

Watershed

Sentinel



NDP CAMPAIGN SPOTS THAT DIDN'T MAKE THE CUT:



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RAESIDE
2020

All Fracked Up!

The Costs of LNG to British Columbia

Edited by Alice de Wolff and Delores Broten

Softcover | \$30 CAD + shipping

Pages | 160 pp colour

ISBN | 978-0-9953286-5-5

With contributions from a remarkable collection of authors and experts - including David Hughes, Maude Barlow, Ben Parfitt, Eoin Finn, Mitchell Beer, and many more - this collection presents a spectrum of topics around fracking and LNG in BC.

Featuring full-colour photography by Garth Lenz and a vivid graphic style, *All Fracked Up!* presents facts, analysis, and histories of fracking and LNG in our province in a highly engaging and accessible format.

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Features



Agricultural Land

In the face of COVID-related supply chain disruptions, BC urgently needs to protect what's left of the ALR.

Arctic Char

Black carbon: the worst climate pollutant you've never heard of? Reducing it would be the fastest, cheapest way to slow climate destabilization in the Arctic, but an IMO ban on heavy fuel oil may be too loophole-y to do the trick.

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 Editor Delores Broten
 Managing Editor Claire Gilmore
 Graphic Design Ester Strijbos
 Social Media Director Sarah James
 Staff Reporter Gavin MacRae
 Renewals & Circulation Manager Dawn Christian
 Advertising Sally Gellard

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No Time to Look Back?

This issue was slated to be our 30-year retrospective, a look back at what was then and what is now. Sometimes, as in the struggle to protect clean drinking water or old growth forests, little has changed. The exercise promised to have a few bright spots, like parks and pollution, but overall be moderately un-uplifting, so to speak.

But as always, events have overrun our ability to multi-task. We got sidetracked with the production of our new book, *All Fracked Up! The Costs of LNG to British Columbia*. It's a timely and engaging tome and we're pretty proud of it (do go check it out on our website and see what you think!) – but as a result, we've been scrambling to get this issue of the *Watershed Sentinel* to press.

And now there's a BC election coming. It's pretty hard to get excited about an unnecessary election in the middle of pandemic, with cases rising, unemployment booming, evictions looming, and personal trauma going through the roof.

However, if you plan on voting, we encourage you to examine the election promises (or implied promises) versus the track record of this government. Three years ago, we toiled over a detailed comparison of parties' environmental and social justice platforms, from Site C to oil and gas subsidies, fracking, old growth logging, and the opioid crisis (you can refresh your memory at www.watershedsentinel.ca/articles/where-they-stand-what-they-say). We picked out three outstanding promises:

Liberal: Ban the use of neonicotinoid pesticides in British Columbia to protect honeybee populations; **NDP:** \$10 a day childcare; **Green:** Initiate comprehensive, province-wide water and watershed planning.

And now, here we are. No need to go into details. Remember the old saying: "Fool me once, shame on you. Fool me twice, shame on me."

–Delores Broten, Comox, BC, October 2020

At the 'Shed

Our new online store for subscriptions, books, and calendars is up and running smoothly now, with the initial kinks ironed out (thank you Sarah!). You can give it a try at www.watershedsentinel.ca, and, phone, mail, or email us at any time.

Adding to our team: Changes are afoot over the coming months – we are planning to build a core team of writers, reporters, and editors for different recurring subject areas. These will be (modestly) paid Canadian freelance positions. Interested or know someone who might be? Give us a shout, with resume and examples of your writing.

Errata: We apologize for printing errors regarding the traditional territories of the Ktunaxa and Sinixt First Nations in "Local Power" (WS April-May 2020). Many thanks to K. L. Kivi for drawing our attention to the issue – see her letter on page 4 for details.

Donations keep the presses running! You may have recently received a letter from us, asking for your generosity. We only do this once every two years. Enuff said!

Net zero by 2060

China Says

In a lauded move for global climate action China will aim for carbon neutrality by 2060, according to a surprise video announcement from President Xi Jinping to the UN general assembly. Xi Jinping said China would adopt “more vigorous policies and measures” to have its emissions peak before 2030, and called on the world’s governments to use the “historic opportunity” of scientific and technological innovation to plot a green recovery from the coronavirus pandemic. The statement is the first time China has talked about cutting emissions to net zero, raising ambition for other large emerging economies such as India.

—www.climatechangenews.com
September 22, 2020

Closure coming ASAP

EU Coal Plant

A District Court judge in Poland has ruled that the EU’s biggest coal plant must negotiate with environmental lawyers to hasten the plant’s closure after law firm ClientEarth successfully argued that under Polish civil law, the climate and environment are a common good that legally must be protected. ClientEarth demanded coal operator Bełchatów close 11 of its 12 coal units by 2030 and the last by 2035. Bełchatów’s largest plant burns a ton of coal every second and has about the same annual carbon emissions as New Zealand. The two parties have three months to find a settlement.

—ClientEarth press release
September 22, 2020

Asphalt at fault

Urban Air

Emissions from asphalt during hot weather are a substantial source of air pollution in cities, a study published in *Science Advances* has found. Researchers discovered that when asphalt samples were heated to between 40°C and 60°C – temperatures regularly reached by the material in summer – emissions of secondary organic aerosols (SOA) from asphalt increased 300%. SOAs are known to have significant impacts on human health. Unlike tailpipe air pollution from motor vehicles, which should lessen as combustion vehicles are phased out, researchers say asphalt emissions could expand as cities grow and climate change drives average temperatures higher.

—www.theguardian.com
September 2, 2020

Heat deaths rising

Extremes

Unchecked climate change could drive death rates from extreme heat by 2100 that match mortality from all present day infectious diseases combined, according to research by the National Bureau of Economic Estimates. Longer, more intense, and more frequent heat waves, particularly in the hottest, poorest parts of the world, could increase mortality rates by 73 deaths per 100,000 yearly, roughly on par with the current 74 per 100,000 person death rate from all infectious diseases – from dengue fever to tuberculosis to malaria. Wealthier nations could afford to adapt health care and infrastructure to see fewer deaths, but if Paris Climate Accord targets were achieved, 84% of increased heat deaths could be avoided.

—www.azcentral.com
August 5, 2020

Subsidies for fossils

Lotta Money

The fossil fuel sector worldwide enjoys subsidies worth US\$3.1 trillion – 20 times the support offered renewables, according to the International Renewable Energy Agency (IRENA), in one of the first attempts to quantify such numbers. Direct subsidies to the fossil fuel sector totalled \$447 billion in 2017, versus \$166 billion for renewables, IRENA estimates. But the cost of direct subsidies for fossil fuels is dwarfed by indirect support of “unpriced externalities,” IRENA said: costs that are not borne by producers but which cost society dearly. Air pollution was the largest, calculated at \$2.3 trillion.

—www.rechargenews.com
September 2, 2020

Bad breakup

Milne Ice Shelf

Canada’s last fully intact ice shelf collapsed this July, losing over 40% of its area in just two days. The Milne Ice Shelf, off Ellesmere Island in Nunavut, lost a city-sized, 80 km² ice piece after above-normal temperatures, offshore winds and open water in front of the shelf created a recipe for ice shelf break up, the Canadian Ice Service said. Already warming at a rate twice the global average, Canada’s Arctic has been battered with temperatures running 5°C above the 30-year average this summer.

—www.reuters.com
August 6, 2020



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Letters

The Watershed Sentinel welcomes letters

but reserves the right to edit for brevity, clarity, legality, and taste.

Anonymous letters will not be published.

Send your musings and your missives to: **Watershed Sentinel**

Box 1270, Comox BC, V9M 7Z8

editor@watershedsentinel.ca or online at www.watershedsentinel.ca

Of Mice and Rats... and Humans

In last issue's article, "Of Mice and Rats," the author outlines social behaviour well, but the central argument of the piece fails when applied to human society. We do not have a population problem so much as a problem of uneven distribution of wealth globally. Poverty and the lack of basic necessities due to economic hardship are causing a breakdown of society far more than overpopulation. It needs to be pointed out that the gross wealth of the few is at the expense of the many. Calhoun's study of the "behavioral sink" is employed to suggest overpopulation is creating a disenfranchised class, when in fact it is inequitable wealth distribution that creates societal decay.

—Georgina Kirkman
Victoria, British Columbia

Recognizing Sinixt Tum'ula7wx

As a long-time micro-hydro user and proponent of alternative energy, I read Dave Mills' article "Local Power" [WS April-May 2020] with great interest. I am delighted to read about Indigenous communities leading the way in developing clean power projects.

I was, however, surprised and disturbed to read that the author attributed the West Kootenay, mentioning "Nakusp, Revelstoke or Nelson," to Ktunaxa territory. He should know that this area is Sinixt tum'ula7wx (traditional territory) because they were declared extinct, in part, to make way for the signing of the Columbia River Treaty. Eliminating the Sinixt from the legal picture (*Indian Act 1956*) allowed for the unfettered creation of most of the dams on the Columbia.

The historical, archaeological and anthropological record is clear that the flooded village and burial sites on the upper Columbia belong to Sinixt. And regardless of government bureaucratic genocide, Sinixt continue to occupy and uphold their rights and responsibilities in unceded Sinixt traditional territory.

In an excellent example of lateral violence, many recognized First Nations groups have made over-lapping claims through the colonial land claims process to Sinixt tum'ula7wx, including Ktunaxa, Okanagan and Secwepemc Nations. To echo the author, this only adds insult to injury.

Sinixt continue to work to reverse the extinction and are actively present on the Canadian portion of their territory which represents 80% of their homeland. More thorough fact checking might be in order in the future.

—K. L. Kivi
Sinixt tum'ula7wx

[**Note:** The editors, appreciate this correction and apologize for the oversight. The author also apologizes for the error and has corrected the original post on www.dogwood.bc.ca.]

Compliments

The April-May 2020 edition of the *Watershed Sentinel* has been sitting on my desk for a couple of weeks as a reminder to write. I was recuperating from an injury in June and was able to sit down and

read the whole magazine from cover to cover in one sitting. Probably one of the best I have read in a long time. Nearly every article was of interest to me and were well-written and edited. Thank you and please pass along my compliments to the contributors and everyone on staff.

—Michael Jessen, P.Eng
Parksville, British Columbia

Enduring Thanks

As I was whiffing (thank you Jabberwocky) through the latest issue of the WS, I couldn't help but think that nearly everything on its pages resonated with me, and struck me as being central to the way we have to manage our world.

It's a beautiful publication, in very large measure because of how you've shaped it over the years. I believe it will stand the test of time, as the decades unfold, as a full-blooded harbinger of the future we all want and need.

Just sayin'....

—R. Warren Bell, MDCM
Salmon Arm, British Columbia



Jasper Park caribou herd

Extirpated

The Maligne herd of Woodland Caribou in Jasper National Park is now locally extinct and two other herds are close to the same fate, according to Jasper National Park's Species at Risk report. The Tonquin herd, with around 45 animals, and Brazeau herd with under 15, both have fewer than 10 breeding females. "That means they cannot grow any bigger and they're very vulnerable to sudden disasters or setbacks," said Carolyn Campbell, a conservationist with the Calgary-based Alberta Wilderness Association (AWA). The AWA is urging Parks Canada to begin emergency population augmentation for the remaining herds, a measure the association rarely endorses.

—www.cbc.ca
September 15, 2020

Grizzly habits

Night Owls

Bears near human settlements must become nocturnal to survive and rely on "immigrant" bears to sustain their populations, new research finds. The study, from the UBC Okanagan campus, looked at 40 years of data that tracked over 2,500 grizzlies in BC. Researchers found that bears who could quickly adapt to become nocturnal reduced conflict with humans and so increased their chances of survival. Bears who couldn't adapt quickly enough often died. But nocturnality was not enough to maintain bear populations near people, the study found, and bears rely on a "lifeline" of immigrants from nearby areas with low human impact.

—www.news.ok.ubc.ca
July 6, 2020

UCP moves to 'delist' Alberta parks

Closed

The Alberta government is moving ahead with plans to fully or partially close 20 parks and change an additional 164 parks to Crown land administrated by "third-party managers." The "delisting" comes as Premier Jason Kenney announced \$43 million to improve Alberta's provincial parks and public lands, a move opposition critic Marlin Schmidt characterized as an attempt to "spin" their decision to close or delist parks. He also pointed out such grant provision is routine. Through a Freedom of Information request, Alberta conservation group Canadian Parks and Wilderness Society said they learned the divestment could lead to some sites eventually being put up for sale, a circumstance Alberta Environment and Parks denies.

