[27]

The Nahanni story stayed in the news cycle for several weeks that summer and then exploded in early September when a party of three Americans led by James Watt, a school teacher and amateur geologist from Yakima, Washington, went missing on the Nahanni. The search and eventual rescue of Watt, his wife, and brother-in-law made additional headlines in Canada and the United States, not only for the drama of the search and its timing with the other Nahanni stories, but also for Watt's unwillingness "to dismiss the stories about the valley as myths."[28] After news of the Watt rescue came to light, the media floodgates opened and even more stories about the Nahanni poured onto the pages of North American dailies.

Typical of the news pieces circulating about the Nahanni in the fall of 1946 was one by R. A. Francis and Margaret Francis, entitled "Nahanni … Valley of Mystery." "The tumultuous Nahanni tells no secrets," it began, "but the winds above the river are heavy with the breath of mystery, of terror, of nameless, fearsome death dealt swiftly by unseen hands." The authors went on to recount a tale of a lost gold mine, disappeared prospectors, evil spirits, and legends of "head-hunting savages and pre-historic monsters." Adding to the mystery was the claim that the Nahanni housed a secret tropical paradise, "like a cloud-wrapped Himalayan Shangri-La, hidden among the frozen tundras, [where] soft fragrant breezes blow and tropical trees and flowers spring lushly from the fertile soil watered by hot springs."[29] The reference to Shangri-La would have likely reminded many readers

of the Himalayan mountain paradise described by James Hilton in his 1933 bestselling novel, *Lost Horizon*, or Frank Capra's evocation of it in the 1937 film by the same name. Could such a place really exist in the Canadian North?

Thinking that the wave of media excitement surrounding the Nahanni had not yet crested, Hal Straight, the managing editor of the *Vancouver Sun*, allocated more resources to the story. In late fall 1946, Straight assigned "the Headless Valley scoop" to one of his in-house reporters, an ambitious twenty-six-year-old from the Yukon named Pierre Berton. Despite his youth, Berton was already a gritty and hard-nosed reporter with a unique ability to find a story where no story seemed to exist and a great capacity for turning out pages of news copy every day. Whether by chance or by design, Straight now had a northerner—the only one in his office—reporting on a northern Canadian news event.[30]

Born and raised in Dawson City, Pierre Berton knew first-hand how stories circulated in the Canadian North, and how that movement could easily distort or exaggerate even the simplest story or claim. He also knew early on that many of the fantastical claims being made about the Nahanni were categorically untrue, but he never let his incredulity interfere with his reporting on a popular news story. "To print almost anything about Headless Valley required a willing suspension of disbelief," Berton wrote decades later in his autobiography, and that was "something from which we [the reporters at the *Sun*] all suffered." Stories circulating in the press about the Nahanni had been based on "the flimsiest kind of evidence to hang any story on, but I swallowed it and so did the public," Berton admitted. "Overdosed on years of wartime realism, the world that winter was hungry for escape."[31]

Berton tried to deliver the "escape" he thought his readers desired. One of the first stories he wrote about the Nahanni was based on the testimony of Walter Tully, a young man who claimed to have first-hand experience in the valley. Tully told Berton that the Nahanni Valley was "shrouded in mists," which screened it from the outside world, that the temperature was "30 to 40 degrees above the temperature of the outside country," and that its vegetation was "lush" and "immense." Tully also told Berton that he had seen a 3,000-foot-high waterfall and the skeleton of a murdered and headless corpse on the banks of the river.[32] Berton knew Tully's claims were nonsense, but, as he later admitted, "it never occurred to me to make that point to the *Sun*'s readers." At the *Vancouver Sun*, "news was not truth," he wrote, "it was what somebody *claimed* as truth, even though the phrases somebody uttered were clearly balderdash." "As long you quoted your source," he continued, "you could publish the most outrageous hokum."[33] And thus with Tully as his source, Berton revealed to readers "the true story of the South Nahanni River's bizarre 'Headless Valley'…."

There were multiple "truths" circulating about the Nahanni by the end of 1946, and the flurry of headlines surrounding those claims aroused a frantic competition among adventurers to be the "first" into Headless Valley. Frank M. W. Henderson, the nephew of Robert Henderson, one of the prospectors involved in the discovery of gold in the Klondike in 1896, announced his plan to return to the Nahanni with a group of U.S. Marines to search for John Patterson, a prospecting partner of his who had gone missing there the year before. Major-General F. F. Worthington declared his intention to lead a Canadian military expedition to the Nahanni in the spring. The polar explorer Tom Carolan and the miner Hal Hendrickson, both of British Columbia, talked about organizing their own exploration parties. Within a week of placing a two-line classified advertisement in a local Vancouver newspaper soliciting the public for expedition members, Hendrickson received 154 applications, including one from a fourteen-year-old boy in Albuquerque, New Mexico, who had announced that the proposed expedition into Headless Valley was "the most important thing that has happened in my life."[34]

In January 1947, the race to be the "first" into Headless Valley brought press coverage of the Nahanni to a fevered pitch, but that fever was likely to break since each expedition was waiting for spring to launch. Not one to miss an opportunity to keep a popular story in the news cycle, Hal Straight decided to sponsor his own expedition to the Nahanni. He knew the claims being made about the Nahanni were groundless, but he also knew that exposing "the disappointing truth" about the Nahanni and its tropical valley in a dramatic fashion, before anyone else did, could make the most of the current hype and boost sales at the *Sun*. So, without much hesitation, Hal Straight decided to send Pierre Berton north to the Nahanni.[35]

*

The *Vancouver Sun*'s "Headless Valley Ski-Plane Expedition" was plagued by delays from the start. On January 25, the commercial flight from Vancouver to Prince George carrying Pierre Berton, *Sun* photographer Art Jones, and veteran bush pilot Russ Baker, was forced to turn around mid-flight because of strong winds and fast-forming ice sheets on the wings of the aircraft. Extremely cold temperatures—it went down to minus sixty-eight degrees Fahrenheit at one point on the trip—caused numerous mechanical problems for Baker's bush plane and an endless stream of work for aircraft mechanic Ed Hanratty. These problems led to delays at Fort St. James, Finlay Forks, Fort St. John, and Fort Nelson—outposts in northern British Columbia through which the expedition passed on its way to the Nahanni.[36]

Taking advantage of the delays, Berton filed twice as many reports from the field than what Straight had originally requested for the series. His first dispatch, filed from Prince George on January 27, appeared on the front page of the *Sun* on Saturday, February 1.[37] The story was touted as a *Sun* "exclusive," and it urged readers to follow along as Berton's team attempted to "beat the Yanks" to the Nahanni and become "the first" into Headless Valley. "The decision to undertake the risky Nahanni venture was made only a few days ago," Berton explained. "It was a difficult decision to make. A flight into the Nahanni country in January is almost unprecedented and we are taking a gambler's chance." Berton went on to introduce Russ Baker, "one of British Columbia's best-known bush pilots," and describe the dangers the expedition faced, as well as the precautions the team would take. In addition to hundreds of pounds of equipment and provisions, Berton also packed a Luger pistol and a 30-30 rifle, just in case the group met any of the Nahanni's "head-hunting 'Mountain Men'" or "prehistoric monsters."[38]

Berton filled his preliminary reports with stories about the outposts he visited and the people he met. The brief introduction to Baker he provided in his opening article spilled over into a detailed exposé of the "mad pilot" in his second report from the field.[39] His third report described the abandoned mining town at Pinchi Lake, which had been recently shuttered following the closure of the nearby mercury mine, the largest in the British Empire.[40] In the fourth report, Berton described how Finlay Forks telegraph operator Paul Vatcher and his wife planned their yearly food purchases, and how all that food had to be flown into the remote community. At a time when wartime rationing was still in effect for most of the country, Berton's readers would have been amazed to read about the Vatchers buying "butter by the hundredweight, bacon by the stone and sugar by the sack."[41]

Blizzard conditions and a blown aircraft engine kept the expedition grounded at Finlay Forks for several days. While waiting for a new engine to arrive, Berton received a telegram from Hal Straight announcing the sale of the *Sun*'s Headless Valley series to the International News Service. Readers of more than 2,000 dailies would now be reading about the *Vancouver Sun*'s expedition to the Nahanni. This was in addition to all the Canadian papers that had already purchased syndication rights to the series. With so much attention now on Berton and the *Sun*, Straight worried that the expedition's delays in reaching the Nahanni and Berton's preliminary focus on topics other than the Legend of Headless Valley might harm the story's appeal, especially for international readers, and he said so much in his telegram to Berton.

> GET SOME DRAMA HEADLESS VALLEY INTO EARLY ARTICLES ... STUFF OKAY BUT GET SOME GOLD AND MURDER IN SOON ... STUFF READING FINE ... KEEP PUNCHING AND DONT [SIC] FORGET TO KEEP MENTIONING HEADLESS VALLEY.[42]

Berton would not disappoint. The sixth instalment of the series, published on February 7, turned the focus back onto the Nahanni. After describing how Ed Hanratty had just put a blow torch to a frozen airplane engine and how he and Art Jones had used shovel, crowbar, and jack to pry the plane's skis loose from the ice, Berton let the nominal subject of the series unfold. "We began to wonder what we would discover when we actually reach 'Headless Valley,'" Berton wrote, "where 14 men have perished and the will o' the wisp of a lost gold mine still haunts prospectors' dreams." He went on to describe the Legend of Headless Valley in detail, recounting all the "strange deaths" that had occurred over the years, as well as the stories about "tropical growths," "prehistoric beasts," and "bad Indians." His expedition was going to set the record straight, Berton declared. They were going to be the "first" into Headless Valley and the "first" to report the "truth" about its many legends.[43]

The sixth report changed the overall direction of the series. Berton would continue to report on other things he witnessed during the expedition—Baker's rescue of a trapper's pregnant wife from a remote cabin in the wilderness; the British Navy's secret cold-weather tests of military equipment being conducted outside of Fort Nelson; a stretch of mountain wilderness in the Yukon known as "the graveyard of lost planes," where the wrecks of aircraft lost during the construction of the Northwest Staging Route peppered the landscape. But with that sixth instalment, the series became more about the team's struggle to reach, penetrate, and survive the Nahanni Valley. "Perhaps Berton had this in mind from the outset, secure in the knowledge that most of the Headless Valley legends were groundless," historian and Berton biographer A. B. McKillop writes. Whatever the case, Berton "had found a formula that worked, a mixture of mythic quest and modern adventure, and readers around the world were riveted by it."[44]

At this point in the story, Berton's quest for the tropical valley had turned into the most exciting, albeit bizarre, news event of the year. In addition to all the front-page coverage, the story was also picked up by prestigious news magazines like *Time*, *Newsweek*, and *Maclean's*. The *New York Daily Mirror* editorialized on the myth of the tropical valley and the high quality of Berton's reporting. American entertainer Jack Benny cracked jokes about the Headless Valley on his nationally syndicated radio program. Lowell Thomas, the first journalist into Germany at the end of the First World War and the first to interview T. E. Lawrence in Jerusalem, dramatized the search for the tropical valley on one of his network radio broadcasts. There was even talk among some Hollywood producers of making a feature film about Berton's expedition to the Nahanni.[45]

The popular appeal of the *Sun*'s Headless Valley series was a direct result of Berton's journalistic prowess. Rather than providing his readers "escape," like he attempted to do in his earlier articles about the Nahanni, Berton now offered

them involvement. Through the shared experience of reading Berton's syndicated reports, the Headless Valley Expedition became a collective enterprise, not just for Canadians, but for international readers, too, and with each new instalment of the series, Berton ratcheted up the excitement.

> Report no. 6, for Sunday, February 9 release. Fort Nelson.
>
> Here, as everywhere, our expedition has been met by raised eyebrows and widened eyes. At the Musquaw post office … the postmistress stared at us as if we were mad….
>
> "I hope you are both good bushmen," she said to me and to Art Jones….
>
> We said we were just newspapermen on a story.
>
> "I hope you come back with your heads."[46]

> Report no. 8, for Tuesday, February 11 release. Fort Liard.
>
> Here on the outer rim of civilization we began at last to gather a few morsels of the facts about the Nahanni region and the Slavey Indians whose superstition has helped to weave a mist of legend about the valley….
>
> I talked today to Willie McLeod, nephew of that same Willie McLeod who came out of the Nahanni in 1905 with an Enos Fruit Salt bottle plugged full of coarse gold nuggets and who with his brother went back to the valley and to his death….[47]

> Report no. 10, for Thursday, February 13 release. South Nahanni River. Precede.[48]
>
> The intrepid ski plane expedition to mysterious "Headless Valley" in the wilderness of Canada's northwest territory has landed successfully on the South Nahanni River at the entrance of the valley itself….
>
> [Our] first discovery—and an exciting one—was that a lone trapper and his wife have been living on the edge of the valley in utter isolation for five years and that the legends about the existence of hot springs in the midst of the frozen wilderness are true.[49]

In the tenth report, Berton's interview with Nahanni homesteaders Gus and Mary Kraus seemed to temper the intentionally overblown claims Berton had made in previous reports. "Nobody can convince Gus Kraus that this wild region in which his snug cabin is built is tropical," he wrote. "As far as he's concerned it's just another valley with a few hot springs at the mouth."[50] After meeting with

the Krauses, the expedition flew over the valley of the hot springs and saw half a dozen or so springs dotting the landscape and throwing steam into the air. They also spotted the First Canyon—twenty-five kilometres long and 1,100 metre deep—which separated the expedition from its goal.

Berton filed his next report from inside Headless Valley. Transmitted to Vancouver over the expedition's portable radio on February 8, the report appeared in newspapers around the world on Saturday, February 15. The series was now more than two-weeks old and having recounted and embellished the Legend of Headless Valley as much as he dared, Berton set out to debunk its myths, one by one. "This was the spot," he wrote, "where the McLeod brothers had been murdered on the way out from their lost gold mine, the spot that Indians had declared was guarded by evil spirits, where head-hunters—great hairy men—were said to roam in bands and where weird mists rise from the ground." It was a mystery no more, Berton declared. "The mystery of Headless Valley melts away when you reach it," he wrote. "It is just another lonely, silent valley … ominous only by virtue of its inaccessibility. It was cursed only by the silence of the tomb. No living thing, beast or human or head-hunter, roams its untrodden snows." The single sign of civilization the team discovered was on the riverbank a mile or so across from where their aircraft had landed. There they found two crumbling cabins, and with them "a rubber boot, an old syrup can, a rusty tobacco tin," and "a pin-up photo of Rita Hayworth—these were the only signs that civilization had come briefly to this valley."[51]

After exploring the valley for half a day, the expedition flew up the Nahanni, around Virginia Falls, and over the continental divide to Watson Lake, where Berton filed his post-mortem on the trip. "We have laid the ghosts of the Nahanni for once and for all [to rest] and returned with our heads from the nebulous Headless Valley," he wrote. "And the strangest thing of all we have discovered about this Headless Valley is that it literally doesn't exist." Headless Valley was not a real place in the Nahanni watershed, he explained, but rather a fictional product of southern Canadian writers, reporters, and radio broadcasters, who had gathered tall tales from across the north and poured them all into the Nahanni wilderness. "The man who can take the credit—or the blame—for much of the Nahanni legend is Philip Godsell," Berton asserted. "He and a double handful of freelance writers have cheerfully rewritten this highly lurid, highly coloured tale and spread the story of the mysterious Shangri-La in the north, each with his own personal embellishments." Berton then punctured each of the myths, again, one by one. The valley was tropical, he wrote, only "if you call a handful of hot springs a tropical valley … but personally I kept my arctic parka on." No tropical mists got in the way of Art Jones's cameras, and the odd "wisp of vapour coming off the hot springs … didn't look very mysterious." What about the head-hunters? "Nix.

The place is deserted." And claims about ghosts and evil spirits? "Sure," Berton quipped, "and we saw Santa Claus riding a winged salmon over Virginia Falls."[52]

After the expedition accomplished its goal, Berton returned to Vancouver to find that he had become something of a celebrity. The press hounded him for more Headless Valley stories. Radio shows clamoured to have him as a special guest. Strangers came up to him on the street and asked for autographs. Admittedly, Berton enjoyed the attention, but he did not want to be known forever as "Mr. Headless Valley."[53] "If one more person comes up to me and says 'Gee—I see you still got your head,'" he said at the opening of a Vancouver radio broadcast, "I think I'm going to impale him on a sharpened copy pencil. That's the sort of thing I've been getting, ever since I returned from the South Nahanni River." He was joking, of course; he spent the rest of the broadcast vividly recounting his trip to the Nahanni.[54]

A few weeks after the Headless Valley series wrapped up, Berton received a job offer from Arthur Irwin, the managing editor of *Maclean's* in Toronto. Berton accepted the offer and spent the next decade working at "Canada's Magazine." There he developed into an award-winning journalist, bestselling author, and critically acclaimed television and radio broadcaster. When Berton departed *Maclean's* for the *Toronto Star* in 1958, "Mr. Headless Valley" was well on his way to becoming "Mr. Canada," the nation's first modern multimedia celebrity.[55]

Throughout his illustrious career, Berton regularly retold the story that launched his celebrity star. In the years following his move to *Maclean's*, he wrote several articles about Headless Valley, delivered dozens of public lectures, and gave "radio talks by the score" over both the CBC and the BBC. In 1956, he published *The Mysterious North*, a bestseller that earned him his first Governor General's Literary Award for Non-Fiction. The first five chapters of that book recounted the Legend of Headless Valley and his expedition to the Nahanni. Berton retold the story on many other occasions as well, including in the last chapter of his first autobiography, *Starting Out* (1987). Aware of how much he had recycled his original Nahanni material over the years, Berton often joked about his readers getting "a little sick of Headless Valley." But he also admitted that, far from losing interest, his readers had a seemingly insatiable appetite for stories about the Nahanni. "The fact is," Berton conceded, "Headless Valley is an indestructible legend."[56]

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A year after Berton's expedition to the Nahanni, E. G. Oldham, the superintendent of forest and wildlife management in the Northwest Territories, submitted a report to the Dominion Wildlife Service and the National Parks Branch calling for the "immediate" establishment of a national park along the South Nahanni River.[57] Oldham's report focused on the need to protect the region's wildlife, particularly its caribou and wolf populations. While the report made no mention of the media spectacle that took place in the Nahanni Valley the year before, Oldham did refer to the Nahanni River as the site of the notorious "Headless Valley." The Parks Branch considered Oldham's recommendation but decided not to proceed. A decade later, his report resurfaced within the National Parks Branch Planning Section, which had been tasked with expanding the national parks system into northern Canada. Planning for a "national wilderness park" along the South Nahanni River began in earnest in 1958, but the federal government's intention to establish such a park was not formally announced until February 1972.

In the meantime, the Legend of Headless Valley continued to grow. In addition to Berton's many articles and radio talks, the Legend of Headless Valley was further amplified by British-Canadian author and adventurer R. M. Patterson, who wrote a series of popular magazine articles in the late 1940s and early 1950s about his search for gold on the Nahanni and Flat rivers in the 1920s. Patterson transformed those articles into a bestselling travelogue called *The Dangerous Rive*r, which recounted the Legend of Headless Valley in vivid detail. Published in 1954 and in print for more than fifty years, *The Dangerous River* remains one of the most successful adventure books in Canadian literary history.[58] As other author-travellers copied Patterson's narrative model, the library of books about the Nahanni Valley steadily increased, and with each new book came yet another retelling of the Legend of Headless Valley.[59]

Fifteen years after Berton's return from the Nahanni, the National Film Board of Canada (NFB) produced an award-winning documentary film about Albert Faille, a prospector who had spent four-decades of his life searching for the McLeods' lost gold mine.[60] Set against the narrative backdrop of gold and death, and with an ominous and eerie score to match, the NFB's *Nahanni* further solidified the ideological connection between the Legend of Headless Valley and the Nahanni wilderness. Throughout the 1960s, the film was shown in elementary and secondary schools across the country as a way of introducing young Canadians to the "fabled northlands" of Canada. The popularity of the film coincided with the release of the first Canadian edition of *The Dangerous River* (1966), as well as with a series of deadly plane crashes in and around the Nahanni

Valley that claimed the lives of thirteen people in the 1960s. Reporters covering these crashes relied on the NFB's acclaimed film, Berton's award-winning book, and Patterson's bestselling travelogue to recount all the lurid and sensational stories that make up the Legend of Headless Valley.

The public's familiarity with the Legend of Headless Valley played a pivotal role in the establishment of Nahanni National Park Reserve. Public support for establishing a wilderness park along the South Nahanni River galvanized only after the announcement in 1970 that federal and territorial government officials and corporate mining interests were planning to build a series of seven dams for hydroelectric power generation and storage on the Nahanni and Flat rivers, including one at Virginia Falls.[61] The National and Provincial Parks Association of Canada (NPPAC, later Canadian Parks and Wilderness Society) reacted to the news by launching a national lecture series and letter-writing campaign to mobilize support for the preservation of the Nahanni.[62] The NPPAC framed the issue in a simple but effective way: "Will part of the Northwest Territories' South Nahanni and Flat rivers region, a land of murders, monsters and mysteries, be a national park or will it be the site of a hydroelectric power dam?"[63]

Wildlife biologist George W. Scotter led the NPPAC's lecture series. Between late 1970 and early 1972, Scotter delivered more than twenty-five presentations on the Nahanni in cities across the country. Most attendees at a Scotter lecture would have known what he was referring to when he described the Nahanni as "a land of murders, monsters and mysteries." In the unlikely case his audience had not yet heard of the Legend of Headless Valley, Scotter was quick to indulge them with tall tales of "rich placer gold deposits, disappearing men, headless men, tropical valleys, fierce natives, [and] mountain men of bad reputation."[64] While Scotter used the Legend of Headless Valley to capture his audience's attention, he did not dwell on the legends and the myths associated with the Nahanni. Instead, he used most of his lecture time to educate Canadians on the need to preserve the Nahanni's unique and fragile ecosystem.

On January 29, 1971, Scotter lectured to more than a thousand people at Eaton's Auditorium in Toronto. Pierre Berton, "Mr. Headless Valley" himself, introduced Scotter to the audience that evening, and, after indulging the crowd with another recounting of his 1947 expedition to the Nahanni, encouraged everyone in attendance to write letters to Prime Minister Pierre Elliott Trudeau in support of preserving the Nahanni Valley. In subsequent months, Trudeau received hundreds of letters from individual citizens and citizens' groups across the country expressing their support for a wilderness park in the Nahanni Valley. Many letter-writers implored the prime minister to "take immediate action" to protect the "legendary" South Nahanni River.[65] Having heard the public outcry, and having visited the Nahanni in August 1970, Trudeau acted to protect what he

considered to be "the greatest river in Canada."[66] On February 22, 1972, twenty-five years after the world had followed Pierre Berton north to the Nahanni, Jean Chrétien, the cabinet minister responsible for national parks, announced the government's plan to create a national wilderness park in the South Nahanni River Valley.

Today, the Legend of Headless Valley remains an integral part of the scenery in Nahanni National Park Reserve. For the average visitor, it is all around, reflected in place names like "Headless Creek," "Headless Range," "Headless Valley," "Deadmen's Valley," "Murder Creek," "Funeral Range," "McLeod Creek," and more. But, as with most landscapes in Canada, these and other English-language toponyms and the stories they reflect sit on top of Indigenous place names and Indigenous stories. For local and regional Dene Peoples, the Legend of Headless Valley is like an invasive weed that colonizes a landscape and chokes out all native plant life. Underlying the Legend of Headless Valley is a host of traditional Dene stories, the lifeblood of Dene culture.

Recognizing the prevalence of "outsider" stories on the landscape, Parks Canada and the Dene co-managers of Nahanni National Park Reserve created a guidebook to the South Nahanni River as a way of breaking part of the suffocating spell cast by the Legend of Headless Valley. Published in 2017, *Nahʔą Dehé: South Nahanni River Touring Guide* is different from other Nahanni guidebooks because it includes traditional Dene place names for notable landscape features in the Nahanni Valley.[67] Those names and the stories they evoke reflect the fact that Nahʔą Dehé is and always has been a sacred and storied landscape for Dene Peoples. The river's unique tufa mounds (Gahnı̨thah) and its great waterfall (Náı̨lı̨cho) are revered as the birthplace and home of Yamǫ́ria (sometimes referred to as Yamozha or Yampa Déja), the "great chief" and "lawmaker" in Dene oral tradition.[68] The inclusion of Indigenous place names in the guidebook is part of a larger project, started in the early 2000s, aimed at re-asserting and re-establishing a Dene cultural presence inside the national park reserve.

Breaking the spell cast by the Legend of Headless Valley has been difficult. As Patrick Carroll, Cultural Resource Management Advisor for Parks Canada in the Northwest Territories, admits, pushing the Legend of Headless Valley out of Nahanni National Park Reserve is like "pushing against a brick wall."[69] But sustaining that effort is critical work, he argues. Not only has the Legend of Headless Valley covered over the Dene cultural presence that has been in the Nahanni Valley since time immemorial, but it has also perpetuated racialized stereotypes about Indigenous Peoples through association with superstition and savagery, and by casting Indigenous people as fictionalized characters lurking in the background of a dark and dangerous wilderness.[70] Prioritizing the use of Dene

place names in Nahanni National Park Reserve is a simple but powerful gesture of cultural recognition, and a means of alleviating the pressure exerted by the bulk of sensationalized stories that have colonized the landscape over the last two centuries.

Despite these efforts, the Legend of Headless Valley persists, not least of all because settler Canadians like me continue to talk about it. But it also persists because, like all stories, the Legend of Headless Valley is itself material, and it has had real material effects on the people and places it has interacted with. The materiality of this or any other story has nothing to do with it being "real" or "true," however. On the contrary, as the historian Yuval Noah Harari argues, the persistence and power of a story rests not in its "credibility" but in its "connectivity," its capacity to bring people and information together into networks of socio-economic, political, and cultural relations.[71] But when these networks result in the subjugation of Indigenous lands and Peoples by a settler state and society, the mediating story must therefore be considered an agent of the colonial project.

Acknowledgements

I wish to thank Liza Piper, Zac Robinson, and the two anonymous reviewers for their insightful and helpful feedback on earlier versions of this essay.

