PIPELINE DECISION | FORESTRY REFORM | SITE C | TECH ISSUE | BC & PRO REP

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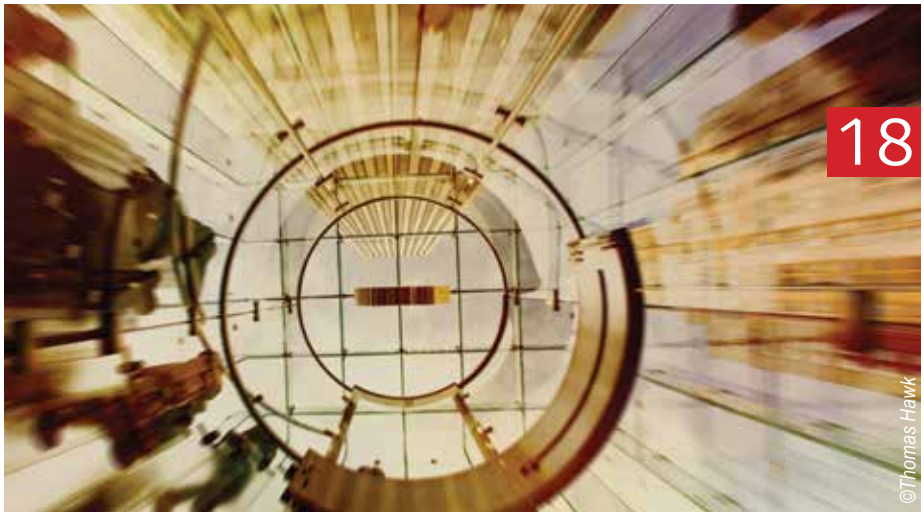
September | October 2018

Vol. 28 No. 4

Features



Forestry

With old growth disappearing, a coalition for reform challenges the forest industry to enter the 21st century

Focus on Technology

What is technology, and how does it reflect and affect the society that creates it? Can we rely on techno-fixes to save us from environmental disaster? What is Indigenous technology? We conclude with a look at some helpful emerging modern tech

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Guest Editorial

Claire Gilmore

Being with Change

This summer has been a wake-up call on a massive scale. There's nothing like the direct experience of living for days or weeks at a time with something inescapable – i.e. an atmosphere thick with smoke from fires near and far – to make one realize that there really is a problem, and it's happening now.

In this issue of the *Watershed Sentinel*, we're looking at technology – and the question came up again and again of whether or not "technology will save us." But what does that mean, and who is the us? Could we, at least some of us and at least in part, be hoping that "technology will save western consumer capitalism"?

To those of who grew up in the relatively affluent west, the current economic system is like a security blanket, or even a parent of sorts – whether we like it or not. When it comes down to it, we think, this is how we survive: we participate, make money, pay rent, buy groceries, gas up the car, etc.

But as our system not only jeopardizes the ACTUAL things that support our existence as living beings (clean air, water, food systems…), but obtusely, and continuously, fails to make itself resilient to the catastrophic changes it is bringing about, there's a sense of the rug being pulled out.

Maybe our main tasks now are to examine our attachments, set our priorities, get really practical, and really comfortable with uncertainty.

—Claire Gilmore, Comox, BC, September 2018

At the 'Shed

Coming up next issue, a feature focus on grief and survival in the Anthropocene. After this summer of smoke and fire, droughts and floods, it seems like a good reflection for the end of the year. Let us know your favourite writers, and send us your own musings.

Proofers Wanted: We still have room for a few more proofers. Not everyone can work on every issue and that's ok, so long as we have a healthy crew of eyes! If you have a yen for catching typo gremlins, we'd love you to join our proofing team. The work is all arranged by internet, so you can work from home, or with a friend.

Correction: Thank you to Pamela Zevit, RPBio for sending us 2 corrections re: "Morrison Creek" in our last issue: 1) "The snail I believe you are referring to is the Pacific Sideband snail [which is] no longer blue-listed." 2) "Provincial blue-listing equals the federal *Species at Risk Act* category of Special Concern." Her letter, with lots of interesting info, can be read in full at *www.watershedsentinel.ca/articles/morrison-creek*

It's that time again. Unbelievably, two years have passed, and we will be sending a request for a little extra help to a mailbox near you. Please add your talent and your financial support to help us become a magazine deserving of such great readers. And for those many of you who are already supporters, a big thank you from the bottom of our penny pinching hearts!