—www.calgaryherald.com
September 15, 2020

Subsidies have been rising in BC

Oily NDP?

Oil and gas subsidies under the NDP have doubled in BC in two years to reach \$1 billion annually, a 79% increase over the previous Christy Clark government, a new report by Stand.earth claims. The largest subsidy source is the deep-well royalty credit at \$350 million per year, which now totals \$2.6 billion in outstanding credits from natural gas producers. "[T]his government, which was elected on a promise of fighting climate change, is in fact giving a billion dollars a year to the very industry that is driving the climate crisis," said Tzaporah Berman, international program director for Stand.earth.

—Stand.earth press release
September 14, 2020

NAFTA side deal reports leaks

Tailings Ponds

Some oil sands tailings ponds in Alberta are leaking into surrounding groundwater, according to a report by the Commission for Environmental Cooperation, an organization created to implement an environmental side accord to NAFTA. The report found elevated levels of naphthenic acid, a tailings pond component, in the Beaver River and Mclean Creek, suggesting they are receiving runoff from nearby ponds. There was little evidence that contamination is reaching the Athabasca River. Federal Environment Minister Jonathan Wilkinson said the tailings ponds were never intended to be permanent waste storage solutions.

—www.theglobeandmail.com
September 3, 2020

A major divestment opportunity

Pensions & Coal

The Canadian Pension Plan holds \$141 million in stocks in Chinese coal companies, the board's 2020 annual report disclosed, while continuing to call itself a climate change leader. The investments include \$1M in coal distributor Jiangsu Guoxin Corp. Ltd., \$3M in mining company China Coal Energy Co. Ltd., and \$42M in China Shenhua Energy Co. Ltd., China's largest state-owned coal-mining company.

—www.canoe.com
July 12, 2020



Tulsequah Chief clean up at last

Mine Milestone

Closure and cleanup of the abandoned Tulsequah Chief mine, 100 km southwest of Atlin, BC, is a step closer after the BC government announced a cleanup and closure plan as well as funding for preliminary cleanup. The news comes as the province of BC and the Taku River Tlingit First Nation both requested the Ontario Superior Court of Justice end the receivership process started for the mine in 2016, when Ontario-incorporated mine owner Chieftain Metals went bankrupt. If receivership ends, remediation would fall to the BC government. The copper/lead mine has discharged acid mine drainage into the salmon-bearing Tulsequah River since at least 1957.

—*Rivers Without Borders press release*
August 13, 2020

Biomass not so much, say Dutch

Circular Use

Biomass burning for electricity generation should be phased out ASAP, an independent advisory board to the Dutch government is urging. The board, made up of entrepreneurs, employees and inde-

pendent experts found biomass is too precious to burn and should instead be used as an “indispensable” resource to support a circular economy in the building, agricultural, and chemical sectors. Billions in subsidies intended for biomass combustion plants should be phased out as well, the board said. It remains to be seen how the Dutch government will use the advice when drafting a national sustainability framework for bio-resources due this fall.

—*www.euractive.com*
July 20, 2020

Cuttlefish comeback

Aussie Rebound

Giant Australian cuttlefish are returning to their winter breeding ground in South Australia in numbers not seen since their decline in the 1990s. An estimated 250,000 of the cephalopods have made the journey to their birthplace, an eight kilometre-long strip of coastline where males spar and perform a colour-changing mating dance to win female attention, and, this year, to entertain a swell of tourists drawn to the spectacle. Known as the “rockstars of the ocean,” the cuttlefish live fast and die young in a lifecycle which lasts only 12-18 months.

—*www.theleadsouthaustralia.com.au*
June 24, 2020

Green space brain case

IQ Glow Up

Access to urban spaces that are rich in plant life can boost the IQs of children while lowering the incidence of aggression, poor attention, and other behavioural issues, says a first-of-its-kind study published in the journal *PLOS Medicine*. The study used satellite imagery to map available green space and compared that data with more than 600 children between the ages of 10 and 15, finding a 3% increase in the greenness of the childrens’ neighbourhood raised IQ scores an average of 2.6 points, while problems like aggression declined two points on a standard scale. The results were the same regardless of socio-economic background.

—*www.theenergymix.com*
September 7, 2020

Watershed jobs will help fish

BC Budget

In September, the BC government announced an investment of \$27 million in watershed initiatives and wetland projects across the province. Coree Tull, co-chair of the Watershed Security Coalition welcomed the investment in watershed security and noted, “Watershed restoration will put people to work in a COVID-safe manner, while improving the health of our watersheds.”

“Water is sacred, alive, and the lifeblood of First Nations’ traditional territories. Access to healthy freshwater is essential to the continued survival of fish and other aquatic species, and to the protection of Aboriginal Title and Rights and Treaty Rights,” said Hugh Braker, president of the First Nations Fisheries Council.

—*Watershed Security Coalition*
September 17, 2020



Site C Code Red

The dam is over budget and the foundation needs a fix

Watershed Sentinel staff

The Site C dam project is “at risk” from geotechnical issues and “significant cost pressures,” according to BC Hydro’s own reports filed July 31 with the BC Utilities Commission.

In their belatedly submitted 2019 annual project report, the electric utility revealed that in late December 2019, geological mapping and monitoring found that “foundation enhancements” are needed along the right (south) bank of the dam to “increase the stability below the powerhouse, spillway and future dam core areas.”

The exact nature of the instability is not explained, but in a second report, covering the first quarter of 2020, possible fixes include changing the design of the main concrete core buttress of the dam, additional subterranean “grouting” to prevent seepage, adding a “shear key” to the right bank of the earthfill dam to resist lateral loads, and increasing drainage within the rock of the approach channel.

The quarterly report found that “foundation enhancement costs are expected to be much higher than initially expected in January,” and significant enough that “project scope, schedule, and cost are under pressure due to the requirement to implement these enhancements.”

“The estimated cost and schedule impacts will be better understood once the enhancement measures are selected,” the report said.

BC Hydro said the problems were communicated to the dam’s Project Assurance Board in early January, over a half-year before release of the public reports, and the company is working with the Site C Technical Advisory Board and the Project Assurance Board to determine the appropriate fixes.

In a statement, Bruce Ralston, minister of Energy, Mines and Petroleum Resources, said budget and schedule troubles at Site C are largely due to COVID-19. He also distanced the NDP government from the dam: “The previous government chose to start Site C in 2010 and made clear they wanted to push it past the point of no return. And they did.”

Ralston said he is appointing Peter Milburn, a former deputy minister of finance, as a special advisor to review the project.

Critics have dismissed attempts to

blame Site C’s ballooning budget on the COVID-19 pandemic. They say the NDP took responsibility for the dam’s inevitable cost overruns when they decided to continue the project, and point out that the region’s notoriously unstable shale bedrock has been known for decades.

The unknown costs of addressing the geotechnical problem, combined with other pressures listed in the reports – COVID-19 difficulties, contract amendments, additional labour, rising costs for clearing the reservoir and building a transmission line, and ongoing court challenges by First Nations – add up to a red “at risk” condition assigned by the report to the project’s overall health.

BC Hydro is now working to “re-baseline” the dam’s costs and timeline, but the reports repeatedly assure that the project is on track to divert the Peace River through bypass tunnels this fall.



Eat Your Bugs

Entomophagy could offset climate and extinction crises



©Tanika



©Jonathan Beckman

by Gavin MacRae

A package at the door signalled it was time for my experiment to begin.

I opened the box and emptied bags of barbecued mealworms and roasted chili-lime and honey mustard crickets into bowls, then called over my 4-yr-old for his afternoon snack.

I explained that today we were eating insects. Without skipping a beat, my son started munching. After a moment of trepidation, I joined him.

The mealworms weren't his favorite; I thought they tasted a little like Hickory Sticks. We both agreed the crickets were tasty, especially the chili-lime. They reminded me of flavoured popcorn.

My kid was still hungry, so I gave him a Bite brand "chocolate chirp energy bar" boasting 20-30 crickets per bar, and he gobbled it down.

For dinner I cooked a pot of vegetarian chili with cricket flour. My wife, steadfast in her rejection of the rest of my insect

cornucopia, admitted it was one of my better concoctions.

My experiment was complete. My son's eagerness and wife's acceptance showed we could, to a modest degree, integrate entomophagy (eating edible insects) into our diet, something one study found only 12.8% of males and 6.3% of females in Western culture are willing to do.

Achievement unlocked!

Except it's not much of an achievement.

Archaeological evidence suggests that humans evolved as an entomophagous species, which is perhaps not surprising considering edible insects are rich in protein, fats, vitamins, minerals, and fibre. Today, around two billion people in 133 countries consume insects as part of their diets.

Tiny but environmentally mighty...

But insects should be feeding many more. According to the UN Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, industrial agriculture has reached such massive scale it is now a key cause of catastrophic biodiversity declines and climate change. Livestock is a particular concern, using 80% of agricultural land for grazing or feed production and driving 18% of global greenhouse gas emissions. Three-quarters of the world's available freshwater resources are also now devoted to crop and livestock production. For all this, by one estimation meat only contributes 15% to the total energy in the global human diet.

Then there's the threat of antibiotic-resistant bacteria from overuse of antibiotics on cattle, the risk of zoonotic spillover of pathogens from industrial-scale hog and chicken farming, manure runoff suffocating wild fish and aquatic species, animal welfare concerns, and the list goes on.

Demand for meat is forecast to rise 75% by 2050. The problems associated with meat production will doubtless grow apace if changes aren't made to how we get our calories.

Farmed edible insects, while no panacea, take far less land, less water, and produce fewer greenhouse gas emissions than typical livestock. And because insects don't use energy to maintain a constant body

Insect farming could divert low-value waste from landfills and convert it to high-quality protein.

temperature, they are able to convert feed to high-quality protein more efficiently than cattle, pigs, or chickens. A 2012 study by Dutch researchers found that a gram of chicken protein takes two to three times more land, 50% more water, and produces 32-167% more CO₂-equivalent emissions than farmed mealworms. Beef cattle were estimated to emit 6-13 times more CO₂-equivalent emissions per unit of protein, and use 14 times more land and five times more water than farmed mealworms.

Edible insect farming could also put a dent in the estimated 27% of all agricultural produce that is wasted between field and fork. Rearing crickets, mealworms, or entomophagy's rising superstar, black soldier fly larvae, on pre-consumer waste streams from the fruit, vegetable, baking, and beer brewing industries diverts low-value waste from landfills, and converts it to high-quality protein.

Economic considerations

There are economic benefits to entomophagy as well, says the UN's Forestry and Agriculture Organization. Raising "minilivestock" offers a way for people in developing countries to start small businesses that create cash flow quickly with little space, investment, or training.

For commercial-scale insect farming, there are still regulatory and technological hurdles, besides the obvious marketing challenges. But buoyed by increasing acceptance of entomophagy, the market is growing. Pressure to develop sustainably

produced animal feeds (especially alternatives to wild-caught fishmeal) and pet food has opened up opportunities too. In Canada, two of the main players are Ontario-based Entomo Farms, which produces cricket and mealworm foodstuffs, and BC-based Enterra, which focuses on black soldier fly larvae for feed and pet food markets.

But the fly in the entomophagy ointment, for the consumer, is price.

The amount of food I received for the price made my order something of a novelty purchase instead of a standing line item on my grocery list. Cricket flour, for example, was over three times more expensive per gram than plant-based protein powder. According to one research paper, this is because commercial-scale insect farming still relies heavily on manual labour, which will keep sticker prices high until automation is developed and implemented.

But I'll still buy the occasional bag of bugs even if – for now – they're more of a curiosity than a food staple. They're tasty, and besides, with the changes in food consumption that will be needed in the decades ahead, gastronomic open-mindedness is a trait I want my son to remember.

See the fully footnoted & linked article at www.watershedsentinel.ca.

For more info see *Edible Insects: Future prospects for food and feed security*, www.fao.org/3/i3253e/i3253e.pdf

Scapewolves

Habitat decimation is the real killer of mountain caribou

by Valhalla Wilderness Society

A multi-disciplinary team of six scientists from three universities, led by a former Environment Canada biologist and caribou expert, has published a stinging rebuttal of a 2019 study by ten co-authors – most of them BC or Alberta government caribou managers or advisors.

The previous study, led by Dr. Robert Serrouya, had concluded that habitat protection was not important for recovery of mountain caribou, when compared to maternal penning and killing predators like wolves. The re-analysis by Dr. Lee Harding and his colleagues, published in the peer-reviewed journal *Biodiversity and Conservation*, has now revealed that the earlier study was seriously flawed.