Notes

1. A.B. McKillop, *Pierre Berton: A Biography* (McClelland & Stewart, 2008), 199; Simon Schama, *Landscape and Memory* (Vintage, 1995), 61. The "constitutive" nature of stories is derived from Emilie Cameron, *Far Off Metal River: Inuit Lands, Settler Stories, and the Making of the Contemporary Arctic* (UBC Press, 2015), 12; and Thomas King, *The Truth About Stories: A Native Narrative* (House of Anansi Press, 2003). See also Sherrill E. Grace, *Canada and the Idea of North* (McGill-Queen's University Press, 2001); and Joan Sangster, *The Iconic North: Cultural Constructions of Aboriginal Life in Postwar Canada* (UBC Press, 2016).
2. George W. Scotter and Norman K. Simmons, "Park of Power?" *Park News* 8, no. 1 (1972): 8.
3. On the internal colonization of the Canadian North, start with Morris Zaslow, *The Opening of the Canadian North*, 1870–1914 (McClelland & Stewart, 1971); and *The Northward Expansion of Canada*, 1914–1967 (McClelland & Stewart, 1988). On the colonization of northern nature, see Paul Nadasdy, *Hunters and Bureaucrats: Power, Knowledge, and Aboriginal-State Relations in Southwest Yukon* (UBC Press, 2003); Liza Piper, *The Industrial Transformation of Subarctic Canada* (UBC Press, 2009); and John Sandlos, *Hunters at the Margin: Native People and Wildlife Conservation in the Northwest Territories* (UBC Press, 2007).

4. For a "tour" of the Nahanni region, see Charles Blyth, *Nahanni Nahʔą Dehé: A Selection of Photographic Images of the South Nahanni Watershed (2007–2010)* (Creative Publishing Services, 2001); Pat Keough and Rosemarie Keough, *The Nahanni Portfolio* (Stoddart Publishing Company, 1988). For a history of the Nahanni region, see Kerry Abel, "The South Nahanni River Region, N.W.T. (1820–1972): Patterns of Socio-Economic Transition in the Canadian North" (Master's thesis, University of Manitoba, 1980).
5. Beryl C. Gillespie, "Nahani," in *Handbook of North American Indians, Volume 6: Subarctic*, ed. June Helm (Smithsonian Foundation, 1981), 451–3. See also John J. Honigmann, "Are there Nahani Indians?" *Anthropologica* 1, no. 3 (1956): 35–38.
6. Keith Lloyd, ed., *North of Athabasca: Slave Lake and Mackenzie River Documents of the North West Company, 1800–1821* (McGill-Queen's University Press, 2001), 157–206, 88–364.
7. See Robert G. Williamson, "Slave Indian Legends," *Anthropologica*, no. 1 (1955): 119–43; and "Slave Indian Legends," *Anthropologica*, no. 2 (1956): 61–92.
8. Robert Campbell, *Two Journals of Robert Campbell (Chief Factor Hudson's Bay Company) 1808 to 1853: Early Journal-1808 to 1851, Later Journal-Sept. 1850 to Feb. 1853* (Shorey's Book Store, 1958), 44, 63.
9. Michael H. Mason, *The Arctic Forests* (Hodder and Stoughton, 1924), 18. See also Philip H. Godsell, "Lost Mines and Lost Men," *The Canadian Magazine*, December 1933, 12, 20, 22–3; and "The Tropical Valley in the Arctic," *Outdoorsman*, March-April 1943, 6–8, 38–9.
10. On the "all-Canadian" routes to the Klondike, see J. G. MacGregor, *The Klondike Rush through Edmonton, 1897–1898* (McClelland & Stewart, 1970). Much of the early gold rush history of the Nahanni region is derived from Poole Field's three letters to Jack LaFlair, dated 1939, in file N-1992-268:1-1, Poole Field Fonds, Northwest Territories Archives, Yellowknife, Northwest Territories.
11. There are many versions of the McLeods' story. The most comprehensive compilation of accounts is found in Hammerson Peters, *Legends of the Nahanni Valley* (Hammerson Peters, 2018), 98–169. See also Kerry Abel, "Nahanni Gold," *The Beaver*, Winter, 1984, 22–27; and Neil Hartling, *Nahanni: River of Gold … River of Dreams* (Canadian Recreational Canoeing Association, 1993).
12. Poole Field to Jack LaFlair, cited above.
13. "Indian Superstition Defeats Gold Seekers," *The Globe*, October 20, 1936, 2.
14. "Prospector Vanishes in Dead Man's Valley," *Toronto Daily Star*, September 26, 1933, 3.
15. For some popular and sensationalized stories about the Klondike and the North, see Pierre Berton, *The Mysterious North* (Cassell, 1956), and *Klondike* (McClelland & Stewart, 1958).
16. See "An Oasis in the Arctic," *Valdez Miner,* November 11, 1922, 1; "Winter in Paradise," *Alaska Weekly*, July 25, 1924, 1; "The Valley of Eden," *Alaska Weekly*, June 26, 1925, 1; "More Than One Tropical Valley in the North," *Wrangell Sentinel*, September 24, 1925, 1.

17. Morris Zaslow, *Reading the Rocks: The Story of the Geological Survey of Canada, 1842–1972* (Macmillan, in association with the Department of Energy, Mines and Resources and Information Canada, 1975), 19, 38, 47, 59, 88, 93, 94, 96, 157, 224–5, 318, 435.
18. Peter Davidson, *The Idea of North* (Reaktion Books, 2005), 20–22; Robert McGhee, *The Last Imaginary Place: A Human History of the Arctic World* (University of Chicago Press, 2005), 20–33; James S. Romm, *The Edges of the Earth in Ancient Thought: Geography, Exploration, and Fiction* (Princeton University Press), 60–67.
19. Mary G. Henry, "Collecting Plants Beyond the Frontier in Northern British Columbia," *The National Horticultural Magazine* 13, no. 3 (1934): 275–76.
20. Charles Camsell, "The Trail of '35," in *The Empire Club of Canada Addresses* (The Empire Club of Canada, 1936 [March 13]), 295–305; Camsell, *Son of the North* (The Ryerson Press, 1954), 70–75.
21. See Fenley Hunter, *That Summer of the Nahanni 1928: The Journals of Fenley Hunter*, ed. Hugh Stewart and David Finch (McGahern Stewart Publishing, 2015).
22. Alan Cameron, "South Nahanni River, N.W.T," *Canadian Geographical Journal* XIII, no. 1 (1936): 37–45.
23. John Buchan, *Sick Heart River* (Hodder & Stoughton, 1941). See also Andrew Lownie, *John Buchan: The Presbyterian Cavalier* (Canongate, 1998).
24. Godsell wrote many books (and magazine articles), including *Red Hunters of the Snow* (1938); *They Got Their Man: A Saga of Traders, Mounties and Men of the Last North-West* (1939); and *Pilots of the Purple Twilight: The Story of Canada's Early Bush Flyers* (1955). All were published by The Ryerson Press.
25. Philip H. Godsell, *The Romance of the Alaska Highway* (The Ryerson Press, 1944). 82–83.
26. Godsell's northern travels, documented in his autobiography *Arctic Trader*, did not include any time in the Nahanni Valley. Because he travelled on the Liard, it is likely he spent some time at Nahanni Butte, but never upstream of there on the Nahanni. Philip H. Godsell, *Arctic Trader: The Account of Twenty Years with the Hudson's Bay Company* (A. L. Burt Company, 1932).
27. See, for example, Georgina Murray, "'Valley of the Dead' Claims New Victim," *Vancouver Sun*, July 16, 1946, 11. For more on the Murrays, see Georgina Keddell, *The Newspapering Murrays* (McClelland & Stewart, 1967).
28. "No Gold, May Be Oil in B.C. Mystery Valley," *The Globe and Mail*, September 26, 1946, 9. The title of this article situates the Nahanni in British Columbia, a mistake that was commonly made in reports at the time. The Nahanni was also mistakenly placed in the Yukon on occasion.
29. R. A. Francis and Margaret Francis, "Nahanni …Valley of Mystery," undated and unattributed clipping in "Nahanni …Valley of Mystery" file, box 163, Pierre Berton Fonds, William Ready Division of Archives and Research Collections, McMaster University Library, Hamilton, Ontario (hereafter Pierre Berton Fonds).
30. McKillop, *Pierre Berton*, 172–95.
31. Pierre Berton, *Starting Out* (McClelland & Stewart, 1987), 311–12.

32. Pierre Berton, "Man Who Came Back Tells of 'Death' Valley," *Vancouver Sun*, January 6, 1947, 11.
33. Berton, *Starting Out*, 311.
34. Pierre Berton, "Valley of Mystery," *Maclean's Magazine*, March 15, 1947, 22, 33–34, 36–37.
35. McKillop, *Pierre Berton*, 198.
36. Pierre Berton wrote four separate accounts of his expedition to the Nahanni. The first is in the form of fifteen telegraphed reports sent from the field to the *Vancouver Sun* offices in January-February 1947. With minor editing, these became the text used by the *Sun* in daily articles between February 1 and 18 ("Dispatches from Headless Valley" file, box 160, Pierre Berton Fonds). The second account, a series of six scripts for CBC radio talks given in 1952, is more detailed (Headless Valley Radio Series, "North to the Nahanni" file, Box 161, Pierre Berton Fonds). A third account occupies the first five chapters of Berton's bestselling book, *The Mysterious North* (1956), and a fourth account is found in Berton's first autobiography, *Starting Out* (1987).
37. Berton filed his dispatches using local telegraph services. Delays in transmitting these dispatches, as well as the time it took for Hal Straight to edit them, meant that the polished reports did not appear in the *Sun* for several days (or more) after they were filed.
38. Headless Valley Article no. 1, January 27, 1947, Headless Valley file, box 160, Pierre Berton Fonds. See also Pierre Berton, "Sun Explores Famed Valley," *Vancouver Sun*, February 1, 1947, 1.
39. Headless Valley Article no. 2, January 28, 1947, Headless Valley file, box 160, Pierre Berton Fonds. See also Pierre Berton, "Veteran Pilot in Sun Party," *Vancouver Sun*, February 3, 1947, 1, 3.
40. Pierre Berton, "B.C. Mercury Centre Idle," *Vancouver Sun*, February 4, 1947, 1, 2, 11.
41. Pierre Berton, "Beefsteaks by Airplane," *Vancouver Sun*, February 5, 1947, 1.
42. Hal Straight to Pierre Berton, January 29, 1947, "Telegrams" file, box 163, Pierre Berton Fonds.
43. Pierre Berton, "Death Tales Rife in North," *Vancouver Sun*, February 7, 1947, 1, 9, 15.
44. McKillop, *Pierre Berton*, 205.
45. Berton, *Starting Out*, 310–21.
46. Headless Valley Article no. 6, February 4, 1947, Headless Valley file, box 160, Pierre Berton Fonds.
47. Headless Valley Article no. 8, February 6, 1947, Headless Valley file, box 160, Pierre Berton Fonds.
48. Most of Berton's dispatches to Straight included a "precede," which introduced the piece and captured the readers' attention, and a "teaser," a prelude of what was to come in the next instalment of the series.
49. Headless Valley Article no. 10, February 7, 1947, Headless Valley file, box 160, Pierre Berton Fonds.
50. Pierre Berton, "Sun Party Near Valley," *Vancouver Sun*, February 14, 1947, 1.

51. Headless Valley Article no. 11, February 8, 1947, Headless Valley file, box 160, Pierre Berton Fonds. See also Pierre Berton, "Sun Men Land in Headless Valley," *Vancouver Sun*, February 15, 1947, 1, 2.
52. Headless Valley Article no. 12, February 9, 1947, Headless Valley file, box 160, Pierre Berton Fonds. See also Pierre Berton, "Head Hunters and Spirits Prove Mostly to be Invisible," *Vancouver Sun*, February 17, 1947, 1, 2, 11.
53. McKillop, *Pierre Berton*, 211–12.
54. Pierre Berton, "For Vancouver Sun Broadcast," four-page typescript, undated, "Headless Valley Articles" file, box 160, Pierre Berton Fonds.
55. Berton, *Starting Out*, 327; McKillop, *Pierre Berton*, xiii, 549.
56. Pierre Berton, "They'll Never Believe the Truth About Headless Valley," ten-page typescript, undated, "Headless Valley Articles" file, box 160, Pierre Berton Fonds.
57. Oldham's original report has been lost, but large parts of it are quoted in various intra-governmental correspondence that still exists. See, for instance, Harrison F. Lewis, Dominion Wildlife Service, to James Smart, Head of the National Parks Branch, February 13, 1948, RG84, A-2-a, Volume No. 1983, File No. U2-20-2, Part 1, Library and Archives Canada, Ottawa, Ontario.
58. Patterson, *The Dangerous River* (Allen & Unwin Ltd., 1954). On the life and times of Patterson, see David Finch, *R. M. Patterson: A Life of Great Adventure* (Rocky Mountain Books, 2009). On the publishing history of *The Dangerous River*, as well as Patterson's original Nahanni journals, see R. M. Patterson, *Nahanni Journals: R. M. Patterson's 1927–1929 Journals*, ed. Richard C. Davis (University of Alberta Press, 2008).
59. See Ranulph Fiennes, *The Headless Valley* (Hodder and Stoughton, 1973); Roger Frison-Roche, *Nahanni* (Arthaud, 1969); A. C. Lewis, *Nahanni Remembered* (NeWest Press, 1997); Joanne Ronan Moore, *Nahanni Trailhead: A Year in the Northern Wilderness* (Deneau and Greenberg Publishers Ltd., 1980; Jean Poirel, *Nahanni: La vallée des hommes sans tête* (Stanké, 1980); and Dick Turner, *Nahanni* (Hancock House Publishers, Ltd., 1975).
60. Donald Wilder, "Nahanni" (National Film Board of Canada, 1962), https://www.nfb.ca/film/nahanni/.
61. T. Ingledow & Associates Limited, *Power Survey of the Liard River Basin, Yukon and Northwest Territories (Final Report)*, prepared for the Government of Canada, Department of Indian Affairs and Northern Development, February 1970.
62. Marilyn Dubasak, *Wilderness Preservation: A Cross-Cultural Comparison of Canada and the United States* (Garland Publishing, Inc., 1990), 189–92. See also Gordon Nelson, *The Magnificent Nahanni: The Struggle to Protect a Wild Place* (University of Regina Press, 2017).
63. G. W. Scotter and N. M. Simmons, "Park or Power?," 8–12. Derived, also, from personal communications with Dr. Scotter in February and March of 2021.
64. Scotter and Simmons, "Park or Power?," 8.

65. Many of the letters written in support of preserving the Nahanni wilderness are in the Department of Indian Affairs and Northern Development fonds at Library and Archives Canada. See RG 22 1388 File 330-12-4 Part 1; RG22 1231 File 330-12-4, Part 3; RG 1003 File 330-12-4, Part 3.
66. Justin Trudeau, quoting his father, Pierre, in Nelson Wyatt, "Justin Retraces Trudeau's Route," *The Globe and Mail*, November 26, 2003, R6.
67. Parks Canada, *Nahʔą Dehé: South Nahanni River Touring Guide* (Parks Canada, 2017).
68. On the significance of *Yamǫ́ria* in Dene culture, see George Blondin, *Yamoria the Lawmaker: Stories of the Dene* (NeWest Press, 1997). On the cultural connection between the Nahʔą Dehé Dene Band of Nahanni Butte and the South Nahanni River, see Wendel E. White, *The Birth of Nahanni – "Nahande Beguli": A Local History of the People of Nahanni Butte.* Microfiche Report Series: 286 (Environment Canada, Parks, 1984).
69. Personal correspondence, Tuesday, April 2, 2019.
70. See, for example, Daniel Francis, *The Imaginary Indian: The Image of the Indian in Canadian Culture* (Arsenal Pulp Press, 1992).
71. Yuval Noah Harari, *Nexus: A Brief History of Information Networks from the Stone Age to AI* (Signal, 2024), Introduction.

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The Northern Review
Exploring human experience in the North
The Northern Review 58: 35–63
https://doi.org/10.22584/nr58.2025.005
Published at Yukon University, Canada

Research Article

When Worlds Collide: Critical Minerals and the Fate of the Maymayquayshwak Anishinaabe in Ontario, Canada

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Abstract: Now, more than ever, critical minerals are in demand. However, in the rush to bring these resources to market, mining can have severe, adverse impacts on the people who use and enjoy the places where these minerals are found. The Maymayquayshwak Anishinaabe who reside in Ni da tak keem nah^{m} (our land), a remote region in Northwestern Ontario, are a telling example. Also known as the North Spirit Lake First Nation, the community is contending with a mining company whose operations in their territory pose an existential threat to their way of life. This article describes their plight and how the duty to consult Indigenous Canadians about industrial developments in their Territories failed in this case.

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> Enthusiastic partisans of the idea of progress are in danger of failing to recognize—because they set so little store by them—the immense riches accumulated by the human race on either side of the narrow furrow on which they keep their eyes fixed, by underrating the achievements of the past they devalue all those which still remain to be accomplished.
>
> Claude Lévi-Strauss, *Tristes Tropiques*, 393

Critical Minerals

The importance of lithium, cobalt, nickel, aluminum, manganese, and other "critical minerals" in the battle against the climate crisis is undeniable. While the use of rechargeable batteries containing these minerals has become widespread since the advent of lithium-ion batteries in 1991,[1] in the aftermath of the 2015 *Paris Agreement*,[2] in which almost 200 nations[3] pledged "to fight against climate change through … the mitigation of greenhouse gases," the demand for critical minerals has reached unprecedented levels.[4]

Provincial Support and the Protect Ontario by Unleashing our Economy Act, 2025

Mindful of the accelerating demand, Ontario Premier Doug Ford not only referred to the discovery of lithium and other critical minerals in Northwestern Ontario as a "generational" economic opportunity for the province, but also "has repeatedly vowed to accelerate mining in the remote region to supply future electric-vehicle and battery factories in the south."[5] In order to accomplish that goal, on 10 May 2023, the provincial legislature passed the *Building More Min**es** Act*, with a purpose "to expedite permitting times and approvals to put more new mines into production more quickly."[6]

More recently, Premier Ford doubled down on his promise to accelerate mining in the region. In March 2025 the premier told representatives from the mining industry, at the annual conference of the Prospectors and Developers Association of Canada, that threats to the nation's national security demanded immediate action. "We cannot afford to add years and years of delays, massive costs to critical mineral projects so that the federal government can waste time repeating and replicating assessments that Ontario has already done," Ford told attendees from Canada and abroad.[7]

Enabling legislation followed three months later, on 5 June 2025, when the provincial legislature passed Bill 5, *Protect Ontario by Unleashing our Economy Act,* which modified several existing acts largely to promote "prospecting, registration of mining claims and exploration for the development of mineral resources …

consistent with the protection of Ontario's economy."[8] Bill 5 also empowered the provincial government to create "special economic zones" in which mines could be brought into production more rapidly by suspending existing municipal and provincial laws and regulations.[9] Although one month later, faced with mounting pressure from First Nations leaders,[10] the Ford government stated that Bill 5 was not intended to diminish constitutionally protected treaty and Aboriginal rights,[11] the premier reminded critics that, "I was crystal clear about getting rid of the red tape, getting rid of the regulations, making sure that we attract investments."[12]

Federal Support and the Building Canada Act, 2025

In the meantime, high-ranking federal officials also vowed "to make government move faster and more efficiently in expediting approvals to put more Canadian mines into production ahead of the quickening global demand for critical minerals."[13] To that end, on 9 December 2022 the federal minister of natural resources released the Canadian Critical Minerals Strategy, which announced that nearly four billion dollars would be provided "for Canada to become a global supplier of choice for critical minerals and the clean digital technologies they enable."[14] Two years later, in October 2024, the federal government "announced up to $13.8 million in funding, pending final due diligence from Natural Resources Canada, for five critical minerals infrastructure developments in Northwestern Ontario,"[15] four of which are in support of lithium mines.[16]

The momentum to develop the critical mineral wealth of Northern Ontario received a further boost when the *Building Canada Act*, which is part of Bill C-5, the *One Canadian Economy Act*, came into effect on 26 June 2025.[17] According to the federal government, the purpose of the legislation is to "get projects of national interest built by focusing on a small number of executable projects and shifting the focus of federal reviews from 'whether' to build these projects to 'how' to best advance them."[18] To qualify, proposed projects must, among other things, "enhance Canada's prosperity, national security, economic security, national defence [and] national autonomy."[19]

According to Prime Minister Mark Carney, critical mineral undertakings in Northern Ontario are an example. Although no ventures of this sort were included in the five "nation-building" projects the prime minister referred to the Major Projects Office[20] on 11 September 2025, a background document accompanying the announcement noted that exploiting the critical mineral wealth of Northern Ontario was likely to be included in the next tranche of endeavours the prime minister intends to recommend to the Major Projects Office—"to create business development teams to work with provinces, territories, proponents, and Indigenous Peoples to further develop and make these nation-building projects a reality."[21] As the government declared in the backgrounder document:

> Canada can be a powerhouse in the extraction and upgrading of critical minerals for industries that can emerge in Canada and to diversify and serve export markets. A priority for the Major Projects Office will be to get more critidcal minerals projects get to final investment decisions, with a focus on sustainability and regulatory certainty. This will enable critical mineral proponents working with Indigenous and local communities, investors, and provinces and territories to develop projects in regions like the Fosse du Labrador in QC and NL, the Northwest Critical Mineral and Conservation Corridor in BC, and the Ring of Fire in [Northern] Ontario … developing 'mines to magnets' using our rare earth resources and building processing and manufacturing abilities; and refining and processing minerals needed for clean energy and electricity battery storage, as well as electric vehicles.[22]

An Existential Threat

However, despite assurances from federal officials and the Ontario premier[23] that potential projects should "advance the interests of Indigenous peoples … [via a process] that allows for the active and meaningful participation of the affected Indigenous peoples"[24] in the decision-making process, there is no consensus among the First Nations in Northern Ontario about how best to proceed. While some Anishinaabe[25] who use and occupy the land where critical minerals are found support the new federal and provincial initiatives, other Anishinaabe consider the exploitation of the metals that have caused so much optimism in Canada and abroad[26] an existential threat.[27]

Among the latter are the Maymayquayshwak, a community composed of about 290[28] predominantly Oji-Cree speaking Anishinaabe[29] who reside in the North Spirit Lake First Nation community,[30] Ni da tak keem nah^{m} (our land), at the southwest tip of North Spirit Lake (see Figure 1), about an hour and a half northwest of Thunder Bay by air (see Figure 2). What alarms community members is that efforts undertaken by Frontier Lithium[31]—"to complete final permitting, metallurgical test work and … feasibility [studies] in 2025 to make [a final] construct[ion] decision for an [open-pit] mine, mill and downstream chemical plant at its PAK (Pakeagama) site to produce lithium chemicals"[32]—will destroy their way of life. The issue is all the more pressing, they say, because Frontier Lithium has identified three additional, economically feasible deposits of lithium-bearing minerals in the First Nation's territory, which it plans to develop:

two adjacent to the PAK site and another 30 km away (see Figure 3). These deposits pose further threats to that way of life. Nor has the company given the Maymayquayshwak any indication that it understands their concerns.

The purpose of this article is to contribute to the scholarship on extractive industries and Indigenous harvesting practices in the North[33] via an ethnological account of the Maymayquayshwak way of life, featuring a father and son who abide by its tenets. This is accompanied by a chronicle of Frontier Lithium's failure to engage the community in a meaningful dialogue about the adverse impacts of the company's activities on their way of life. Like other students of ethnology, our goal is to portray the world from "the other" point of view[34]—to achieve what the great, pioneer anthropologist Bronislaw Malinowski (1884–1942) wrote, was "the final goal, of which an Ethnographer [ethnologist] should never lose sight … to grasp the [other's] point of view, [their] relation to life, to realise *[their]* vision of *[their]* world."[35]

Figure 1. Photo of North Spirit Lake First Nation, Village site reproduced with permission of Destiny Rae. Source: Destiny Rae.

Figure 2. Map of North Spirit Lake First Nation location in Northwestern Ontario.
Sources: Reg Nelson, Lakehead University, Geospatial Data Centre, NaturalEarthData.com, Canada Atlas Lambert.

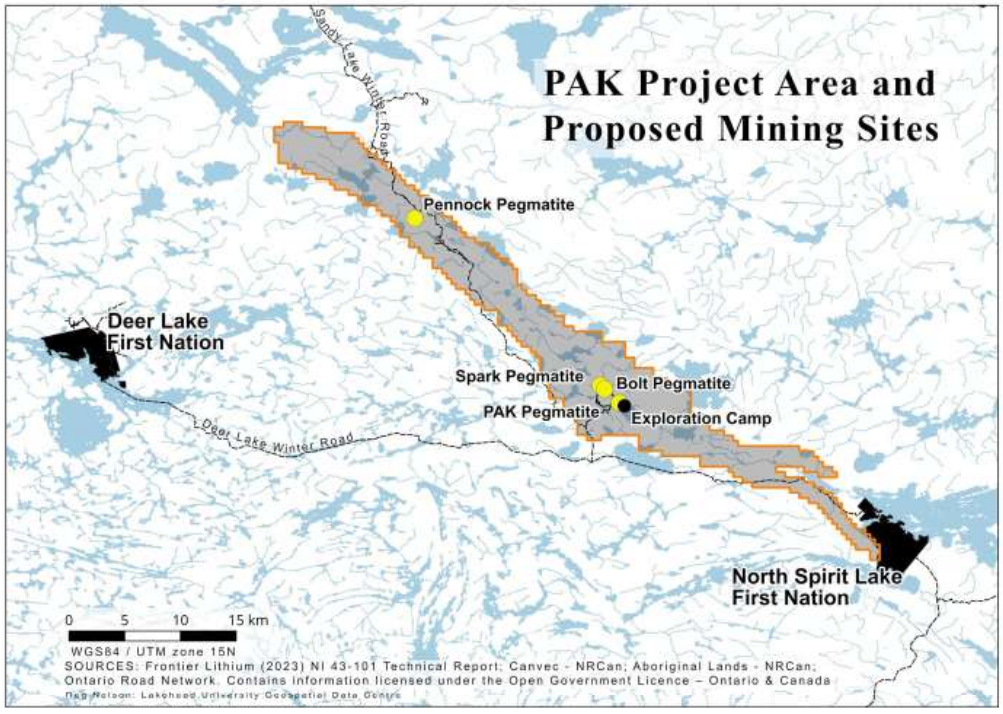

Figure 3. Map of Frontier Lithium claims and proposed mine sites in relation to the North Spirit Lake and Deer Lake village sites.
Sources: Reg Nelson, Lakehead University Geospatial Data Centre, Frontier Lithium (2023) NI 43-101 Technical Report: Canvec - NRCan, Aboriginal Lands - NRCan, Ontario Road Network. Contains information licensed under the Open Government Licence - Ontario & Canada.

