MUSKRAT FALLS

How a Mega Dam Became a Predatory Formation

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Hydraulic Imperialism and the Infrastructure of Canadian Colonialism

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Milton Born With A Tooth had a dream. In 1990, the Oldman River Dam was under construction to expand the agricultural irrigation network to hydrate crops on southern farms in Alberta. But those in the Piikani First Nation warned that the river diversion would have devastating environmental impacts affecting fish habitats and their harvesting economies. In his dream, Born With A Tooth was visited by a beaver who showed him how to take matters into his own hands and divert the flow of water back to its natural course. Born With A Tooth rented a bulldozer and, with the Peigan Lonefighters Society he had helped to found, they fought back against the project and tried to fix the damage that had been done. He spent sixteen months in jail as a result, since he violated a court injunction to stay away from construction and fired warning shots in the air when police approached. Although he was criminalized by an Alberta court, Born With A Tooth was following his nation's own law to protect the flow of water from being choked and killed by dams.

The Peigan Lonefighters Society is one of many resistance movements that has emerged in the struggle to control the flow of waters in Canada. In the 1930s, when the Algonquin of Barriere Lake in Quebec encountered a dam that would flood their territory, they cut half away with their hands and wooden instruments to maintain the integrity of Kichi Sipi (the Ottawa River) that supported so much life along its course

(Pasternak 2017, 68). There are dozens and dozens of such stories. Across the country decades later, the Association of United Tahltans asserted their position against BC Hydro development in their territories, affirming that the construction of dams in the Stikine-Iskut watershed was non-negotiable and that this position was a "matter of survival" (Faustmann 1982, 13–14). The project failed, but many other hydroelectric dams have pushed forward, despite the ignored presence or active resistance of Indigenous communities.

Today, at Muskrat Falls, affected communities have pulled together to protect the lifeblood of the Churchill River from losing its natural weight and motion in exchange for an unneeded market-based power of energy supply. Like the Peigan Lonefighters Society, the Labrador Land Protectors have also shown "contempt" for injunctions filed to remove them from construction sites—a legal weapon of last resort to enforce the development of massive infrastructure.

Others in this anthology discuss the details of the Muskrat Falls dam with great expertise of the project and its local politics. As an anti-colonial educator and activist living in Ontario, I've often wondered why the story of hydro power isn't one of the more common means of illustrating the history of colonialism in Canada. Infrastructure development in general is often hived off, for example, from treaty history and Indian Residential Schools, though all of these issues are deeply intertwined. While the building of the railroad and telegraph lines may be a more broadly understood incentive for the prairie treaties, less known is that Treaty 9 was partially negotiated with potential for hydroelectric power in mind. It is also not widely known that many Indigenous children were taken from their homes and put in residential schools under the pretense of "neglect" due to gastrointestinal infections. The cause of this common sickness? Stomach bugs became prevalent in communities displaced from clean water sources whose local waterways had become contaminated through dams, development, and agricultural run-off.[1] Hydroelectric development radically transformed the landscape and economies of Indigenous peoples with cascading effects through their social worlds.

The massive alteration of waterways in this country as a result of what Macfarlane and Kitay (2016) call "hydraulic imperialism" exemplifies how much of Canada's economic and ecological foundation

is tied up in Indigenous dispossession and resistance. What is the power of water in Canada? It is an export commodity, a surging southern demand upon the North, an ironic deprivation on reserves hardest hit by dams, and a lightning rod of epistemic difference in relationships to water between settler and Indigenous societies. Of course, a colonial history of hydroelectric power in Canada would be an insurmountable challenge in any length of written space. But here I hope to trace a finger along some of these broken flows to show the impacts of this energy economy on Indigenous peoples and their lands—in particular, the ways Indigenous economies have been sacrificed for Canadian industrial development. In my conclusion, I also want to point toward a promise that dam destruction and real sustainable energy futures hold for decolonization today.