“To those of us who have been working for decades to save BC’s rare and unique Deep-Snow Mountain Caribou, this new study is a bombshell,” said Anne Sherrod, a caribou campaigner with the Valhalla Wilderness Society. “The 2019 analysis by the government advisers was

published at a very sensitive time for public involvement and government decision-making. It had powerful influence on the media coverage, public perception, and government policy.”

Timing is everything

In mid-2018, Environment and Climate Change Canada (ECCC) declared an imminent threat to the recovery of BC’s endangered mountain caribou. The federal government said that habitat protection had been inadequate, urged immediate new protection, and threatened that the federal government could order BC to protect more habitat.

In April 2019, a panel of federal and provincial biologists toured the province holding public meetings to present plans for new caribou protection and take public input. Just three weeks before the meetings began, headlines across Canada heralded the analysis by Dr. Serrouya’s team. The articles inferred that the caribou could be saved by intensified predator culls and maternity pens, without additional habitat protection.

Six months after publication of the 2019 analysis, Forests Minister Doug Donaldson announced that there would be no more habitat protection for the caribou of the Interior Wetbelt (also known as the “Deep-Snow

Mountain Caribou”). Since then, many British Columbians have pleaded with the government to stop logging in the habitat of the endangered Central Selkirk, Columbia, and Hart Ranges herds of Deep-Snow Mountain Caribou. The logging has continued. Simultaneously, the government more than tripled the number of wolves killed per year for mountain caribou, with 498 wolves killed last winter.

Ironically, re-analysis of the data by the new scientific team showed that most of the improvements from wolf culls and maternal pens were in herds of the Central and Northern Mountain Caribou in the Peace River Region – north of the Interior Wetbelt. The journal article by the Harding team explains that the genetically unique Deep-Snow ecotype is more dependent on old-growth forest than their northern cousins, and thus more vulnerable to the impacts of logging. Also the major cause of verified predation mortalities for the Deep Snow Caribou is cougars, not wolves.

It has been two years since the Environment Canada and Climate Change Minister directed immediate habitat protection. Yet to date the Deep-Snow Mountain Caribou have not received one iota of new habitat protection. Logging continues to ravage their remaining habitat.

For more information on the context of these issues, see VWS’s background report at www.vws.org



2019 logging at Trout Lake, in habitat of the Central Selkirk herd of the Deep-Snow Mountain Caribou

How It All Went Down

CORE and the fight for BC forests in the 1990s

by Dan Lewis

In 1992, the BC government tried to settle growing forestry disputes with a multi-stakeholder consensus-based negotiation about regional resource use. Former provincial ombudsman Stephen Owen was the commissioner. The process was boycotted by First Nations. It met with some success, notably in the Caribou-Chilcotin and the East Kootenays, but the Vancouver Island process quickly fell apart. The Protected Area Strategy did result in an increase in parks across BC from 6 to 12% of the land base. By 1996, cabinet had resumed direct control of land use decisions. Dan Lewis was a young member of the Conservation Sector at the Vancouver Island CORE Table and remembers the experience.

Where to begin a tale? Why not start with Tla-o-qui-aht and Ahousaht First Nations in Clayoquot Sound uniting with Tofino residents and the environmental movement to stop the clearcutting of Meares Island in the 1980s? This was soon followed by Indigenous-led protests to protect Gwaii Haanas in Haida Gwaii, and the Stein Valley near Lytton.

Logging in British Columbia was in full swing, and it was hard to avoid seeing major new clearcuts springing up whenever you left the cities. The Wilderness Committee in Vancouver was publishing calendars each year featuring endangered wilderness. The province was becoming

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EDITORIAL

Estranged Bedfellows

Environmentalists throughout BC may come to appreciate the misdirected yelping and whining of the SHARE groups, the timber-based community organizations at least partially funded by the logging corporations. Given a little thought they will realize SHARE is making their points for them. Perhaps they might even consider raising a little money to help offset the expenses of SHARE's town hall meetings/intimidations. What matter another bake sale to these Napoleons in rags?

The few percentage points here or there, in the protected areas, as recommended in Stephen Owen's CORE report, would not make a significant difference if our forest practices were as healthy and sustainable as some would have the citizens of the province believe.

If the forest industry cannot tolerate a sustainable safety margin, as represented in the recommendation for a reduced allowable annual cut, we are walking dangerously close to the edge. Indeed, so close are we to the precipice, a couple of unusually dry summers, resulting in the burning of a few thousand hectares of forest, could kick us over the edge.

If SHARE is really interested in sharing the province's resources, it could better spend its time pressuring for a value added industry, the suspension of Tree Farm Licenses, and the granting of cutting permits to thousands of small operations throughout the province.

What a great pity that SHARE seems not to be reason-driven, but rather, appears to be unwittingly caught up in the corporate fear of losing control of the government.

The winds of change are blowing through the forests. A lot of dust is rising. World markets are threatened by the gathering clouds. When the dust settles and the new broom sweeps, will SHARE be thrown in the dust-bin?

*Don Malcolm,
March 1994*

AT THE CORE OF IT ALL

"We are a people under occupation, occupation by the transnational corporations. They run our towns, they run our forests..."

*Joe Foy, Western Canada Wilderness Committee,
November 1993*

⇐ CORE continued

a kettle of conflict – clearly something needed to be done to address the concerns of citizens.

By the early '90s, the media-dubbed “War in the Woods” was in full swing, with protests sparking up all over Vancouver Island. Along came BC’s Opposition, the New Democratic Party, promising in 1991 that if elected they would end the war in the woods and double BC’s park system. The Valhalla Wilderness Society had created a map of endangered wilderness areas in the province, so we had an agenda – our work was cut out for us.

Once elected in October of 1991, the NDP decided to establish the Vancouver Island Commission on Resources and Environment (CORE) to bring all stakeholders to the table and find a way forward. They chose Stephen Owen, a respected former ombudsman, as Commissioner.



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Consensus or lunch?

There were several months of preparatory meetings for the ENGOs (Environmental Non Government Organizations). We held massive meetings with up to two hundred representatives from organizations of all sizes from all over Vancouver Island. We debated for hours about which issues mattered most, and what we wanted CORE to accomplish. There were of course cynical jokes: the Island had already been mostly logged, and we were fighting over what to do with the core after the apple had already been eaten.

I remember one intense day-long session where we decided by consensus how long to take for lunch. Many felt we needed a solid break before the intense afternoon, and argued for an hour for lunch. Others felt there was way too much to do to take such a long break. In the end, we debated for half an hour, at which point it was clear we only had half an hour left for lunch. Perhaps we should have reviewed Starhawk’s manual on when not to use consensus: when the issue is trivial would have applied here!

High end lawyers and a Yale tie

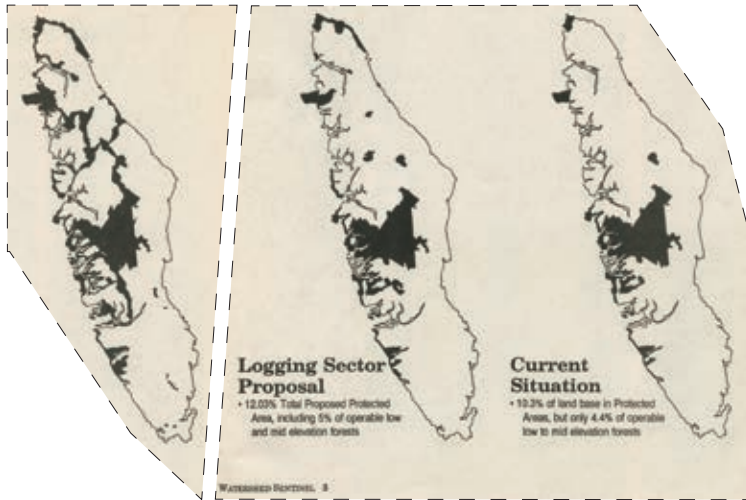
Finally, we arrived at the big first Table Meeting. There were six of us on the conservation sector negotiating team, and we would be the only sector with three seats at the table. We had decided to dress up a bit so as to dispel any granola-munching stereotypes (I had to borrow a suit and tie). When our team showed up in the lobby, the corporate logging types silently gasped – they had dressed casual so as not to appear like a bunch of suits. You could practically see the sparks flying as they took in my attire and the Yale Law School tie I borrowed, paired with my bushy red beard. It was seriously messing with the high-end lawyer who had been hired to represent the logging majors.

The process wound on through the winter until April 1993, when the government in their wisdom decided to make their own decision about Clayoquot Sound without waiting for the table to deliberate. (That is a whole ‘nother story – basically by opening two-thirds of Clayoquot Sound to clearcutting, they kicked off Clayoquot Summer 1993; to this day the largest act of civil disobedience in Canadian history, with 900 arrested over three months. And it’s still being logged – albeit nothing like the heydays).

Everybody expected the conservation sector to walk from the table, but we had decided to be less predictable and stay on for the

The CORE Plan

- 13% Protected Areas, but only 7.8% low and mid elevation forests
- 8% Regionally Significant Lands where logging and mining may occur if they are carefully managed so as not to interfere with environmental, recreational and cultural values.
- Forest Land Reserve recommended



All images from Watershed Sentinel, March 1994

rest of the negotiations. Instead, Stephen Owen arrived with a list of ten demands, threatening to quit as Commissioner unless his demands were met. Then the forest majors, forest unions, manufacturers, and truck loggers stood up from four opposite sides of the table and left the meeting in protest of any job loss which might occur as a result of saving one-third of Clayoquot.

Eventually the whole affair wound down to its logical conclusion. Only when we began actually drawing lines on the map did any of it matter much. The conservationists tried playing a trick used by logging companies – we asked for only small tracts of land, the places with rich valley-bottom big tree rainforest. For example, we were prepared to let the companies have the bog along the outer coast of Nootka Island. We staked out only the hills above, knowing those were the only trees worth cutting. The idea was to minimize the number of hectares we were proposing for protection. Because the target was 12% of the land base, as set out in the International Convention on Biological Diversity signed at the Rio Earth Summit in 1992, and BC had already protected about 10%, we were really only going to protect 2% more of the land base as parks.

The night before the final negotiations began, we met some of the small business loggers in the bar. We'd gotten to know each other over the months, and had built relationships. But that night they apologetically told us that they would be siding with the forest majors the next day, and pushing for no real change to the status quo.

No agreement

In the end, the Table failed to agree on which areas to protect from clearcut logging. The places which received protection

were those which had become household names through protests appearing on the evening news: Carmanah Valley, the Walbran, the Tsitika, and bits of Clayoquot. Little was done to address concerns about the rapacious nature of clearcut logging, other than establishing Special Management Areas where logging was meant to be light-touch and other values had priority. If you've driven to Tofino in the past quarter-century, you passed through a Special Management Area after Port Alberni; but you may not have noticed anything different about how it is being logged – new cutblocks appear all the time.

By focussing only on adding protected areas to the parks system, the conservation sector was unable to push forward concepts which had support from other sectors at the Table: lowering the Annual Allowable Cut (the volume of trees cut per year) to a sustainable level; investing in value-added manufacturing so we could sell at least lumber if not furniture instead of raw logs; investing in intensive silviculture to create jobs and healthy young forests; increasing stumpage (the fee corporations pay to cut trees) to fund the transition; or protecting riparian zones (the trees along streams and rivers which hold the banks together, protecting salmon habitat).

I believe the NDP did an amazing thing for this province by doubling the park system in the 90s. However, they failed to follow up by bringing in truly sustainable logging practices, or ending the export of raw logs. And most importantly of all, they did not put an end to logging of all old-growth forests as jurisdictions such as New Zealand have done. It will be up to today's generation to drive a stake in the ground and make their stand!

Dan Lewis lives in Tofino and is a founding director of Clayoquot Action. Contact him at dan@clayoquotaction.org



Agricultural Land

BC needs to protect farmland and expand food production

by Harold Steves

What will “normal” look like now that COVID-19 has become an inescapable part of our reality? Physical distancing will continue, people will wear masks, and seniors will remain isolated until a vaccine is created. But we must plan for the future now to prevent food insecurity due to climate change and pandemic-related supply disruptions. An even greater crisis awaits us.

The United Nations warns that, due to COVID-19, people facing severe food insecurity worldwide could double from 135 million in January 2020 to 265 million by 2021. Climate-related problems of floods, wildfires, drought, and locusts are rapidly getting worse. Columbia University researchers announced that California and the US southwest, which supply most of our food here in British Columbia, might be experiencing the second worst mega-drought in 1,200 years.

