

REFLECTION

If We Build It, They Will Come: Industrial Folly and the Fate of Northwest British Columbia

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MY FATHER CAME OF AGE in the 1930s, the son of a doctor in the lead zinc mining town of Kimberly in the East Kootenays. To reach his boarding school on Vancouver Island, he would take a boat downriver to Spokane, Washington, where he could catch a train west for Seattle and the coast. Such was the state of infrastructure in British Columbia at the time – an economically debilitating void that men of my father’s generation sought avidly to fill as they came back from war in 1945.

The master architect was W.A.C. Bennett, premier from 1952 to 1972, another son of a small interior town, whose vision for the province embraced public works projects on a gargantuan scale, viewing each as an almost biblical challenge, a triumph of personal will. As his political rival and later ally “Flying Phil” Gaglardi laced the province with bridges and roads – many through lands conveniently owned by his sons – Bennett stamped his name on the largest construction project in the history of the province, one of the world’s highest earth-filled dams, a \$6 billion investment (in today’s dollars) that flooded 350,000 acres (141,640 hectares) of forested land, displacing, without consultation, the entire Tsay Keh Dene First Nation, a people who have yet to recover from the blow.

W.A.C. Bennett, like most of his peers, believed that any natural resource not used was wasted. Modern industrial logging took off during his tenure, driven by new machinery and technologies, and fuelled by a triumphant ideology that called for the elimination of all primary forests in the province. Science, it was said, had shown that the annual increment of cellulose in a young tree plantation was greater than that in an ancient forest. The old growth was, by definition, a forest in decline: the trees were over-mature. To see evidence of decadence, one had only to look at the deadfall, tons of rotting timber wasted on the forest floor.



The author at work, Dinan Bay, Haida Gwaii, 1978. Photo credit Wade Davis.

The goal of proper management was to replace these inefficient stands with fresh and productive new forests. A regime of carefully monitored clear-cut logging would eliminate the old growth, the debris would be burned, and the land would be sown with uniform plantations comprised of only the most up-to-date conifer seedlings. In short, scientific forestry would clean up the mess inherited from nature. If it served the economic interests of industry by rationalizing the wholesale eradication of the old-growth forests of the province, so much the better.

Men like my father shared W.A.C. Bennett's frontier values, honed by the Great Depression, forged years before the word "ecology," let alone "biodiversity," "sustainability," "biosphere," or "climate change," had entered our vocabulary. In the early 1960s, just getting people to stop throwing garbage out of a car window was considered a great environmental victory. To look back at that era is not to judge, but merely to suggest that we now live in a completely different time and that to allow such values of the past to determine public policy today would be as inappropriate as anchoring our future in the convictions of nineteenth-century clergymen who claimed with absolute certainty that the earth was but six thousand years old.

And yet, as the recent decision on the highly controversial Site C dam suggests, this is precisely what we've done and continue to do throughout the northern reaches of the province. That federal and pro-

vincial governments have squandered hundreds of millions of dollars on unrealized megadevelopment schemes may come as a surprise to many urban Canadians for, much as we like the idea of the North, few of us ever go there. Gordon Campbell in his decade as premier, and indeed in his entire life, never once visited the northwest quadrant of British Columbia, even as his government endorsed and funded capital-intensive initiatives that promised to fundamentally transform the region.

To appreciate the extent of these ambitions, not to mention the fiscal and environmental consequences of implementation and failure, consider the fate of just five industrial projects, all transformative in scale, that have been proposed or enacted in northwest British Columbia since the late 1960s. All of these centred in the Stikine Valley, traditional territory of the Tahltan First Nation, a vast and remote region roughly the size of Switzerland.

The first of these projects, and the only one to come on line and reach the end of its life, is Cassiar Asbestos, which declared bankruptcy just before shutting down in 1992. For forty years before its closure the mine had thrived as the one industrial magnet for infrastructure development and employment in a region the size of Oregon.