Apocalyptic Chokepoints

While climate change has generated extreme panic in environmental movements, the prospect of apocalyptic environmental change is something that Indigenous peoples faced and survived throughout colonization.[2] Hydroelectricity has played a central role in this transformative change to the land, waters, and community well-being. So first, the scale, value, and impacts of this transformation must be understood.

It is difficult to overstate the reliance on hydroelectricity in Canada for domestic energy but also as a vital trade commodity. Citing multiple studies, Webster et al. report that "*Canada has diverted more water by damming rivers than any other country*" (2015, 102, emphasis added). This country is the third largest producer of hydroelectricity in the world and accounts for almost 60 per cent of total electricity generation in Canada. For reference, thermal sources, such as coal, nuclear, natural gas, petroleum products, and waste, only contributed 23.4 per cent combined. Canada's biggest hydro buyer is unsurprisingly the United States and, in 2010, Canada exported C$2.2 billion in electricity across the border.

By far the largest hydroelectric dams in Canada measured in terms of capacity and reservoir size are Le Grande complex in Quebec on Cree and Inuit lands and Churchill Falls in Labrador on the lands of the Innu. But massive dams are also found on the Moose River in Ontario,

Nelson River in Manitoba, Saskatchewan River in Saskatchewan, and Peace River in British Columbia. The 713 large dams in the boreal forest zones throughout the country also generate a substantial 39 per cent of hydroelectricity in the country. Thousands of small hydro projects contribute smaller amounts both on and off the grid, as well.[3]

Dams began to dot river shorelines in Canada in the 1800s. The energy was harnessed to power mills and mines and to light lanterns on town streets.[4] In North America, most big dams were built between the 1930s and 1980s. Big engineering megaprojects were ushered in during a period of high modernism internationally, with new technological knowledge of engineers, hydrologists, and geologists driving this vision. In the context of North America, Canada's process was largely decentralized and demand-driven compared to the New Deal planning and employment scheme in the United States (Loo and Stanley 2011). In most provinces, Crown corporations have formed public energy utilities. But the desire to engineer low-cost energy from hydro power most often proceeded oblivious to the vitality of these waterways as transportation routes, harvesting sites, beloved spaces, and spiritual places for Indigenous peoples, as well as habitat, gathering places, spawning sites, and migration routes for other-than-human beings.

The advantage of hydroelectricity is that it is touted as a "clean" and renewable energy source that saves hundreds of barrels of oil from being burned. Given the abundance of waterways in Canada and the excellent returns on investment, for politicians it has been a tempting catalyst for spurring economic growth. But while many have studied the environmental history of Canada, the intersection of Indigenous people, water, and industrialization has only become a focus of study in recent years.[5] Macfarlane and Kitay name the longer history "hydraulic imperialism," which the authors define as "the colonial aspirations of the Canadian state in the process of marginalizing the First Nations [and Métis and Inuit] peoples through the manipulation of hydrological and hydraulic resources" (2016, 382). They cite as example the negotiation of Treaty 9 in northern Ontario, which concerned many issues, but hydro and power were among them. They show how Ontario "stipulated that sites along water ways suitable for the development of hydro-electric power exceeding 500 horsepower should not be included within the boundaries

of First Nations reserves" (387). The hydro power in the region was then harnessed to fuel the local industrial and agricultural economy.

Another site of intense transformation took place on the lands of the Michi Saagig Nishnaabeg in the mid-nineteenth to early twentieth century, when the Trent-Severn Waterway was constructed to provide passage between Lakes Ontario and Huron. This series of locks and dams caused flooding to Mississauga lands, burying graves, contaminating fish, decimating salmon migration, and eviscerating rice beds, among other things. But as Gidigaa Migizi (2018) describes as the most damaging effect of the new hydro corridors, it opened the shorelines to white settlement displacing Indigenous peoples and forever altering the cultural ecology of the place.