Anishinaabe-Bimaadiziwin

The Maymayquayshwak call their way of life Anishinaabe-Bimaadiziwin, which means living in the Anishinaabe way, directly off the land, like their ancestors, by hunting, trapping, fishing, and gathering, and as twenty-first century people. Since time out of mind, the Maymayquayshwak have moved through their territory in a remote region of Northwestern Ontario (see Figure 4) in concert with the ebb and flow of the seasons, in an annual round that enabled them to maximize their returns from the environment and simultaneously conserve resources for the future, in pursuit of a meaningful and fulfilling way of life.[36] Combined with their cumulative cultural knowledge and formidable survival skills, moving through their territory in this way made it possible for the Maymayquayshwak to depend on the proceeds indefinitely. Like their Anishinaabe counterparts elsewhere in the boreal forest, those from North Spirit Lake were (and are) "adept at steadying a beaver snare with a loop or grass, at aging tracks, at noticing the broken bits of sedge at the mouth of a stream, always learning about climate, landscape, and animal behavior … in a complex and skill-demanding setting … [where each] forager has a history, built on experience and always engaged with the changes of the moment."[37]

The 1910 Adhesion to *Treaty Number 5, 1875*

It was with the goal of maintaining their relationship with the land that Chief Robert Fiddler from Deer Lake, who served as ogimaa-giigdo,[38] or Chief Speaker, during negotiations for the final adhesion (1910) to *Treaty Number Five, 1875*, informed Treaty Commissioner John T. Semmens[39] that the Chiefs and leaders, who had gathered at Deer Lake on 9 June 1910 to parlay with Semmens, had decided to accept the government's offer.[40]

Also known as the Lake Winnipeg Treaty, *Treaty Number Five, 1875* originated with the mid-nineteenth century "push to extinguish aboriginal title to the agricultural land of the Prairies."[41] Although the consensus among scholars is that the Cree and Ojibwe-speaking Anishinaabe who originally endorsed the agreement in 1875 "valued their harvesting life," almost all also acknowledge that the Chiefs and leaders who endorsed the agreement "were not blind to the necessity for change in the face of non-Native settlement and economic restructuring. They believed the treaties would provide the means to survive the anticipated dislocations."[42]

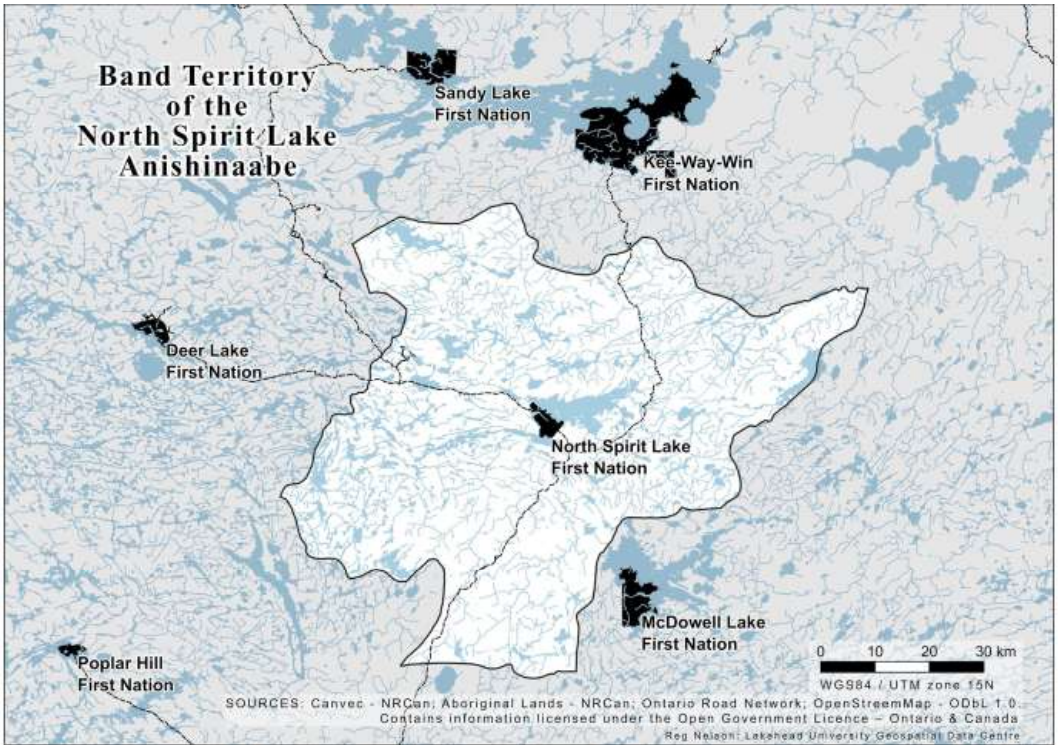

Figure 4. Map of Band Territory of the North Spirit Lake First Nation.
Source: Reg Nelson, Lakehead University Geospatial Data Centre, Canvec - NRCan; Aboriginal Lands - NRCan; Ontario Road Network; OpenstreemMap.

The leaders who endorsed the 1910 adhesion, including those who represented the Maymayquayshwak, believed otherwise. In the remote region of Northwestern Ontario where Oji-Cree speakers such as the Maymayquayshwak resided, Anishinaabe-Bimaadiziwin prevailed. At the time, like neighbouring bands in the newly ceded territory, the Maymayquayshwak reached their maximum size in spring, when the otherwise detached, extended families[43] that comprised the community congregated to take spawning walleye and northern pike at the lower reaches of the rivers and streams that served as their highways to and from the interior. And when spring gave way to summer, people set up camps at various locations on the shores of North Spirit Lake and other, smaller lakes in their territory, where they spent their time fishing, collecting plants for medicine and food, welcoming visitors from other Nations, participating in contests and games, and performing the sacred ceremonies that linked them with the spirit world.

Later, when the leaves began to fall, after taking on a supply of whitefish and lake trout to sustain them when the weather turned cold, people broke camp, and the families who comprised the community, each usually containing from five to fifteen people, separated and headed inland to their individual family winter hunting grounds in the interior. There the men set their traps and went after large game such as moose and woodland caribou, while the women maintained the

camp and killed small game and fished. The hunters and their families remained in their winter quarters until breakup in the spring, when open water enabled the people to return to their fishing grounds and begin the cycle anew.[44]

In the meantime, the details of living off the land as a moral and ethical endeavour had to be mastered—boys and girls schooled in the intricacies of their culture by their Elders, who taught them that, above all, they must respect what the land and water provided, and that the earth was a sentient entity that had thoughts and feelings and was capable of choice.[45] The Elders relied on the spoken word to educate youth about these matters, via sacred narratives that called attention to the social and cultural as well as the economic dimensions of living off the land.

To be sure, there have been changes in Anishinaabe-Bimaadiziwin since the adhesion to *Treaty Number Five, 1875* was endorsed, especially since the end of the Second World War (1939–1945), when the introduction of "programs such as schooling for the young, health services for all, and retraining programs prevented the Indians from remaining in the bush during the winter," had an adverse impact on traditional methods of education based on participant observation and apprenticeship in the bush.[46] As a result, by the last quarter of the twentieth century, the wealth that the Maymayquayshwak and members of neighbouring communities produced through living off the land had been eclipsed by a cash economy and commercial exchange.

Peripheral Market and Peripheral Subsistence Economies

A Peripheral Market Economy

Since time out of mind, although the Maymayquayshwak traded with their neighbours, and later with Europeans, the foundation of the community's economy was hunting, trapping, fishing, and gathering, whose products typically were shared in accord with the principle of reciprocity. The principle holds that gifts are bestowed with the expectation that these will be returned, although the nature and timing of the recompense depends on the relationship between the principals; the closer the connection, the less need for commensurate action.[47]

An economy that is heavily weighted in this way—in favour of gift-giving rather than commercial exchange—is known as a peripheral market economy, an apt term since, from the point of view "of the community, market sales are not the dominant source of material livelihood … [Instead,] most people are not engaged in producing for the market, or those who are so engaged are only part-time marketers. [Rather, their] livelihood comes largely from [the] non-market [or subsistence] sphere of their economy."[48] In the case of the Maymayquayshwak, products were shared in a manner that helped ensure the health and well-being

of the whole, "especially," as one early observer noted, "as it often happens that a single hunter provides food for several families, which, but for his aid, would, at certain times and at certain places, perish of hunger and want."[49]

A Peripheral Subsistence Economy

However, when the annual round of the Maymayquayshwak was disrupted in the middle of the twentieth century, the local economy was transformed from a peripheral market economy into a peripheral subsistence economy. Like a peripheral market economy, a peripheral subsistence economy generates wealth via traditional subsistence activities such as hunting, fishing, and gathering, and non-subsistence market endeavours of various sorts. The difference between these is that, whereas most of the wealth that is produced in a peripheral market economy is derived from traditional subsistence endeavours, most of the wealth that is produced in a peripheral subsistence economy is produced via non-subsistence, market endeavours such as wage labour.

In a system of this sort, while the production, distribution, and exchange of goods and services is based primarily on supply and demand, a smaller share of the economy nonetheless continues to be governed by the principle of reciprocity. Such is the case in the North Spirit Lake First Nation today.

Darcy and Brandon: Consummate Moose Hunters

Peripheral does not mean unimportant.[50] Despite the transition to a predominantly market economy, Anishinaabe-Bimaadiziwin continues to function as one of the most important unifying themes in the cultural lives of the Maymayquayshwak. This is especially true for men who are committed to the principle that their responsibilities include "not only the business of hunting, for this is an *employment* and not a *pastime*, but [also] the care of the territory and keeping off intruders and enemies … [and for the women who are their partners, who are responsible for] cooking and dressing meats and fowl, and whatever else the chase affords … [as well as] the entire care and controul [sic] of the lodge."[51]

Among these men are thirty-year-old Brandon Rae, the current Chief of the North Spirit Lake First Nation, and his forty-eight-year-old father, Darcy Kejick. Like his father before him, Darcy began to tutor his son in the intricacies of Anishinaabe-Bimaadiziwin when Brandon was a child (see Figure 5), overseeing his son's progress from acolyte to expert. This began with the lesson that the

resources Anishinaabe depend on to survive are best understood as species composed of other-than-human persons, each species overseen by its own "spirit master," or ogima, who controls access to its underlings.[52]

Generally thought to be of equal rank, in practice some spirit masters are more powerful than others. The transcendental entities that control access to natural resource harvests such as moose, lake trout, and beaver, for example, are held in higher regard than those that dwell in trees and rocks, although these also are revered. Brandon also was taught that, if a spirit master takes umbrage with anything a forager does, the spectre may punish the offender by refusing to make its kind available to be harvested, or by causing the transgressor's hunting, trapping, fishing, and gathering equipment to malfunction. As ethnologist Irving Hallowell learned from the Berens River Anishinaabe: "Guns and traps are of no avail if this spiritual boss of the species is offended and does not wish human beings to obtain his underlings."[53]

Beyond that, Brandon was taught that the spirit masters who enabled Anishinaabe to thrive abhorred the accumulation of wealth. As Georg Kohl, a German geographer and ethnologist who visited Anishinaabe on the south shore of Lake Superior in the middle of the nineteenth century learned: "As a universal rule, next to the liar, no one is so despised by the Indians as the … greedy miser… As long as a man has anything, according to the moral law of the Indians, he must share it with those who want; and no one can attain any degree of respect among them who does not do so most liberally."[54] The food that the spirits provided (and provide) was (and is) among those things that must be shared.

Darcy and Brandon abide by the principle. Acknowledged by others as the best hunters in the community, the father and son duo have given thousands of kilograms of moose meat to family and friends in North Spirit Lake and beyond for years, by word of mouth and, more recently, via Facebook (see Figure 6). Like all expert hunters, Darcy and Brandon remember every moose they have killed. They also have kept detailed, written records of their kills on their family trapline since 2008 (see Figure 7), which was five years before Frontier Lithium acquired the rights to develop the lithium deposit at the PAK site, which "encompasses 26,774 hectares" in the immediate vicinity of their trapline, RL 121 (see Figure 8).

Figure 5. Photo of Darcy Kejik and Brandon Rae field dressing a moose they harvested on their family trapline in October, 2020. Reproduced with permission of Darcy Kejik and Brandon Rae.

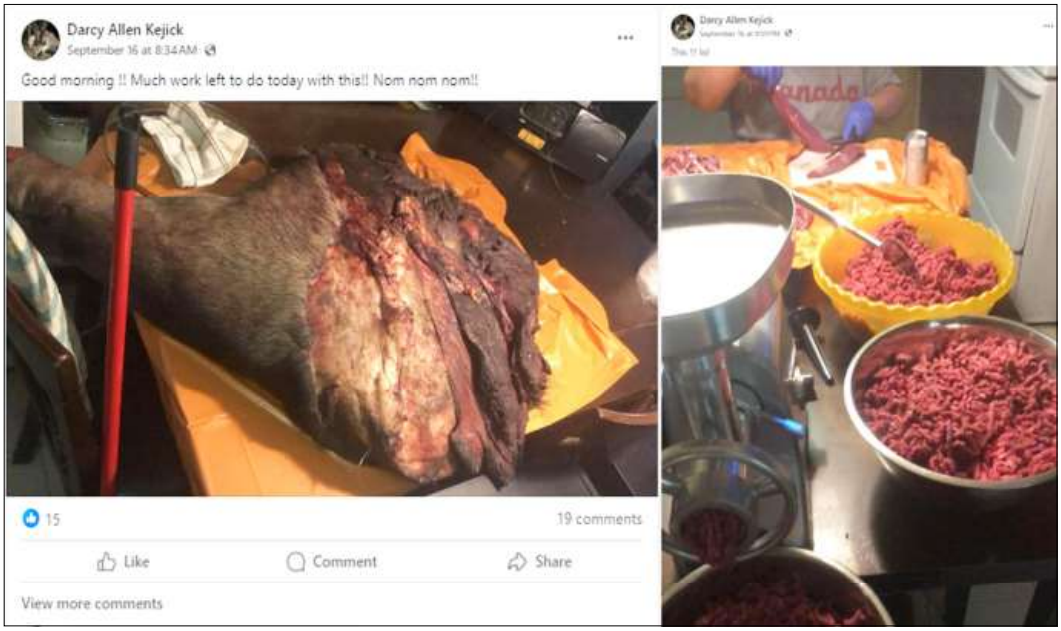

Figure 6. Photo of hunter Darcy Kejik's Facebook posts, sharing moose harvest
Kejik, D., "Good Morning!!," Facebook, September 16, 2024. Reproduced with permission of Darcy Kejick

Figure 7. Photo of moose kills on their family trapline, records kept by Darcy Kejik and Brandon Rae, 2008–2023. Photo of moose harvest records on family trapline, Northwestern Ontario, North Spirit Lake First Nation.
Reproduced with permission of Darcy Kejick and Brandon Rae.

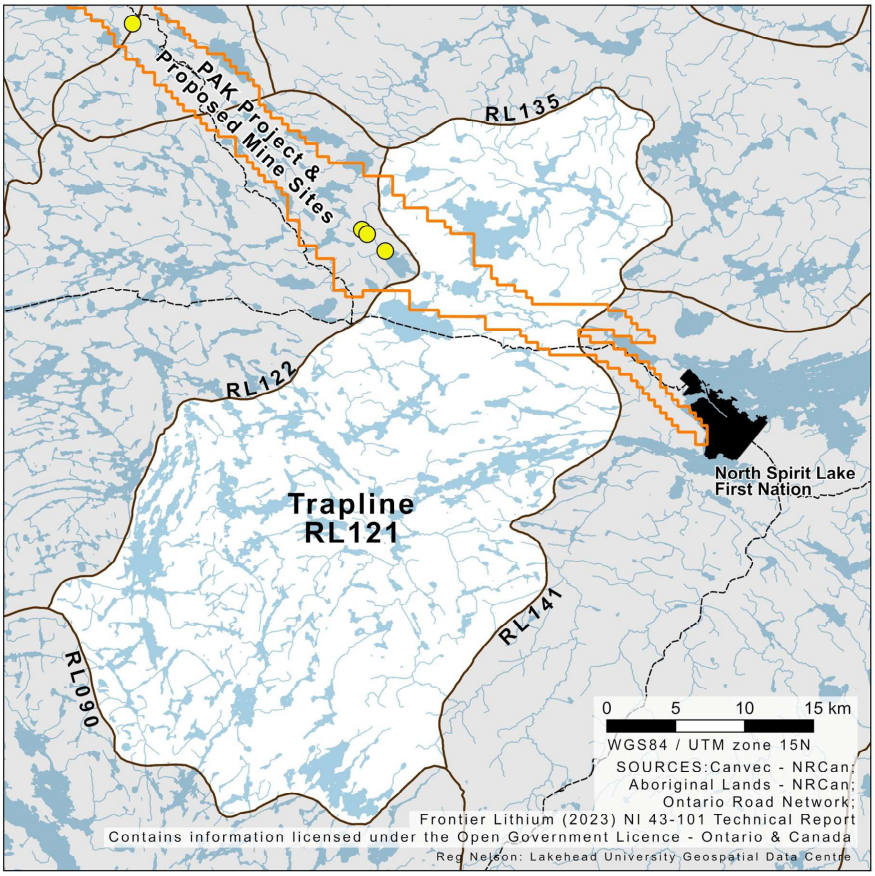

Figure 8. Map of Trapline RL121 boundaries, southwest of the North Spirit Lake First Nation Village site. Sources: Reg Nelson, Lakehead University Geospatial Data Centre, from Canvec-NRCan; Aboriginal Lands - NRCan; Ontario Road Network; Fontier Lithium (2023) NI 43-101 Technical Report

Figures 9, 10, and 11 are based on Darcy and Brandon's records. Each figure represents a different way of looking at their productivity on an annual basis between 2008 and 2023. Figure 9 shows the number of moose they killed annually during the period, and, as the numbers indicate, Darcy and Brandon have been far less successful since 2017. Between 2008 and 2016 they killed forty moose, but only twelve moose between 2017 and 2023. This amounts to a 72% average annual decline.

Since the number of moose killed has decreased, the total edible weight of the animals also has dropped significantly, and the less meat that Darcy and Brandon are able to share with family and friends. As Figure 10 shows, despite their hunting prowess, Darcy and Brandon produced around one-quarter the amount of moose meat between 2016 and 2023 compared with the period between 2008 and 2015—2,547 kg as opposed to 10,259 kg.

Finally, Figure 11 displays the cash-equivalent values of the moose meat Darcy and Brandon produced between 2008 and 2023, and these likewise show a conspicuous drop beginning in 2017, equivalent to $21,462 per annum in 2024 dollars. The importance of this cannot be overstated in a place where the "cost of living is high and opportunities are scarce."[55] Meanwhile, other hunters in North Spirit Lake report similar downturns beginning in 2017, not only in the number of moose killed, but also in the numbers of waterfowl, fish, and furbearers they take, which likewise are sources of food that also are freely shared.[56]

According to Darcy, Brandon, and other hunters in North Spirit Lake, the reason for the decline is apparent: the increasingly rapid pace of the activities undertaken by Frontier Lithium to achieve the company's goal of opening the mine in 2027. Construction, float planes, helicopters, and motorboats transporting employees and materials to and from the First Nation's territory have altered the movements of animals—so much so that the hunters at North Spirit Lake are no longer able to rely on the ecological algorithms that were key to their success. As a result, everybody in North Spirit Lake has been harmed: think of the hunters whose role as providers has been diminished, and then of the recipients of the presents, which is the community as whole, who not only have suffered an economic setback, but also have less of the natural foods that Anishinaabe say is essential to maintain their physical, mental, spiritual, and emotional health.[57]

To make matters worse, the pace of the development that is threatening to overwhelm the community is nearly certain to continue apace. Of the previously mentioned $13.8 million in funding to promote five critical mineral projects in Northwestern Ontario, Frontier Lithium was slated to receive the lion's share—$6.1 million "to advance Indigenous engagement and engineering for a 56-kilometre all-season road and electricity infrastructure for the Pakeagama (PAK) Lithium Project in Northwestern Ontario."[58]

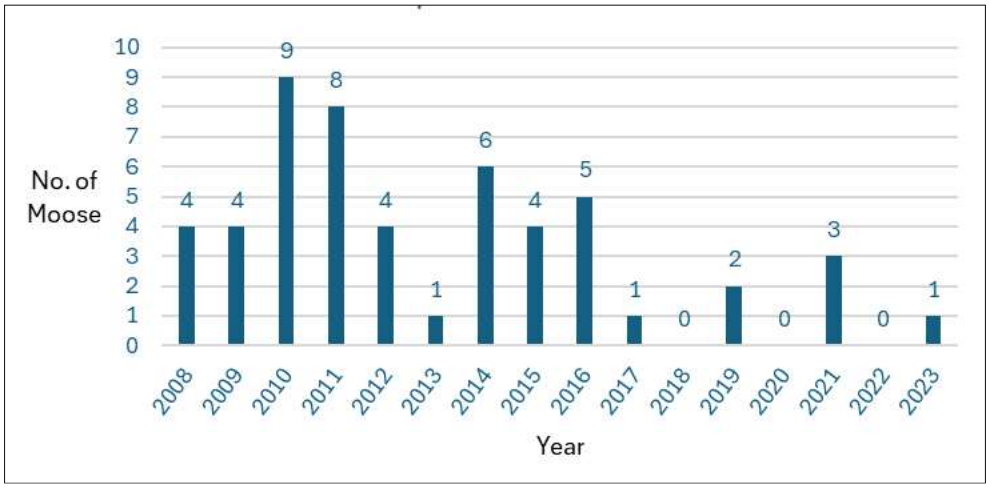

Figure 9. Graph of annual moose harvested by Darcy and Brandon in Trapline RL 121, 2008–2023.

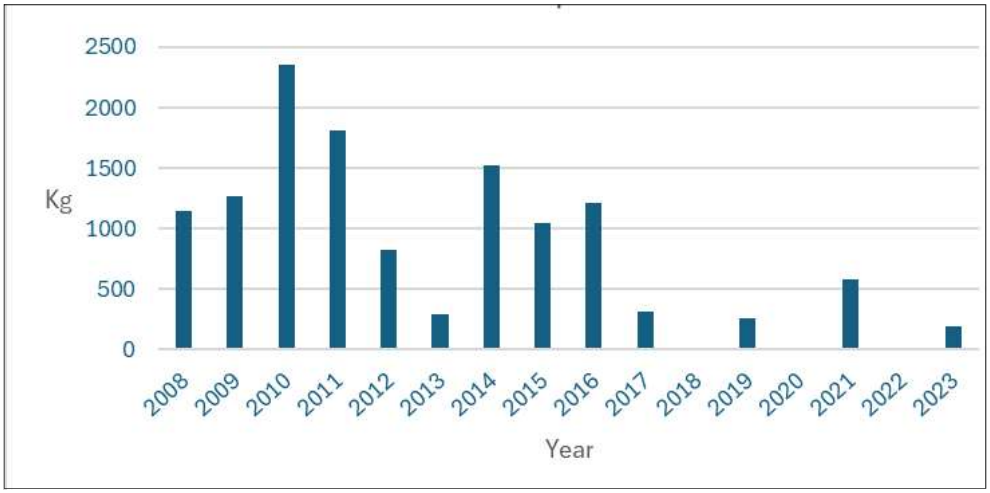

Figure 10. Graph of annual edible weight of moose harvested by Darcy and Brandon in Trapline RL 121, 2008–2023

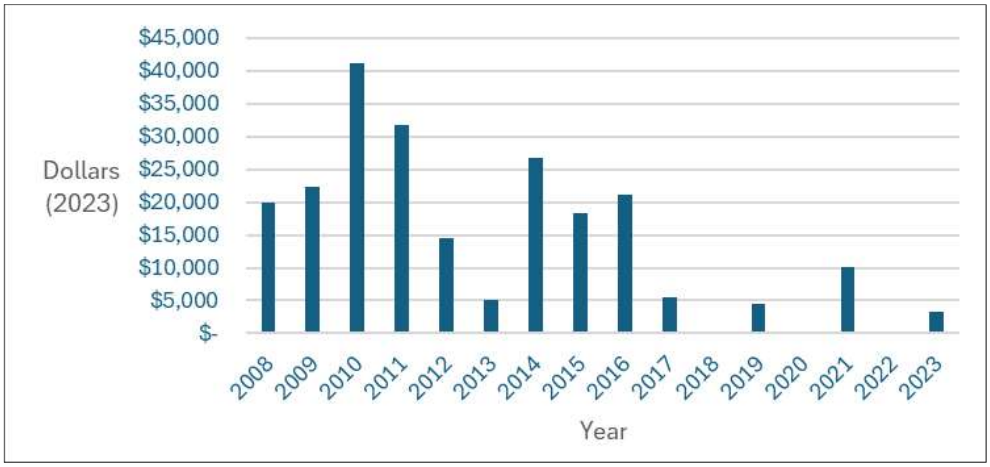

Figure 11. Graph of annual cash equivalent value of moose harvested by Darcy and Brandon in Trapline RL 121, 2008–2023

The Duty to Consult Indigenous People

Between 1990 and 2000, in a series of decisions concerning "lands reserved for Indians," the Supreme Court of Canada ruled that the honour of the Crown "requires that federal and provincial governments have a dialogue with Indigenous groups about contemplated government actions or decisions that might have a negative impact on Aboriginal and treaty rights. The goal is to listen to the views and concerns of affected Indigenous groups and, where necessary and possible, modify the action or decision to avoid unlawful infringement of those rights.…"[59] Examples include industrial developments "that may affect Indigenous groups' access to and supply of an animal population, or a change in policy or regulation that restricts land use."[60]

In such cases, governments can and do assign the duty to consult to the proponent of a project undertaken on property within the authority's jurisdiction. In Ontario, for instance, while "the ultimate legal responsibility to meet the duty to consult lies with the Crown,"[61] the provincial government has the authority to delegate certain responsibilities to a third party "depending on a variety of factors including the nature of the consultation, the extent of consultation required in the circumstance and the procedural aspects of consultation the Crown has delegated to the third party."[62]

To fulfill its legal responsibility, Frontier Lithium advertised that its work in the North Spirit Lake First Nation territory would be guided by six principles: first, recognizing "that Indigenous peoples were the original inhabitants of the land that became Canada"; second, admitting "the special relationship between Indigenous people and the land that has formed over millennia and … [to] incorporate traditional knowledge into our decisions"; third, committing the company "to sustainability and [to] recognize the need to preserve the environment for use by future generations"; fourth, respecting "that each community has its own distinctive culture, traditions, values and aspirations"; fifth, seeking "to structure our projects in ways that provide social, cultural and economic benefits consistent with the aspirations of those communities with which we partner"; and sixth, engaging in "timely, respectful and meaningful consultation with the goal of achieving free, prior and informed consent on new projects."[63]

How Frontier Lithium Exercised the Duty to Consult

It was in the spirit of these promises that current Chief Brandon Rae, Head Trapper of Trapline RL 121, wrote a letter to Frontier Lithium on 6 September 2023 to ask the company to refrain from flying helicopters in the vicinity of his family trapline during the prime moose hunting season (beginning the second week in September and ending the third week in October) that year. The letter reads as follows:

Dear Frontier Lithium,

It has come to my attention that the Frontier Lithium company helicopters are looking to operate during prime moose hunting season. I'm sending this letter to ask that you refrain from flying helicopters in the RL 121 Trapline during Prime moose hunting season. Strictly from the start of the second week of September until the end of the third week of October.