A company town of twelve hundred, Cassiar attracted workers by offering easy access to home ownership and by supporting an active civic culture along with all the facilities of a regular town, a movie theatre, two churches and two schools, a small hospital, a ski hill and curling rink, a library, and a recreation centre. The Lion's Club and PTA met regularly in a company hall where members of the handicraft, bridge, badminton, and gun clubs also gathered. There were hockey teams and choirs, boy scouts and girl guides. When the mine closed, every structure was dismantled or moved. Those who had made a home there, some for two generations, simply scattered to the winds. Today, Cassiar is a ghost town of fading memories. All that remains is a mountain of toxic tailings, 16 million tons altogether.

The 1970s brought two megaprojects to the Stikine, both of which, in the memorable words of filmmaker Monty Bassett, ultimately collapsed under the weight of their own stupidity. In 1969, BC Rail decided to extend the provincial railway in Nak'azdli Whut'en territory some 540 kilometres from Fort St. James northwest to Kaska Dena lands at Dease Lake, an arbitrary destination that consisted at the time of just a handful of broken-down structures once owned by the Hudson's Bay Company. The rationale was to open up the country for resource extraction, notably the extensive anthracite deposits underlying the headwaters of the



When Dease Lake was selected as the terminus of the northern extension of the BC railroad, it consisted of a couple of rundown Hudson's Bay Company buildings, in no better condition than this old cabin photographed in 1980 at the native settlement of Metsantan. Photo credit Wade Davis.

Skeena, Stikine, and Nass rivers, a region known today as the Sacred Headwaters.

Construction of the Dease Lake extension began in 1970, but costs soon soared to \$360 million (\$1.5 billion today), five times the original estimate. When, in 1977, amidst considerable controversy, the project was abandoned, the rail grade reached as far as Dease Lake, but only the first eighty-four kilometres at the southern end were operational. A Royal Commission established to review the project revealed not only massive cost overruns but also shoddy construction from one end of the line to the other, a consequence, in part, of W.A.C. Bennett's imposed mandate to build the project at "minimum cost/maximum speed." Today the grade, locally dubbed the "railway to nowhere," serves as the most expensive back country mountain bike trail in the world.

Even as the provincial government struggled with the political fallout of the collapse of the Dease Lake extension, BC Hydro was gearing up to build a massive hydroelectric development in the canyons of the Iskut and Stikine rivers. Three dams were planned for the Iskut, and two on the Stikine, including Site Z, a concrete arch dam projected to soar as high as a seventy-five-story building. Together the Stikine dams were expected to completely inundate Canada's largest and most dramatic canyon, destroying a stretch of wild river known throughout

the world as the K2 of whitewater challenges. The cost of the project was a staggering \$7.6 billion (\$46 billion in 2017 dollars), making it the biggest capital project ever conceived by BC Hydro.

By project design the Site Zed reservoir would reach up the Stikine and drown the new railway bridge that had only just been completed at considerable expense as part of the BC Rail Dease Lake extension, an indication of just how little coordination occurred between government entities responsible for these enormous industrial projects.

Despite BC Hydro's dire predictions that, without the Stikine/Iskut dams, the province would face severe shortages of electricity, the project stalled, though not before tens of millions of dollars had been spent. What saved the canyon was both strong local opposition from the Tahltan First Nation and a fortuitous shift in the corporate culture at BC Hydro that resulted in a new public focus on efficiency and conservation. The power shortages long anticipated by proponents of the dams never materialized.

The two final examples – Christy Clark's faded dream of an LNG-driven economy and the saga of the Northwest Transmission Line – her "powerline to nowhere" – leave little doubt that industrial folly conflated with corruption persists to this day. Indeed, one is left to wonder what, if anything, has been learned from the costly debacles of the 1970s, even as we continue to elect politicians cut from the same ethical cloth as "Flying Phil" Gaglardi. Whatever one's views of the virtues or challenges of the energy sector of the economy, the provincial government's failure after such fanfare to bring on line even a single LNG development must surely leave any British Columbian both discouraged and frankly embarrassed.

For more than a decade I served on the International Advisory Board for Peru LNG, a US\$3.8 billion project led by Hunt Oil, the world's largest privately held energy company. Investing tens of millions in environmental mitigation, the consortium built an exemplary four-hundred-kilometre pipeline across the Andes and, at the coastal terminus at Pampa Melchorita, an equally impressive port and LNG facility capable of processing 620 million cubic feet of gas a day.