The negative impact of deliberately excluding First Nations from the possible benefits of hydro power has been compounded by the re-engineering of their homelands. In fact, some of the first studies in Canada on the impact of hydroelectrical dams on human and environmental health are based on the Great Whale Project in northern Quebec.[6] When Robert Bourassa became Liberal leader in 1970 in Quebec, he immediately focused on damming the James Bay rivers. When his image took a beating with the *Front de libération du Québec* crisis, he doubled-down on damming during his election campaign to appear heroic. Announcing *le projet du siècle* (the project of the century) on April 30, 1971, in a hockey stadium in Quebec City, he promised he would meet the "challenge … the conquest of northern Quebec, its rushing, spectacular rivers, its lakes so immense they are veritable inland seas, its forests of coniferous trees … the whole history of Quebec must be rewritten. Our ancestors' courage and will must live again in the twentieth century. Quebec must occupy its territory; it must conquer James Bay. We have decided the time has come" (McCutcheon 1991, 34). This colonial project was prefigured by Quebec's "decolonization" movement, captured in the slogan "*maîtres chez nous*." Nationalizing all privately held power companies led to the explosive development of Hydro-Québec and the focus on the "wild" North for economic growth and expansion that would test the theory of an independent nation.

The Cree and Inuit were surprised to learn of these grand designs on their territory quite by accident, stumbling across the engineers planning

the disruption to their entire way of life. Until that point, the province had been a largely absent force in their lives, one that had barely provided any services to the nations living relatively remote from the southern centres of urban and political power. Nungak tells the story in *Wrestling with Colonialism on Steroids* from the perspective of a young man negotiating against the formidable power of the province, ironically empowered by a trajectory to break free from English colonization and religious conservatism (Nungak 2017; see also Richardson 1975). The Cree and Inuit fought with everything they had to stop the dam and, in the end, secured the first treaty signed in Canada in over fifty years with the James Bay and Northern Quebec Agreement (see Rynard 2001). Nungak expresses regret for what they lost with the construction of the Great Whale River Project but conveys the incredible duress under which they were negotiating and the triumph at the time just to be heard.

Nation-building through hydro power was also taking place in co-operation between Canada, the province of Manitoba, and Manitoba Hydro with its own "provincial continental modernization" in the Churchill River Diversion (CRD) and Lake Winnipeg Regulation (LWR) projects in the 1970s (Netherton 1993). These "instruments of modernization" (Hoffman 2008, 6) transformed a massive drainage watershed; the Nelson River basin covers over a million and a half kilometres from the Rocky Mountains in the west to the Mississippi River and Lake Superior in the south and east, running throughout the Prairies and Ontario. As Hoffman describes, "These two projects allowed Hydro to develop the Nelson River as a 'power corridor' and to turn Lake Winnipeg into a gigantic 'storage battery.' The projects irreversibly altered the hydrological and ecological characteristics of some 30,000,000 acres, or 50,000 square miles, of northern boreal rivers and forest" (6). The vast change to the landscape had catastrophic impacts on the local Cree communities of York Factory, Nelson House, Split Lake, Norway House, Cross Lake, along with other upstream and downstream First Nation communities.

According to the 2001 Report of the Interchurch Inquiry into Northern Hydro Development, the CRD and LWR projects have proven to be "an ecological, social, and moral catastrophe for northern Manitoba and its Aboriginal inhabitants" (Aitchison et al. 2001, 6). The Panel of Public Inquiry heard testimony from affected Cree communities who

testified to the damage caused. This included reversed water regimes of high water in winter and low water in summer, destroying fish spawning beds and a viable fishery, as well as flooding and erosion of burial grounds, and dangerous conditions of navigation caused by thin ice that held hunters and trappers painfully back from providing for their families and being out on the land that they loved (Niezen 1999).