In 1972 I drafted a simple statement for NDP agriculture policy in a booklet, “A New Deal For People,” going into the provincial election. The suggestion to “establish a land-zoning program to set aside areas for agricultural production and to prevent such land being subdivided for industrial and residential areas” was adopted by the BC NDP Government on April 18, 1973, and the Agricultural Land Reserve (ALR) was created. In 1976 the concept was adopted at the third UN-Habitat “World Urban Forum” conference in Vancouver.

The ALR not only preserved the province’s limited amount of farmland, but also shaped growth patterns over the next 45-50 years. Metro Vancouver adopted the ALR as an urban containment boundary creating more efficient and compact urban communities.

In 1973, BC was producing 86% of our vegetables and small fruit on the 1.1% of BC that is Class 1-3 agricultural land. We were losing 15,000 acres of farmland to development every year, much of it high-producing land in the Lower Fraser Valley.

The original concept of the ALR included a Land Bank to get young farmers back on the land. About 10,000 acres were sold or leased to young farmers in the first four years. It also included BC’s first major allotment gardens in Richmond to promote urban agriculture, and an Industrial Land Reserve to prevent erosion of farmland to industry.

In 1977, when the Barrett NDP Government was defeated, the Land Bank and the Industrial Land Reserve were taken out of the legislation. The allotment gardens were sold to create the “Fantasy Gardens” shopping centre in Richmond.

Mega-mansions

Over the years, hundreds of small parcels and several large blocks of farmland were removed from the ALR, like Terra Nova

in Richmond, Spetifore Farm in Delta, Six Mile Ranch at Kamloops, and finally the Site C Dam on the Peace River. More recently, lax regulations have permitted an influx of mega-mansions and country estates. The BC Ministry of Agriculture recommended a maximum house size of 4,300-5,000 sq.ft. but the government refused to act until the government changed in 2018.

The government-appointed BC Food Security Task Force’s final report, *The Future of BC’s Food System*, wants 0.25% of the ALR (class 4-7 land) allocated for “a broader category of use essentially categorized as agricultural-industrial,” in order to “spur rapid establishment of agritech and agri-innovation enterprises [and] attract companies that align with agri-industrial vision to these new zones of opportunity.” That will fuel further speculation on farmland, and make it more difficult for farmers to buy farmland or negotiate long term leases. Agritech companies could instead be located on land outside the ALR in various sites around the province, such as the Inland Port at Ashcroft.

Farmland for truck parking

The Vancouver Fraser Port Authority already wants 2,600 acres of farmland for Port expansion instead of expanding to Ashcroft or other ports along the coast. The Port has purchased 218 acres in Richmond, and speculators with close ties to

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the Port own much of the desired 2,600 acres in Richmond, Delta, and Barnston Island. The Port refused to provide land for parking trucks. Class 4 land that should have been agricultural-industrial became truck parking and manufacturing along River Road and Westminster Highway in Richmond. The same is happening around Burns Bog in Delta. Ironically, Class 4 land is best suited for cranberries, one of the most valuable crops in Canada.

Now, BC is experiencing massive cost overruns at the Site C dam. This dam would flood 9,430 acres of prime farmland. On July 31, BC Hydro announced the cost is rising from \$10.7 billion (previously \$9 billion) to about \$12 billion. Being built on shales, in the absence of bedrock, the dam may not even be stable. It's time to develop solar, wind, and geothermal energy that doesn't flood forest and prime farmland like the planned Site C dam. It isn't too late to rethink the Site C dam.

A 2013 report from the UBC Collaborative For Advanced Landscape Planning (CALP) recommended rooftop solar in Metro Vancouver that would produce electricity for 900,000 homes or heat up to 650,000 households. It praised the City of Richmond's Alexandra District Energy Utility which is using geothermal systems to eliminate baseboard heating in downtown Richmond apartment buildings. There is no need to flood farmland for hydro.

It is time for the BC Government to stop the erosion of the ALR and put more emphasis on local food systems, urban agriculture and organic farming. During WWII, when food was rationed and sent overseas to support the soldiers, Canadians and Americans grew 40% of their vegetables and small fruit in their own backyard "victory" gardens.

At the 2006 World Urban Forum in Vancouver, the FAO (Food and Agricultural Organization of the UN) warned that cities need to provide more of their own food. At the same time, IESCO (The International Ecological Safety Collaborative Organization) asked Richmond and Kwantlen Polytechnic University to establish a municipal farm school and land bank to provide food for urban populations. KPU planted their first crop on 20 acres of the 136-acre Garden City Lands near downtown Richmond in 2018. Richmond is providing incubator farms for graduates to improve their skills and making unused, privately-owned farmland available. As the farm school develops, 300 allotment gardens will be provided for downtown apartment dwellers.

A 2006 study by the BC Ministry of Agriculture, *BC's Food Self-Reliance: Can BC's Farmers Feed Our Growing Population?* found that BC's population had increased 82% between 1971 and 2001, and BC produced only 56% of its own food. It concluded that "to produce a healthy diet for British Columbians," farmland with access to irrigation needs to increase by 230,000 acres or 49% over 2005 levels.

A Regional Food System Action Plan was adopted by Metro Vancouver in 2016, stressing a need for increased local food "storage, processing and distribution," with more land under vegetable production to replace imported foods.

A more detailed study by Davies Transportation Consulting in April 2020, *Food Flows in Metro Vancouver*, studied food sources, imports, and exports in BC and found that only 35% of the BC food supply is sourced from within the province.

Approximately 14% of the food supply is sourced within the Metro Vancouver re-

gion, nowhere near the 40% recommended by the FAO today. Since 84% of our food imports come across the US border, we will increase our food self-reliance and reduce our CO₂ footprint from trucking dramatically if we get more land into production and grow food locally.

Local agriculture can also reduce greenhouse gas production. Grassland, pasture, and plants are second only to trees for sequestering CO₂ as long as the byproducts, manures, and compost are returned to the soil, and no fossil fertilizers, herbicides, and pesticides are used.

Let's all continue with the environmentally-positive changes we have made with COVID-19 like video conferencing, reduced air travel, e-commerce, working from home, and planting gardens. Cities should promote local agriculture with farmers' markets and allotment gardens, and encourage farming of unused arable lands to reduce the need for shipping and dependence on other countries for our basic foods.

Farm schools and food hubs

More cities should innovate with enterprises like Richmond's award-winning geothermal energy projects and Garden City Lands, where a 2.7 hectare farm school is maintained through KPU and more urban agriculture is planned.

The BC government needs to re-evaluate farm assessments, taxes, and the low farm income threshold that still encourages country estates; help BC farmers expand local food production; develop food hubs (including fisheries) and expand processing and distribution; establish local food procurement policies; increase farm research and extension services to farmers; take steps to reduce high-emissions inputs and transition back to crop rotations

and regenerative agriculture; assure a local BC seed supply in times of scarcity; expand market access and health safety with provincially-inspected meats and abattoirs; and establish a Land Bank once again to get land into production and into the hands of young farmers. A solid urban containment boundary around the ALR is an urgent provincial responsibility.

Corporations will urge politicians to return to the old ways to pay off pandemic costs. We must not let that happen. The cumulative effects of loss of farmland, rising population, and increasing dependence on sources of food beyond our borders are damning. Our “new normal” should be a sustainable future that values clean air, water, and food.

Harold Steves is an agroecologist, farmer, former MLA and a founder of the Agricultural Land Reserve. He has been a Richmond councillor for 49 years and is the Coastal Community Network South Coast Director on the Groundfish Development Authority.

84%

of our food imports
come across the US border

Site C

Protecting farmland crucial for post-COVID food security

by Wendy Holm and Ana Simeon

When it comes to panic buying, vegetable seeds are up there with hand sanitizer and toilet paper. Pandemic gardens are trending. Through March and April, seed suppliers across North America were so overwhelmed with orders that many had to temporarily close down their online platforms, or stop selling to home gardeners.

Reared in the economic orthodoxy that worships efficiency and scale, we may be tempted to scoff at such naïve attempts at self-sufficiency. Yet the pandemic is showing us the frightening vulnerability of our food systems. Becoming more resilient – as communities, provinces and as a nation – will require us to re-learn some measure of self-sufficiency when it comes to food and other essential services.

The conversations we're beginning to have now – in the media, in the legislatures – show that we're taking the first steps in grappling with some of the vulnerabilities of our current food system. Canada has always worked to enact policies that support sustainable family farms – the problem by and large is post farm-gate. COVID-19 has awakened us to the fact that large-scale food processing concentrated in a handful of plants can cause continent-wide disruption, compared, for example, with regional hubs processing produce grown in the region. We are also beginning to connect the dots between underpaid foreign labour, our dependence on food imports, and the very real possibility of shortages of some food items.

To achieve food security in the post-COVID era we will have to go against the grain of much of the economic thinking that has increasingly dominated the discussion since the mid-1980s and the emergence of globalization. We will have to reverse decades of policy-makers' efforts to steer the economy toward profitability on paper and away from meeting basic needs. We will have to grapple with the fact that the supply of farmland is limited and that some of the losses will be irreversible. Others may still be reclaimed, if we act swiftly. But make no mistake, Canada's farmland is on the international auction block.

BC has a very small percentage of first class agricultural land, which is why BC's Agricultural Land Reserve was created in 1973. Since then, the ALR has been both weakened and reduced in size. Both the Liberal and the NDP governments have allowed the "death by a thousand cuts" to proceed apace whenever it suited them. Over the years, urbanization and sprawl have been allowed to gobble up prime acreage in Richmond/Delta and on Vancouver Island (and even more may be lost if the planned Deltaport expansion goes ahead).

But nowhere has the loss been so devastating as in the northern part of our province. The fracking boom has decimated food production in a region that was already by far the most food-insecure in the province – and the pandemic makes everything much worse. The uniquely productive Peace River Valley, "the valley of the southern North," is close to being sacrificed for the destructive and unnecessary Site C dam project. Yet it is not lost, and in the new normal of a global pandemic it is even more worth fighting for.

A unique food oasis

Born from the confluence of the Parsnip and Finlay rivers (now submerged by the Williston Reservoir formed by the W.A.C. Bennett Dam), the Peace River flows east past Hudson's Hope and Fort St John before crossing the border into Alberta and wending its way north, joining the Athabasca, Slave, and MacKenzie river systems before entering the Arctic.

Blessed with a warm inflow of air from the Pacific, the alluvial soils and class one climate for agriculture of the Peace River Valley give it the same cropping capacity as BC's Fraser Valley, with higher yields due to longer hours of sunshine in the summer months.

The farmland to be flooded by the Site C Dam has the potential – cropped to its highest and best use, which is fresh vegetables – to meet the nutritional needs of over one million people a year, forever.

The prime agricultural land at Site C is not only closer to Vancouver than California and Mexico (suppliers of over 60% of the imported fruits and vegetables BC could grow in this province) – it is on the doorstep of the Northwest Territories and the Yukon, both of which are critically food insecure and said by Ottawa to be a federal food security priority.

Food security in the post-COVID era

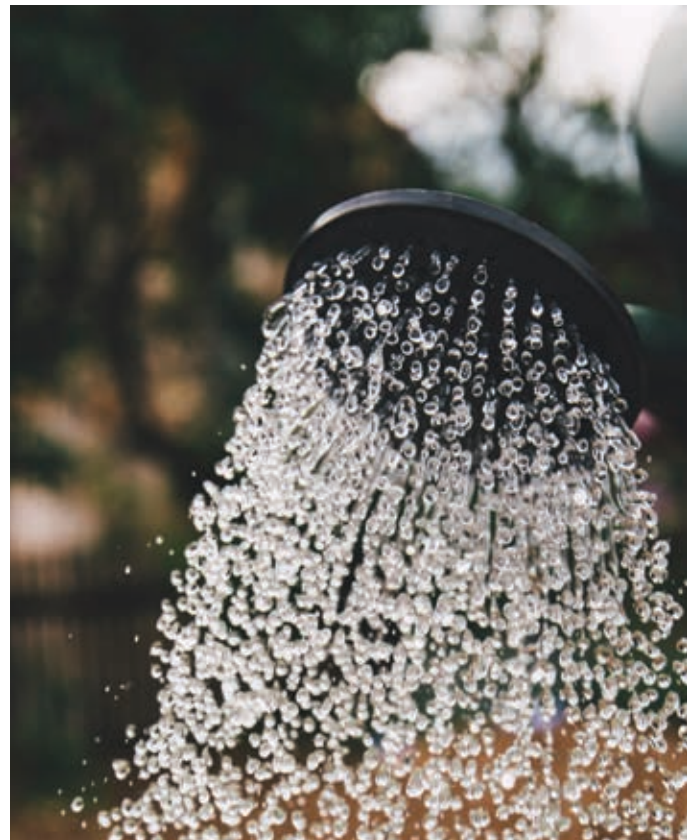
COVID-19 puts food security on the front burner. The Peace Valley land to be flooded by the Site C Dam is critical to Canadian food security – both in BC and northern Alberta, and also in the Northwest Territories and the Yukon.