As a consultant with oversight responsibilities, ultimately reporting to the multilateral banks that funded the project, I was privy to internal discussions and experienced what it actually means to bring such a project on stream, including the costs, the scale of the enterprise, and the challenge of international markets. Ours was the first LNG plant ever constructed in South America, and the race to get it built was informed by a sense that, given market demands, there might not be room for more

than one or two, possibly three, such export facilities along the Pacific coast of the entire Western hemisphere.

When I later learned that, in British Columbia, Christy Clark's Liberal government claimed to be considering no fewer than twenty proposals, all calling for separate export facilities, even while anticipating \$1 trillion in revenue and promising to add 100,000 permanent jobs to the provincial economy, I could only conclude that those at the helm of our provincial government were either being dishonest or had only the vaguest idea what they were talking about. One dreaded the former and feared the latter.

Finally, we come to perhaps the most disturbing of all these megaprojects, though one that, on the face of it, ought to have been the least controversial – the extension of the provincial power grid through the construction of the 344-kilometre, 287 kilovolt Northwest Transmission Line (NTL) from Terrace to Bob Quinn Lake.

In 2008, the Mining Association of BC released an industry survey estimating that \$15 billion in new capital investment leading to ten thousand full-time jobs might be generated if only power on an industrial scale could be delivered to the mineral-rich northwest quadrant of the province. Premier Gordon Campbell immediately set aside \$10 million to kick-start the environmental assessment.

Rationalizing the costs of the investment, initially budgeted at \$400 million, were a series of large industrial projects in different stages of development, all promising and all in Tahltan territory. These included Imperial Metals's open-pit copper and gold proposal on Todagin Mountain; two similar mines at Galore Creek and Shaft Creek, respectively; a run of the river hydro project at Forrest Kerr canyon; Shell's million-acre coalbed methane tenure in the Klappan; and Fortune Minerals's anthracite claim, also in the Klappan.

Even as the premier launched the initiative, Byng Giraud, then vice-president of the Mining Association of BC, cautioned that there was no guarantee, "that these projects will be here tomorrow or for sure." Nobody, he cautioned, should necessarily go to the bank on the promise that all would be realized.¹ Unfortunately, someone did – the BC taxpayer, although she/he didn't know it at the time.

Within two years the projected cost of the NTL had increased by half; eventually, it would come in at \$736 million. In addition, BC Hydro com-

¹ Christopher Pollen, "Gordon Campbell's \$400 Million Power Line Bet", *The Tyee* 13 November 2008. Giraud of Mining Association of BC is quoted as saying in reference to the various projects that rationalized the construction of the NTL: "The report is pre-feasibility work based on interviews with all the coalition members asking 'what do you see as the future?' This isn't necessarily saying that these projects will be here tomorrow or for sure."



Kounugu Mountain in the Spectrum Range, south of Edziza, sacred mountain of the Tahltan. Kounugu, according to the Tahltan, was the master of freshwater who stubbornly refused to share it with the world. Photo credit Wade Davis.

mitted to reimburse Imperial Metals \$52 million for the costs of building the company's dedicated line from Bob Quinn to the Red Chris mine site on Todagin Mountain as well as the costs of a smaller line north to the Tahltan community of Iskut.

Of this \$736 million, Alta Gas, owner of the Forrest Kerr project, would by agreement pay \$180 million. In Ottawa, the Harper government agreed to invest \$130 million from the Green Infrastructure Fund, money set aside, according to the government website, to support "projects that will improve the quality of the environment and ... that promote cleaner air, reduced greenhouse gas emissions and cleaner water." The official rationale for the inclusion of the \$130 million was Ottawa's desire to get 350 Tahltan at the small community of Iskut off of diesel generation to reduce their carbon footprint, albeit at a per-resident cost of close to \$400,000. Even with this questionable federal subsidy, BC taxpayers remained on the hook for at least \$478 million.



In the construction of Imperial Metals dedicated power line no effort was made to separate the industrial corridor from the right of way of the Stewart Cassiar, the public highway built at considerable expense as BC's scenic route to Alaska. The interests of a single mine trumped those of all the small family businesses that up and down the highway cater to the tourist trade. Photo credit Wade Davis.