Economic destruction can be profound even on smaller-scale dams and reservoirs. In 1928, a dam near Ear Falls was constructed where the English River leaves the heart of Lac Seul territory in Treaty 3, raising the water five metres. The impact of the flooding on the Ojibwe community was never considered in the planning and construction of the dam and the tragedy was that the community itself did not receive hydro until 1985, six decades later. But the losses felt in the aftermath were immediate and devastating: total destruction of rice beds, hayfields, timberlands, muskrats, and waterfowl. As described in a report prepared by the community for the Royal Commission on Aboriginal Peoples (RCAP), the community sought to recover these rice beds (Manoomin) and, over decades, families hauled hundreds of kilos of seed lots over hundreds of kilometres to propagate in new waterways (Chapeskie 1994, 16; Usher et al. 1992). After painstakingly rebuilding their economies, the Ontario government then licenced these lakes to non-Indigenous "entrepreneurs." The report describes an incident near Birch Lake where Manoomin was planted in the early 1970s by the Quedents. One day, members of the family saw a plane land on the lake. To their shock, "[t]he new 'owner' of a wild rice harvesting license for the lake got out and ordered them to get off the lake" (Chapeskie 1994, 14). Ontario effectively invisibilized the labour and ownership of Manoomin by an Ojibwe family, effectively conceptualizing this "wild resource" as a public good that they could then privatize.

The impacts of hydroelectric development also have uniquely devastating impacts on women, for example, to their reproductive health and due to higher incidents of gender-based violence with the presence of hydro "man-camps." In terms of reproductive health, Luby studied the Dalles Indian Reserve 38C southeast of Lac Seul. Dalles suffered from hydroelectric development, as well, along the Winnipeg River when the Whitedog Generation Station reduced the flow of water past the reserve, facilitating an accumulation of pulp waste in and around Dalles Channel

(Luby 2015). This contamination endangered the health of infants and breastfeeding mothers with methylmercury poisoning if they relied on wild foods. For likely hundreds of years, expectant mothers consumed whitefish to produce the highest quality of breast milk; they also cooked whitefish and Manoomin soup as a substitute for breast milk that could be bottle-fed to young children (369). The dam disrupted women's ability to maintain their reproductive health. Anishinaabe women are understood to possess breast milk as a gift from Creator and as a medicine. As the massive reservoir reduced wild churning of waters into toxic stagnation and contaminated the fish, soon it became dangerous to consume and was eventually banned. Luby writes that, while much has been written about the impact of collapsing fishing economies on men, little has been written on the impacts on Anishinaabe women, who now had to eliminate breastfeeding and stopped passing down knowledge of the health benefits of whitefish soup.

In terms of gender-based violence, while women have been reporting for decades cases of sexual assault on their homelands by men who travel to work in resource sectors, these reports have been largely ignored. However, recently reports surfaced about Manitoba Hydro workers around the town of Gillam who terrorized women in the community throughout the 1960s to 1980s. As transcripts show, women experienced rampant sexual assault by hydro workers and by RCMP officers who would detain and assault women at the station (Manitoba Clean Energy Commission 2018, 153). This cumulative sexual violence continues to this day, with a recent spate of sexual assaults against Indigenous women reported at the Keeyask dam—725 kilometres north of Winnipeg—where workers have returned to expand dam construction (von Stackelberg 2015).

Recognition and Megaprojects

In recent years, there has been a strategic shift in government strategies for negotiating megaprojects with First Nations, Métis, and Inuit people based on a new policy regime "designed to ensure a more equitable sharing of the resource wealth through the collection by the government of resource rents or that the resources themselves in some cases … are nationalised and managed in a sustainable way" (Veltmeyer 2013, 82). Resource revenue sharing, partial ownership, land claims agreements,

equity ownership, or partnership opportunities are often on the table. The same holds true for hydroelectric power, as we can see from projects like the Wuskwatim dam development—located in the Nelson House Resource Management Area about 45 kilometres southwest of Thompson—as an equity partnership between Manitoba Hydro and Nisichawayasihk Cree Nation. In terms of the Muskrat Falls dam, the Innu leadership signed a partnership with Nalcor Energy, the provincial Crown corporation managing the project, called the *Tshash Petapen* (or "New Dawn") Agreement. The package includes a modern land claims and self-government agreement, settlement for past hydro development grievances against Labrador and the company, and a benefit package for future hydro development for the Labrador Innu.