Ireland to divest from fossil fuels

Clean Money

The Republic of Ireland will become the world's first country to sell off its investments in fossil fuel companies, after a bill was passed with all-party support in the lower house of parliament. The state's €8bn national investment fund, which holds over €300m in fossil fuel investments, will be required to sell all investments in coal, oil, gas and peat "as soon as is practicable," which is expected to mean within five years.

—www.theguardian.com
July 12, 2018

Blue skies return to Beijing

Clean Air

China is rapidly attacking the smog problem that created Beijing's "airpocalypse" in 2013, when airborne particles peaked at 35 times the World Health Organization's recommended limit. Of the seven lowest monthly pollution readings in the capital city since 2008, five have been recorded since the beginning of last summer, according to data gathered by the US Embassy in Beijing. That's when Chinese officials ramped up enforcement of policies restricting coal burning in Beijing and surrounding areas.

—www.bloomberg.com
August 19, 2018

Decision against Chevron

Justice at Last

The Constitutional Court of Ecuador has issued a long-awaited ruling in favor of those affected by Chevron, which operated through its subsidiary Texaco in Ecuador between 1964 and 1990. The court found that Chevron deliberately dumped billions of gallons of toxic oil waste in the Amazon rainforest on Indigenous lands. The company will now have to pay $9.5 billion for the repair and remediation of social and environmental damage in the Amazonian provinces of Sucumbíos and Orellana.

—www.truthout.org
August 14, 2018

Pesticide linked to autism

DDT

A new study published in the *American Journal of Psychiatry* has found that a mother's exposure to DDT increased the risk of her child developing autism spectrum disorder. The study builds on previous evidence that the pesticide is linked to developmental impacts in children exposed in utero. DDT was heavily used in the 1940s to 1960s but banned in 1972 in the US because of its impact on wildlife and concerns over its effect on fertility, immune systems, hormones, and brain development.

—www.ehn.org, August 16, 2018

US Grid 30% less carbon-intense

A Bit Cleaner...

The average annual carbon dioxide emissions intensity of electricity production in the US decreased by 30% between 2001 and 2017, according to a new study from Carnegie Mellon University. The primary drivers for the change were an increase in generation from natural gas and wind accompanied by a reduction in coal-fired power.

—www.physicsworld.com
July 17, 2018

Activists are dying for our food

Agribusiness

Land and environment defenders were killed in record numbers last year, and for the first time, agribusiness is tied to more killings than any other sector, according to a report published Tuesday by Global Witness, a London-based NGO. The organization documented 207 killings of land and environmental defenders in 22 countries around the world in 2017.

—www.towardfreedom.org
July 25, 2018

Landmark ruling against Monsanto

Bayer Beware

A California jury has found Monsanto liable for a terminally-ill man's cancer, awarding him $289m in damages. The jury determined that Monsanto's Roundup® weedkiller caused the 46-year-old former groundskeeper Dewayne Johnson's cancer, and that the corporation failed to warn him of health hazards from exposure. His lawyers persuaded the jury that Monsanto had known of links between glyphosate and cancer since 1983 and had covered this up. Parent company Bayer's shares abruptly fell by 11% to their lowest level in five years. Monsanto intends to appeal the verdict.

©Donna Cleveland

—www.theguardian.com
August 11, 2018
—www.economist.com
August 18, 2018

Letters

Exaggerated Progress at Mt. Polley?

Re: "Progress Made on Remediation at Mount Polley" by Lynn Anglin of Imperial Metals in the May 10 edition of the *Williams Lake Tribune.* I find that her comment "The tailings in Quesnel Lake, which is a very deep lake, are sitting at depths of greater than 100 metres and there is no evidence that they are re-suspending," is not supported by other research undertaken on Quesnel Lake as a result of the 2014 disaster.