For the provincial government things began to unravel just as construction of the NTL was coming to an end. In 2012, Shell withdrew from its coalbed methane development in the Klappan. The promising and highly promoted Galore Creek copper and gold project imploded due to fiscal challenges and uncertainties. Fortune Minerals remained committed to its anthracite play in the Klappan, but, given Tahltan opposition, it had very weak legs, especially in the wake of the Supreme Court's *Tsilhqot'in* decision. Alta Gas's hydro project at Forrest Kerr was a going concern. But the public was going to be hard pressed to understand why well over \$700 million of public funds were spent to extend the provincial grid to facilitate a private power company's efforts to sell back electricity to the state. By 2012, of the five other speculative industrial projects that had rationalized the construction of the NTL back in 2008, only one remained viable – Imperial's Red Chris mine on Todagin Mountain.

There is most assuredly nothing wrong with governments creating infrastructure that will promote economic growth or bring benefits to a wide range of citizens and diverse business interests. But things get a bit murkier when the benefits accrue exclusively to one sector of the economy. And they become downright muddy when they effectively

benefit a single company, especially one owned by an individual who has heavily bankrolled the political campaigns of the government authorizing the massive public expenditure.

Here was another challenge for the provincial government. Imperial's Red Chris project had been kept afloat by the personal investment and loan guarantees of Murray Edwards, owner of the Calgary Flames. His infusion of some \$200 million had effectively bought him ownership of Imperial. On the eve of the 2013 provincial election, with the Liberals behind in the polls, at the Calgary Petroleum Club Edwards hosted a private dinner for Premier Christy Clark that raised \$1 million for her campaign. Nothing illegal in this, but it was hardly something to reassure the BC public, given that Red Chris was the only industrial project aside from Forrest Kerr to benefit from construction of the NTL.

Yet even here the optics for the government were problematic. Todagin is home to the largest concentration of Stone sheep in the world, a resident population that attracts remarkable numbers of predators. A wildlife sanctuary in the sky, the massif looks west to Edziza, sacred mountain of the Tahltan; north to the Grand Canyon of the Stikine; and east to the Sacred Headwaters, birthplace of the Stikine, Skeena and Nass rivers; and beyond to the Spatsizi, widely recognized as the Serengeti of Canada. There are over four thousand copper properties in the world. To build an open-pit mine on Todagin was as audacious an undertaking as drilling for oil in the Sistine Chapel.

But consider the provincial government's dilemma. Some \$800 million had been spent to build what was effectively a subsidized line for a single mine. At the same time the government had to have a successful mine at Red Chris to avoid accusations of having built a "powerline to nowhere." In the 1970s, the collapse of the Dease Lake extension of BC Rail, the so-called "railway to nowhere," had brought down a government.

If the optics of Red Chris were already poor, public perception became truly dreadful in the wake of the Mount Polley disaster in August 2014 – a catastrophic failure of the tailings dam at Imperial's other major holding, an open-pit copper and gold mine near Quesnel Lake that had been promoted by the company as the design prototype for the Red Chris development. Altogether 10 million cubic metres of industrial water and 4.5 million cubic metres of slurry tainted with heavy metals surged into one of the most celebrated salmon lakes in the world, the place of origins of fully one-quarter of the Fraser River run.

As it turned out, Imperial Metals had a history of operating the tailings pond beyond capacity since at least 2011. The independent investigation into the cause of the breach concluded that, while the dam had failed



Red Chris from the air, with the tailings impoundment expanding by the day, draining toward Black, Kluea and Todagin lakes, and the Iskut River. Photo credit Wade Davis.

because of an undetected weakness in the foundation, it could readily have failed due to over-topping, which it almost did in May 2014. Or it could have failed due to internal erosion, for which some evidence was discovered. “Clearly,” the panel concluded, “multiple failure modes were in progress, and they differed mainly in how far they had progressed down their respective failure pathways.”²

The Mount Polley disaster sent shock waves through the members of the Tahltan community at Iskut. They heard media reports that employees at Mount Polley had quit high-paying jobs because management refused to listen to their concerns about the safety and integrity of the dam. They discovered that independent consultants hired by Imperial had expressed similar concerns only to be ignored. They learned, too, that the insurance policies held by the company were insufficient to cover the costs of cleaning up the mess. Imperial’s insurance coverage was a mere \$15 million: the cleanup of the two most recent major tailings pond failures comparable to that of Mount Polley, one in Spain and a second in Tennessee, had cost \$350 million and \$600 million, respectively.