The shift toward more "equitable" distribution is due in large part to the expansion of Aboriginal rights within new policy frameworks and the need to recognize these rights in order to secure "certainty" in commodity production and circulation. As Dafnos and I describe elsewhere, "the government is increasingly worried about legal victories that recognize Aboriginal land rights, especially in light of escalating struggles over natural resource extraction across the country" (Pasternak and Dafnos 2018, 743). This statement holds true for hydroelectric development.

While the partnership agreements mentioned above are not without their controversies,[7] this strategic shift in recognition also indicates (again) the enormous economic power of hydroelectricity to the growth of the nation that governments and industry seek to protect. Historically, hydroelectricity has distinguished Canada in the world for its boost to the national economy. When central Canadian industry substituted hydroelectricity for coal in the twentieth century, businesses like pulp and paper, electrochemicals, and metal refining flourished, launching the country by the second decade of the century to a global powerhouse of pulpwood and mineral supply (Martin-Nielsen 2009, 113). Hydro power enabled Ontario and Quebec to gain independence from United States coal imports and exercise greater control and savings via domestic low-cost supplies of energy.

Bragging at a world conference early in the twentieth century, Canada announced that "[b]etween 1914 and 1924 … Canada's developed hydro-electric power had grown 100% and the use of hydro-electricity in

Canadian industry had jumped by over 200%—and, even so, Canada had only begun to touch her vast hydro resources" (Martin-Nielsen 2009, 116). Likewise, but slightly later in BC, the "Two Rivers Policy" of the Social Credit government introduced eight storage facilities in the Peace and Columbia Rivers between the 1960s and 1980s, creating a huge driver for industrial development. As Loo and Stanley describe,

> There is no better example of how high modernist development created new terrains of economic activity and new communities then the pulp and paper industry of northern British Columbia, centred on the instant towns of McKenzie. Established in the 1960s, both town and industry were rooted in and reliant on "second nature": they owed their origins to the electricity generated by the Portage Mountain dam (renamed Bennett dam in 1968) and the waters of Williston Lake, which were used to float logs to the mills. (2011, 422)

Today, hydroelectricity is touted as essential to achieve greenhouse gas emission targets against the rise of global temperatures. Canada's own predictions by the Ministry of the Environment project the need for over 100,000 megawatts of additional hydro capacity by the year 2050 (Canada 2016). But hydro power is not without its social and economic costs for Indigenous peoples. How will Canada balance the need for a clean energy transition without perpetuating further colonial dispossession and displacement?

Conclusion

Water insecurity continues to put Indigenous peoples, particularly children, at risk, which is a terrible irony since so much of the clean water Canadians have access to is a result of diversions at the cost of First Nation communities.

But there are beacons of hope: we also have an example of the most amazing consultation process in Canadian history *undertaken regarding energy infrastructure*, which was the Mackenzie Valley Pipeline Inquiry

in the mid-1970s, led by John Berger. Berger did things differently—he heeded advice at preliminary discussions and waited a year to secure funding for Indigenous participation, then met with anyone interested to speak, for any length of time they required. He visited homes and attended ceremonies. The inquiries were covered in local papers and generated discussion across the region. He secured funding for multilingual CBC-funded broadcasts that covered hearings, as well. He led consultations in southern cities and engaged the urban public, as well, and the first volume of the inquiry was on the bestseller lists.

There is hope in the ongoing struggle of Manitoba hydro-affected Cree communities, too, such as the Wa Ni Ska Tan alliance of hydro-impacted communities that brings together a cross-regional research network of Indigenous leaders, researchers, academics, and social justice and environmental NGOs. In 2019, Indigenous women leaders from the network traveled to the United Nations to call for the province to revoke Manitoba Hydro licence deviations that allow for ongoing augmentations to original hydro licences (Dawkins 2019). The same coalition has led protests in front of Manitoba Hydro offices, bringing in busloads of schoolchildren to be educated and integrated into an intergenerational struggle for justice and compensation (Barghout 2018). After a six-week occupation of the Jenpeg Generating Station in 2014, the Pimicikamak First Nation—affected greatly by the loss of lands and livelihood due to a dam—also finally got traction with Manitoba Hydro to make real and substantive contributions to the hard-hit community. Since 2017, the utility has been providing grants for programs designed by the community to improve their quality of life (Paling 2018).