It is not too late. According to BC Hydro’s own reports, the diversion tunnels are seriously behind schedule. BC Hydro’s works to date can be easily removed, the flood reserve lifted, and the valley allowed to heal. Farmers who lost land to the dam project should be offered incentives to return. BC’s universities should be invited to form a learning cooperative and acquire the land to establish a Centre of Excellence on Sustainable Agriculture that would offer practicums for students to study cutting-edge methods, and then homestead them in the valley as part of a growing food security cooperative.

We have highly productive land, a unique microclimate and unprecedented public need. With good public policy, growing the new young farmers to make it all happen would be the easy part!

Wendy Holm is an award-winning Canadian Professional Agriologist (Ret’d), economist, and journalist. She is the editor of *Damming the Peace: the Hidden Costs of the Site C Dam* (2018, Lorimer, Toronto).

Ana Simeon is a food security advocate who grows year-round vegetable crops on rented and share-cropped land in Victoria. A journalist by background, she also works for RAVEN (Respecting Aboriginal Values and Environmental Needs) as a campaigns director.



“The farmland to be flooded by the Site C Dam has the potential – cropped to its highest and best use, which is fresh vegetables – to meet the nutritional needs of over one million people a year, forever.”



©Markus Spiske

Feeling Lucky?

The bottom falls out of BC's overhyped LNG gamble

by Mitchell Beer

Whether you love the thrill of a trip to the casino or consider it a strange form of entertainment, most of us would draw a big, bright line if we thought our governments were gambling our tax dollars and pension funds on “sure” bets about as reliable as a craps table or a one-armed bandit. Particularly if they were placing bets in the billions of dollars, rather than tens or hundreds, on our behalf.



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And even more so in a moment when we thought we'd agreed that all our personal and government resources would be focused on recovering and “building back better” from a global pandemic.

Asia – the region that accounts for more than half of global Liquefied Natural Gas demand – is where successive British Columbian governments have always been intent on selling their product. It isn't that Premier John Horgan or his apparently like-minded predecessor, Christy Clark, would never have been able to find a projection of future LNG demand that matched up with their export ambitions. It's more that the numbers range widely enough to support almost any set of conclusions. Which means that, by cherry-picking the analysis, it would be easy for any government of any stripe to make a deep, long-term commitment based on data that is wafer-thin.

Here's how that's been turning out for them so far:

In mid-December 2018, analysts at consultancy group Wood Mackenzie confidently predicted that uncontracted LNG demand in northeast Asia could quadruple, to 80 million tonnes per year, by 2030. *Oilprice.com* reported that WoodMac foresaw decisions in 2019 to proceed with LNG megaprojects in Russia, Mozambique, and the US, as well as smaller “backfill projects” in Australia and Papua New Guinea.

Just nine and a half months later, the picture was much less certain. “The next wave of LNG demand growth expected from Asia's emerging economies is far from assured, raising questions over how fast supply from new projects can be absorbed by the market in the coming decade,” S&P Global Platts advised in October 2019. While “some industry proponents have argued that supply will create its own demand,” the release added, “looming risks of a recession mean expensive LNG could be the first fuel countries axe from their energy mix when demand slows.”

By late January 2020 – a moment when the coronavirus outbreak had hit hard in China, but still weeks before the World Health Organization declared a global pandemic – the prognosis for LNG was downright morose. With Asian economies signalling slower economic growth, the market was “still small enough that it takes considerable time for LNG demand growth to catch up with new LNG supply,” *Petroleum Economist* reported, and creating demand would hinge on “downstream investment that is equal to or greater than the cheque being written for new liquefaction.”

By mid-March, with crude oil prices collapsing, more than a dozen LNG projects had been scrapped. “Even before crude’s drop, developers were under pressure from a slump in global gas prices, milder winter temperatures, and demand restraints from the coronavirus,” *Bloomberg* wrote. In late April, the Institute for Energy Economics and Financial Analysis weighed in with a list of cancelled or deferred investments that included BC’s Woodfibre LNG project, as well as the proposed Goldboro LNG project in Nova Scotia.

In late April, *oilprice.com* columnist Nick Cunningham reported that at least 20 LNG cargoes from the US had been cancelled by customers in Asia and Europe.

In early May, both the International Energy Agency and Royal Dutch Shell predicted permanent reductions in fossil energy demand, as the changes wrought by the coronavirus pandemic changed the oil and gas industry forever. “The plunge in demand for nearly all major fuels is staggering, especially for coal, oil, and gas,” said IEA Executive Director Fatih Birol. “Only renewables are holding up during the previously unheard-of slump in electricity use.”

In the second half of June, in what was widely seen as a bombshell for the global industry, colossal fossils BP and Shell each acknowledged that some of their oil and gas holdings will never be developed, producing “stranded assets” worth up to US\$39.5 billion.

By then, *Nikkei Asian Review* had reported that growth in China’s LNG imports was set to fall from 12.1% in 2019 to just 1.8% in 2020. Japan’s imports were on track to fall by 1.2%, South Korea’s by 0.5%.

It’s a baked-in feature of oil and gas markets that prices and demand are constantly shifting. Until now, LNG proponents have counted on energy demand in Asia continuing to grow, quickly

“The plunge in demand for nearly all major fuels is staggering, especially for coal, oil, and gas ... only renewables are holding up during the previously unheard-of slump in electricity use.”

and more or less reliably, as the region develops. But that picture keeps getting more complicated.

Now, to justify a multi-decade, multi-billion-dollar provincial commitment with many thousands of jobs in the balance, British Columbia has to hope or assume:

- That faltering gas demand will recover,
- And that demand for coal-fired electricity will switch to gas,
- And that gas prices will recover to a point where producers can break even, but somehow avoid being undercut by renewables,
- And that in embracing gas, countries will choose to pay more than they have to for their heating, cooling, lighting, and connectivity,
- And that BC can meet a large enough share of that demand to justify a big LNG buildout,
- And that a region facing immediate, acute climate vulnerabilities will continue to accept an energy source whose greenhouse gas emissions are 84 times more potent than carbon dioxide over the crucial 20-year span when humanity will be scrambling to get the climate crisis under control.

In the aftermath of the COVID-19 pandemic, those assumptions don’t appear too sound.

Pop quiz: If John Horgan were the provincial opposition leader, what would he say about a sitting premier betting it all on that kind of risk?

Mitchell Beer is publisher of *The Energy Mix*, a thrice-weekly e-digest on climate change, energy, and a carbon-free future.

This is an edited excerpt from Mitchell Beer’s chapter in *All Fracked Up! The costs of LNG to British Columbia*, published by Watershed Sentinel Books in October 2020. An expanded version of this article with links to sources can be found on our website, www.watershedsentinel.ca.

No Label

Canada's invisible genetically modified salmon

by Lucy Sharrat

More genetically modified (GM or genetically engineered) Atlantic salmon will soon be on the market in Canada. This is because the first ever Canadian-produced GM salmon will be ready for harvest in early January 2021, and the first US-produced GM salmon is being harvested right about now. The GM salmon will be sold unlabelled in Canada.

Small shipments of GM salmon have been sold into Canada periodically since the summer of 2017, but all of this salmon was produced at a small pilot plant on-land in Panama. It could not be tracked in the marketplace but was eaten, invisible to the Canadian public.

The Panama plant is now closed and replaced with two new on-land commercial-scale fish farms, one in Prince Edward Island and one in Indiana, US. This is the start of what the GM salmon company AquaBounty hopes is their global expansion of GM fish factories, and their promotion of GM salmon as local, sustainable fish.

Selling an invisible product

In the US, the genetically modified salmon will now be labelled as “bioengineered,” leaving Canadians as the only people in the world eating GM fish with no way of identifying where it is on the market. In a presentation to the Canadian Centre for Food Integrity on May 27, 2020, AquaBounty’s CEO, Sylvia Wulf, said, “Our plan is to follow the guidelines

in Canada which is we don’t have to label, and the reality is that I think the US is backwards.”

AquaBounty does not advertise to Canadian consumers. Its customers are not the consumers who order salmon at restaurants or buy salmon fillets for dinner, but the food service companies who buy farmed salmon from seafood brokers to sell to restaurants, hotels, and catering companies.

The Fish of the future

AquaBounty is promoting their GM salmon as the future of on-land fish farming. The Atlantic salmon is genetically engineered to grow faster and is promoted as a way to increase the financial viability of land-based containment, bringing the salmon to market quicker and therefore more cheaply. GM salmon is currently restricted to on-land production to minimize the risk of escape into the wild. However, the company has plans to expand production around the world and AquaBounty has speculated on a possible future for ocean farming (“Innovation is Critical for Our Planet,” *Innovature*. July 17, 2019).

The company is set to announce the location of their third GM fish factory, naming Ontario as well as Israel and some land-locked US states as possible sites. It says it will build a “farm” each year. Wulf told the Canadian Centre for Food Integrity, “We think that Canada is an excellent place to put one of our farms in the near future.” Wherever the next GM fish factory is constructed, all genetically modified salmon eggs will come from PEI, making Canada a global centre of GM fish production.

FMI see www.cban.ca/fish. Lucy Sharrat is the coordinator of the Canadian Biotechnology Action Network (CBAN), which brings together 16 groups to research, monitor, and raise awareness about issues relating to genetic engineering in food and farming. CBAN is a project on MakeWay’s shared platform.

Chile Fines Mowi

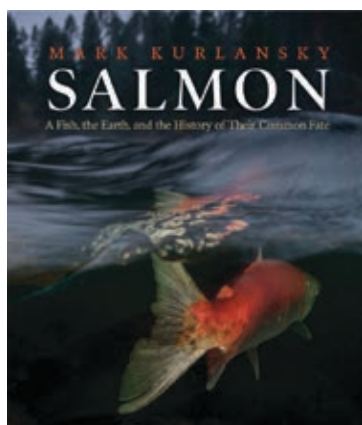
Chile’s environmental protection service has slapped a record \$6.6 million fine on Norwegian salmon producer Mowi (formerly Marine Harvest), in response to the “irreparable environmental damage produced by the mass escape of salmon” from the Punta Redonda farm in Chile’s Los Lagos region in 2018. The service also handed the company an additional 2.7 million peso fine “for not having adequate facilities to dispose of dead fish.” The fish are an invasive and predatory species which are likely to cause a reduction in the number of endemic species in the region and alter the marine habitat, the service said. The salmon also could transmit pathogens and disease to wild species and other fish farms.

—Agence-France Presse, August 21, 2020

Salmon

A fish, the Earth, and the history of their common fate

Review by Alan James



Mark Kurlansky
Patagonia 2020
ISBN:9781938340864
448 pages

Kurlansky's non-fiction writing often looks at food from a long-range, historical perspective. His latest book, *Salmon: A Fish, the Earth, and the History of Their Common Fate*, follows the successes of *Cod: A Biography*

of the Fish That Changed the World [1997] and *Salt: A World History* [2011].

He begins *Salmon* with this rationale:

“The principal point of this book is not that the salmon is a magnificent animal that [can] hold its own compared to anything on the Serengeti – beautiful in its many phases, thrilling in its athleticism, moving in its strength, determination, and courage, poetic in its heroic and tragic life story – and it would be sad if it were to disappear. All that is true, but a more important point is that if the salmon does not survive, there is little hope for the survival of the planet.”

But he does offer hope. He notes that DNA research has yielded new understandings about the interactions between wild fish and hatchery fish, and that people are more aware of their responsibility for the salmon habitat near where they live.

As a streamkeeper for Stoney Creek in Burnaby, I was pleased to see how much of the book is devoted to Pacific Salmon (*Oncorhynchus*). I learned how West Coast First Nations practiced sustainable fisheries for millennia before Europeans arrived. For example, as spawning salmon made their way through the Strait of Juan de Fuca to the Fraser, the Lummi nation in Washington State were waiting. They used a reefnet strung between two ca-

noes in Legoe Bay off Lummi Island. Also, I had incorrectly assumed that all coastal groups traded salmon to inland groups, but I found out that some of the biggest catches were from interior rivers like the Columbia and the Fraser. The Secwepemc traded dried salmon with the Tsilhqot'in for furs and with coastal groups for eulachon grease.