In the wake of the Mount Polley disaster there was a strong sense in Iskut and, indeed, throughout British Columbia that Red Chris would

² Independent Expert Engineering Investigation and Review Panel, *Report on Mount Polley Tailings Storage Facility Breach*, 30 January 2015.

be put on hold at least until the cause of the failure at Mount Polley was fully determined and corrective measures established and implemented. In fact, quite the opposite occurred. Just six months after the disaster, and within days of the release of a report that was, by every measure, damning, and even as search warrants were issued allowing government investigators to comb Imperial's records at Mount Polley, the Red Chris mine received an interim permit to begin processing copper and gold ore using the same wet tailings design that had failed at Mount Polley.

With the Kafkaesque logic that Imperial needed a revenue stream to cover the costs of the cleanup, the provincial government allowed Imperial to return to limited production at Mount Polley less than a year after the disaster, even as it fast tracked its final permitting process for the Red Chris mine. On 23 June 2016, the government authorized Mount Polley to return to normal operations and to process up to twenty-thousand tons of rock per day while continuing to store wet tailings. To date, Imperial Metals has not been obliged to pay any fines, nor have any of the small family businesses on Quesnel Lake compromised by the Mount Polley disaster received any compensation from the company or the government. Much of the expense of mitigation and cleanup at Mount Polley has, in fact, been borne by the BC taxpayer.

After two years in operation, with the eastern plateau of Todagin and the entire upper Todagin River drainage transformed into an industrial zone, the fate of the Red Chris mine remains uncertain. In December 2017, a leading credit rating agency, Moody's Investor Service, assessed Imperial Metals's "probability of default" and concluded that the company was "judged to be speculative, of poor standing, subject to very high default risk and may be in default on some, but not all, of their long-term debt obligations."³ According to the latest report of British Columbia's chief minister of mines, Imperial Metals has but \$73 million set aside in bonds against estimated reclamation costs for its mines of \$103 million. Should Imperial fail to cover its debt obligations and be forced to default, the costs of reclamation and cleanup of all of its projects will fall to the people of British Columbia.

In the end, we are surely left overwhelmed by the scale of the corruption, the extent of the folly, and the aggregate waste of taxpayers' wealth. And yet it all continues. Consider the ill-fated Site C dam on the Peace River. Conceived by Christy Clarke's Liberal government, the

³ Judith Lavoie, Tuesday 15 December 2017 "Imperial Metals Financial Downgrade Raises Questions about Liability of Mount Polley, Red Chris Mines," *Desmog Canada*. See <https://moodys.com/research/Moody's-changes-Imperial-Metals-probability-of-default-rating-to-Caa--PR-375835>.

pharaonic, partially built hydroelectric project had already cost more than \$2 billion when inherited by the NDP upon its election in May 2017.

Politically it presented a true challenge of leadership. Premier John Horgan had to decide whether to spend \$2 billion to clean up a \$2 billion mess inherited from the previous government or go ahead with the project, mortgaging the province's future for a white elephant that few wanted and, according to many technical reports, nobody needed.

By late 2017, with a decision pending, Horgan came under increasing pressure from union supporters keen to discredit the conclusions of the BC Utilities Commission, whose independent findings had fundamentally questioned the need and cost-effectiveness of the project. Union representatives spoke of energy requirements and projections, but clearly their primary concern was the anticipated construction jobs that would come about should the ill-fated megaproject proceed – the very rationale that had in good measure propelled the Site C proposal from its inception. In focusing on the immediate financial benefits for just their membership, as opposed to the merits of the project and/or its costs to future generations of all Canadians, the unions proved in the final analysis to be as self-serving as the most avaricious of corporate executives whose vision goes no further than quarterly profits and short-term shareholder value.