Other hopeful horizons on the history of damming include a de-damming movement for smaller disruptions to the flow of waters across these lands. For example, in New Brunswick, the Eel River Bar (Ugpi'Ganjig) Mik'maq community was devastated by the introduction of a dam in 1963 on the river. As they describe: "No longer did the falling tide remove the sand that was deposited with the incoming tide and by 1972, only nine years later … the clam beds at Eel River were completely shut down" (Eel River Bar First Nation n.d.). The tide's force withered and no longer dragged sand back and forth over the clams, but now buried them in the silt. Settling pollutants in the water contaminated

the beds, as well as did the sewage and effluent pumped into the river by upstream towns. The collapse of the shellfish harvest was not only economic, besides ensuring that no one was ever hungry, their gathering place as a community was by the shoreline and constituted the heart of the community fabric.

Without the harvest, people became isolated from one another. But in hopeful news, 2009 marked the launch of the Eel River Dam Removal Project in cooperation with the government of New Brunswick. Though the return of shellfish has been slow, it is breathing new life into the community. Coincidentally, when researching for this essay, I came across another dam removal initiative also on the Eel River but in California, US. Perhaps hope is springing eternal in other places, too.

Endnotes

1 See, for example, Bennett, Blackstock, and De La Ronde (2005); and, concerning child apprehension today related to gastro illnesses, see MacIntosh (2009).

2 See, for example, Estes (2019), Perry (2016), and Richardson (1975).

3 All numbers in this and the previous paragraph are from Webster et al. (2015).

4 The earliest hydroelectricity was generated by the Ottawa Electric Light Company that powered street lights and mills in town at Chaudières Falls in 1881, for example. Then, in 1895, electricity was transmitted at 11,000 volts (V) over 27 kilometres from a hydro station on the Batiscan River to Trois-Riviéres, Quebec. Meanwhile, in 1898, the Kootenay River helped generate the necessary power to support the gold, silver, zinc, and lead mines in nearby Rossland (Canadian Hydropower Association 2008; Martin-Nielsen 2009).

5 In particular, academic publications dedicated to describing the socioeconomic and ecological impacts in First Nations communities first focused on the James Bay Cree and northern Cree of Manitoba. Regarding the former, some key publications include: Girard, Noël, and Dumont (1996); Roebuck (1999, 89); Noël, Rondeau, and Sbeghen (1998). Regarding the former, see, for example, Chodkiewicz and Brown (1999), Kulchyski (2008), Loney (1995), and Waldram (1998).

6 See n.5.

7 CTV News (2011), McLachlan (2018), and Penashue (2019).

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Exploring the Health and Well-being Concerns of Labrador Land Protectors

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Introduction

This work considers the health and well-being effects of the Muskrat Falls project on those living nearest to it. The project has been critiqued by many in Newfoundland and Labrador, as well as across Canada, for its environmental, economic, and health implications, but some of the most consistent resistance efforts against the project have been organized by the Labrador Land Protectors. They describe themselves as "a group of concerned citizens fighting against the development of the Muskrat Falls hydroelectric mega-project" (D. Cole, pers. commun., June 1, 2018). This essay focuses on the lived experiences of Labrador Land Protectors in Happy Valley-Goose Bay that inform their apprehensions. In particular, it highlights two main health concerns: methylmercury contamination and the stability of the North Spur portion of the hydroelectric project. The goal of this essay is to consolidate and share the stories of participants to promote understanding of the variety of viewpoints surrounding the Muskrat Falls project.

Research Context

Happy Valley-Goose Bay is a central hub for Labrador; it had a population of around 8,109 people during the last Canadian census (Statistics Canada 2019). The Muskrat Falls project is located approximately thirty kilometres west of the community. Due to its close