In *Salmon*, Kurlansky deals with changes in fishing technology and government mismanagement – similar to what happened with the East Coast cod fishery. A 30-page chapter discusses hatcheries – both commercial and restorational – and the controversies over the effect of hatchery fish on wild salmon. He explains that most hatcheries are for purely commercial goals, not for the survival of the wild species. He also covers issues with data collection and the problem of shifting baselines. The downsides to marine-based salmon farming – damage to wild salmon from sea lice and viruses – are also well covered. He calls for the removal of open-pen aquaculture to stop disease and parasites from plaguing wild salmon.

More people now support positive changes to fishing practices and infrastructure. Several US states are reviewing laws that require passage around dams for spawners going upstream, but do not yet adequately deal with juveniles going down.

Kurlansky breaks up his detailed and clear salmon science and history with personal anecdotes and two dozen recipes, several from 17th century English cookbooks and a contemporary one for sake steamed sockeye salmon flavoured with ginger and lemongrass.

The most important take-away from this book is the need for place-based, watershed-based fisheries management and the need for political action. Let's make Fisheries and Oceans management in Ottawa know how important salmon and salmon habitat are to British Columbians.

Alan James is a long-time streamkeeper with the Stoney Creek Environment Committee in Burnaby.

Salish Sea Rising

A global problem demands a local response

by Delores Broten

Thirty years ago, I was running the tiny Friends of Cortes Island office out of the community hall at Manson's Landing. This led to many interesting and sometimes passionate conversations. One regular visitor was Basil Seaton, veteran of the internment camps for British soldiers in Burma during World War Two. Basil took it as his mission to educate me about climate change. I remember in particular a floppy disk he brought that contained various climate change scenarios.

Fast forward thirty years. My computer is more like a Ferrari than a horse and cart, and the Province of British Columbia advises communities to plan for one metre of sea level rise by 2100, and two metres

by 2200. But the predictions are still all over the place, depending on the modeling used and the assumptions made.

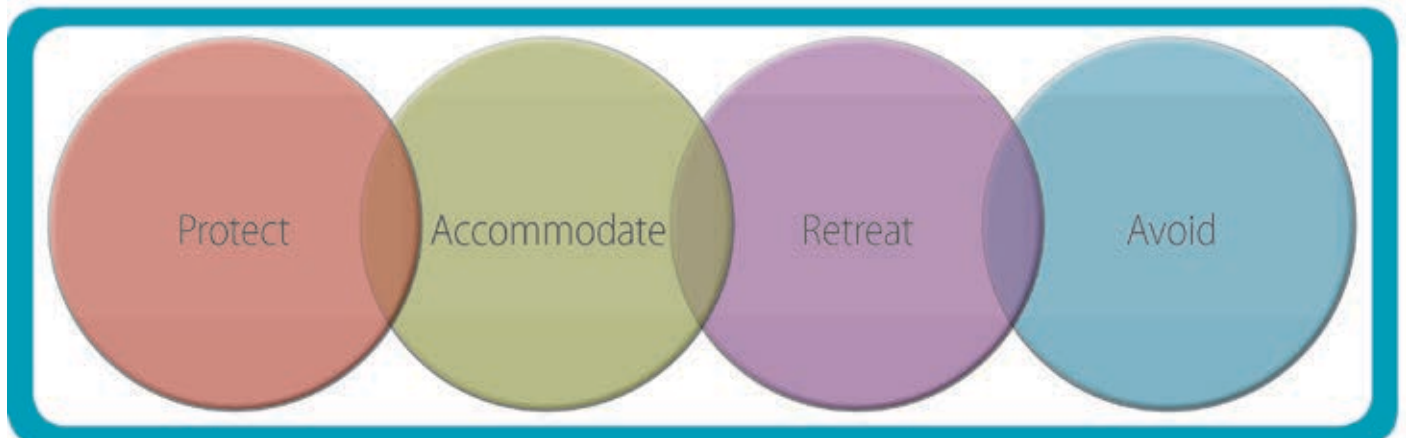
It is indeed complicated.

We can start with the long long view. Over geologic time, sea level has fluctuated by at least 300 metres, largely dependent on the amount of water locked into the Antarctic ice caps. Changes in land formations and water temperature are also major factors.

But what about the here and now? The sea is slowly rising, but on the West Coast the land has also been rising for 11,500 years as the weight of the glaciers was lifted, and from the movement of the tec-

tonic plates. The Educating Coastal Communities About Sea-level Rise (ECoAS) Project, a collaboration between the Ecology Action Centre in Halifax and Fisheries and Oceans Canada cautions: "Depending on your local conditions, the rate of sea-level change in your location can be substantially different from the rate of sea-level change globally and in other locations. In fact, sea-level in Charlottetown is rising almost two times the rate of global sea-level rise each year and relative sea-level projections for Halifax for 2010-2100 (relative to 1986-2005) are 28% larger than global values for the same time interval." Rates of sea level rise for Haida Gwaii are predicted to be around 50-60 cm by 2100, and for Southern Vancouver Island, 50-70 cm.

Adaptation strategies to sea level rise can be grouped as follows:



ECoAS also notes that, “Sea levels in BC during the El Niño cycle between 1976-2008 were on average 0.30-0.40m above normal.”

The Department of Fisheries and Oceans’ Canadian Extreme Water Level Adaptation Tool (CAN-EWLAT), created for small craft harbours, provides a map with projections of sea level rise and wave climate for 650 wharf sites on the coasts. For example, predicted levels for the Cortes Island wharves by 2100 seem to range between 0.13 and 0.4 metres, depending, of course, on what humans do in the next decade or two to limit the greenhouse gases we are packing into the atmosphere. However, with the Arctic permafrost melting and the taiga on fire in Siberia, it is now a question of adapting as much as possible.

To that end, the Islands Trust has prepared a document for the small islands in the southern Salish Sea, *Climate Projections for Islands Trust Area*, March 2020. The Islands Trust report divides its impact projections – such as length of growing season, precipitation, and ocean impacts – into four regions: Southern Gulf and Saltspring Islands, Gabriola & Thetis Islands, Howe Sound, and the Northern Gulf Islands.

Over the entire region, the hottest day is predicted to increase to 36°C by 2080, growing season will lengthen, but so will summer droughts. Farmers and gardeners will have to adapt accordingly.

Certainly of concern to coastal people who love seafood are the projections for ocean stability: “Since the industrial revolution, ocean pH has dropped from 8.2 to 8.1, and is expected to decrease to an average of ~7.7 pH level by 2091-2100,” on the pH scale of 0-14 with anything under 7 being acidic.

Oxygen levels in the water are also falling: “Changes to oxygen levels are occurring rapidly in the North Pacific Ocean, where oxygen has already decreased by 22% at depths of between 100 and 400 m during the last 50 years.”

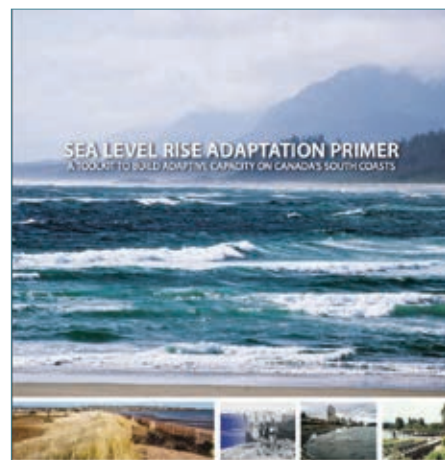
The impact to species other than humans is predicted to be quite severe, stressing both sensitive habitats and biological diversity, species ranges, and species health. The Islands Trust report is largely based on data from the Pacific Climate Impacts Consortium (PCIC) hosted by the University of Victoria. Along with much technical information, science publication reviews, databases, links to even more information, and up-to-date seasonal anomaly maps, PCIC has just launched a completely revamped tool for community planning, called Plan-to-Adapt.

This provides data, including map representations of predicted changes for every region of BC, and is simple and fun to use. For a deeper dive, the Fraser Basin Council hosts a site called ReTooling for Climate Change, with detailed manuals on planning for climate impacts on everything from transportation to natural resources.

The BC government also has a nifty guide for community planners, *Sea Level Rise Adaptation Primer: A Toolkit to Build Adaptive Capacity on Canada’s South Coasts*, with inclusion of the Atlantic resources such as legislation.

The toolkit runs through planning tools, regulatory tools, land use change, structural tools such as hard armouring shorelines and soft armouring by activities like restoring wetlands, and rehabilitation of beaches or creation of dunes, to provide an adaptive buffer to sea level rise.

The authors caution “Adaptation tools



included in this Primer should be considered in the context of information gathering, public education and community engagement, all crucial to informed decision-making processes within our democratic system.”

One can see a fine example of the attempt to engage community in adaptation planning in the City of Campbell River’s “Together for Climate: Managing Risk through Community Collaboration” project, where workshops, resources, and opinion polls are being used to help citizens shape the coming years in that city.

All these considerations need to become everyday life in urban, rural, and personal planning because one thing is certain, “the tides they are a-changing.”

FMI:

- www.bio.gc.ca/science/data-donnees/can-ewlat/index-en.php
- www.islandstrustconservancy.ca
- www2.gov.bc.ca/assets/gov/environment/climate-change/adaptation/resources/slr-primer.pdf
- www.campbellriver.ca

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Arctic Char

Black carbon is cooking the Arctic, but shipping has a fix

by Gavin MacRae

With Canada's last intact ice shelf recently collapsed, a June heatwave that roasted Siberia with temperatures over 37.8°C, and Greenland's ice sheet now losing a half teratonne of ice yearly, it's no wonder researchers now predict the Arctic could be ice-free in summer in less than 15 years.

And while the majority of the anthropogenic heating in the Arctic (which is occurring at a rate over twice the global average) can be attributed to plain old carbon dioxide, a host of secondary climate forcers, called short-lived climate pollutants, aid CO₂ like sidekicks helping a

villain. They don't stay in the atmosphere nearly as long as CO₂, but molecule for molecule are far more potent. Short-lived climate pollutants include methane, black carbon, tropospheric ozone, and hydrofluorocarbons.

Of these, black carbon is unique, being a particle, not a gas, formed during the combustion of fossil fuels and other biogenic materials. In other words, black carbon is soot.

According to a major scientific assessment published in 2013, the pollutant is second only to carbon dioxide as a driv-

er of global heating, although methane may have taken that dubious title since. Regardless, the warming effect of black carbon is so significant that its reduction offers the fastest, cheapest way to slow climate destabilization in the Arctic.

"Black carbon is a little bit esoteric, not a lot of people talk about it," says Bryan Comer, a senior researcher at the International Council on Clean Transportation (ICCT). "We talk about carbon dioxide, we talk about methane – maybe not as much as we should – but we hardly talk at all about black carbon in the media."

The main sources of black carbon worldwide are cooking and heating fires, wildfires, diesel engines, burning of agricultural wastes, and coal and heavy oil power plants.

As a component of fine particulate pollution, airborne black carbon is linked to cardiovascular diseases, strokes, cancer, and acute respiratory infections in children. The World Health Organization estimates that air pollution causes seven million premature deaths each year.

Whether emitted from a cooking fire in Africa, a diesel engine in Asia, or a wildfire in North America, black carbon drifts in the atmosphere for as long as a couple of weeks. While in the air, the black particles absorb heat from the sun's rays, warming the atmosphere.

But for the Arctic, the largest climate effect occurs when the particles land on snow and ice and continue to absorb solar radiation.

"As this snow and ice melts, especially if it's sea ice, it's opening up darker-coloured patches of water, setting off a feedback loop where you have more melting, more warming, and so it's accelerating the melt of snow and ice happening in the Arctic right now," Comer says.

Black carbon sources in the Arctic, which include heating, transportation, and gas flaring, are tiny relative to sources from other parts of the globe, but due to their proximity, have a surface warming effect nearly five times greater than black carbon emitted at more southerly latitudes.

Swiss cheese ban

Black carbon pollution from ships in the Arctic, though a lesser source, has shot up 85% since 2015, and is set to grow fur-

The largest climate effect comes when the particles land on snow and ice and continue to absorb solar radiation.

ther. Ships are "the only source that can plow through the ice and emit black carbon exactly where you don't want it to be, which is right next to the arctic snow and ice and inside the sea ice," says Comer.

Fortunately there's a straightforward solution.