In the end, succumbing to pressure from the NDP base, Horgan took the politically expedient decision to proceed with Site C, despite anticipated costs well in excess of \$10 billion, all for a project that, on the campaign trail only months before, he had vociferously rejected for sound economic, technical, and environmental reasons. If many British Columbians were disappointed by his decision, many more were stunned to learn that the Liberal government of Christy Clark had committed the province to such industrial folly in the first place.

Silenced in the shuffle were any number of authorities, Native and non-Native alike – engineers, technicians, hunters and trappers, economists, farmers, ranchers, guides, environmentalists, lawyers, and owners of small businesses – who had argued persuasively that the dam was both unnecessary and certain, over time, to be a drain on the provincial economy.

The voices that were heard differ little, both in their values and priorities, from those of all these long-forgotten men who, in their enterprise and unshakeable confidence, left as their legacy the many industrial fiascos that litter the landscape and taint the history of the North.

For too many years politicians in all parties in British Columbia have told the people of the province that the only way we can generate an economy is to tear open our land, tear down our forests, and empty our seas. Such tired and threadbare thinking both denies our potential and betrays our destiny. We are so few and we live in a place that is so vast. We are civil, decent, and among the most educated citizenries in the world. Our intellectual and entrepreneurial capacity is limitless. When politicians suggest that the only way we can make a living is to compromise our natural heritage, what is revealed is not a lack of economic options but, rather, a dearth of imagination and moral character on the part of those we elect to office.

Political leaders thinking not of the next election but of the next generations know that true and lasting prosperity in British Columbia will only come as we transform our economy from one dependent on natural resource extraction to one based on knowledge, technology, and innovation. Market forces are already driving us in the right direction. Information technology and biotech, together with media and film, are now dominant elements in the economy of the Lower Mainland, home to the great majority of British Columbians. Tourism throughout the province employs more workers than mining, industrial forestry, and commercial fishing combined. Government can play a significant role with wise and cost-effective investments in education, infrastructure, affordable housing, and virtually anything that will enhance quality of life, making the province ever more desirable for individuals and businesses aspiring to occupy the heights of the new knowledge-based economy.

What we don't need are governments beholden to individuals and enterprises entrenched in the past and blind to the world coming at them from tomorrow. With the extension of the Northwest Transmission Line the Liberal government spent \$750 million of public funds on a power line that has largely benefited a single mine employing but three hundred people, an industrial project that, by design, implied the violation of perhaps the richest wildlife sanctuary in the province. That same level of investment would have allowed Vancouver to extend the SkyTrain from Burnaby to Point Grey, enhancing the well-being of millions of British Columbians, and the prosperity of hundreds of independent and self-sufficient businesses, not one of which would even imagine seeking or receiving government subsidies comparable to Christy Clark's singular gift to Imperial Metals.

This history of folly and avarice shadows our quest for a truly sustainable economy, at the heart of which will be new sources of power. The move towards a clean energy future, however, is not simply about shifting away from carbon; were that to be the case, we would all be lining up in support of all hydroelectric projects, not to mention nuclear reactors. Clean energy is a metaphor for a process of societal and economic transformation historic in its scale and profoundly hopeful in its promise.

It's useful to reflect that, while climate change, for example, has become humanity's problem, it was not caused by humanity. It came about because of the consequences of a particular world view. For three centuries, we have consumed the ancient sunlight of the planet. Our economic models are projections and arrows when they should be circles. To define perpetual growth on a finite planet as the sole measure of economic well-being is to engage in a form of slow collective suicide. To deny or exclude from the calculus of governance and economy the costs of violating the biological support systems of life is the logic of delusion.

What is celebrated as modernity is but an expression of certain values that reflect the priorities of a particular cultural tradition. Modernity is not some objective force removed from the constraints of culture, nor is it the true and only pulse of history. It is simply a constellation of beliefs, convictions, and economic paradigms that represent one way of doing things, of going about the complex process of organizing human activities. Our achievements, to be sure, have been stunning, our technological innovations dazzling. But these accomplishments do not make this Western paradigm exceptional or suggest in any way that it has or ought to have a monopoly on the path to the future.