Margot Lake, Flanagan River, Duckling River, Tall Rice Lake, Duckling Lake, Mortely Lake, Whiteloon Lake, Cellist Lake, Lakewood Lake, Two Lakes, are all located in Trapline RL121. These lakes and rivers are used during September and October for moose harvest.

Helicopters are a big issue with our fall harvest as they keep the animals on edge and away from waterways while community members are trying to hunt. We have had issues in the past with other companies flying helicopters during our fall harvest. If they continue to fly during our fall harvest and members cannot proceed to harvest an animal during that time it would then affect our right to hunt. We will have nothing to hunt if the animals have fled the area.

Sincerely,
Brandon Rae, North Spirit Lake First Nation Band Member,
Head Trapper RL121c[64]

There was no response from Frontier Lithium—not by snail mail, email, text message, or voice.

Ignoring the Request

That Frontier Lithium ignored Brandon's request was not unexpected. Speaking in his capacity as Chief, Brandon said that, at best, when it came to the duty to consult, the company simply came to town and told the Chief and Council what it was going to do and that was that. And so, not knowing what to expect, Brandon and two others set out to hunt moose on RL 121 during the prime hunting season in September 2023 (see Figure 12).

One of us (Wilson) went on the trip and wrote about what transpired: After we packed up Brandon's twenty-foot boat with our gear, we travelled down the Flannagan River to the first of four waterfalls, where we portaged the contents of the big boat to smaller, twelve and fourteen-foot boats and continued downriver. Although it is only about 19 km as the crow flies from Brandon's house in the reserve to his camp on Whiteloon Lake, the 35-km, four-hour journey by boat

provided time for us to concentrate on the task at hand. And so, we stayed alert, watching and listening for signs of moose.

As we travelled, thoughts of previous kills rekindled memories of bygone hunts, which we shared with one another on our way to the fourth and final portage, from Tallrice Lake to Whiteloon Lake, where we encountered a boat loaded with scientific equipment belonging to Frontier Lithium at the landing. The presence of the boat completely altered our mood. There was no more talk of moose; instead, we spoke about nothing but the boat at the landing while we made our way to Brandon's camp on Whiteloon Lake, where we spent the night.

The following day, no sooner had we started than we saw a boat in the middle of the lake. After thinking things over, we decided to approach the boat and find out what the occupants were doing. The crew, which was from Frontier Lithium, included a company representative who said they were collecting water samples from the lake. After a lengthy, and frequently heated conversation, the representative told Brandon that he had received his request to stay away while Brandon hunted, but decided that the use of a motorboat would not disrupt the hunt. Brandon told the representative that he was mistaken, and that he would appreciate it if Frontier Lithium stayed away from his trapline until hunting season was over. While we were speaking, a helicopter flew overhead on its way to the company's helipad.

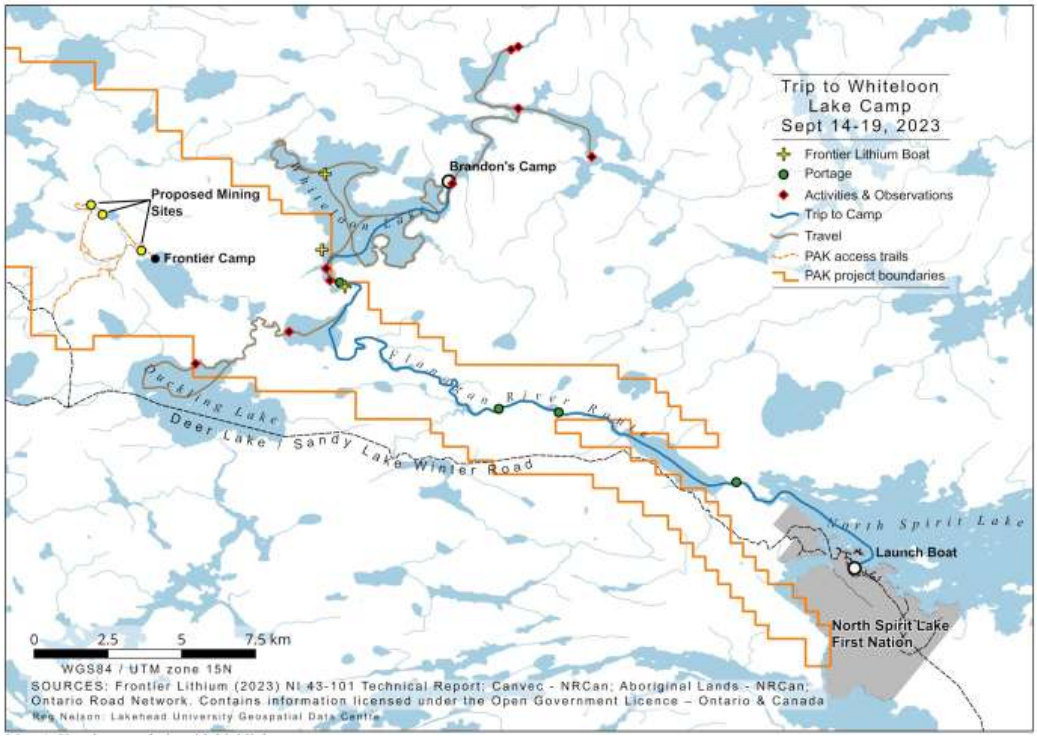

Figure 12. Sketch map of trip with highlights. Source: Reg Nelson, Lakehead University Geospatial Data Centre, Frontier Lithium (2023) NI 43-101 Technical Report: Canvec - NRCan; Aboriginal Lands - NR Can Ontario Road Network. Contains information licensed under the Open Government Licence - Ontario & Canada

Given the disruption, Brandon suggested that our best option was to travel downriver in search of moose. But none were sighted, and so, after two days without success, we headed back to Brandon's camp where we encountered Frontier Lithium staff in a motorboat collecting data again.

In the end, the four of us returned empty handed. Bad luck? In 2024, Frontier Lithium stayed away from North Spirit Lake during the six-week period when moose hunting is at its best. Better results: Darcy killed three moose, whose meat he promptly shared with family and friends.

Aftermath

Although atypical, the company's concession to stay away was not unexpected considering that the date for the decision to move ahead with the mine was fast approaching. To that end, Frontier Lithium announced that a successful preliminary feasibility study was completed; that a pilot mining project demonstrated the proposed mine was financially viable; that four discoveries of lithium-bearing ore were identified on the company's property, two of which lent themselves to open-pit mining; that a joint venture with Mitsubishi Corporation to develop the first fully integrated lithium mining and processing operation in Ontario was established; and that the company had established and maintained "Indigenous Partnerships focused on proximal Oji-Cree Communities consistent with our Indigenous Principles."[65]

The Maymayquayshwak see things otherwise. As far as they are concerned, Frontier Lithium is an existential threat, which was made abundantly clear on 7 November 2024, when company representatives made a presentation to the community in the school gymnasium in the North Spirit Lake First Nation. It was the first time company representatives had spoken to Maymayquayshwak as a whole in several years, and when band members heard about the company's plans, they were shocked, angered, and dismayed. The presentation consisted of a fourteen-page PowerPoint presentation that discussed where Frontier Lithium intended to remove and process lithium bearing ore. What company representatives failed to do was to come prepared with illustrations that showed the size of the sites from which the minerals would be removed, something the Chief and Council had requested in September. Although the Chief said the presenters "had to scramble," they were able to piece together a rough image that showed "how big the frontier lithium Pakeagama and spark project pits would be" relative to the point of land on which their houses are located.[66]

In Chief Rae's summary of the meeting, which he posted on Facebook, he wrote that, when the "images were shown, there was gasps heard due to just how large these pits would be." The Chief also wrote that,

> after the company's presentation, I asked our people if they had received enough information to decide whether they would agree to move forward with the proposed projects in our territory - Frontier lithium standing in the gym as I asked the question. The people responded NO. They did not receive enough information from the company to be able to make an informed decision. WE NEED MORE INFORMATION.[67]

So does Frontier Lithium, about a way of life that is in peril.

Last Word

Considering the remote location where the Maymayquayshwak live, and the race to produce lithium for the transition to a clean energy world, no wonder First Nations members are fearful that the proposed lithium mine in their territory not only will have severe, adverse impacts on their economic, social, cultural, and spiritual lives, but ultimately will destroy their way of life—not in one fell swoop, but by degrees, out of sight and out of mind in the wilderness.

While the outcome remains to be seen, it is worthwhile to point out that the future is of our own making, and that Frontier Lithium can choose to repair its broken relationship with the Maymayquayshwak, hopefully with the honour of the Crown uppermost in mind as Prime Minister Mark Carney said when he addressed First Nations, Inuit, and Métis leaders about Indigenous involvement in the decision-making process regarding industrial development in the North.[68] The federal and provincial governments also have the power to intervene. In the meantime, the duty to consult remains in effect. Although the mechanism is imperfect, there have been instances in which the process has accommodated Indigenous interests.[69]

For our part, we believe that the contents of this article demonstrate that the Indigenous perspective must inform the decision-making process, and that ethnology can play a strong, supporting role in calling attention to that perspective. As Franz Boas (1858–1942), one of the founders of modern anthropology, put it almost a century ago: "Anthropology is often considered a collection of curious facts, ... It is looked upon as an entertaining diversion, apparently without any bearing upon the conduct of life of [so-called] civilized-communities. This opinion is mistaken … [A] clear understanding of the principles of anthropology illuminates the social processes of our own times and may show us, if we are ready to listen to its teachings, what to do and what to avoid."[70]

Acknowledgements

We would like to thank the Maymayquayshwak Anishinaabe from the North Spirit Lake First Nation, and most especially Brandon Rae and Darcy Kejic, for providing us with the opportunity to gain insight into their lives, and for encouraging us to publish this article. We also would like to thank the anonymous reviewers of an earlier version of this paper whose recommendations improved the quality of our work.

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The Northern Review
Exploring human experience in the North
The Northern Review 58: 65–81
https://doi.org/10.22584/nr58.2025.009
Published at Yukon University, Canada

Research Article

Beyond the Data Deficit: Rethinking Evidence-Based Policy Making in Northern Canada

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Abstract: Evidence-based policy making (EBPM) has become a normative gold standard in contemporary governance, yet its universal application obscures the colonial assumptions embedded in dominant evidence regimes. This article offers a normative critique of EBPM as it is currently imposed on northern and Indigenous contexts. It argues that the elevation of conventional, quantitative, and Eurocentric evidence forms reproduces structural and epistemic harms—that is, harms that emerge when dominant evidence standards dismiss or undervalue Indigenous knowledge and community-based ways of knowing—by holding northern governments to standards they were never resourced to meet, while simultaneously devaluing Indigenous epistemologies, land-based knowledge, and relational approaches to well-being. In doing so, EBPM generates artificial data scarcity, perpetuates colonial governance logics, and limits the potential for effective, locally grounded policy making. The article contends that meaningful reconciliation between EBPM and northern governance realities requires further research into methodologically-plural policy practices that recognize multiple ways of knowing, legitimize Indigenous-led data governance, and expand what counts as "adequate" evidence. Such an approach not only strengthens policy effectiveness but also advances the broader goals of reconciliation, self-determination, and epistemic justice. This reframing of EBPM is essential for building evidence systems that reflect the diversity, complexity, and sovereignty of the northern communities they are intended to serve.

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Evidence-based policy making (EBPM) has become a prominent feature of contemporary governance discourse. This approach to policy making aims to apply scientific knowledge and analytical practices to address policy problems. The EBPM approach is championed as a means of improving transparency, accountability, and policy effectiveness. However, despite its promise, the application of EBPM in northern and Indigenous contexts reveals deep structural and methodological limitations. In regions like the Canadian northern territories (Nunavut, the Yukon, and the Northwest Territories), where data infrastructures are limited and policy capacity is constrained, the normative expectation that policy making ought to be "evidence based" often exceeds the practical means available to achieve it. These challenges are further complicated by small, dispersed populations and geographically remote communities. As a result, the ideal of EBPM risks reproducing inequities rather than resolving them. This risk is heightened by EBPM's reliance on conventional, quantitative evidence that often fails to capture the lived realities of Indigenous and northern communities.

This article critically examines how the adoption of EBPM as a normative framework shapes policy making in data-scarce contexts and calls for methodological innovations to advance meaningful EBPM in northern Canada. While the EBPM paradigm presumes that enhanced data (in either quantity or statistical quality) leads to more informed policy, this logic falters in contexts where data scarcity, limited analytical capacity, and colonial legacies constrain what constitutes "evidence" (Straßheim, 2024; Wesselink et al., 2014). In regions without adequate conventional data, policy makers confront methodological deficits arising from a mismatch between EBPM ideals and regional realities. In an effort to pursue some semblance of EBPM, policy makers often rely on incomplete, irrelevant, and outdated data sets that may not reflect local epistemologies and priorities (Schneider et al., 2025; Wesselink et al., 2014; O'Dwyer, 2004). This disconnect between policy evidence and community realities results in abstract policies that often do not translate as beneficial policies on the ground.

Moreover, in addition to no tangible improvement in policy outcomes, the uncritical application of EBPM in data-scarce northern regions risks entrenching colonial hierarchies of knowledge by privileging Eurocentric standards of data collection and analysis over community-based conceptions of evidence and well-being (Maddison, 2012; Andersen, 2016; Konnerup & Kongsted, 2012; Nutley et al., 2013). EBPM approaches often face significant challenges when applied to Indigenous contexts, as Indigenous communities across Canada often experience exclusion from policy design processes, and existing data metrics frequently fail to capture the cultural and contextual realities of Indigenous ways of living (Maddison, 2012; Andersen, 2016; FNIGC, 2020; Roberton, 2023).

This article suggests that advancing EBPM in northern and Indigenous communities requires rethinking its methodological foundations, rather than continuing to invest further in existing data infrastructures and analytical capacity. Specifically, further research is needed to explore innovative methodological solutions for EBPM in these data-scarce regions. These new approaches must cultivate policy practices that are practical, culturally relevant, and grounded in the lived experiences of community members. This involves moving beyond narrow quantitative metrics toward methodological pluralism that integrates qualitative, participatory, and Indigenous Knowledge Systems as legitimate forms of evidence. By doing so, EBPM can be reimagined not as a fixed normative standard but as a flexible, contextually adaptive framework that supports inclusive and legitimate policy making in northern Canada and beyond.

Conceptual Frameworks

Central to this discussion about rethinking evidence-based policy processes in northern Canada is a distinction between conventional and non-conventional data. In this article, "conventional data" refers to evidence produced and aggregated through formal, standardized processes, such as surveys, censuses, administrative records, statistical reports, and epidemiological or demographic data sets (Phillips et al., 2020; Wesselink et al., 2014). This evidence is selected and legitimized through formal institutionalized methods like peer review, citation-based bibliometrics, and "expert" panels, which typically privilege quantifiability, replicability, comparability, and statistical or scientific legitimacy (Phillips et al., 2020; MacKillop & Furniss, 2023; Nutley et al., 2013; Wesselink et al., 2014). These institutional mechanisms rely on top-down (institution-centred, rather than community-centred) practices that prioritize efficiency and standardized policy rollout over inclusivity and cultural relevance, often marginalizing Indigenous voices in the process (Maddison, 2012). A prominent example of this dynamic is evident in federal long-term boil-water advisories, which primarily rely on water quality test results, technical assessments, and federally defined engineering indicators, rather than community perceptions of safety or lived experiences with drinking water (see Health Canada, 2021).

On the other hand, non-conventional data, more aptly referred to as contextual data, refers to evidence that emerges from community lived experiences, local practices, oral histories, relational world views, Indigenous epistemologies, and participatory community processes (Epstein et al., 2014; Hiwi, 2014; Hogan, 2014; Smith, 2012; Wallerstein & Duran, 2010). Unlike conventional data, which emphasizes generalizability, these non-conventional forms of evidence prioritize contextual accuracy and cultural relevance; they are locally specific, relational, and grounded in the social, cultural, and ecological realities of the communities

they aim to capture. This form of evidence prioritizes data that reflects the social, cultural, political, and institutional context within which a policy operates (Parkhurst, 2017). Notably, despite the value of contextual evidence in generating insights into how policies are experienced, interpreted, and enacted on the ground, a hierarchy of evidence continues to persist, wherein conventional forms often continue to dominate and be considered superior EBPM (Konnerup & Kongsted, 2012; Maddison, 2012). Given the overt dominance of this statistics-centred perspective in EBPM discourse, this article consciously uses the terms "evidence" and "data" interchangeably. However, in reality, conventional data and EBPM are not objective, and their applications in northern Canada raise questions about whether policy can (or should) aim for objectivity or if neutrality, in fact, risks perpetuating systemic inequities. However, despite the binary rhetoric that emerges from a hierarchical view of evidence, conventional and non-conventional forms of evidence are not mutually exclusive. In fact, recognizing both forms as complementary would likely facilitate evidence-based policy processes that are more inclusive and representative, particularly in regions like northern Canada where conventional data sets are limited or ill-suited to local realities (Straßheim, 2024; MacKillop & Furniss, 2023; Konnerup & Kongsted, 2012).

Relatedly, in this discussion, "adequate evidence" does not refer to the volume or statistical validity of data but to its fitness for informing policy making in a given context. Specifically, this refers to the quality of evidence in accurately capturing the lived realities, priorities, and socio-cultural dynamics of the target population. In northern regions, adequacy should also refer to whether the data is timely, ethically collected, and interpretable and acceptable by local governance. Using this broad definition of adequacy, a technically rigorous data set that lacks contextual validity is considered as inadequate as one that is incomplete. For example, a policy decision on housing in Iqaluit based entirely on a national data set, such as the census, is inadequately evidence-based. While this policy process may uphold data standards, by using a large N dataset to appease EBPM's prioritization of data "quality," much of the nuance and detail of local realities are lost (Parkhurst, 2017). With policy decisions so far removed from the contexts they aim to serve, this type of policy making can hardly be considered "evidence based." This perspective on data adequacy draws on Parkhurst's (2017) thesis that the good governance of evidence depends not only on methodological rigour but also on political and cultural relevance.

Northern Contexts

This article presupposes that Nunavut, the Yukon, and the Northwest Territories often lack sufficient conventional data to support evidence-based policy approaches. This supposed data scarcity is shaped by a series of structural constraints that limit the collection, storage, and analysis of data in the North. These constraints are threefold: resources, infrastructure, and cultural. First, Canada's territorial governments struggle to acquire the human capital needed for conventional EBPM due to a lack of staff with relevant training (OAG-Yukon, 2021; OAG-NWT, 2025). Given its emphasis on statistical data, EBPM depends on a range of hard skills in quantitative analysis, including complex coding, statistical modelling, econometric methods, and the management of large administrative data sets (Suazo-Galdames et al., 2025; Straßheim, 2024). Such capacity is unevenly distributed across jurisdictions and not often present in northern and Indigenous governments. Enhanced coding and technical data-management skills are particularly important in smaller northern communities, where data anonymization and privacy protection are of the utmost importance (Suazo-Galdames et al., 2025; Straßheim, 2024). However, with limited professional capacity and high staff turnover, regions like northern Canada often lack the specialized analytical expertise and institutional stability required to meet these standards (see OAG–Yukon, 2021; OAG–Nunavut, 2025; OAG–NWT, 2025).

This capacity issue is further compounded by limited data infrastructure in the North; the three territorial governments often lack not only the specialized personnel but also the hardware, server capacity, secure storage systems, and digital connectivity required to maintain and analyze large administrative data sets (see OAG–Yukon, 2021; OAG–Nunavut, 2025; OAG–NWT, 2025). This infrastructure gap reinforces existing disparities in analytical capacity and further undermines the feasibility of implementing EBPM as it is currently conceived.

Finally, the limited conventional data collection that does occur in the North is made more complex by cultural factors, including language barriers, survey fatigue, and intergenerational trauma (Walter & Suina, 2019). For example, many Indigenous Peoples have good reason to distrust governmental data collection, given past abuses including the use of registry and household data to facilitate child removal during the Residential School System and the Sixties Scoop (FNIGC, 2019; Roberton, 2023). This history, combined with decades of extractive and unethical research, produces both overt and tacit resistance to new surveys or research initiatives (Roberton, 2023).

However, as this article explains, despite these real constraints on the collection and analysis of conventional data in northern Canada, data scarcity in the North is, in large part, artificial. The North does not lack adequate data; in fact, it is an intensely rich terrain of community-generated evidence—if only we modify existing practices to better consider non-conventional data.

Mind the Gap: How EBPM Diverges from Northern Realities

Unfortunately, scholars and practitioners alike continue to emphasize the need for more and "better quality" data to address the North's supposed data scarcity (Oliver et al., 2014). In essence, this is the continued domination of conventional data over non-conventional forms. However, this perspective and the perpetuation of conventional EBPM as a gold standard for policy making is flawed for three primary reasons: 1) it assumes the existence of extensive data capacity; 2) it perpetuates tensions between conventional and non-conventional data; and 3) it privileges colonial epistemologies that materially manifest in continued harm to northern communities.

In reality, the challenges of EBPM in northern and Indigenous contexts stem less from the absence of data than from the inadequacy of data forms. While increasing the quantity of quantitative data could improve statistical reliability, it does not resolve deeper issues of quality—namely, the cultural misalignment and interpretive bias embedded in conventional data and approaches. In fact, pursuing "more data" under existing frameworks might amplify epistemic inequities if it imposes Eurocentric methods and ways of knowing (Walter & Suina, 2019; Kukutai & Taylor, 2016; FNIGC, 2019).

The discourse's persistent focus on "data gaps" and "quality" obscures a deeper methodological deficit: the disjunction between the academic rhetoric of EBPM and its uneven realization in practice. Scholars continue to call for more and better data, yet the pursuit of conventional evidence in regions like the Northwest Territories often proves impractical and, in some cases, counterproductive (Klick, 2016; Howlett, 2009; McMahon & Akçayır, 2022). If EBPM is treated as the best practice in settings with limited quantitative data, then the question is not whether the North should meet this standard, but how policy makers navigate the practical constraints of upholding it. In the absence of adequate, contextually appropriate methods, policy makers must either rely on incomplete data sets or seek traditional indicators that misrepresent local realities—both of which risk reproducing epistemic inequities and reinforcing colonial hierarchies of knowledge (Parkhurst, 2017; Andersen, 2016; Walter & Suina, 2019). This gap between normative aspirations and practical implementation reveals the limitations of EBPM as a supposedly neutral framework. It privileges a technocratic rationality that discounts lived experience and local expertise, thereby excluding alternative forms of evidence that could enhance relevance and legitimacy.

The Colonial Costs of EBPM

Without empowering northern communities to pursue meaningful EBPM (through both investing in their analytical capacity and a normative shift towards more holistic views of evidence that encompass non-conventional data), EBPM as a normative gold standard is a colonial construct. This domination manifests as two key forms of colonial violence: 1) northern communities are held to a standard they are not equipped to achieve, resulting in a continued colonial narrative of dependency and inadequacy, through which settlers impose dominance over Indigenous epistemologies and self-determination; and 2) northern communities' needs, aspirations, and realities are obscured by conventional data methods, culminating in suboptimal policy outcomes.

First, on the former effect, imposing a universal benchmark of "evidence-based" practice without providing the necessary tools to achieve it reflects a form of methodological colonialism—and one that privileges Eurocentric standards of knowledge production while marginalizing the epistemic (knowledge and lived-experience) realities of northern and Indigenous contexts (MacKillop & Furniss, 2023; Straßheim, 2024; Bryant, 2024; Maddox & Morton Ninomiya, 2024). This form of coloniality is not merely rhetorical; it is embedded in the institutional expectations, funding frameworks, and performance measures that guide public administration in the North. Northern governments are held to a gold standard of EBPM that presupposes robust administrative data systems, consistent population-level information, specialized analytical staff, and stable long-term funding. However, these prerequisites are unevenly distributed across Canada. For instance, in much of northern Canada, policy makers must navigate chronic capacity constraints, small and fluctuating populations, high staff turnover, limited statistical infrastructures, and federal funding structures that rarely align with the temporal or cultural realities of northern governance.