The most commonly-used ship fuel in the Arctic is Heavy Fuel Oil (HFO), a low-cost, tar-like residue from processing crude oil. HFO emits large amounts of black carbon when burned. A switch from HFO to Marine Diesel Oil (MDO), a lighter distillate fuel, would cut black carbon emissions from ships in the Arctic by nearly a third. MDO-burning ships could then be outfitted with particulate filters, cutting black carbon emissions 90% or more.

It's the type of measure the International Maritime Organization (IMO), the United Nations body that regulates shipping, has been pondering. For thirteen years.

"It's been over a decade now that the International Maritime Organization has been discussing what to do about black carbon, or what it is, how you measure it, and ultimately how to reduce the emissions of it," says Dr. Sian Prior, lead advisor to the Clean Arctic Alliance, a coalition of 18 environmental NGOs. "The solutions are actually relatively simple compared to some climate forcing gases. We have alternatives available. They

are cleaner, they're not clean.... But if you combine moving to a cleaner fuel producing less black carbon with the installation of a particulate filter, you can reduce your black carbon emissions dramatically

There is a cost obviously associated with doing that, but in terms of the total impact that black carbon is having on the climate generally and the Arctic specifically, it's almost a no-brainer."

The IMO finally looks ready to move on black carbon, albeit slowly. The organization has hammered out draft language for a ban on HFO in the Arctic that would take effect in July 2024. (HFO has already been banned in Antarctica since 2011 due to the risk of spills.) Comer and Prior say that as the draft stands now, however, there are loopholes large enough to steam an oil tanker through.

First, vessels with double-walled fuel tanks meeting certain specs would qualify for a five-year extension, thereby avoiding the ban until 2029. A study by the ICCT estimates this alone will exempt a third of HFO used in the Arctic.

Secondly, a proposal by Russia would see ships registered in Canada, Greenland, Norway, Russia, and the United States exempted until 2029. Under this arrangement, ships from non-Arctic nations could be reflagged by Arctic nations, to

Continued on Page 28 ⇨

burn HFO while in their flag-country's sovereign waters.

Analysis by Comer and other ICCT researchers finds that less than one-third of HFO carried and less than one-fifth of HFO used would actually be banned in the Arctic, resulting in black carbon cuts of only five per cent.

"It's not that the ban is pointless," Prior says, "but if all you're doing is banning less than a quarter of the fuel that's being carried and used in the Arctic today, it's ineffective regulation, it's not what was intended when it was agreed that we would be banning heavy fuel oil in the Arctic."

The last chance to change the language of the ban before the resolution comes up for adoption will be an IMO meeting in October.

A different fuel restriction from the IMO came into force at the beginning of 2020. HFO used in international waters must now have a sulphur content of not more than 0.5%, to reduce deadly sulphur emissions. The regulations were a land-

mark step to reduce air pollution from the shipping sector.

But there's a hitch. A study submitted to the IMO by Germany and Finland suggests that the formulations developed to replace high-sulphur HFO, called very low sulphur fuel oil, or VLSFO, may produce more black carbon than their predecessor. An increase in additives called aromatics is suspected, but Prior says until there's concrete published data, whether and how VLSFO raises black carbon emissions remain open questions.

Trading one pollutant for another

For Russia, which dominates Arctic HFO use and black carbon emissions, the exemptions in the Arctic HFO ban would allow Russian-flagged ships burning or carrying HFO to transit the country's entire Northern Sea Route from the Pacific to the Atlantic, or vice versa. This allowance dovetails with Russia's plans for economic expansion in the Arctic.

"It's clear the Arctic is a huge economic possibility [for Russia]," Prior says. "They're investing massively in infrastructure in the Arctic along the Northern Sea Route, a lot of that funded by or supported by China. They've set huge commitments, huge targets on increasing the volumes of goods being shipped that way."

Yet at the same time, Prior says, Russia has sent signals it plans to move away from oil-based fuels in the Arctic altogether, transitioning instead to fossil gas, a resource of which Russia has vast Arctic reserves.

Prior cautions, however, that while LNG ship engines emit no black

carbon, they do emit CO₂ and leak methane, so they are not a solution for greenhouse gas emissions from shipping. "We don't want to be in the business of trading one climate super pollutant for another," Comer says.

Horrendous spill risk

HFO also carries significant spill risk, amply demonstrated by the Japanese bulk carrier MV Wakashio, which ran aground then broke up off the coast of Mauritius this summer, bleeding over a thousand tonnes of HFO into the crystal waters of a protected marine park.

In the remote Arctic, an HFO spill would be "horrendous," says Prior. "They're very persistent, nearly impossible to clean up ... skimmers don't work, absorbents don't work, dispersants don't really work. It's just too thick and heavy."


Distillate spills, while not exactly squeaky clean, can at least be expected to largely evaporate and disperse.

Comer says that although it's still early days for a well-trodden trans-Arctic shipping route, "companies and countries, including China for instance, are serious about taking the Arctic shortcut, especially the Northern Sea Route, which opens up a lot faster and has a lot more open ocean than the Northwest Passage."

"[An HFO ban] used to be about trying to protect the Arctic before things got crazy up there," Comer says. "Now things are getting crazy up there."

The clock is ticking. As Finland's President Sauli Niinistö said in 2019, "If we lose the Arctic, we lose the globe."

An expanded version of this story, with links, is available at www.watershedsentinel.ca



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Old Growth

Government announcement amounts to ... not much

by Delores Broten

On September 11th, the BC government released the long-awaited Old Growth Strategic Review (<https://engage.gov.bc.ca/oldgrowth>).

Simultaneously the government expressed the intention of “deferring old forest harvesting in nine areas throughout the province totalling 352,739 hectares as a first step, and committing to engaging,

initiating or continuing discussions with Indigenous leaders.”

However, only a fraction of the 350,000 odd hectares were actually in any danger of being logged in the immediate future, and some of it, never. A lot of that land had no old growth, was rock or wetland, or was already protected. David Broadland of *Focus Magazine* ([\[victoria.ca/forests/27\]\(http://victoria.ca/forests/27\)\) first estimated that just over 50,000 hectares of old growth was under the two-year deferment, but mapper Dave Laversee later came up with a more accurate analysis of a mere 32,474 hectares. Broadland commented, “This is 9% of the area \[the government\] says is being deferred. It’s 7.8% of the area identified ... as needing immediate protection.”](http://www.focuson-</p></div><div data-bbox=)

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Monitoring Oilsands

The importance of **upholding treaties** and co-management

Statement by Keepers of the Water

On August 4, the Canadian Press reported that Alberta had come to an agreement with the federal government that makes major funding cuts to environmental monitoring of the oilsands. Specific monitoring programs have reportedly been cut completely, including monitoring on the main branch of the Athabasca River downstream from the oil sands, field studies on wetlands, fish, and insects, a pilot project to assess the risks posed by oilsands tailings ponds, and water quality assessments in Wood Buffalo National Park, where Canada has faced international pressure to properly protect a UNESCO World Heritage Site.

Alberta citizens' group Keepers of the Water responds:

Keepers of the Water is not in agreement with the recent decisions of the Provincial Government of Alberta and Federal Government of Canada's joint industry-funded oilsands monitoring program. The decision to cut monitoring programs goes against years of prior negotiations on agreements focused on co-management. These agreements include resources that would allow Indigenous Peoples to properly monitor their lands and territories. This Indigenous oversight would allow for the continued development of policies needed for the provision of environmental protections.

Sam Gargan, Keepers of the Water Chair, states "we have worked together with the

Federal Government to establish an [Edzhie] Indigenous protected area that will be co-managed with the Indigenous people of this region. This is the way of the future; it is a solution that ensures we are protecting the lands for future generations."

There are questions as to the legal ramifications of this decision in several areas, including both the Treaty Rights of Indigenous Peoples of these lands and international human rights agreements. As Canada was being formed and expansion encroached into Alberta, Treaties 8 and 11 were agreed upon and signed with an understanding that the land would be co-managed with Indigenous people of these lands. More importantly, the land would be protected by Indigenous Peoples and they would continue to have access to these lands to hunt, fish, and trap, and access to clean water. With this decision, the Provincial Government of Alberta and the Federal Government of Canada are contravening the Indigenous Rights and Treaty agreements in the affected areas and failing to uphold their obligation as Treaty signatories.

The evolution of co-management agreements up to and including the recent Guardian programs has worked well. This includes programs that are federally funded and provide Indigenous people the means necessary to manage and monitor their lands. The ones who know the lands, air, water, and living beings best are the ones who live on this land. In-

stead of cutting funding, now is the time to promote and adequately fund programs such as the Guardian program. Upholding co-management agreements with the necessary funding would ensure a more reliable independent monitoring program for Indigenous Peoples.

As Jesse Cardinal, Keepers of the Water Executive Director states, "Indigenous people are not leaving, we are still on the lands and will still be on the waters. All governments in Canada must ensure that adequate funding is provided for monitoring and management of the lands."

The Keepers of the Water is comprised of First Nations, Metis, and Inuit peoples; environmental groups; concerned citizens; and communities working together for the protection of air, water, and land — and thus, for all living things today and tomorrow in the Arctic Drainage Basin.



1492 Land Back Lane

Land defenders' actions in accordance Haudenosaunee law

Statement from the Indigenous Education Network, September 15, 2020

The Indigenous Education Network wishes to assert our uncompromising solidarity with and support for Indigenous land defenders at the 1492 Land Back Lane reclamation site on Six Nations territory near Caledonia, Ontario.

We are outraged to learn of the September 2, 2020 arrest of our colleague, Courtney Skye, a research fellow at Yellowhead Institute, who now faces criminal charges after bringing soup to the land defenders and joining them for lunch at the site. Skye is Mohawk, Turtle Clan, from Six Nations of the Grand River Territory. [...] Journalist Karl Dockstader from Oneida Nation of the Thames has also been arrested and charged following several days at the reclamation site covering the resistance. In total there have been 26 arrests based on an injunction granted to Foxgate Developments, and according to the land defenders, 15 of these arrests have occurred off-site at people's homes and workplaces. As Skye asserts,

“People who are supporting the action are being criminalized. People who are making sure the land defenders are fed, that they are warm, that they are getting supplies, they are being criminalized. It's really alarming [...] Cutting off Indigenous people's supplies to starve them off the land, it's genocide, it's colonialism.”

Since July 19, a group of Six Nations land defenders have reclaimed and resided upon land in unceded Haudenosaunee territory near Caledonia, ON. They have

set up camp on a site slated for the McKenzie Meadows housing development, renaming the site 1492 Land Back Lane.

As Six Nations community member Beverly Jacobs explains, “what needs to be understood is that this is a historical land claim going back a couple of hundred years that has not been addressed.” Jacobs, a lawyer, law professor, and Associate Dean at Windsor Law School, explains that Canada has not been able to produce title to the land [...]: “We never gave up title to those lands and territories, and in fact Canada owes us money for those lands and resources. The issue is with Canada.” The current situation at 1492 Land Back Lane is part of a long-standing struggle to defend land rights of Six Nations of the Grand River and to address unresolved land claims to the area known as the Haldimand Tract.

[...] The reclamation site is an example of Indigenous peoples – Indigenous women and youth in particular – protecting the land and sovereignty of the Haudenosaunee people. As Jacobs reminds us, “What they're doing is according to Haudenosaunee law in being land protectors. They're following our rule of law.”

In response, Foxgate has secured federal injunctions criminalizing land defense by prohibiting anyone from being on the site or setting up road blockades. This is part of a centuries-old colonial state practice of using Canadian law to dispossess Indigenous peoples of their land. [...]

From the lands of the Wet'suwet'en to Six Nations, from Kanehsata:ke to Elsipogtog, attempts to prevent Indigenous women from fulfilling their responsibilities as caretakers and stewards of the land must be opposed; injunctions that deny Indigenous peoples their inherent right to their land and authorize police violence against Indigenous peoples must be opposed. We must condemn and take actions against such ongoing uses and abuses of Canadian law in attempts to destroy Indigenous nations and assert control over Indigenous lands, waters, and peoples.

We join our colleagues at the Yellowhead Institute in condemning the arrests and calling on the Attorney-General of Ontario to drop all charges against Courtney Skye and others arrested in relation to land defense on September 2nd. We amplify their calls for the “Province of Ontario to develop policy prohibiting the use of injunctions on Indigenous people in cases of disputes over land use,” and for the “Federal Government to engage with the volumes of evidence on criminal justice reform and Land Back.”

Signed,

Dr. Rosalind Hampton, IEN Faculty Co-Chair; Dr. Jeffrey Ansloos, IEN Faculty Co-Chair; Kayla Webber, IEN Student Co-Chair; Julie Blair, IEN Coordinator; Lindsay DuPré, OISE Indigenous Education Liaison.