All cultures are myopic, faithful to their own interpretations of reality. Our way of thinking, about the natural world in particular, is but a product of our past, rooted in our culture and history. During the Renaissance and well into the Enlightenment, in our quest for personal freedom, we in the European tradition liberated the human mind from the tyranny of absolute faith, even as we freed the individual from the collective, which was the sociological equivalent of splitting the atom. In doing so, we also abandoned many of our intuitions for myth, magic, mysticism, and, perhaps most important, metaphor.

The universe, declared René Descartes in the seventeenth century, was composed only of "mind and mechanism." With a single phrase, all sentient creatures aside from human beings were devitalized, as was the earth itself. "Science," as Saul Bellow wrote, "made a housecleaning of

belief.⁴ Phenomena that could not be positively observed or measured could not exist. The triumph of secular materialism became the conceit of modernity. The notion that land could have anima, that the flight of a hawk might have meaning, that beliefs of the spirit could have true resonance, was literally ridiculed. The reduction of the world to a mechanism, with nature but an obstacle to be overcome, a resource to be exploited, has in good measure determined the manner in which the industrial world has blindly interacted with a living planet.

As a young man, I was raised on the coast of British Columbia to believe that the rainforests existed to be cut. This was the essence of the ideology of scientific forestry that I studied in school and practised in the woods as a logger. This cultural perspective was profoundly different from that of the First Nations, those living on Vancouver Island at the time of European contact, and those still there. If I was sent into the forest to cut it down, a Kwakwaka'wakw youth of high rank and similar age was traditionally dispatched during his Hamat'sa initiation into those same forest to confront Huxwhukw and the Crooked Beak of Heaven (cannibal spirits living at the north end of the world) with the goal of returning to the Big House triumphant and transformed – the symbolic embodiment of the human capacity, through morality, to tame the savage heart and to overcome the barbaric forces that lie within all people. The point is not to suggest which perspective is right or wrong. Is the forest mere cellulose and board feet? Was it truly the domain of the spirits?

Ultimately, these are not the important questions. What matters is the potency of the belief and the manner in which the conviction plays out in the day-to-day lives of a people for, in a very real sense, this determines the ecological footprint of a culture, the impact that any society has on its environment. A child raised to believe that a mountain is the abode of a protective spirit will be a profoundly different human being from a child who is brought up to believe that a mountain is an inert mass of rock ready to be mined. A Kwakwaka'wakw child raised to revere the coastal forests as the realm of the divine will be a different person from a Canadian child raised to believe that such forests grow only to be logged. The full measure of a culture embraces both the actions of a people and the quality of their aspirations, the character and nature of the metaphors that propel them onward.

⁴ Bill Moyers in a conversation between him and Joseph Campbell in *Joseph Campbell, The Power of Myth* (New York: Doubleday, 1988), 12.



Lillian Moyer lifts her hands in prayer as chiefs and representatives of nine First Nations along with hundreds of supporters came together in August, 2006 to call for the protection of the Sacred Headwaters, the place of origin of the Stikine, Skeena and Nass rivers. Photo credit Wade Davis.

Herein, perhaps, lies the essence of the relationship between many Indigenous peoples and the natural world. Life in the malarial swamps of New Guinea, in the chill winds of Tibet, in the white heat of the Sahara leaves little room for sentiment. Nostalgia is not a trait commonly associated with the Inuit. Nomadic hunters and gatherers in Borneo have no conscious sense of stewardship for mountain forests that they lack the technical capacity to destroy.

What these cultures have done is to forge, through time and ritual, a traditional mystique of the earth that is based not only on deep attachment to the land but also on a far more subtle intuition – the idea that the land itself is breathed into being by human consciousness. Mountains, rivers, and forests are not perceived as being inanimate, as being mere props on a stage upon which the human drama unfolds. For these societies, the land is alive, a dynamic force to be embraced and transformed by the human imagination.

Despite years of growing environmental concern, those creating policy in British Columbia still view the natural world essentially as a commodity, a raw resource to be consumed at our whims. When a mine is proposed, they accept it as normal that people who have never been on

the land, who have no history or connection to the country, may legally secure the right to come in and, by the very nature of their enterprises, leave in their wake a cultural and physical landscape utterly transformed and desecrated.