As a result, northern Canada faces a structurally-produced data deficit: an environment in which conventional forms of evidence are difficult to collect, expensive to maintain, and often ill-suited to local contexts. This deficit becomes self-reinforcing. Low data availability (i.e., data that fails to meet Eurocentric expectations of methodological rigour) is often interpreted as a sign of capacity issues or poor governance. In turn, these perceptions then "justify" continued external oversight and involvement. Rather than strengthening northern self-governance, this dynamic entrenches dependency and continues an historical pattern in which Indigenous and territorial governments are positioned as data-poor and thus "in need of" Eurocentric expertise. In turn, this cycle produces a persistent asymmetry: the North is expected to meet normative EBPM standards but lacks the institutional or methodological resources to do so. In reality,

addressing "data scarcity" in the North requires parallel investments in local analytical capacity and in governance models that enable Indigenous-led evidence building.

Moreover, conventional EBPM processes exclude Indigenous voices not only by sidelining non-conventional data but also by relying on institutional functions that assign value to evidence. Policy making in Indigenous contexts cannot be separated from issues of power, voice, and inequality (Maddison, 2012). Policies often stem from top-down structures that limit Indigenous self-determination, a dynamic that reflects institutional inertia and the dominance of non-Indigenous stakeholders in decision making (Maddison, 2012). In conventional EBPM practices, policies are frequently designed with an emphasis on streamlined implementation and measurability, sidelining the distinct needs and Knowledge Systems of Indigenous communities. This approach reinforces a top-down policy model that places decision-making power with non-Indigenous institutions, perpetuating institutional inequality by excluding Indigenous perspectives from policy design (Hiwi, 2014; Maddison, 2012). For example, territorial housing allocations are often determined through federally designed capital-planning templates that prioritize standardized cost-efficiency metrics over community-identified needs, leaving northern and Indigenous communities with constrained authority on how housing dollars are spent. This top-down structure sidelines northern priorities such as overcrowding, multi-family living, and culturally appropriate design, thereby reinforcing institutional dominance. This institutional exclusion fails to recognize Indigenous governance models, imposing limitations on Indigenous autonomy and perpetuating a one-size-fits-all approach (Brock et al., 2023; Hiwi, 2014; Maddison, 2012). This exclusion coupled with "universal" policy solutions is particularly harmful in northern and Indigenous contexts as these communities have distinct cultures, needs, and aspirations; northern and Indigenous communities are not monolithic and would not necessarily implement similar policy solutions, if empowered to lead local EBPM. The exclusion of Indigenous voices from the conventional EBPM process perpetuates imbalanced power dynamics in policy making, with decisions frequently made by non-Indigenous actors whose agendas may not align with Indigenous priorities (Hiwi, 2014; Maddison, 2012). These structural barriers restrict Indigenous communities from crafting policies that reflect their cultural values and governance practices (Brock et al., 2023).

Furthermore, this institutional exclusion not only undermines Indigenous self-determination but risks perpetuating a form of cultural erasure, where Indigenous voices are either excluded from decision making or misrepresented within frameworks that do not acknowledge their unique epistemologies (Andersen, 2016; Brock et al., 2023; Hiwi, 2014). EBPM's preference for

measurable evidence often reduces Indigenous Knowledge to secondary or supplementary status, undermining its richness and legitimacy (Hiwi, 2014; Brock et al., 2023). This limitation speaks to a broader issue within EBPM: balancing technical rigour with cultural relevance, as Indigenous Knowledge is frequently viewed as supplementary rather than integral to evidence bases. For example, in the past, caribou management decisions in the Northwest Territories frequently prioritized aerial population surveys over Inuit and Dene land-based knowledge, positioning Indigenous observations as anecdotal and contributing to management outcomes that failed to reflect community understandings of caribou health and ecosystem change (Parlee & Caine, 2018; Kendrick, 2008).

Simultaneously, EBPM's adoption as a normative ideal of good governance has not necessarily translated into more informed policy processes or improved outcomes, particularly in northern and Indigenous contexts (Head, 2005; Pearce et al., 2014). The assumption that EBPM inherently leads to better decision making obscures the uneven distribution of institutional and methodological capacities across regions. Effective EBPM in Indigenous communities demands better metrics that accurately capture Indigenous realities. By focusing solely on quantitative empirical measures, EBPM can inadvertently marginalize Indigenous communities, whose ways of knowing often involve qualitative, narrative, and experiential forms of knowledge (Andersen, 2016; Hiwi, 2014; Maddison, 2012). These forms are deeply tied to cultural contexts and traditional practices that cannot be fully captured by standardized data points (Andersen, 2016). As a result, policies driven by narrow data sets may overlook the complexities of Indigenous ways of life, leading to outcomes that are disconnected from the lived realities of these communities (Andersen, 2016; Brock et al., 2023; Maddison, 2012).

For example, the remediation of Giant Mine in Yellowknife, Northwest Territories, highlights how epistemic exclusion can reproduce colonial harm as technocratic risk assessments and engineering models were prioritized over Yellowknives Dene knowledge about land safety and contamination pathways, even as community members reported concerns grounded in lived experience. Subsequent biomonitoring research showing elevated inorganic arsenic exposure among residents of Ndilǫ, Dettah, and Yellowknife, including heightened risks for children, revealed the tangible health effects of ignoring Indigenous evidence (Cheung et al., 2020; Sandlos & Keeling, 2016). In this way, the marginalization of Indigenous knowledge within EBPM not only erases community expertise but perpetuates material and intergenerational forms of colonial violence.

Without culturally tailored and community-centred data, policies risk being ineffective or alienating. Therefore, EBPM should integrate Indigenous Knowledge Systems, which value qualitative, experiential insights as essential

evidence (Brock et al., 2023; Hiwi, 2014; Maddison, 2012). When data is wholly inadequate, as defined in this article's conceptual framework, it often fails to capture the unique challenges Indigenous communities face, resulting in policies that may be ineffective or even harmful (Andersen, 2016). For instance, according to Andersen (2016), data on Indigenous health is frequently aggregated or applied inconsistently across distinct communities, obscuring specific needs such as the higher prevalence of certain chronic illnesses or mental health conditions. Without culturally relevant metrics that reflect Indigenous realities, such as factors related to land-based practices, traditional diets, and intergenerational trauma, policies are shaped by data that reflects non-Indigenous populations, creating interventions that may miss the distinct variables of Indigenous contexts (Andersen, 2016). This data gap perpetuates a form of colonial violence where Indigenous needs are obscured by reliance on non-Indigenous standards, reinforcing policies that overlook Indigenous-specific needs. Addressing these limitations with culturally specific indicators would enable more responsive, equitable, and effective policies to improve policy outcomes in Indigenous contexts (Anderson, 2016).

A promising example of a culturally tailored and community-centred approach can be seen in Nunavut, where recent efforts to integrate Inuit Qaujimajatuqangit (IQ) principles in territorial health frameworks demonstrate how Indigenous epistemologies can guide policy design. Rather than subordinating Inuit knowledge to biomedical indicators, the IQ health system emphasizes land-based well-being, relational healing, and community-defined measures of health, offering a concrete illustration of how culturally grounded evidence can improve both relevance and legitimacy in public health policy (Akearok et al., 2023). While still developing, the model shows how Indigenous Knowledge Systems can be operationalized as core evidence, rather than supplementary insight, to support more culturally aligned and community-led policy outcomes (Akearok et al., 2023).

Reconciling EBPM and Northern Contexts

Supporting Indigenous-led evidence-building initiatives is not simply a matter of inclusion but of epistemic justice. Methodological pluralism that integrates both quantitative indicators and community-defined qualitative evidence offers a more meaningful pathway toward data adequacy, empowering Indigenous self-determination and improving policy outcomes in the North. Emerging frameworks of Indigenous data sovereignty and participatory research partnerships offer practical pathways to address the capacity and legitimacy gaps identified above (Smith, 2012; Wilson, 2008; Kovach, 2021). These approaches assert that Indigenous communities should determine what data are collected, how they are used, and who benefits from their use. Such models move beyond inclusion to

genuine co-governance of evidence, ensuring that policy making is accountable to local epistemologies and priorities. In doing so, they reconfigure the meaning of evidence itself from a static input to a relational, community-driven process of knowledge creation.

Indeed, Indigenous Knowledge Systems offer an important corrective to the narrow empiricism of conventional EBPM. Indigenous epistemologies emphasize relationality, experience, and holistic understandings of community well-being as valid and vital forms of knowledge for policy making in the North. Integrating these epistemologies into EBPM frameworks could address the methodological deficit and its colonial implications by expanding what counts as legitimate evidence, and grounding policy decisions in the realities of target populations. For example, Indigenous hunters routinely monitor changes in sea ice stability, animal migration routes, and weather patterns through lived experience and long-term relational engagement with the environment. These observations rooted in daily practice, rather than discrete measurements, offer holistic insights into ecological well-being that can meaningfully inform environmental policy but are rarely captured by conventional climate data sets.

Moreover, when EBPM processes meaningfully incorporate Indigenous ways of knowing, they may foster trust and political engagement by aligning policy with cultural and community priorities. Culturally informed EBPM, which considers local evidence on par with conventionally quantitative data, is a necessary component of self-determination and improved policy outcomes in northern communities (Brock et al., 2023; Hiwi, 2014; Hogan et al., 2014).

When Indigenous communities are included in data collection, ownership, and interpretation, they can ensure that evidence reflects community-defined indicators of well-being and governance success. Research on Indigenous data sovereignty shows that when Indigenous communities govern data systems, the resulting evidence more accurately captures relational, cultural, and land-based dimensions of well-being that are systematically overlooked in Western evidence paradigms (FNIGC, 2020; Kukutai & Taylor, 2016; Walter & Suina, 2019). Such a shift is not merely procedural; it fundamentally reshapes the evidentiary foundations of policy making by aligning what counts as "evidence" with Indigenous epistemologies and community priorities.

An alignment between data and lived reality leads to more accurate problem diagnosis, better targeting of interventions, and policy designs that reflect community-identified needs rather than external assumptions (Maddison, 2012; Walter & Suina, 2019). This integration produces more effective and targeted interventions, where policy design reflects the realities of local populations rather than external assumptions imposed through Eurocentric metrics (Kukutai & Taylor, 2016). Moreover, Indigenous inclusion in evidence systems enhances

institutional legitimacy. When evidence is produced through Indigenous protocols, accountability norms, and ethical frameworks, rather than through extractive or colonial data practices, community trust in governance strengthens (FNIGC, 2020). In turn, this trust, cultural alignment, and community participation are key drivers of policy uptake, compliance, and long-term success (Maddison, 2012).

In short, Indigenous and community data governance improves policy outcomes not by increasing the quantity of data, but by transforming the quality, relevance, and the bases of evidence used in public decision making. When northern and Indigenous communities shape what evidence is collected, how it is interpreted, and which indicators matter, policies become more responsive, more legitimate, and more likely to produce durable, community-supported outcomes (Walter & Suina, 2019; Kukutai & Taylor, 2016; FNIGC, 2020). This autonomy also mitigates the historical misuse of data as a colonial instrument of surveillance and control.

For example, participatory and culturally relevant models enhance the cultural relevance of EBPM by directly involving Indigenous community members in the policy making process to shape policies that reflect their unique cultural values, needs, and experiences. These models contrast sharply with imposed policies that may lack community resonance (Brock et al., 2023; Hogan et al., 2014). These approaches demonstrate that Indigenous-led EBPM can yield more sustainable and effective policy outcomes when culturally aligned with the unique experiences and values of Indigenous people (Bryant, 2024; Maddox & Morton Ninomiya, 2024; Hogan et al., 2014). In the health and education domains, in particular, a participatory approach fosters a sense of ownership and agency within the community, ensuring that policies are not imposed from the outside but are co-created with those who are most affected (Bryant, 2024; Maddox & Morton Ninomiya, 2024; Hogan et al., 2014). In doing so, these models address the historical exclusion of Indigenous voices in policy making, where top-down approaches have often led to policies that lack cultural relevance or community buy-in. This shift from efficiency-focused, top-down approaches to inclusive, collaborative frameworks offers a pathway to more equitable policy outcomes that respect Indigenous autonomy and uphold culturally resonant values, thus challenging the institutional biases inherent in mainstream EBPM practices (Brock et al., 2023; Bryant, 2024; Maddox & Morton Ninomiya, 2024). Moreover, an inclusive approach enhances the legitimacy and effectiveness of EBP, fostering evidence informed and culturally resonant policies that support Indigenous self-determination and well-being more authentically (Andersen, 2016; Maddison, 2012; Smith, 2012; Wilson, 2008; Kovach, 2021). In the simplest terms, self-determination requires empowering Indigenous communities to shape the policies that affect them.

Conclusion

This article addresses foundational questions about evidence, agency, and institutional reform that underscore the complexity and transformative potential of EBPM in northern and Indigenous contexts. The fragmented yet evolving nature of EBPM in northern Canada underscores the urgent need for discourse on the contentious gaps that characterize this field. Effective EBPM, particularly in northern and Indigenous contexts, must move beyond the pursuit of more data toward a deeper rethinking of methodological practice (MacKillop & Furniss, 2023; Nutley & Davies, 2013; Wesselink et al., 2014). Logistical constraints such as small population sizes, limited administrative capacity, and rigid funding mechanisms compound these methodological challenges (Suazo-Galdames et al., 2025; Straßheim, 2024). These foundational misalignments reveal that EBPM not only fails to capture the realities of northern and Indigenous communities but also perpetuates colonial violence in these communities, not due to an absence of data but because of the absence of a methodological pluralism capable of accommodating diverse evidentiary forms. Reassessing EBPM as a normative framework is therefore essential if it is to respond meaningfully to the epistemological and political realities of northern and Indigenous governance.

New approaches to EBPM adapted for northern contexts need to not only include Indigenous Knowledge, but also do so in ways that respect the distinct epistemologies of Indigenous Knowledge rather than translating it into Western metrics. Reconciling these views will involve broadening the concept of evidence to encompass both quantitative and qualitative data alongside Indigenous methodologies such as storytelling and Land-based Knowledge. By integrating Indigenous ways of knowing with scientific approaches, future policy development can better capture the cultural and contextual realities of Indigenous life to support policies that are empirically sound and deeply rooted in the lived experiences and values of Indigenous communities (Brock et al., 2023; Hiwi, 2014; Hogan et al., 2014). This inclusive EBPM model would better respect Indigenous epistemologies, enhance cross-cultural collaboration, and lead to more equitable and sustainable outcomes, shifting the focus from a one-size-fits-all model to one that is adaptive and responsive to the diverse ways of knowing and being within northern and Indigenous communities.

Moreover, as the field of EBPM in northern and Indigenous contexts continues to navigate tensions among data rigour, cultural relevance, and institutional challenges, a more integrative approach to policy making will be essential. New models must privilege contextual relevance over universal norms, value relational knowledge alongside empirical data, and reorient policy processes around the lived experiences of local populations. Bridging the methodological deficit in the North thus requires a paradigm shift from top-down technocracy

to grounded, pluralistic evidence-building that recognizes both the limits of conventional EBPM and the transformative potential of Indigenous Knowledge Systems. This approach would ensure that policies are grounded in empirical evidence and resonate with Indigenous Peoples' priorities and self-determined goals, fostering greater ownership and more sustainable outcomes (Hiwi, 2014; Hogan et al., 2014; Maddison, 2012). Ultimately, such policy approaches would promote Indigenous sovereignty in data collection and use, supporting policies that reflect Indigenous world views and governance systems rather than continuing to impose external frameworks that risk marginalizing these communities.

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Research Perspective

Applying the 5 R's of Indigenous Research in Practice: Graduate Student and Van Tat Gwich'in Elder Reflections in Old Crow, Yukon

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Abstract: There is growing recognition that research with Indigenous communities should foster reconciliation and support self-determination. Research frameworks like the 5 R's—Respect, Relationship, Relevance, Reciprocity, and Responsibility—can help Indigenous and non-Indigenous partners work together in a good way. In this article, the authors, guided by Elder Mary Jane Moses of the Vuntut Gwitchin First Nation, Old Crow, Yukon, reflect on the 5 R principles in the context of a graduate student's research, and discuss ways to implement the principles into a wildlife monitoring project. We find that discussing and implementing these principles during all stages of the research process creates the space for respecful, ethical, and effective knowledge sharing between research collaborators. By sharing our experience, we hope to inspire other researchers to pause and reflect to ensure that we all conduct our research in a good way.

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Introduction

Research has earned a bad reputation in many Indigenous communities. When mentioned around some Indigenous people, the word research often "stirs up silence, it conjures up bad memories, it raises a smile that is knowing and distrustful" (Smith, 2021, p.1). Over the years, researchers from Western institutions have exploited Indigenous People, their lands, and their knowledge, often advancing their careers while causing significant harm, or providing no benefit, in the communities where they worked (Mosby, 2013; McGregor, 2018; Kovach, 2021; Smith, 2021).

Over the last few decades, there has been a movement towards making research more inclusive of Indigenous Peoples and their Knowledge Systems (Canada Research Coordinating Committee, 2019). However, this often translated to merely incorporating Indigenous Knowledge as data points to support Western scientific pursuits, or engaging Indigenous communities in the data collection component of a project (Thompson et al., 2020). To move forward "in a good way" that genuinely supports reconciliation (Reid et al., 2024) fundamental questions as outlined by Linda Tuhiwai Smith (2021) may include: "Whose research is it? Who owns it? Whose interests does it serve? Who will benefit from it? Who has designed its questions and framed its scope? Who will carry it out? Who will write it up? How will its results be disseminated?" These questions need careful and ongoing consideration as it is easy to perpetuate harmful behaviours despite researchers' best intentions (Archibald, 2008).

More and more, Indigenous communities expect that researchers working on their lands or with their members go beyond university-mandated research ethics requirements and use local frameworks to establish what ethical or "good" research entails (Fingers, 2005; Xiiem et al., 2019; Reid et al., 2024). "Good" research or research "in a good way" is often defined holistically and is grounded in a deep sense of respect for all those who are involved in the research (including humans, plants, animals) and those who might be affected by it (e.g., community members, the land) (Kovach, 2021; Reid et al., 2024). Consequently, researchers need to be "accountable to [themselves], the community, [their] environment or cosmos as a whole, and to the idea or topic that [they] are researching" (Wilson, 2008, p. 108).

Many researchers working within Indigenous communities inhabit what Celia Haig-Brown (1992) calls a "border world," or a space at the border between Nations, cultures, and world views. Border worlds extend to anyone (Indigenous or non-Indigenous) who is entering a place to conduct research with/within a community that is not their own. Some Indigenous scholars have proposed research frameworks that can help navigate this space including, for example, Ethical Space

(Ermine, 2007; Littlechild & Sutherland, 2021), Two-Eyed Seeing (Bartlett et al., 2012), and the 5 R's of Indigenous Research—Relationship, Respect, Relevance, Reciprocity, and Responsibility (Kirkness & Barnhardt, 1991; Restoule, 2008). These frameworks describe research approaches that actively prioritize values like respect, reciprocity, relationship building, and accountability, and are, therefore, typically well-suited for research in Indigenous contexts (Wilson, 2008). Many Indigenous scholars have also stressed the importance of deep self-reflection in research, regardless of the approach or framework being implemented (Wilson, 2008; McGregor et al., 2018; Kovach, 2021; Littlechild et al., 2021; M'sit No'kmaq et al., 2021). Such relational and reflexive approaches to research can also help navigate differences in cultural protocols and guide researcher behaviours in the community.

Although these frameworks have been described and applied in previous articles (Snow, 2018; Abu et al., 2020; Reid et al., 2021; Lafferty et al., 2023), it is important to adapt their meaning and implementation to the specific cultural and research context of each project. In this article, we—graduate student Hogue and community Elder Mary Jane Moses—reflect on the cultural and ecological context of a wildlife monitoring project and interpret the 5 R's within this context. We also translate each of the 5 R's into actionable items that can be implemented in this project.

Lead Author Positionality (Karl-Antoine Hogue)

I am a master's student at the University of Guelph with a background in environmental biology. I was raised with my two brothers on a farm on the Traditional Territory of the Kanien'kehà:ka (outside Montréal, Quebec) in a family of French descent. Growing up, I spent a lot of time outside, whether playing in the forest or running through corn fields, and I still return to these natural spaces to find relaxation and intellectual stimulation.

At the start of my master's degree, I was new to northern Canada, new to the town of Old Crow, and new to Van Tat Gwich'in culture and Knowledge Systems, so I tried to approach the project with humility and gratitude. I have tried to observe, listen, and learn any way I could, whether from written materials, in the classroom, on the land, or in community. Coming from a Western background, there were numerous instances where this project took me far outside my comfort zone; moments where I had to challenge some of what I thought I knew for a fact. It was not always easy, but I am immensely grateful to have had the opportunity to embark on this journey. I am also immensely thankful to the community of Old Crow who have made me feel at home so far from home, and who have provided me with so much. Mahsi' choo.

Context

Introducing Elder Mary Jane Moses

I first met Elder Mary Jane when I presented my master's research proposal to the Vuntut Gwitchin Heritage Committee in 2022. Since then, we have collaborated on various aspects of this project, building a relationship based on mutual respect and trust in the process. Elder Mary Jane's lifetime of experience working on research projects in Old Crow, and her thorough understanding of the challenges involved when working across knowledge systems, allowed for a fruitful and insightful conversation on research, the 5 R's, and our wildlife monitoring project. Before we began our conversation, I asked Elder Mary Jane to introduce herself.

> First of all, I'm a grandmother to 4 children. I'm originally from Teetł'it Zheh (Fort McPherson, NWT) but I've moved to Old Crow in 1979. I've held many roles in the community. When I first came to Old Crow, I was working as a receptionist at the nursing station. Then, I was a community health worker. In 2002, I came on with the Heritage Department of the Vuntut Gwitchin Government. The position was called Heritage Researcher, but I told my manager that I wanted to change my job title to Heritage Coordinator because people were expecting me to do research for them, individually, and I didn't think that was my role. I got it changed, and I worked in heritage work with our Van Tat Gwich'in oral history database. I did culture work like hide tanning and language work transcribing Gwich'in. I understand my language, but I have difficulty speaking sometimes and I'm learning to write it.
>
> I retired in March 2022 from the Heritage Department. In June 2022, I received an honorary bachelor's degree from Yukon University in Heritage and Culture. I sit on the Porcupine Caribou Management Board Steering Group in Indigenous Knowledge since last October and I'm on the Heritage Committee in Old Crow. In 2001, I took a course called Value-based Video Course here in Old Crow. Today, I still make films, and my last one was made in May 2023. That was film number 11 or 12, I think. All my films are made with my culture in mind, trying to pass the culture to young people. It's all for the future, for young people to remember and practice their culture and traditions. The last film I made is called "Instilling Gwich'in Values" so the title tells you what it's about. There are so many good experiences that I've had and today I try to pass that on and share my knowledge whatever way I can with researchers and other people. My knowledge I

> gained from the many research projects I have experienced with the VGG [Vuntut Gwitchin Government] Heritage Oral History Project and coming away with how to do good research in our community, trying to engage everyone in the process. It was community driven, for the people, by the people. I just like where I am today in my life. (Elder Mary Jane Moses)

The Community of Old Crow, Yukon

The Van Tat Gwich'in are a self-governing First Nation whose Traditional Territory extends through a vast area of northern Yukon and into northeastern Alaska (Vuntut Gwitchin First Nation & Smith, 2019). This landscape is composed of spruce-dominated boreal forests and open tundra with sedges, mosses, lichens, and shrubs (Sherry & Vuntut Gwitchin First Nation, 1999). Located at the confluence of the Crow and Porcupine rivers, the community of Old Crow is the heart of the Nation and home to around 250 community members. Elder Mary Jane describes how Old Crow has changed since she moved there more than forty years ago:

> I came to Old Crow in 1979, I got married here. I'm from Fort McPherson (NWT). When I first came to Old Crow, it was not like it is today. It was much smaller but now it has really grown. When I first got here, it was really remote. We had a store, a nursing station, a school, and the First Nation office. Today, this is my home. When I go back to Fort McPherson, I'm in a hurry to come back here. I like Old Crow because it keeps me connected to the land, to my culture. With the different seasons, we have different food. In the fall, it's caribou, moose, and fish. In the winter, it's caribou, rabbits, and ptarmigan. In the springtime, it's caribou, beaver, muskrat, and ducks. Each season is different. We have berries, too, in the summer with vitamin C. Old Crow is unique. It's a strong little community with resilient people. We have our struggles, but if you're strong you can make it through. (Elder Mary Jane Moses)

Wildlife Monitoring Project

The wildlife research component of my master's research was part of an ongoing, community-based monitoring project called Nanh gwiinzii vik'ite'tri'giikhii (We read the land well). The project was started in 2021 by Jeremy Brammer, then Fish and Wildlife Manager of the Vuntut Gwitchin First Nation (VGFN) in collaboration with the VGFN Land Guardians. VGFN has been operating a Guardian program since the 1990s and had a team of two full-time Guardians

as of 2021. The VGFN Guardians are responsible for patrolling the VGFN Traditional Territory to monitor harvesting activities, and document changes to the land, water, and wildlife. In this community-driven project we aimed to investigate population densities and behaviour of large mammal species in the Vuntut Gwitchin Traditional Territory while fostering Gwich'in traditional lifestyles and ensuring that Gwich'in Knowledge and skills continue to be shared amongst community members, especially youth (Kuntz et al., 2018; Fish and Wildlife Planning Team, 2021).

In 2022, I joined the project as a master's student under the supervision of Dr. Jesse Popp and Dr. Allyson Menzies. I was tasked with assisting with the design and implementation of a camera-based wildlife monitoring program around linear corridors in the Vuntut Gwitchin Traditional Territory. Over the course of two years, I worked alongside the Guardians to deploy and service 72 game cameras during a dozen snowmobile patrols. The patrols were a few days in length and involved two to six community members each. I also teamed up with Elder Mary Jane to conduct ten interviews with Gwich'in Knowledge Holders. To ensure that we addressed the monitoring project's scientific, social, and cultural goals, I turned to the 5 R's framework and to community Elders like Mary Jane. Together, we were able to navigate community expectations and graduate school requirements to design and implement a sustainable wildlife monitoring program. This work was approved by the Heritage Committee of the Vuntut Gwitchin First Nation and the University of Guelph Research Ethics Board (#20-10-014).