Full version at www.oise.utoronto.ca

What's in a Word?

Language shapes our **relationship** with nature

by David Suzuki with Rachel Plotkin

As natural environments and geographies shape language, so too does language shape the way we see nature and, subsequently, the impacts we have on the lands and waters that surround us.

Western culture and the English language primarily view nature as something owned by humans that can be exploited. That's why Canadian agencies tasked with governing nature are referred to as departments of natural "resources."

It's not uncommon even for those who appreciate nature beyond its exploitative value to reduce it to a thing with monetary worth through language. For example, we refer to protected areas in Canada as "our" "national treasures," "jewels," and "gems."

Western science has also shaped the way we employ language to describe nature by advancing the reduction of living, functioning ecosystems to things best studied under a microscope. Recall Jane Goodall, admonished for naming instead of numbering the chimpanzees she studied.

As Indigenous botanist and writer Robin Wall Kimmerer notes, "the English language is made up primarily of nouns, somehow appropriate for a culture so obsessed with things.... English encodes human exceptionalism, which privileges the needs and wants of humans above all others and understands us as detached from the commonwealth of life."

Industry's use of language brings the point home. Loggers call old growth trees that aren't as profitable when logged as younger trees "decadent" – even though they provide habitat to at-risk species and have critical ecological functions. In oil and gas, vegetation above oil-shot rock – no matter how diverse – is called "overburden." Some developers refer to off-limit conservation areas as "sterile."

Nature's vital life force is, to some extent, like Voldemort: that which cannot be named. Nature Institute senior researcher Steve Talbot writes in his essay, "The Language of Nature," words inevitably diminish nature because containing it is impossible.

How can we change the ways in which our language abets destruction of nature? Let's start by investing more in our relationships with nature – and recognizing the role of language. (One way we wield language is to blanch at the notion that we humans are "animals," when we're just as much an animal as the raccoon digging in our garbage.) We can stop talking for a moment and listen.

According to Talbot, "If we took the fact of the world's speech seriously – the world speaks! – there would be none of the usual talk about a mechanistic and deterministic science, about a cold, soulless universe, or about an unavoidable conflict between science and the spirit. Confronting the many voices of nature ... we would listen for their meanings...."

The trouble, however, is that we often fail to pay attention; we never learn the language of the world we inhabit. We try to master nature while becoming increasingly deaf to her complex symphony."

As Kimmerer notes, in her traditional language, Potawatomi, "There is no it for nature. Living beings are referred to as subjects, never as objects, and personhood is extended to all who breathe and some who don't. I greet the silent boulder people with the same respect as I do the talkative chickadees."

She continues, "Beyond the renaming of places, I think the most profound act of linguistic imperialism was the replacement of a language of animacy with one of objectification of nature, which renders the beloved land as lifeless object, the forest as board feet of timber."

We can create new language. Language is always evolving. (For example, our use of pronouns has recently expanded to recognize those who identify as non-binary and gender neutral.)

It's our job as global citizens to continually reimagine a better world. We can also undertake the challenge of reimagining new ways to describe the world, using language to craft stories that recognize and honour the myriad living and nonliving entities with which we share the planet.

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Sweeping the Pool

by Philip Kevin Paul

Rainwater from two mountains
gathers here and throws its weight
around. After tasting the fresh water
at the edge of the estuary, salmon run
in just so far, then back out to where
the other unturned salmon gather.
The water's taller than me, but I know
where to stand. Dad and my uncles
arranged a proper introduction:

Lesser Stream, this is Kevin.
Don't eat him.

So I'm chest-deep in swift water,
toeing around an edge I've never seen.
Please don't eat me.

I shoulder my long-handled dip net
like a flag: best aluminum,
corrosion-resistant mesh
and water-resistant grip.

A white man yells at me from across
the stream: "If you people are going to fish
in your traditional fishing grounds,
you should use traditional fishing gear!"

I ignore him but he keeps yelling
in bigger vowels, louder each time.

He looks around seventy, so I shout
back in my language and then his,
saying nearly the same thing in both:
"Mind your manners or I'll eat you!"

He flaps both hands at me then stomps
away, puppet to a bad puppeteer.

The pool is about the length of a grave.
How do I know? I've grown into habit
for this place: the pool and the edge,
stirring my reflection every time
I turn a new face down into the dark water.
Where I dig my net I do so carefully,
so it doesn't get so heavy I can't pull it up.
So it doesn't get so heavy
It pulls my ear to its hard secrets.

"Sweeping the Pool" by Philip Kevin Paul from *Little Hunger*,
Nightwood Editions, 2008, www.nightwoodeditions.com

Philip Kevin Paul is a member of the WSÁNEĆ Nation
on Vancouver Island. *Little Hunger*, his second book of poems,
won the 2004 Dorothy Livesay prize for poetry.

Sympathy for the Devil

Understanding why people become anti-vaxxers



by Stuart Parker

These days, even if the world has not become a better place in the past decade, it has at least become a place I can predict better. Since my time living in the US during the 2010 midterm elections, I have spent a good amount of time warning people about the rise in anti-scientific belief and conspiracy theories in the US and their slow seizure of the public square.

Unfortunately, many on the political left seem to see identifying conspiracy theory and its wrongness as a political end in itself, a tactic for more comprehensively dismissing movements that are gaining on us every day. As with other phenomena allied with Trumpism, progressive folks see empirical wrongness as some kind of Achilles Heel or sign of inevitable defeat, and therefore

reassuring. An increasingly elitist, siloed, and out-of-touch left rarely thinks to ask itself: “why are these movements succeeding?” or, more importantly, “what are people getting out of these movements?”

Fundamentally, people do not take on new beliefs or join new social movements if these movements do not meet needs that are not being met elsewhere. If we do not ask ourselves what false beliefs are being used for, we have little hope of competing against those beliefs and the movements that peddle them.

So, I thought I would try to think a little more creatively and compassionately about one of the movements out there whose teachings, beyond merely being wrong, cause unnecessary deaths of children with some frequency. Unlike many “astro-turf” movements that are backed by corporate wealth, “Anti-Vaxx” movement adherents persist in their anti-childhood vaccination campaigns despite facing the opposition of Big Pharma – one of the most ruthless and powerful industry groups in the world today.

The core of the Anti-Vaxx movement is parents of autistic children who believe that childhood vaccinations cause autism. Their activism is focused on convincing other parents not to vaccinate their children, thereby preventing them from developing this often-crippling neurological disability. Why would a group of cash-strapped parents, many already run ragged caring for disabled kids with negligible help from the state or their community, throw themselves into this work?

Exactly. What if this is not an obstacle to Anti-Vaxx activism, but a reason for said activism?

One of the dominant feelings for the parents and guardians of autistic kids is one of powerlessness. No matter how hard they work, how much love they show, how many new or controversial treatments they try out, they feel powerless over the child’s disability. They can attend support groups and talk about that feeling of powerlessness, but it never goes away. They can commiserate with the other parents of autistic kids, but such experiences of social solidarity and companionship can often serve to

entrench those feelings of powerlessness, as one meets parents who have been struggling with non-verbal or non-responsive kids into young adulthood with no sign of improvement on the horizon.

But let us imagine how different the experience would be if one could join a support group and, instead of sharing experiences of frustration and loss, the focus of the support group was to stop autism? Going to the support group would suddenly take on a very different character. Even if one's own child could not be cured, the hope of an end to autism could be real, and one's own loss could be balanced against achieving a greater social goal that would spare other parents from ever having to join such a group. That is what the Anti-Vaxx movement offers.

In many communities, seeing oneself as a victim or a member of a marginalized group requiring pity or accommodation is something shameful. Imagine an autism support group full of people whose primary self-image is not as victims but as heroes. Again, that is what the Anti-Vaxx movement can offer: a chance to create community with the parents in other families afflicted with autism, based not on a shared victimhood but shared heroism.

In many smaller communities, there might not be a local autism support group but there might be a handful of Anti-Vaxxers. Furthermore, those who join the movement despite not having autistic kids but because they believe they have been screwed over by Big Pharma in some other way (like survivors of benzodiazepine or opioid addiction) are not just a source of camaraderie but people who can help lighten one's burden as a caregiver in small, material ways.



“Fundamentally, people do not take on new beliefs or join new social movements if these movements do not meet needs that are not being met elsewhere.”

So, let us be clear on some of the values that underpin the Anti-Vaxx movement: compassion, solidarity, camaraderie, heroism, altruism. In a neoliberal, individualistic society in which family support is becoming scarcer, people are coming together and offering each other not just material support and camaraderie but a psychological lifeline, in the form a narrative of heroism, for people struggling to put one foot in front of the other.

Along with negligible respite care and a school system that rations education assistants to the point where parents are routinely called to pick up their child at shift's end, another feature of parenting a child with a disability is the experience of being talked down to by experts and authority figures.

Unlike in the twentieth century, when we believed in Thomas Paine's theory of common sense and people were allowed to explain science on the news, the twenty-first century is a time when the cult of expertise means that "it's science, you wouldn't understand," is the stock response of the commissar class and the caring professions when questioned by lay people.

The Anti-Vaxx movement reverses this too. It believes, for better or worse, that anyone can read and figure out fairly advanced neuroscience; it has faith that if people "do their research," they will come to the same conclusion. This in contrast to the movement responding to the climate crisis, which emphasizes expert authority and is deeply distrustful of any public debate of science. Furthermore, the Anti-Vaxx movement gives its members the confidence to talk back to experts and authority figures, to stand their ground, to act like heroes and to proclaim a hope for a better world in the future.

If these folks weren't killing all those kids, I might well join up!

Originally published on <https://stuartparker.ca/>
Stuart Parker is an historian, political activist, former lecturer in History and International Studies at Simon Fraser University, and cofounder of the Los Altos Institute and the BC Ecosocialist Party.

Wild Times 26 Mile Miracle

by Joe Foy

At the end of an epic day of bush thrashing and side-hill gouging, we finally made it to the top of Porcupine Peak. The view was worth it. We saw rolling waves of jagged mountain peaks piercing the clear blue sky as far as the eye can see. Even if it had taken three days of backpacking, it was worth it.

A friend and I were on a six-day backcountry trip in 26 Mile Valley, a wilderness watershed with no roads or even trails – just a vast expanse of mossy old forests and flower-filled alpine meadows with a crystal clear creek wending its way through it. All the while we were in that wild valley, my backpacking buddy and I didn't see another human being, not even a boot print. COVID-19 distancing was pretty much assured. It sounds like we were in a remote location in Northern BC or the Yukon, but, in fact, we started our hike only a two-hour drive from my home in New Westminster – part of Metro Vancouver, which is home to over two million people.



From the top of Porcupine Peak, we could see a limitless jumble of mountaintops connected by a tangle of alpine ridges. To the south lay the traditional territories of the Skagit peoples, to the west the Stó:lō communities, to the north the Nlaka'pamux and to the east the Syilx/Okanagan. The awesome twin peaks of Hozomeen Mountain rose up like two flint knives to mark the site of an ancient chert mining area, which has been used since time immemorial by the surrounding tribes to create cutting tools and arrowheads that were then traded from community to community all over the west.

As far as we could see we couldn't make out a single road or clearcut. This part of the North Cascade mountains has over one million hectares of protected lands that are joined together, even though they are divided by the US/Canada border. Parts of BC's Manning and Skagit provincial parks and the Cascade Recreation



Area can all be seen from the top of Porcupine Peak. Looking south, we could see a vista of forests and mountains extending all the way to the North Cascades National Park and the Pasayten Wilderness in Washington State.

Directly below Porcupine Peak, rolling out like some great forested welcome mat, lies the pristine 26 Mile Valley. Several centuries ago, the view of the valley ringed by peaks would have been pretty much the same.

BC Timber Sales, which is operated by the BC government, had planned to start clearcutting 26 Mile Valley this year. Only a last-minute intervention by the provincial environment and forest ministers in December 2019 saved the valley from being roaded and logged.

26 Mile Valley is in an area nicknamed the Donut Hole – a region of unprotected lands held as mineral tenure by the mining company Imperial Metals, of Mount Polley tailings dam collapse fame.

Luckily for the Donut Hole, almost a century of exploration has resulted in no major mine there. It's time for the provincial government to extinguish the mineral tenure and, in partnership with First Nations, designate the entire area, including 26 Mile Valley, as protected lands forever. Write to your MLA today and ask them to make the miracle of 26 Mile Valley official by granting protected area status to the Donut Hole.

Joe Foy is the protected areas campaigner for the Wilderness Committee.

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