What's more, in granting such mining concessions, often initially for trivial sums to speculators from distant cities, they place no cultural or market value on the land itself. The cost of destroying a natural asset, or its inherent worth if left intact, has no metric in the economic calculations that support the industrialization of the wild.

No company has to compensate the public for what it does to the commons, to the forests, mountains, and rivers that, by definition, belong to everyone. As long as there is a promise of revenue flows and employment, it merely requires permission to proceed. We take this as a given for it is the foundation of our economic system, the way commerce extracts value and profit in a resource-driven economy. But if you think about it, especially from the perspective of so many other cultures, touched and inspired by quite different visions of life and land, it appears to be very odd and highly anomalous behaviour.

Imbuing the natural world – the lakes, rivers, forests, and seas – with a sense of the sacred is not contrary to science but, rather, an acknowledgment of the complexity and wonder of ecological and biological systems that science alone has illuminated.

Throughout the world Indigenous people who played no role in the creation of this crisis are not only seeing the impact of climate change on their lives but also taking personal responsibility for the problem, often with a seriousness of intent that puts many of us to shame. For the industrial world climate change is all about technological challenge, public policy, mitigation, cost benefits, economic opportunity, and, according to some, scientific debate. But for those in the many Indigenous cultures who believe that they are responsible for the well-being of the natural world, it is a deeply psychological challenge, an existential dilemma, a moral crisis: if the earth suffers, they believe that it is their fault.

In the Peruvian Andes, glaciers are receding at such a rate that pilgrims, believing the mountain gods to be angry, are no longer carrying ice from the heights back to their communities, forgoing the very gesture of reciprocity that completes the sacred circle of the pilgrimage and that allows everyone to benefit from the grace of the divine.

In the Sierra Nevada de Santa Marta in Colombia, the *mamos*, or priests, observe each season the recession of the snow and icefields that, for them, are the literal heart of the world. They notice the disappearance of birds, amphibians, and butterflies, and the changing ecological

character of the *páramos*, which are drying out. They have increased both their ritual and political activities, and have formally called on the Younger Brothers, as they describe the rest of humanity, to stop destroying the world.

In Tanzania, the Maasai look up to a mountain that has lost more than 80 percent of its snowcap in a generation and ask what will happen to the very idea of Africa when Kilimanjaro no longer shines over the ancient continent. In the Trobriand Islands, entire populations will have to be evacuated should sea levels rise even half a metre. Indigenous peoples in all lands are witnessing unprecedented changes in their environments, and they are everywhere reacting and taking action. An increase in ritual activities, often at great costs to the society in question, has been reported among the Barasana and Makuna in the Northwest Amazon, Aboriginal groups in Australia, and the shamanic cultures of Mongolia and the Gobi Desert.

Some years ago, I travelled from Igloolik in the Canadian Arctic three thousand kilometres to northern Greenland with an Inuk friend, Theo Ikummaq, who had once made the journey on foot with his dogs. Almost immediately, as our chartered plane crossed over Baffin Island, I could see from Theo's expression that something was wrong. It was April and our flight path took us twelve degrees south of the North Pole. The sea ice was not there. Smith Sound, which Theo had crossed with his dogs, was open water. He stared out the plane window in disbelief.

When we reached Qaanaaq, the northernmost inhabited place on earth, there were great open leads in the ice, and we were obliged to hunt by boat. The ice used to form in September and remain solid through July. Now it comes in November and is gone by March. In the dialect of the Polar Eskimo the word *sila* means both weather and consciousness. Weather is life. One afternoon, as we stood on a headland looking out over the water, an elder said very simply: "This is not our weather. Where does it come from?"

The voices of Indigenous people matter because they remind us that there are indeed alternatives, other ways of orienting human beings in social, spiritual, and ecological space. This is not to naively suggest that we abandon everything and attempt to mimic the ways of non-industrial societies, or that any culture be asked to forfeit its right to benefit from the genius of technology. It is, rather, to draw inspiration and comfort from the fact that the path we have taken is not the only one available, that our destiny, therefore, is not indelibly written in a set of choices that, demonstrably and scientifically, have proven not to be wise. By their very existence, the diverse cultures of the world bear witness to the folly of those who say that we cannot change, as we all know that we must, the fundamental manner in which we inhabit this planet.