Our Approach: Co-Interpreting and Applying the 5 R's

Early on in my graduate school journey, I recognized the need to reflect on how best to conduct myself and my research as an "outsider," a settler, and a researcher within the community. To do so, I sought guidance from pre-existing Indigenous research frameworks, ultimately selecting the 5 R's of Indigenous Research—Relationship, Respect, Relevance, Reciprocity, and Responsibility (Kirkness & Barnhart, 1991; Restoule, 2008)—as the framework to generate important self-reflections, foster valuable discussions, and, ultimately, inspire my research approach. The 5 R's framework was first introduced in the field of Indigenous education by scholars Ray Barnhardt and Verna J. Kirkness (1991) as the 4 R's (Respect, Relevance, Reciprocity, and Responsibility). The fifth R of Relationship was later added to highlight the importance of relationships in the research process (2008).

To reflect on the 5 R's and to turn them into actionable guiding principles for our research project, I took inspiration from the field of ethnography as it seemed best suited for a profound reflection on research approaches in this cross-cultural context (Smithers Graeme, 2014; Graeme & Mandawe, 2017).

Ethnography creates space for the examination of self in relation to the community, community members, and research (Haig-Brown, 1992; Lassiter, 2005). Also, the ethnographer focuses on listening and watching as a way to learn and create new knowledge, which is akin to what is expected of a learner in many First Nations cultures (Haig-Brown, 1992; Archibald, 2008). Finally, ethnography and, more specifically collaborative ethnography, allows for research participants to become co-intellectuals, meaning they can take a leading role at each stage of the research process from setting the research objectives to writing and reporting on the findings (Lassiter, 2005).

When I started looking for a co-intellectual to co-write this piece with me, I immediately thought of Elder Mary Jane. She has a lot of experience with research and researchers in Old Crow, and a thorough understanding of our wildlife monitoring project. So I was thrilled when she enthusiastically agreed to co-author this article with me. Elder Mary Jane was more comfortable sharing her ideas orally, so we agreed to record and transcribe our conversations. We then reviewed the transcripts together making edits where needed. We repeated this process until we were both satisfied with the result in an approach similar to Archibald (2008). To get started, I organized a first meeting during which I introduced the 5 R's framework to Elder Mary Jane and we discussed the general direction of the article. We followed this first meeting with a series of visits at Elder Mary Jane's house taking inspiration from Keeoukaywin (The Visiting Way) (Gaudet, 2019). This approach recognizes the central role of informal visits for community members to share knowledge, maintain social bonds, and take care of each other. In my visits with Elder Mary Jane, we often shared food and hot beverages while discussing the latest community news, before diving into the 5 R's and research. I often started this part of the conversation by asking a broad question like how can researchers be respectful or give back when doing research in Old Crow? We then went into more specific questions related to our wildlife monitoring project. Our conversations were mostly unstructured in an approach that Haig-Brown (1992) calls "research as conversation." This back and forth allows for the co-construction of ideas in a format similar to a co-writing exercise. Reviewing and editing previous transcripts also sparked many conversations often expanding or clarifying what had been previously said. In total, we met on ten occasions over the span of nine months.

Throughout the rest of this article, we are sharing parts of our conversation, organized by each of the 5 R's, in a format that alternates between Elder Mary Jane's perspectives and my own reflections and interpretations of what she said, pulling in the relevant literature.

Relationship—Nihlak nat

When talking about the 5 R's, we started with "Relationships," as it is foundational to everything. According to Elder Mary Jane:

> Relationship should be the first R because it is the most important. Doing research 'in a good way' means that when new researchers come into the community, they can't just come in and, right away, start interviewing people. They need to get to know the people first. It's important for them to make a good first impression. They have to state their case. We have to know why the researchers are asking those questions, what's the purpose, what's going to be done with it, and are we going to see something in a booklet in easy-to-understand language.
>
> Meeting people is so important. It's a process. Researchers have to build trust, earn people's respect and get to know community members. Otherwise, they will be just another researcher, and people won't be interested in talking to them or talk about the land. Some researchers just want to do their field work but it's not good research when it's rushed. They don't get the full picture when it's rushed. That's how you make false assumptions too if you don't hear from people. They have to see what we mean when we say that we live off the land. They need to know that it's more than words, it's our way of life. Researchers will have a different understanding after spending time in the community. They will learn so much. They probably came in with a mindset, but that mindset will change.
>
> I know some researchers come year after year and make a point of stopping by to say hello. My family has gotten really close to some of them over the years because they always make a point of saying hello and that's good. For me, it shows respect, and there can be no relationship without respect. (Elder Mary Jane Moses)

Listening to Elder Mary Jane speak reminded me of the importance of engaging with community members as humans rather than research participants. Most individuals I worked with, whether on the land during Guardian patrols or in town for interviews, were all people with whom my supervisor or myself had a prior friendship or connection. When asked, most participants mentioned that they joined the project because they knew me and trusted me.

Many authors argue that, because research involves the creation of new relationships between pieces of knowledge, between people and between animate and inanimate beings, it can only start once a rapport of trust has been

established (Haig-Brown, 1992; Archibald, 2008; Wilson, 2008; McGregor et al., 2018). Building this rapport might include following various cultural protocols, participating in ceremony, visiting with community members in town and on the land, demonstrating proper handling of community knowledge, and, above all, it might take time (Archibald, 2008; Gaudet, 2019; Kovach, 2021; Smith, 2021). For Elder Mary Jane, building this rapport starts by making a good first impression in the community. To do so, I applied to work for the First Nation government prior to the start of my degree. This opportunity allowed me to integrate into the community and start building connections and trust with community members, the land, and all its inhabitants without the requirements of my research project and graduate degree weighing on every interaction. It also allowed the community to get to know me as a person, which Smith (2021) says is often more important than explaining the technicalities of the proposed research. Those early relationships that were built before the start of the degree helped start the project in the right direction and created a level of trust and mutual understanding on which to base future knowledge sharing.

Elder Mary Jane highlights the importance of researchers spending time in the community as part of the research process. Previous work in Old Crow and other Gwich'in communities has stressed the importance of repeated, informal social interactions to build trust between outside researchers and community members, which is integral to satisfactory completion of a project for all those involved (Wolfe et al., 2011; Brunet et al., 2014; Hovel et al., 2020). To create space for these interactions to occur, researchers must be willing to spend time in the community. The Maori refer to the principle of kanohi kitea, or "the seen face" when describing the need to be "seen" and recognized within community (Smith, 2021). This is especially important for researchers, such as me, with limited or no prior connection to the community. Hence, I decided to spend half of my degree in the community. For many Indigenous community members, there is no distinction between research and personal relationships. As such, I made sure to get involved in community life, including school activities, sports, and community celebrations in order to engage with community members outside of work. In my experience, this process of relationship building is far from easy. It takes time and often requires spending long periods of time away from one's previous home, friends, and family. Personally, there were times when I felt lonely, uncomfortable, or exhausted, and I had to step back to take care of myself. Despite all the challenges, I would encourage every researcher and student to spend time and get to know the communities they work with. It is difficult work but one that can lead to life-long relationships.

Elder Mary Jane also echoes the words of Elder Shawn Wilson (2008) who sees no difference between relationships made with people and with the

environment. Hence, I made sure to spend a lot of time on the land to meet the wolves, caribou, and moose who were part of this research. Camps or personal traplines might be off-limits to outside researchers at first, but I found that offering to help with camp repairs, firewood collection, or other tasks was a great way to get an invitation. Being on the land, whether at people's camps or on hunting trips, was also a way to get to know community members who are otherwise unavailable when in town. There was no better place to talk about the land than on the land itself. Through those interactions, I learned about the history, geography, and biology of the Traditional Territory, which helped prevent what Elder Mary Jane calls "researchers not getting the full picture" or the misunderstanding of the local context leading to misleading or false results. I identify with what Archibald (2008) calls a "learner," someone with limited cultural knowledge who needs to be guided by more experienced Knowledge Holders. As such, I was committed to listen and take direction from the cultural knowledge shared by Elders, Guardians, and other community members to help navigate each step of this research journey.

Respect—Yiinji'hidhoh'ee

Respect can take many forms, from how the research is handled to researchers' behaviour in the community. Elder Mary Jane highlighted that, most importantly, respect starts before setting foot in the community and continues once researchers arrive.

> To be respectful, researchers need to do some homework before they come here. They should do research on Van Tat Gwich'in history, culture, traditions, and learn how this community operates. It's quite different from other communities because we are so isolated, and we live off the land. We're connected to the land; we are hunters and gatherers.
>
> It's good for them [researchers] to look at a map too and learn the place names. Researchers have to learn the protocols in the community too. For example, if there's a funeral, everything shuts down. It's about asking questions and respecting what goes on in the community and helping where you can. Researchers should not be shy to experience the culture and not be afraid to taste new food. I think it comes under respect, respect the culture. Some of the researchers, they use Gwich'in in their presentations and I find that really respectful. They are trying to learn our ways and our language, and have it their presentations.
>
> Respect has to extend to the land too. Everything is done to respect the land here. Watching and listening; listening is a big part too. We've had so many researchers, so people are used to

> researchers coming here but sometimes it gets to be too much. It's too much for the community, too much for the land, and too much for the caribou so we have to say no. We need to respect all three, and researchers have to understand that sometimes it's just too much.
>
> Because the research is happening here, I think it has to involve the people that live here, too. If researchers are isolated by themselves and not including community information, then it's just one-sided. We've lived here forever. The information is always passed down from one generation to the next and that's how we survive. It has to be a two-way communication. If a community member knows the information, they will provide it. (Elder Mary Jane Moses)

As Elder Mary Jane pointed out, and as I learned through experience, cultural competency is essential to work across cultures. When I first visited Old Crow, I realized that, although much can be learned from books, stories, or films before getting to the community, Indigenous knowledge and lifeways are best learned by doing (Bartlett et al., 2012; McGregor et al., 2018). I have learned the most about culture by taking part in community events and by spending time on the land with Knowledge Holders. Another way I found to learn about culture in an experiential way was to sign up for Dinjii Zhuh k'yuu (Gwich'in language) classes. As an outside researcher, it is crucial to navigate cultural spaces with care and access them appropriately. For example, there is often more interest for learning Indigenous languages than there are resources available, so I made sure to wait for an invitation before joining a language class to ensure that I was not taking resources away from community members. When I first joined the class, some of my classmates shared some concerns and questions related to my motivations for learning Dinjii Zhuh k'yuu. Together, we discussed why I wanted to learn the language, and I explained my intended use of the knowledge shared in the class. In the end, my presence in the class was well received and even perceived as a sign of respect by community members.

Through the time I have spent with Knowledge Holders, I learned a lot and tried to embody the idea mentioned by Elder Mary Jane that respect starts with listening. To truly listen, one must approach each interaction with a healthy dose of humility about what they know or what they think they know (Graeme & Mandawe, 2017). Modesty is of the essence especially when discussing academic achievements (McGregor et al., 2018). Listening to community members is also key to navigate protocols around funerals and other community events. Previous research in the area has highlighted the necessity of closely following local protocols to maintain respectful and constructive relationships with communities

(Wolfe et al., 2011; Brunet et al., 2014; Hovel et al., 2020; Pedersen et al., 2020). Although community protocols create some challenge especially with the rescheduling of research activities, I have found that, with some creative thinking, we were often able to pursue research objectives while contributing to local customs and traditions. For example, we were able to provide meat for community feasts by incorporating caribou harvesting during our camera deployment trips.

In our project, there was an early request from community Elders to formally include Gwich'in Knowledge as part of the research process. As Elder Mary Jane puts it: "Because the research is happening here, I think it has to involve the people that live here."

To address the legacy of non-Indigenous researchers exploiting, diluting, or misinterpreting Indigenous Knowledge (Smith, 2021), it was important to consider how to engage with Gwich'in Knowledge in a respectful and meaningful way and to ensure community leadership at each stage of the process. To do so, I decided to seek the guidance of respected Knowledge Holders to guide the collection, interpretation, and dissemination of Indigenous Knowledge (Kimmerer, 2000; Smith, 2021). Specifically, I turned to Elder Mary Jane to co-design and implement knowledge collection and to the Vuntut Gwitchin Government staff to ensure that participants' data would be handled according to local standards and adhere to the Ownership, Control, Access, and Possession (OCAP) principles (First Nations Information Governance Centre, n.d.).

Because respectful engagement with Indigenous Knowledge also extends to how researchers analyze and evaluate the validity of their findings (McGregor et al., 2018), we decided to conduct a community-based result interpretation workshop during which community members were encouraged to share, discuss, and reflect on the different findings from our camera monitoring work and our interviews. We planned the event around a community meal followed by a short presentation of preliminary result findings. During the workshop, community members reviewed preliminary research findings, asked questions, provided additional information from their lived experience, and suggested different ecological mechanisms to explain patterns in wildlife movements observed during the study. This workshop was open to all but some community members, identified by Elder Mary Jane, were specifically targeted because of their extensive knowledge of the land and animals. We believe that this kind of workshop, when done prior to publication, can reduce the risk of misinterpreting or exploiting Indigenous Knowledge and is essential to respectful research collaborations between Western institutions and Indigenous communities.

Reciprocity—Nihjihkhe' Nihts'oh Gi'giikhii

Reciprocity, or the action of giving back to the community, has been identified as a possible avenue to counteract the often extractive nature of research in Indigenous communities. Many opportunities to give back exist both within and outside the research process, and Elder Mary Jane discussed a number of them.

> It is important to give back. The researchers need to share the end product of their research with the [Indigenous] government. They need to leave something here because they took a lot of information and we need to know what is happening out there ([e.g.,] erosion, lakes drying out, climate change). It can't be the researcher just getting info from community members and them not giving us something back. Researchers have to tell community members what they're doing here in simple language. They have to tell community members how long they are staying and what they need from the community. At community meetings, some researchers have slideshows with pictures. Pictures really say a lot, we see what is going on the land. By them just telling us, we don't know but if we see pictures, then we understand the damage that's happening.
>
> It's really important to keep that communication ongoing and for the researcher to share their plans with the community. Researchers should stay true to their word because at some point they will need the community's help.
>
> Reciprocity can also happen outside the research process. Getting involved in community activities is good because it shows that researchers are sincere about their stay in the community. It shows that they are trying to get to know the ways of the people, the traditions, the culture and going on the land, they are connecting with the land. Researchers are learning how it's done out there. (Elder Mary Jane Moses)

During my time in Old Crow, I got to witness many community assemblies during which the community discussed various issues affecting the community and decided collectively what to do about it. Listening to community members discuss solutions to very complex issues like permafrost melting drove home the importance of communicating research results back to the community.

However, as Elder Mary Jane mentioned, researchers should also share research objectives, protocols, timelines and any other relevant information. Sometimes, scientific protocols differ from local ways of doing and this can create tension between researchers and community members, which reinforces the need

for effective communications (Brunet et al., 2014). I have found that, following Elder Mary Jane's advice to use pictures and videos, and to try to show rather than tell, leads to very effective communication. Also, I have had great success combining pictures of community members at work on the land alongside research results or other scientific information to capture community interest and maintain support for the project. Of course, pictures were only shared after obtaining proper permissions.

Elder Mary Jane explains that giving back can also extend outside the research process. As researchers get more involved in the community, Kim Tallbear (2014) argues that they can go from giving back to standing with the community. When I first got to Old Crow, I found it useful to identify some of my skills and interests that might be of help to community members. In my case, this has meant helping Elders with technology or chores, babysitting for single parents, and getting involved with recreational volleyball. I also allocated some of my time to support the First Nation government during larger events like on-the-land trips and community feasts. By engaging in reciprocity, I am hoping to give back some of my time, skills, and energy to a community that has already provided me with such a warm welcome, profound learning opportunities, and very dear relationships.

Relevance—Gwiyeendoo Ch'igwijuu'ee

The importance of research that can help address gaps in the scientific literature, and be useful to the inhabitants of the North has been a priority for a number of years (Canada Research Coordinating Committee, 2019). However, Elder Mary Jane stressed that useful research is not limited to the topic of investigation and should extend to more holistic community goals like cultural revitalization or skills development.

> How is this research going to benefit the community? That's one of the questions we always ask researchers in their application. I like when our people are going to be hired for research, when different people get hired. Some researchers, they pick and choose who they want to work with, but I prefer when different people get hired. I'm really proud of the community members doing on the land work with researchers.
>
> I was raised up on the land and with the daily survival activities on the land. When you are doing that, you are learning the culture, hearing the language and learning the traditions. All those are connected. Most of our young people today, that is lost upon them. Elders and Knowledge Holders today, they are trying to pass that knowledge on but there's still a big gap missing. We have to practice the culture as much as we can. But if people

> are willing to learn, it's going to help them because the culture is so rich. It's so important to create those opportunities for our young people to go on the land. I know lots of them want to go on the land but they have no equipment, no gear so when those opportunities happen for them, they'll jump at that opportunity.
>
> Culture should be part of every trip. Researchers have to be flexible. If they have to choose between setting up a game camera and harvesting caribou, I would choose the caribou. It's not only a project for the science, it's about getting our people on the land and getting them connected to the land. (Elder Mary Jane Moses)

When I first visited Old Crow, it didn't take long to appreciate the importance of "the land" in people's lives. Everybody was either getting supplies to go on "the land," coming back from "the land" with firewood, or discussing in which area on "the land" they had last seen caribou. Even in town, "the land" was everywhere.

Much of Van Tat Gwich'in cultural identity is tied to the land and, as Elder Mary Jane and other publications have alluded to, time on the land can cultivate a feeling of wellness for community members and contribute to intergenerational knowledge transfer and cultural revitalization as community priorities (Sherry & Vuntut Gwitchin First Nation, 1999; Brunet et al., 2014; Vuntut Gwitchin First Nation & Smith, 2019). Since environmental, economic, or social benefits of a research project are often perceived as intertwined by communities, it was important to us to include local priorities that go beyond the creation of knowledge as metrics of a project's success to ensure community support and local relevancy (Artelle et al., 2019; Thompson et al., 2020). With my master's degree project, I wanted to go beyond simply investigating a topic that the community deemed useful, and wanted to help support the VGFN's effort to bring its members on the land to practice cultural activities. To do so, we selected a research approach that involved multi-day, on-the-land patrols with a large group of community members. To bring new community members on the land, the research team helped them get through the hiring process with the human resources department and the First Nation provided them with a snowmobile, camping gear, and winter clothes when needed. We also planned our patrols to include unstructured time, usually at camp, to allow for hunting, storytelling, and other traditional activities to occur. With this research project, we were able to offer on-the-land employment while providing a space for Elders, youth, and other community members to practice, share, and pass down their culture.

Responsibility—Jidii Guk'andehnahtii

As I build more and more relationships with community members, the land, and the other inhabitants of the Vuntut Gwitchin Traditional Territory, I feel a great responsibility to honour and stay true to those relationships. Here, Elder Mary Jane highlights a few concrete responsibilities for researchers operating in the community.

> Old Crow has seen enough researchers from way back and more since the 2007 International Polar Year (IPY) to know how it works and what damage some researchers can do. We always ask for the end product (report, book, film, etc.) of whatever research is happening in the community and sometimes we don't get anything. This breaks the trust between researchers and community members, and it hurts the community because we need the research in some ways. Researchers have to be honest with their actions and with their words.
>
> Paying people in a timely manner is important too because researchers are taking them away from what they need to do (e.g., seasonal harvest, family duties, etc.). The knowledge they share is also important, so they need to be compensated. Continuity is another thing too. Researchers that come back year after year, I really respect them today because their research is still ongoing and for me that says that their research is really important for the community. They are true to their word. Every year they come back and give us the information. Continuity is important to make good research and to make it valuable to the community. If there was turnover every year, it would just go nowhere.
>
> I do all of what I do to educate the outside world about who we are, where we are at. I hope researchers tell a true story of Old Crow. I hope they truthfully tell their colleagues about their visit to the community. I hope they share how they interacted with people; how they built connection; what worked and didn't work in the community; what they could do better; the lessons they've learned; how they were able to connect with people on the land, to experience the land. Showing their pictures too. Hopefully, it will help new researchers coming in. (Elder Mary Jane Moses)

In my conversations with Elders, many have shared fond memories of their participation in research projects and of the relationships they have built with the anthropologists, archaeologists, hydrologists, and other scientists who visited Old Crow in the 1960s, 1970s, and 1980s. Some other researchers do not enjoy

a stellar reputation. Elder Mary Jane identifies a few key responsibilities of the researcher to foster trust, mutual respect, and accountability between themselves and the community.

Elder Mary Jane starts with communicating research results with the community. When conducting research in Old Crow, researchers are required to present their research project to the Heritage Committee of Vuntut Gwitchin First Nation and sign a research agreement with the VGFN heritage manager. The VGFN research agreement mandates that researchers provide the product of their research back to the Nation, but some do not. Breaching this agreement, as Elder Mary Jane mentioned, can harm the community in very tangible ways as the community often needs the research conducted on their land more than anyone else. In our project, we not only shared project results but also protocols and accompanying documentation to ensure continuity of the project, another responsibility of researchers as identified by Elder Mary Jane. Following Thompson et al.'s (2019) recommendation, we applied for and were successful in obtaining funding to hire a Guardian coordinator to ensure the continuation of the project at the end of my degree and the creation of local capacity at the Vuntut Gwitchin First Nation government.

Elder Mary Jane reminds us that it is a researcher's responsibility to report truthfully on what they have learned working with communities. As researchers, we become stewards of the knowledge being created; thus we have a responsibility to ensure that the knowledge is collected, analyzed, and used in a way that honours Knowledge Holders and the knowledge itself (Wilson, 2008; Kovach, 2021). Elder Mary Jane also stresses that this reporting should go beyond research results and discuss the relationships and the experiences that we shared with community members. I take this advice to heart and, in writing this report, I hope to honour all my relationships in the community and encourage other graduate students and researchers to work towards conducting their research in a good way and building long-lasting connections with the communities they work with.

Conclusion

Towards the end of this project, as Elder Mary Jane and I were reflecting on the many hours of conversation we shared together, it became evident that the 5 R's are intrinsically linked and represent five different aspects of a whole. This whole is a space for mutual understanding between researchers, community members, and any other research collaborators. Elder Mary Jane reflects on the importance of creating and maintaining such a space in research.

> What I take from this work is the importance of open and honest communications back and forth. If we are not able to communicate openly, we won't get far in the research. Both sides must listen and understand and not let assumptions get in the way. I say this because in many research projects people come in with their own ideas, interpretations, understandings, and assumptions. For good research, in the beginning stages, it's good to be on the same page and make sure each person (researcher, research advisor, community member, Elder, etc.) has a basic understanding of their role in the project, what is expected of them and what they can hope to get out of the project. The researchers also need to understand the community, the lifestyle, the traditions, and the culture. All this ensures that we can listen to each other and understand each other. This leads to more effective and respectful research and minimizes the chance of misinterpretations or misleading research conclusions. (Elder Mary Jane Moses)

I wholeheartedly agree with Elder Mary Jane that creating a space for the respectful and effective exchange of knowledge and ideas is what makes good research. For me, her words echo the concept of Ethical Space, which Littlechild and Sutherland desribe as "an invitation to co-create a space between different cultures and knowledge systems […] to engage with each other in an ethical way" (2021, p. 9). This close connection between the 5 R's and Ethical Space frameworks does not make the former less relevant. Rather, it demonstrates how reflecting on the 5 R's can create the space for ethical collaboration between external researchers and Indigenous communities.

As I look back on the project, I contemplate the central role of time in this journey across the 5 R's to a space of mutual respect and understanding. Over the course of my degree, I have gotten to know, trust, and understand Elder Mary Jane in a way that would not have been possible throughout an interview or two. Time has allowed us to work together and co-create a relevant research project, identify effective ways to give back, and understand our responsibilities in the research process. More broadly, I have found that my two years in Old Crow have allowed me to get to know community members as people rather than research subjects, understand the local context, and experience the land as a place of life, sustenance, and spiritual nourishment rather than strictly a research topic. I recognize that funding constraints and scheduling requirements from universities and funding agencies do not always allow for extended stays in community. I would encourage those institutions to increase support for extended student stays in partner communities. Another potential barrier to extended stays in small

communities is housing. I would encourage a conscious, community-led approach to housing external researchers with the view of supporting long-term stays and relationship building.

In this article, we have presented how the 5 R's framework can create a space of mutual understanding and respect on which to build a sustainable research project. We have also shown how the 5 R's framework can be applied to the local context through shared conversations and reflections between a Van Tat Gwich'in Elder and a non-Indigenous graduate student. We recognize that this method will not be appropriate for every situation, but we hope that this report will encourage other graduate students, researchers, and faculty in Western institutions to take the time to pause, reflect, and enact meaningful changes to ensure that we are all doing research in a good way.

Acknowledgements

This research was a collaboration between the Natural Resource and Heritage Department of the Vuntut Gwitchin First Nation and the WISE Lab at the University of Guelph. It was graciously supported by Polar Knowledge Canada, Environment and Climate Change Canada, the Guelph Institute of Environmental Research, the Natural Sciences and Engineering Research Council of Canada, Earth Rangers, the W. Garfield Weston Foundation, and the Vuntut Gwitchin First Nation.

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The Northern Review
Exploring human experience in the North
The Northern Review 58: 105–110
https://doi.org/10.22584/nr58.2025.004
Published at Yukon University, Canada

Reflection

What's Love Got To Do With It: Renewing the Foundations of Conservation Science and Practice

At Saxán, Konnoronhkwa, Love, Miłość, Amare†

Abstract: We seek a renewing of the foundations of conservation science and practice with love as one of the main pillars. We trace how this has been embodied through histories, practices, knowledge systems, writings, and key figures throughout conservation science and practice. We see this work as a call to renew our vows to practise conservation science and practise with a deep love for the species and places we work with and for.

†Author Contribution Statement: Here we interrupt the regular hierarchical nature of journal authorship and present authorship to the concept of love translated into different languages. The word for love is listed as our authors in Tlingit, Kanien'keha, English, Polish, and Latin. The contributors to this paper include, in no particular order, Krystal Isbister (she/her, Yukon settler/western Europe, northern flora), Katarzyna Nowak (she/her, Polish return migrant/former asylee, hoofed mammals), Jared Gonet (he/him, Indigenous, Tlingit/Polish/Dene, ecosystems), Paul McCarney (he/him, settler/western European), and Dan Longboat (he/him, Mohawk Nation of the Rotinonshón:ni (People of the Longhouse) the Six Nations Confederacy). We see all as equal contributors in various ways that create a whole greater than the parts.

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"We address the Earth as Ieti'nihstenha, 'her to all of us has given us life.' The love, affection, respect, appreciation, and gratitude we have for our own Mother is the same feelings, emotions, connection, love, respect, honour, and gratitude that we give to our Mother the Earth" (D. Longboat, personal communication, May 26, 2024).

Love is foundational to conservation science and practice. Who among us entered the field in search of endless data and significant p-values? When we as researchers and practitioners pursue a mythical form of valueless, objective, neutral conservation science,[1] we hamstring our ability to exist together in respectful, loving relationships with place.[2] When we recognize and encourage love in conservation science, we create space for multiple world views[3] and mobilize some of the best parts of humanity in our work.[4] Here, we see some broad elements of love as the care for, sharing, and acknowledgement of the agency of places and life other than human. When we scan the diverse histories of conservation science and practice, we find many manifestations and expressions of love. As conservationists we will serve, honour, and uplift biodiversity by recognizing and reconnecting with understandings of love in conservation.

Science did not start out aiming for valueless, normative outcomes, and the effort to compartmentalize emotion and logic in conservation science is not a foregone conclusion. The full history of Western science—and certainly the history of conservation science—is replete with individuals and traditions that expressed deep care and love for the natural world, and this was not always seen as oppositional to good, rigorous, effective science. In fact, throughout the history of scientific practice in fields related to conservation, the normative values of objectivity and emotionless inquiry are a fairly recent invention. Love and other emotions were stripped from our sciences in the Enlightenment[5] by thinkers who saw a mechanistic, reductionist world. However, this is not the only world we live in.

Feminist[6] and Indigenous[7] bodies of thought emphasize the role of love and other emotions in successful conservation science and practice. For instance, Bond and Liboiron[8] "focus on the tension between the pressures on professional scientists to be detached and objective, and the emotional work of studying pollution." Bond notes that as a scientist, "you have to take a step back and almost detach yourself from the situation. But as a human being, when I cut open a dead bird and see bottle caps, tetra-pack lids and balloon clips gushing out of the stomach, it just breaks my heart."[9]

If we practice conservation science that respects Indigenous Knowledge systems[10] and pushes towards versions of anti-colonial science,[11] we must include the emotional element of those systems. In many Indigenous world views, love for non-human peoples and places is commonplace.[12] Anishinaabe Grandmother Teachings also speak of love, which John Borrows beautifully applies to constitutional law; according to Borrows, love should and must be a legal value that underlies our most basic laws (which ultimately informs all our work).[13] In the Canadian North, First Nations people are taught to "feel as much as you think,"[14] echoing the Maori saying of "Science with a heart."[15] Anishinaabeg environmental activist Winona LaDuke describes the sense of love at the root of Indigenous-led conservation, telling us that "our commitment and tenacity spring from our deep connection to the land" and the relations her culture maintains with the animals, fish, trees, and rocks.[16] In a recent report on Indigenous approaches to climate action, Reed et al.[17] argue that an Indigenous approach to climate action starts with recognizing key shared principles of Indigenous knowledge systems, "including hope, love, and respect for diversity."

Western academic approaches to conservation and popular environmental literature have also emphasized the value of love in conservation theories and successes.[18] Aldo Leopold set love as a foundation for his concept of a land ethic, arguing that "when we see land as a community to which we belong, we may begin to use it with love and respect."[19] The concepts of Topophilia and Biophilia both explore people's love of places and forms of life beyond the human.[20] The environmentalist and writer Wendell Berry highlights people who "are motivated by affection, by such love for a place and its life that they want to preserve it and remain in it."[21] The emergence of writing about ecological grief over the past decade shows the importance of love in conservation, as surely we don't mourn what we don't love. The term Solastalgia describes the distress felt by those who have become separated from the place and environment they love.[22]

Across the world, some of our greatest conservationists have pushed the bounds of what is possible with their obvious love for places and other species. Norma Kassi, a Vuntut Gwitchin Elder and Indigenous conservationist in the Yukon, has inspired generations of people in the North to safeguard boreal ecosystems and the Porcupine Caribou Herd, with which the Gwich'in People are inseparable.[23] Primatologist Jane Goodall helped push the bounds of interspecies kinship through divulging the lives of Gombe chimpanzees (thereby achieving what Charles Darwin could not through a theory of evolution alone). Kenyan environmentalist Wangari Maathai, founder of the Green Belt Movement, notably said, "We can love ourselves by loving the earth."[24] "Loving onto trees" epitomized the anti-deforestation movement in India led by Sunderlal Bahuguna.[25] Choosing to work from a place of love expands what is possible.

When we push for normative, valueless sciences, we detract from other ways of knowing and understanding. With the state of the world today it is clear we need to use all world views to make peace with nature.[26] The tools of conservation science have a critical role in this shift, but the job most often entails documenting (and feeling) the continuous loss of places and species.[27] Conservation scientists need to freely embrace love for the places and species we work with, enable mourning, and face the heartbreak without loss of purpose, conviction, and hope. Love is medicine for us and our Mother the Earth. A Kanien'keha word for love, Konnoronhkwa, is the medicine that, "works to restore, to renew, to restrengthen us. It's the thing that allows us to carry on with our responsibility, the sacred responsibility that we've been given to care for all life" (D. Longboat, personal communication, May 26, 2024). Love has been and is a powerful driver and motivator for conservation, engaging people, and driving true stewardship. We must rebuild, recognize, and renew a loving foundation of conservation science and practice. Much as people renew their vows to people they love, we must do so with the natural world we endeavour to steward.

Acknowledgements

We acknowledge the places we have inhabited and the species with whom we have crossed paths.

Jared Gonet
University of Alberta, Yukon University

Krystal Isbister
University of Alberta, Yukon University

Katarzyna Nowak
Mammal Research Institute Polish Academy of Sciences, Poland

Paul McCarney
Yukon University

Dan Longboat
Trent University

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https://doi.org/10.22584/nr58.2025.010
Published at Yukon University, Canada

Commentary

Baseline Data, Bill 5, and Development in the Ring of Fire, Ontario, Canada: Lessons from Quebec's James Bay Project

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Abstract: Ontario's 2025 *Protect Ontario by Unleashing Our Economy Act* (Bill 5) authorizes the creation of special economic zones that suspend environmental assessment requirements for selected projects, including those in the mineral rich Ring of Fire region of the James Bay Lowlands in Northern Ontario. This policy directly conflicts with the ongoing federal regional assessment, co-led with fifteen Treaty 9 First Nations whose purpose is to establish baseline data and cumulative-effects frameworks before development begins. By allowing development to proceed in advance of these baselines, Bill 5 removes the scientific control condition required to distinguish natural variation from mining impacts and undermines Indigenous participation in environmental governance. Historical evidence from the 1975 James Bay and Northern Quebec Agreement demonstrates that accelerated project approvals without adequate baseline science produced decades of ecological and health harm. The Ring of Fire presents a comparable inflection point: safeguarding both scientific integrity and Indigenous self-determination depends on completing multi-year baseline studies before development proceeds.

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Governance by Exemption

On June 5, 2025, Ontario enacted Bill 5, the *Protect Ontario by Unleashing Our Economy Act*,[1] granting cabinet authority to create special economic ones (SEZ) where environmental assessment requirements can be suspended or modified for selected projects. On the same day, the province announced that the Ring of Fire would be among the first areas designated as an SEZ.[2] The Ring of Fire is a mineral-rich region of the James Bay Lowlands, located roughly 500 kilometres northeast of Thunder Bay, Ontario, containing major deposits of chromite, nickel, copper, and platinum on or near the Traditional Territories of fifteen James Bay Treaty (Treaty 9) First Nations.[3] The government's decision arrived only a few months after the federal regional assessment, co-led with these Nations, finalized its terms of reference[4] and before any baseline data collection had started. This overlap placed a policy focused on accelerating mining development in direct conflict with a federal process still establishing how cumulative impacts would be measured and how Indigenous participation in environmental governance would occur.

The Ontario government has framed Bill 5 as a strategy to accelerate investment while building economic partnerships with First Nations. In its April 2025 announcement,[5] the province pledged to "cut red tape and streamline approvals to speed up critical mineral and resource development projects," presenting efficiency and competitiveness as the primary goals. The provincial minister responsible for economic and community partnerships in the Ring of Fire region described First Nations as "full partners in achieving prosperity" through infrastructure and energy development, but the statement made no reference to environmental baselines or cumulative assessment.[6] Although the news release emphasizes collaboration, its language suggests that scientific baselines are being positioned within the same category as procedural delay, portrayed as requirements imposed by academics rather than as measures essential to credible oversight. By suggesting that monitoring can occur in parallel with development, the government implies that evidence can follow development instead of guiding it.

In toxicology and impact assessment, pre-disturbance baselines are not an academic luxury but the control condition that makes inference about environmental changes possible.[7] Multi-year observations collected before development are often required in order to characterize the natural range of variation in water levels, temperature, contaminant cycling, and wildlife

populations. For Indigenous communities, baseline data is also grounded in a holistic world view that treats local environmental conditions, cultural practices, and socio-economic well-being as part of a connected system. Without those observations, adaptive management loses the anchor it needs to decide whether a measured exceedance reflects mining effects, climate oscillation, or normal inter-annual variability. Adaptive management only works if you know what you are adapting from; once development begins, the original state of the system cannot be reconstructed, so the capacity to separate signal from noise is permanently lost. This is partly what a regional assessment addresses.

Bill 5 could undercut both the scientific foundation and the promise of meaningful participation for First Nations investing time and personnel in the Regional Assessment of the Ring of Fire area. While Treaty 9 Nations may differ on development timing or terms, Bill 5 could remove the baseline information needed for informed negotiation by any of the Nations. In announcing the court action initiated by Marten Falls First Nation on August 7, 2025, Chief Bruce Achneepineskum said his community had not been consulted and that they were "not willing to be stepped on or stepped over."[8] This concern is consistent with his earlier view that, when government dictates the process, First Nations become "merely … pawns," and that decisions must be open and transparent, and "collaborative and inclusive" with the Nations.[9] The regional assessment was created to place knowledge in sequence before disturbance so that later decisions rest on shared evidence rather than assumptions. By contrast, the SEZ approach accelerates permitting while that evidence is still being assembled.

The request for a regional assessment did not arise from opposition to a single project but from the scope of the Ring of Fire. Multiple mines, access roads, and transmission lines will operate within interconnected watersheds, and contaminants, hydrological changes, and habitat fragmentation move across these systems rather than remaining within project boundaries.[10] That logic reinforces the assessment's design, which standardizes sampling methods across the region and sequences seasonality to capture inter-annual variability across multiple years.

As of now, the regional assessment is set to conclude in mid-2027. The province's new authority under Bill 5 could compress that timeline by allowing approvals for mining activity within shorter timeframes and allow development to proceed by ministerial order.[11] The practical effect of Bill 5 seems to shift the burden of uncertainty from the government onto communities and the ecosystems they rely on for food security, health, and intergenerational teachings. It may also increase industry certainty by streamlining mineral tenure, potentially limiting Indigenous governments' negotiating power in future development. If

monitoring occurs only once development is underway, which is possible under the streamlined process created by Bill 5, the lack of a coordinated pre-development baseline will make attribution to mining uncertain. Mitigation will then be reactive. Consequently, this is not a debate about methodological refinement. It is the difference between science that prevents harm and science that only measures it after the fact.

The Regional Assessment: Why Time, Process, and Baseline Matter

The Regional Assessment[12] of the Ring of Fire arises from years of advocacy by Treaty 9 First Nations who have argued that individual project reviews cannot account for the cumulative impacts of large-scale mining in the James Bay Lowlands.[13] That advocacy led the federal minister of environment and climate change to announce in 2020 that a regional assessment would be created under section 92 of the *Impact Assessment Act*[14] in partnership with the fifteen Treaty 9 Nations. The assessment seeks to combine Indigenous Knowledge and scientific data to build a shared body of information before development begins.

Communities welcomed the federal commitment, but others questioned whether the process would produce genuine influence or simply repeat earlier patterns of consultation without consent. Neskantaga First Nation has consistently raised concerns that the assessment process fragments evidence and undermines shared decision making. In correspondence with the Impact Assessment Agency of Canada,[15] the Nation warned that the current approach "is making shared decision-making and Nation-building worse," and stressed that meaningful consultation cannot occur without being present in the community. Such skepticism emphasizes the challenge of balancing scientific credibility and governance with Indigenous authority in decision making.

The regional assessment's draft terms of reference[16] set out a multi-year schedule determined by geography, access, and climate rather than bureaucratic timing. Travel among remote northern communities depends on short winter-road seasons and, often, limited flights, so each visit requires weeks of coordination and several days of meetings with Chiefs, Councils, Elders, and community members. Community leaders emphasize that consultation must also remain Nation specific. Each First Nation faces distinct ecological and cultural concerns; grouping them all together would erase these differences and reduce sovereign governments to a single administrative category. Chief Solomon Atlookan of Eabametoong First Nation stated that his Nation has repeatedly told Ontario that changing laws cannot alter inherent Indigenous Rights, and that genuine partnership among neighbouring First Nations must replace the tokenism of simply being offered a seat at the table.[17]

Scientific fieldwork is shaped by the same seasonal and geographic limits that structure how knowledge is gathered and shared across Treaty 9 territory. These gaps cannot be addressed quickly. Building dependable baselines requires coordinated sampling networks, hydrological modelling, and field seasons that capture natural variation across spring, summer, and fall. Traditional Knowledge research proceeds through verified parallel protocols by local Knowledge Holders and during visits to the places being described. Nations participating in the regional assessment emphasized that Traditional Knowledge must guide the process alongside Western science. Both the Neskantaga First Nation and the Eabametoong First Nation noted that knowledge grounded in experience on the land cannot be generated through short-term or remote studies, and that meaningful inclusion requires time, travel, and participation by multiple Knowledge Holders.[18]

Although the proposed schedule for the regional assessment likely appears long to the provincial government, it produces efficiency over time. By investing in a regional baseline at the outset, the process avoids duplication and inconsistent data in future project reviews. Once shared data sets and environmental thresholds are in place, proponents can design site-specific assessments more quickly and with consistent reference points. Compressing this timeline under Ontario's SEZ framework would save little time while undermining both data quality and consultation depth, and risk additional delays from potential legal action by First Nations. Furthermore, the ecosystems of the North recover slowly and are characterized by wide seasonal differences.[19] Scientific and cultural knowledge cannot be compressed to meet political deadlines. The regional assessment's duration is therefore not an administrative delay, but the minimum time required to build the foundation for accountable development.

Ecological and Human Stakes of the Ring of Fire

The Ring of Fire lies within the James Bay Lowlands, one of the largest continuous peatland complexes on Earth. Extending across northern Ontario and western Quebec, these wetlands store billions of tonnes of carbon in their soils and function as a major global carbon sink.[20] They regulate atmospheric greenhouse gases through the slow accumulation of organic matter under saturated conditions. Disturbance from road construction, open-pit excavation, or dewatering can rapidly convert this carbon sink into a carbon source. Drainage exposes peat to oxygen, accelerating decomposition and releasing carbon dioxide and methane, both of which contribute to climate change and undermine Canada's commitments to achieve net-zero emissions by 2050.[21] These same wetlands regulate water flow, maintain base water levels during dry seasons, and filter contaminants before they

enter river systems. Once altered, their hydrology is difficult to restore, and even small changes in drainage can increase the mobility of contaminants, amplifying bioaccumulation in fish and wild game. As these processes operate across watersheds that span thousands of square kilometres, the regional assessment's broad-scale framework is the only scientific approach capable of capturing the baseline environmental conditions.

The ecological consequences of disturbance extend directly into human health and cultural continuity. For the fifteen First Nations within the Ring of Fire Regional Assessment area, the rivers, lakes, and wetlands of the Lowlands are not only ecosystems but food systems. Fish remain a primary protein source for many households, harvesting game supports food security and local economies, and the transfer of knowledge is passed between generations. When contaminant levels rise because of development, communities lose both nutritional security and the cultural practices that sustain identity. For example, Neskantaga First Nation, which has lived under a boil-water advisory since 1995, approaches new industrial development with caution. Its insistence that comprehensive baseline studies be completed before any road or mine construction begins reflects experience, not obstruction. These studies should include detailed aquatic, benthic, and socio-economic data collection to understand how proposed access roads could affect its waterways, fish habitats, and community well-being.[22] These scientific and ethical concerns should be inseparable from governance.

The special economic zones authorized under Bill 5 allow cabinet to exempt designated projects from parts of Ontario's environmental legislation and to modify regulatory requirements by ministerial order. Section 7 of Bill 5 states that the lieutenant governor in council may "provide that one or more Acts or provisions of Acts do not apply" or "modify the application of one or more Acts."[23] This framework fragments oversight by enabling project-specific approvals that ignore cumulative environmental effects. A mine, a processing facility, and an access road may each appear compliant in isolation, but together they alter hydrology and emissions across shared watersheds in a cumulative manner. When assessments proceed individually, each community must navigate separate consultations and timelines, a process that favours industrial proponents or government with greater technical and financial capacity. The regional assessment, by contrast, establishes a shared knowledge base that allows all parties to negotiate on equal terms. Diluting or bypassing that foundation would erase the transparency required for meaningful consent, and may, perhaps, disregard the duty to consult.[24] The peatlands of the James Bay Lowlands regulate the global climate, and the fish and wildlife they sustain anchor regional health and identity for the Peoples who live there. Proceeding with development before the baseline is complete risks destroying the empirical record needed to protect both.

Scientific Foundations: Baselines as the Control Condition

Baseline data establish what exists naturally so that change can be measured against it. In the James Bay Lowlands, that reference condition is still forming through the regional assessment. The system's variability is immense. Water levels fluctuate seasonally and between years, carbon concentrations in peatlands shift with temperature and water chemistry, and vegetation responds to natural cycles of fire, flooding, and wildlife activity. Without pre-disturbance data, any attempt to attribute later changes to mining development is a guess rather than a conclusion. This is where the provincial argument for adaptive management collapses.

In practice, beginning development before baseline studies are complete erases the very information that adaptive management depends on. Adaptive management fails when there is no baseline to show whether observed changes fall within or beyond natural variation. Once mining begins, the ecosystem is altered, and each subsequent measurement reflects a system already in transition. Baseline conditions also change over time due to non-anthropogenic processes such as natural cycles in weather and temperatures that should be measured, making pre-development even more important. For example, if walleye tissue methylmercury concentrations are measured as having risen to 0.50 mg Hg/kg after three years of mining activity near a water body, that number is meaningless without knowing whether the baseline was lower or higher than 0.50 mg Hg/kg before development. Natural fluctuations can also vary greatly between years, making it impossible to separate inherent environmental variability from industrial effects without a record of baseline data. A recent review[25] of fifty years of mining assessments across Canada found that projects are routinely approved with "incomplete information, inaccessible records, and fragmented oversight," a pattern that demonstrates how development-first timelines erode the scientific basis for accountability.

Bill 5's justification rests on the claim that approvals can be accelerated without reducing environmental protection, even as the legislation weakens the mechanisms that provide that protection. The legislation[26] removes requirements under the Ontario *Environmental Assessment Act*[27] and repeals the definition of a "recovery strategy" under the Ontario *Endangered Species Act*,[28] reducing the tools used to understand and prevent ecological harm. In announcing the legislation,[29] the minister of energy and mines described it as a "bold plan" to "reduce government review time by 50% to get shovels in the ground," framing accelerated development as a matter of national self-reliance and economic sovereignty. That logic treats environmental data as a formality to overcome rather than the foundation of accountability and good management practice.

The Ontario government's position is that economic uncertainty is unavoidable and that mining should proceed to offset this problem while environmental data accumulate as development advances. The assumption is that any emerging problem can be mitigated via adaptive management and ministerial orders once detected.[30] However, this view ignores both toxicokinetics and ecology. Contaminant accumulation in fish and wildlife, for example, takes years to appear and decades to reverse. By the time elevated concentrations are detected, contamination has already entered the food web, and human exposure may have occurred depending on consumption patterns. Adaptive management cannot undo that exposure; it can only record it after the fact.

Experience from other northern developments demonstrates that recovery from contamination is extremely slow.[31] For example, in long-lived species such as walleye and lake trout, methylmercury body burdens decline only gradually even after source inputs stop. Some fish populations affected by Quebec's James Bay Project still exhibit elevated concentrations more than fifty years later. The contamination was not unforeseen, but its intensity and persistence exceeded predictions,[32] as early modelling had predicted moderate, short-lived increases. Instead, fish methylmercury concentrations in some reservoirs rose to as much as five times Health Canada's tissue guideline of 0.50 mg Hg/kg. While some levels declined slightly over subsequent decades, others have remained elevated or are even higher.[33]

The regional assessment's timeline, extending through 2027, is not excessive but proportional to scientific reality. Early stages of coordination and data collection were also slowed by pandemic restrictions that limited travel to remote northern communities and delayed federal–provincial administrative approvals. These disruptions compounded the logistical barriers already inherent to northern fieldwork, reinforcing the need for a longer timeline rather than a shorter one. Compressing the time frame or beginning mining activity as quickly as possible, as the SEZ framework seems to allow, would destroy the control condition necessary for credible science. The result would not be accelerated development guided by evidence, but development carried out in ignorance of its own consequences. Baseline data are not optional or symbolic; they are the empirical boundary between knowledge and assumption.

The James Bay and Northern Quebec Agreement: Lessons Learned?

To understand why the Ring of Fire Regional Assessment timeline is both justified and necessary, it is helpful to revisit Canada's most influential precedent in northern resource governance. The James Bay and Northern Quebec Agreement (JBNQA) stands as both a warning and a model, illustrating the costs of rushing development without full consultation and, conversely, the benefits of taking time to negotiate comprehensive frameworks that address Indigenous rights and environmental protection together.

In April 1971, the Quebec government announced an ambitious plan to harness the rivers flowing into James Bay for hydroelectric power. The James Bay Project would eventually flood more than 11,000 square kilometres of land. However, the announcement came without consultation with Cree First Nations and Inuit communities in the region. The late Billy Diamond, later Grand Chief of Eeyou Istchee, recalled learning of the decision only after returning from the spring goose hunt, when radio reports described plans to flood Cree territory.[34] The realization that such a profound transformation of their homeland had been decided without notice or consent emphasized the sense of disbelief and betrayal felt across First Nations.

As a result, Cree First Nations and Inuit launched a legal challenge seeking to halt development. In November 1973, the Quebec Superior Court granted an injunction,[35] concluding that proceeding without addressing Indigenous rights would cause "irreparable harm" to Peoples in the region. The ruling was overturned on appeal one week later, but it forced the province to negotiate. Over the next year and a half, Cree First Nations and Inuit representatives engaged in intense discussions that culminated in the signing of the JBNQA on November 11, 1975.

The JBNQA became the first modern treaty in Canada, establishing rights to harvesting, creating co-management boards for wildlife, providing financial compensation, and establishing Indigenous participation in environmental review. It was a milestone that produced meaningful benefits for northern communities, but it was also the product of enormous political pressure. With billions of dollars invested and construction already underway, the Quebec government sought a quick settlement. Negotiators for Indigenous community members faced pressure from multiple sides, including government urgency, community expectations, and the knowledge that refusing to sign might mean the project proceeding without any protections at all.

The speed of the negotiation also left several weaknesses. Environmental assessment before the signing was limited in scope and failed to anticipate long-term cumulative impacts. Flooding vast areas of organic-rich soils produced extensive methylmercury contamination in fish in the reservoirs.[36] In communities such as Chisasibi, fish mercury levels exceeded safe consumption thresholds for decades following reservoir flooding.[37] Elders have recalled how families who had always relied on fish were suddenly told that the fish were no longer safe to eat; many described the disorientation of being forced to abandon a central food source.[38] Health officials told communities that methylmercury concentrations in fish would fall within a few years of reservoir flooding, but elevated concentrations persisted for decades[39] in many waterbodies, leaving households with long-term consumption advisories or exposure to methylmercury when fish were consumed.[40]

The history of the JBNQA shows that the costs of rushing consultation and assessment ultimately exceed the costs of waiting. What appeared to be fast-tracked progress in the 1970s led instead to half a century of conflict. The timeline tells the story: the James Bay Project was announced in 1971, the JBNQA was signed in 1975 after only eighteen months of negotiations, and by the early 1980s major generating stations were operational. Except, the following decades were dominated by litigation, mercury crises, and further negotiations. This period culminated in Cree First Nations campaigning, which halted the Great Whale Project in the 1990s and resulted in new benefit-sharing arrangements signed nearly thirty years later.

The JBNQA is relevant for the Ring of Fire because it demonstrates that negotiated frameworks combining environmental science, Indigenous rights, and shared governance can succeed when they are given sufficient time and authority. It also shows how political pressure to move quickly can permanently weaken those same frameworks. The dual legacy of the JBNQA, its successes in co-management and its failures in environmental protection, offers Ontario a potential guide for what could be emulated and what should not be repeated.

Implications of JBNQA for Bill 5's Governance and Accountability: Lessons Used?

Part of the JBNQA's legacy is in the creation of boards that gave Cree First Nations and Inuit direct roles in decisions affecting wildlife and land use. These institutions, such as the Cree Regional Authority (now Cree Nation Government) and Cree Board of Health, have survived for nearly five decades because they were designed with clearly defined jurisdictions, stable funding, and authority embedded in law. Ontario can mirror this success by ensuring that Treaty 9 Nations have equivalent

authority in the regional assessment process and any future development decisions. That authority should extend beyond consultation to include co-development of research protocols, control over data, and binding participation in future project approvals, should the Treaty 9 Nations wish. Where Quebec's process eventually empowered Indigenous governments through institutional permanence, Ontario can build that structure from the start by embedding Indigenous decision making directly into assessment and monitoring governance.

The other part of the JBNQA's legacy is the weakness that came from what was done too quickly. Environmental baselines were incomplete, cumulative effects were not assessed, and development began before the full consequences of flooding and mercury mobilization were understood. Those scientific omissions produced decades of harm that no later negotiation could fully repair. Ontario now faces a direct parallel. If development begins in the Ring of Fire before baseline data collection is complete, the resulting uncertainty about contaminants, environmental disturbance, and hydrological change will make it impossible to attribute impacts or design mitigation with confidence. The province therefore has an opportunity to learn from Quebec's mistakes by preserving the integrity of the regional assessment timeline rather than treating it as a bureaucratic obstacle.

To apply the lessons of the JBNQA, Ontario must allow the regional assessment to be completed before approving major development. This would mirror the JBNQA's long-term co-management successes while avoiding its environmental failures. This means respecting the 2027 timeline rather than circumventing it through SEZ exemptions. Stable, long-term funding for Indigenous-led monitoring would ensure that oversight continues after project approvals, preventing the inequities that arose when JBNQA compensation was front-loaded while environmental monitoring remained underfunded. Benefit-sharing mechanisms should be linked to measurable environmental outcomes rather than one-time financial offsets, creating accountability that aligns economic interests with environmental protection.

Most importantly, giving Treaty 9 Nations joint authority over assessment protocols and data ownership would transform participation from consultation into co-governance, which is the condition that produced the strongest elements of the JBNQA. This authority must include meaningful control over research design, data interpretation, and decision-making thresholds. Without such structural changes, there are risks of replicating earlier patterns where Indigenous participation remained advisory rather than decisive. For the Ring of Fire, success will depend on whether Ontario treats this history as precedent rather than warning. The province can either invest time in science and partnership now, or face generations of remediation and renegotiation, and possibly litigation, later.

Conclusion: Scientific Integrity as the Basis of Governance

The conflict between Ontario's Bill 5 and the federal regional assessment is more than a jurisdictional dispute. It is a test of whether environmental decisions will be grounded in evidence or accelerated for development, and whether Treaty 9 Nations will retain the conditions necessary for informed governance of their lands. That outcome depends on understanding environmental change before development begins. Allowing development to proceed without baseline studies removes the empirical foundation needed to distinguish natural variation from human impact, replacing prevention with uncertainty.

The regional assessment's multi-year structure, integrating Indigenous Knowledge and Western science, is the only credible means of generating information that can support adaptive management and defensible approvals. Compressing this process to accelerate development undermines environmental protection, weakens public accountability, and erodes the legitimacy of future decisions. Scientific standards cannot be adjusted to meet political timelines; ecological processes set their own pace. Without complete baseline data there can be no accountability, and without accountability, there can be no claim of responsible development.

Author Biography

As a settler toxicologist and mercury specialist with training in impact assessment, I study how development moves contaminants through northern ecosystems and how these exposures affect human health. My goal is not to oppose development but to ensure that it rests on informed and accountable decision making. The concern lies in how development proceeds and whether the information required to prevent harm is in place before decisions are made. This commentary does not presume to limit or prescribe how Treaty 9 First Nations choose to negotiate resource development. It aims instead to clarify the scientific conditions that make informed decision making and accountability possible within Bill 5's accelerated framework.

Notes

1. Bill 5, *Protect Ontario by Unleasing our Economy Act*, 2025, 1st Sess, 44th Leg, Ontario, 2025, assented to 5 June 2025, https://www.ola.org/en/legislative-business/bills/parliament-44/session-1/bill-5.
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The Northern Review
Exploring human experience in the North
The Northern Review 58: 127–128
https://doi.org/10.22584/nr58.2025.011
Published at Yukon University, Canada

Book Review

Northerny. By Dawn Macdonald. University of Alberta Press, 2024. 80 pp.

Reviewed by John Morgan*

Dawn Macdonald's poetry collection, *Northerny*, is full of high spirits, wit, and intriguing poetic experiments. It takes the reader on an exhilarating adventure in terms of place (the remote north), form, and language. The poems are always questing, never settling for easy solutions.

The book opens with a poem called "First Things," which features an eggshell that's been blown out and "Inside / was a cathedral." The egg is described as "a riddle wrapped up … brooded, clucked upon." Eventually, a chicken turns up too and the poem concludes, "Last things follow first," delivering its answer to the which came first riddle.

Macdonald's inventiveness extends to particular words—not gobbledygook as in Lewis Carroll's "Jabberwocky"—but plausibly formed English words, like "overmarmaladed" and "orangelessness," both of which appear in the poem "Aperture." The poem is about unsuccessfully searching for a fox, which ultimately shows up as the image of a fox's tail flicking "from cloud to cloud" in the sky. The title of the collection, "Northerny," also seems to be made up. But my favourite word invention describes the lowest layer of packed down snow, which won't come off the sidewalk when you're shovelling, and hence is "unshovelable." You have to say that word out loud and let it roll around in your mouth to get the full taste.

Macdonald's wit includes lots of punning and word play. For example, the poem "About the Author" plays on the author bio format. It begins: "About the author hangs / a nimbus of expectations and defeat." And it goes on to say:

> She walks a lot
>
> but cannot walk
> this algae off her
>
> an offer too good
> to be, etc….

And later in the poem we learn that "The author has a body // like and liking other bodies." Her word play isn't just on the surface, because in this basically lighthearted poem, the reader can discern elements of the poet's desires and self-questioning.

Occasionally a poem may be too clever for its own good (or at least for me to grasp its point). For instance, "Transcribed on Leaves Thrown into the Wind" begins "Sometimes I talk too fast and,"; then it hops down the page to the notation "[five lines missing]" followed by more skipped lines. The intriguing title puts pressure on the fragments that follow to be vivid and epigrammatic, but instead I found them puzzling. The wind behind this poem is strong ("an eight on the Beaufort scale") but its ultimate point blew past me. On the other hand, the poem "The town filled up" combines prose and a scattering of the word "(coyote)" in an amusing and effective take on "invasive species." The "foxes" here aren't the homegrown kind, but rather intruders from Toronto.

We learn some actual facts "about the author" on the back cover. Macdonald was raised "off the grid" in Whitehorse, Yukon, and this off-the-gridness is spelled out in a series of poems toward the end of the book. In one of the book's prose pieces she writes: "On the radio they were saying how technology is everywhere nowadays. We looked from the radio, to the lightbulb, back to the radio, which was about all we'd got." Her schooling is alluded to in the poem "Please Leave On," where the initials P.L.O. on the chalkboard are misunderstood by the kids to mean Palestine Liberation Organization. "Our wisdom was the kind / that's learned in Current Events ….// We got in trouble … / for reading / unassigned texts." In another prose poem sarcasm underlines her annoyance with conventional northern subject matter, as commonly displayed by artists from down south: "wow that's *so real*, those Northern Lights sure do resonate on a hipster wavelength."

Macdonald's perspective on life in a remote northern community includes instructions for plucking a chicken, a skirmish against wasps in an outhouse making use of spray paint, and an anecdote about a woman waiting for a bus "who was clearly not too familiar / with the whole system of public transit." I won't give the punchline away, but it should bring a laugh, at least it did for me.

Northerny is a pleasure to read and to explore. There are some sharp turns in the climb but the view is expansive. The last sentence in the book is "the and" (not, as we might expect, "the end"), and so we're invited to look forward to more work by Dawn Macdonald to come.

***John Morgan** moved to Fairbanks, Alaska, in 1976, to direct the creative writing program at the University of Alaska; he has published eight poetry books, an essay collection, and four chapbooks, and his work has appeared in *The New Yorker, Poetry, The American Poetry Review, The New Republic, The Paris Review,* and many other journals. https://www.johnmorganpoet.com

The Northern Review
Exploring human experience in the North
The Northern Review 58: 129–131
https://doi.org/10.22584/nr58.2025.007
Published at Yukon University, Canada

Book Review

Nome: The Bering Strait Seen Through Its Most Storied City. By Michael Engelhard. Corax Books, 2025. 306 pp.

Reviewed by Christopher David Adkins*

When colleagues and friends ask me about Alaska, they sometimes ask if I've been to Nome—and I tell them I was supposed to go, but never did. The story has become part of my own personal folklore. You see when my father died, my mother, fresh in her grief, worried about me travelling to so distant a destination, and begged me to reconsider. Not wanting to upset her, but travel grant for fieldwork in hand, I compromised by going to Anchorage instead. It is there that I first saw the northern lights, and felt my late father's loving presence in the skyborne phosphorescence. So no, I never did end up visiting Nome—but it all worked out in the end.

Reading *No Place Like Nome* by Michael Engelhard, however, is an elegant solution to having never been there. Engelhard, a seasoned wilderness guide and outdoor instructor in youth programs, and a former Nomeite besides, has taken his lifetime of experiences and interests in and around the city of Nome, and written about the stories, places, and people that he feels deserve to be talked about more. He does this in a delicious mix of humour, wit, and—always a necessity in Alaska—warmth. The title is a pun, shared by a much older memoir by Artis Palmer (Morrow, 1963) and, of all things, a 1990 Yogi Bear animated special (Hanna-Barbera Home Video), each a punning reference to *The Wizard of Oz*.

The historiography around Nome is not enormous, and Engelhard's work is a welcome, if uneven, addition—his humble inference that he is offering "much material of less than earthshaking significance" (p. 42) notwithstanding. It joins the magisterial Terrence Cole's *Nome: City of the Golden Beaches* (*Alaska Geographic*, 1984), and the more technical *Empire's Edge* by Preston Jones (University of Alaska Press, 2007), as well as broader texts that feature Nome, the town and its people, as a central feature, such as the by-now classic *The Cruelest Miles* by Gay Salisbury and Laney Salisbury (W.W. Norton & Company,

2003). Engelhard's chapter on Bernard Hubbard, the Glacier Priest, will be a welcome addition to a newly emerging canon of Hubbard-related studies led by the contemporary *The Glacier Priest: Father Bernard Hubbard and America's Last Frontier* by Josh McMullen (University of Notre Dame Press, 2025).

"Stories hide within stories there, nested like matryoshka dolls," Engelhard tells us (p. 23), and indeed one is astonished to find just how deep Engelhard goes in his grand tour of Nomeite environs and history: ivory harvesting, jade carving, reindeer herding, and lemming breeding, among many others, are all introduced with Engelhard's flashes of insight and a journalist's attention to detail.

But therein lies the largest difficulty with the book itself. As much as Engelhard ruminates and brings to life Nomeite and Alaskan history, it is not a *history book* and does not treat its subject in the way a historian would. There is a trade-off here. Engelhard's dazzling language and brilliant raconteur style means that his use of history itself is like a librettist in an opera: sweeping and beautiful, but once the performance is concluded it is expected to fade back where it came from. Most gravely, the book at no point cites any sources (although some explanatory notes do come with illustrations). The omissions can be frustrating. We hear of an encounter between Wyatt Earp and Charlie Chaplin, a marvel of Americana (p. 63). But how did Engelhard get the information to tell the tale? For that matter, exactly where did the valuable, revealing quote by the Nome Kennel Club (p. 136), which compared the All Alaska Sweepstakes to the Kentucky Derby and Battle of Marathon, come from? Bernard Hubbard, lighting banned movies on fire to inaugurate a bronze statue of Jesus Christ (p. 164), is a striking image, but where exactly did Hubbard talk about it? These are important, indeed profound moments in Nomeite, Alaskan, and Western American history—so one hopes the curious reader at least has Google. Although Engelhard's rapid-fire anecdotes and penchant for finding peculiar coincidences in and around Nome's history will delight most lay readers, the professional historian and cultural scholar will be left scrambling.

But even here Engelhard makes some strident choices that many other readers will immediately take issue with. Right from the beginning he makes clear that he wishes to write about the less famous, less explored aspects of Nome history, which is welcome, but he frames it problematically, inferring that he had nothing else to add to these topics. Still, some subjects are not explored *enough*. "So, here, you'll find … Katmai the goggled pack husky, not Balto the Serum Run's star, 'scrub dog' to snobbish critics" (p. 41). Even if we excuse the fact that the only time Balto ever got called (correctly) a "scrub dog" was by the man who raised and trained him, Leonhard Seppala—the greatest musher of all time and not exactly what one would call a *snobbish critic*—Katmai (Hubbard's beloved dog who was murdered in California, something Engelhard fails to mention) actually does not

appear all that much as Engelhard promises. In fact, the storied canine culture of Nome—a city founded by dogsled during its gold rush years and the nexus of both mushing culture and the sled dog as an Alaskan symbol for three decades—is only gestured at. His assertion that the Iditarod "has lost a bit of luster" (p. 41) is sure to raise more than a few eyebrows. The book also lacks a final chapter, a conclusion, to allow the reader some space to explore and reflect on what Engelhard has laid out over the course of the text; rather, the whole thing ends with jarring abruptness on a chapter about cycling.

Where *No Place Like Nome* succeeds, however, is letting outsiders take an insider's tour. There is a logic to Engelhard's choices, bothersome as they may be to someone expecting something a little more scholarly. As inconvenient as it may be to the academic, Engelhard's style is probably best suited to sharing what he passionately believes deserves to be discussed and remembered—culturally, historically, socially—about a place and its people. Engelhard shines a spotlight on Nome's Indigenous Peoples with an easygoing, neighbourly friendliness that is refreshingly authentic. He writes with a matchlessly deep love and fondness for his topic: Nome, Alaska, the myths and symbols of the Great North that he so obviously and earnestly wants to keep alive with the artistry of his storyteller's talent. "It is as vital to link the past with the present," Engelhard insists (p.42). "The two are not sovereign countries; we have one foot in each." Yet I would argue that Engelhard has far more than feet in these "sovereign countries" but, rather, his whole heart. With this in mind, the book's flaws can be readily forgiven.

Ultimately, *No Place Like Nome* is really less a book at all, and still less a collection and examination of Nomeite culture, than it is a confession of faith, a statement of belief in both the dead and the undying, a winking celebration of Alaskana.

After all, having read it—I feel I, too, have finally been to Nome.

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The Northern Review
Exploring human experience in the North
The Northern Review 58: 133–135
https://doi.org/10.22584/nr58.2025.012
Published at Yukon University, Canada

Book Review

Frontier Science: Northern Canada, Military Research, and the Cold War, 1945–1970. By Matthew Wiseman. University of Toronto Press, 2024. 329 pp.

Reviewed by Ken Coates*

Matthew Wiseman has written a timely book. In the middle of the 2020s, Canada is increasingly preoccupied with a combination of Arctic sovereignty, northern security and defence, and scientific investigations. Fuelled by Prime Minister Mark Carney's repeated references to a new Arctic strategy and highlighted by a promise-rich Fall 2025 budget, the Canadian North is getting more attention than it has received in generations. Wiseman's study of Arctic science during the Cold War reminds us of a time when Canada's commitment to the Far North was more urgent, science-based, and, most importantly, far-reaching, based as it was on the prospect of war with Russia, a nuclear power with long-standing Arctic capabilities and aspirations.

Wiseman's main argument is that Canadian scientists played a fundamental role in developing the nation's response to the Cold War, providing practical advice on an urgent basis at a time when Canada faced an existential threat in its Arctic regions. The author does a fine job of situating the surge in Arctic science within the political and military tensions of the postwar world, when Russian aggressiveness and northern expertise put the country on its heels in terms of military preparedness. As Canadians cope with the relatively modest military threat posed by Russia, we have forgotten the age when the threat of a Russian ICBM (intercontinental ballistic missile) attack dominated North American nightmares.

The country was, in 1945, ill-prepared for military engagement in the Far North and lacked a basic understanding of how to conduct military operations in Arctic environments where they faced an unknown but potent threat from the Union of Soviet Socialist Republics. A large and diverse group of scientists was

mobilized to prepare the Canadian military for northern activities, responding to the short-term needs of the Canadian armed forces and laying the foundation for a rapidly expanding economic, social, and political presence in the Far North.

Wiseman's study proceeds on a thematic basis, examining a wide variety of important topics. It starts with a study of the important Defence Research Northern Laboratory at Fort Churchill and some provocative studies of human adaptation to Arctic climates (few of which would get past modern ethics reviews, an issue that Wiseman considers at length). There are chapters devoted to entomology and biological warfare, as well as the technologies of northern military operations. The section on Operation Hazen, a major meteorological and geological study of Ellesmere Island, coordinated with the International Geophysical Year (1957-1958), is a particularly insightful examination of the challenges of polar research and the long-term benefits of extensive scientific study of a little-known area. Arctic radiation studies provide a stark reminder of the real—and widely anticipated—outbreak of nuclear war and the first-ever Canadian examination of the potential effects on Arctic regions.

There are portions of this excellent study that might have been recast. The diversion into the examination of Frederick Jackson Turner's famed "frontier thesis" is not particularly effective; there are lengthy digressions into Canadian historiography that will deter readers more interested in science and policy. The long-term impact of these scientific enterprises on Indigenous people and communities in the Far North is underdeveloped, as the author carefully explains. More comprehensive comparisons with American activities in Alaska would have been helpful, particularly through an examination of the leadership role played by the research-oriented University of Alaska Fairbanks and the absence of a comparable northern Canadian university based in the North and engaged with Arctic science (a gap that is being addressed through the continued evolution of Yukon University and the creation of Inuit Nunangat University). The story of Bill Pruitt, later a star Arctic researcher in Canada, is told only in small part; his later flight from the University of Alaska over the university president's wholehearted support of the peaceful use of atomic weapons in Alaska is a vital part of the Cold War tensions between Arctic science and militarization. These elements only highlight the utility of Wiseman's study as a launching pad for further academic research on the topic.

Frontier Science is not a celebration of endlessly impressive research successes. It documents the many challenges and shortcomings of Canadian scientific research. The extensive detail on the scientists and their wide variety of projects illustrates the difficulties—and enormous demands on them—of doing

foundational research in an area that was little explored scientifically. The study also reveals the unexpected long-term impacts of the military-inspired research activities. As Wiseman argues, the Cold War investigations and exercises laid the groundwork for future scientific, commercial, and administrative actions across the North. To a surprising degree, this book demonstrates that Cold War science underpinned Canada's still incomplete coming of age as an Arctic nation.

Wiseman's work is, appropriately and deliberately, Ottawa-centric and is strongest in the study of defence policy and government planning. His examination of the work of individual scientists and professional teams is first-rate. The study of the engagement with northerners and Arctic communities, as the author makes clear from the outset, is less comprehensive and would require additional community-based research. Wiseman makes it clear that Indigenous perspectives are essential to a full understanding of the impact of scientific research, pointing the way to important avenues for further research.

The overly long and complex conclusion reveals both the diverse nature and impact of Arctic military research, as well as the author's struggle to make sense of a broad and complicated story. This is not a theme that lends itself to easy or straightforward analysis and Wiseman has difficulty providing a succinct commentary on the role of Arctic military research in the North post-Second World War. His efforts to integrate Indigenous considerations, to situate scientific research in the broader "idea of the North," to document the difficulty involved with connecting military research to the "opening" of the Arctic during the resource booms in the 1950s and 1960s, among a variety of other themes, are admirable but a little distracting.

In the end, I had hoped for some commentary that linked the postwar developments to the contemporary preoccupations with Arctic security, Indigenous empowerment, resource development, and national priorities. *Frontier Science* ultimately argues that the postwar era was a distinct time and space, characterized by a preponderant interest in Arctic defence and scant concern for Indigenous inhabitants, and providing more warnings and context than lessons and ideas for contemporary politicians and policy-makers. That said, Wiseman's study is essential reading for anyone seeking to understand the development of the Canadian Arctic after the Second World War.

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The Northern Review
Exploring human experience in the North
The Northern Review 58: 137–139
https://doi.org/10.22584/nr58.2025.008
Published at Yukon University, Canadas

Book Review

The Nancy Poems. By John Morgan. Cirque Press, 2024. 45 pp.

Reviewed by Dawn Macdonald*

Poet John Morgan first arrived in Fairbanks, Alaska, in 1976 for a posting as director of University of Alaska's creative writing program. He has never completely left, although he now divides his time between Fairbanks and the more southerly port city of Bellingham, Washington. The places where we live out our lives, by choice or circumstance, have enormous consequences for our character and our work. Equally consequential is the matter of who we live them with. In *The Nancy Poems*, Morgan draws a thread through nearly six decades of marriage to the woman he loved "at first sight," though she, we learn, was initially under the impression that they were "just friends."

Published by Anchorage's Cirque Press, *The Nancy Poems* constitutes a slim volume of 33 pages, somewhere between a chapbook and a full-length collection. It's a deeply personal document, frequently addressing itself directly to Nancy, as in the poem "Married," which concludes with these lines about a first Christmas as husband and wife—"... the dozen / gates of heaven squeak open; angels / cry; carols rise from the ice rink / speakers. We exchange books, beam, have / breakfast in bed. Christ, I love you, Nancy!"

The personal nature of the work does not mean it is without Morgan's typically high level of craft consciousness. He brings careful attention to the interplay of sounds within and across his lines. The near rhymes of "squeak" with "rink" and "speakers" sustain movement through the passage quoted above, as do the sound similarities between "dozen", "heaven," and "open" as well as the pair "angels/exchange." At the same time, though, there is a degree of sentimentality that enters into *The Nancy Poems*, which can, at times, border upon the twee. The squeaking gates of heaven make for an interesting image, and the invocation of Christ as an expletive announcing a secular love is surprising and clever, but

perhaps the crying angels may be a tiny bit over the top. This same tension is at play across the book, between a finely tuned ear and a somewhat overeffusive turn born out of nostalgia and sincere emotion. The feeling of a skilled craftsman occasionally falling into excess can be quite touching, and many readers are likely to find these pieces deeply affecting, as we in turn are moved to reflect upon our own past and present loves.

Morgan makes use of the sonnet in *The Nancy Poems*, as befits a collection of love poetry. His sonnets are unrhymed (except for the subtle cross rhyming that occurs mid-line). A loose meter circles around a baseline of iambic pentameter in pieces like the 14-line opener, "First Date—The Sviatoslav Richter Recital" or "Sonnet of Lost Labor." Just as the form varies from the strict rules of the traditional, so the content takes us to the less obviously romantic elements of a marriage: brief conflicts (resolved by poem's end), little letdowns, a miscarriage. There is a rough chronology to the collection, beginning with the couple's first date (which Nancy may not have known was a date) and progressing through the wedding, the move to Fairbanks, the birth and growth of children, and into aging. Two sonnet-length poems near the end of the book, "And Never Look Back" and "November Surprise," both invoke the metaphor of the butterfly for the ephemerality of youth. The insect in the second of these two pieces has not only appeared far too late in the season but has also made its way indoors to beat against the window glass. "Its wings, like paisley, red and brown, quiver / as it paws the pane, embodiment of / summer in late fall, cold-blooded thing, / whose hopes will never be this young again."

Morgan works in the lyric tradition—accessible, autobiographical, and with a studied application of craft. Often he presents an anecdote, some small moment of interaction or observation, as illustrative of larger truths within a relationship or a life. He self-consciously reflects upon these poetic choices in "The Beach Walk at Port Townsend, WA" where he muses, "I came here to think about poems: / which details count? The whole may / be luminous, but broken into parts // which sandgrain, which occasion rends / the heart? When I phoned home today / you said our two-year-old had learned // to fear his shadow on the road. He / stared and stared and wouldn't move. / Then he saw yours. "Everyone has // a shadow," you said, but he insisted / "*Papa!*" thinking it was me. ..."

Shadows recur and encroach as the collection nears its finish. Towards the conclusion of the long poem "Mt. Tamalpais," in a sentence that wraps five lines, Morgan writes, "The mind / strays through these primal woods, impossible / to say I am this thing that was, trails / winding among shadow with no final / destination we can name."

The destination may remain obscure, but in *The Nancy Poems* Morgan succeeds in delineating the shape of the path that has led to this point within a life. It's a quiet, reflective collection of admirable concision, and a marvelous gift to a beloved wife.

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The Northern Review
Exploring human experience in the North
Published at Yukon University, Whitehorse

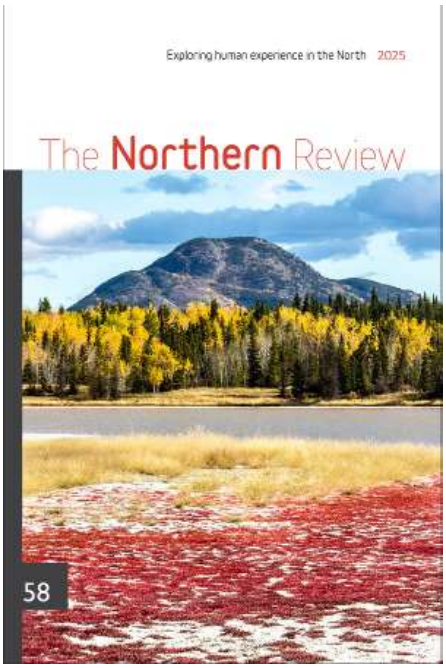
Cover Art

Layers of Autumn Splendour at the Takhini Salt Flats

Ray Marnoch
Whitehorse

The Takhini Salt Flats is a unique geologic feature of sediments from ancient Glacial Lake Champagne, in the Ibex Valley 40 km northwest of Whitehorse, that comes alive in the fall.

Each year, thanks to the dry, warm summer climate of the Ibex Valley, the lake water evaporates to reveal white flats of sodium sulphate salts. This special habitat supports several species of birds and wildlife and unique salt-loving plants. Most peculiar of the these plants is the Arctic glasswort (*Salicornia borealis*), an annual, succulent halophytic plant that is green in spring and ripens to vibrant red in the fall.



The Takhini Salt Flats hold deep cultural importance for the Kwanlin Dün First Nation (KDFN) and the Champagne and Aishihik First Nations (CAFN), and were specifically selected by the KDFN as part of their Settlement Land, to protect their ecological and cultural value.

As a long-time resident of Whitehorse, I love visiting these unique Takhini Salt Flats in the fall to enjoy the stunning layers of colour.

September 18, 2025