UNBC research by Dr. Ellen Petticrew, Dr. Phil Owens, and others finds that resuspension of the tailings may be occurring. In a related communication that I recently received from the UNBC research team, the following was stated:

"Results of post-spill water column monitoring indicate elevated turbidities in the bottom waters of the West Basin in the fall and winter, when the lake circulation is most active…. This was observed in fall 2015, 2016, and 2017 with decreasing intensity each year.

"Suspended sediment delivered to the Quesnel River from the lake exhibits copper levels exceeding both local background sediment concentrations ... and the probable effects level for aquatic organisms ... in mid-October 2014 through to late-May 2015, again from November 2015 through to mid-May 2016 and in January of 2017…. The timing of these high river sediment copper concentrations corresponds with the elevated turbidity in the West Basin.

"These observations suggest the copper-elevated suspended sediment in the Quesnel River is coming from the bottom waters of the West Basin…. The original source of these sediments could be natural or mine-related material, or a combination of both. Research is continuing to determine the source of this sediment."

I understand Lynn Anglin and other Imperial Metals staff have been present for presentations by UNBC and other universities that discuss the [findings] provided above. I would be pleased to know why this research is not being recognized by Lynn Anglin in her May 10 article.

—Richard Holmes, Likely, BC

Tanker Traffic Corrections

The article in the summer issue by Joe Foy on tanker traffic perpetuates a common error. There are not five tankers a month filling up with crude oil at the Kinder Morgan Westridge terminal; in 2016 there were 15 in the whole year; in 2017 there were 16; thus the rate in the last two years has been a little over one per month. In the first half of 2018 the rate has been about two per month.

There is currently about one large ship, various tankers, and bulk carriers per day entering the east end of Burrard Inlet. The plan proposed by Kinder Morgan is to add an additional tanker each day, thus doubling the traffic under the second narrows bridges, for a total of four large ship transits a day, along with assorted tugs, some towing barges, pleasure craft and other vessels. Because of requirements for some vessels to travel only during slack tide and daylight hours it is hard to see how this will be accomplished without accidents.

A new detailed report on "Vessel Collision Risk, Assessment & Mitigation" for the 2nd Narrows bridges is available from *www2.gov.bc.ca.* Anyone who wishes my Kinder Morgan tanker details can contact me at *huntley@sfu.ca*.

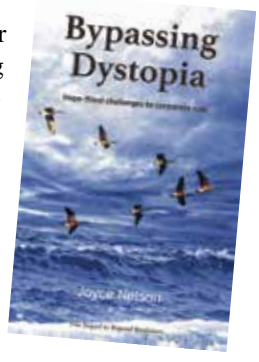
—David Huntley, Burnaby, BC

Senseless and Waffling

If Justin Trudeau had announced plans to spend $4.5 billion on solar energy, this would have shown a strong commitment to the environment. If the prime minister had decided to invest $4.5 billion in the marijuana industry, this would have demonstrated some business sense. Buying the Kinder Morgan pipeline shows neither.

—James Young, Cyberspace

A Strong Tonic



Thank you for your work in publishing *Bypassing Dystopia*. Clear, and utterly damning, research. It curls what remains of my hair.

—Robert Hart, Terrace, BC

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*

Court OKs Drilling

Fish Lake

A legal bid by the Tsilhqot'in Nation to stop exploratory drilling in the Teztan Biny area was dismissed by the BC Supreme Court in August. The decision has cleared the way for Taseko Mines to construct 76 km of road, conduct 122 geotechnical drill sites, dig 367 trench or pit tests, and clear 20 km of seismic lines near Teztan Biny (Fish Lake) and Nabas, an area of cultural and spiritual significance for the Tŝilhqot'in. The related mine has been rejected twice by the federal government and cannot currently be legally built. The Tŝilhqot'in Government is calling on the BC NDP to step in.

—Williams Lake Tribune
August 27, 2018

First Banff-born bison in 140 years

Re-wilding Herd

Three bison babies have been born in the backcountry of Banff National Park – the first calves conceived in the area in more than 140 years. Sixteen plains bison from Elk Island National Park were reintroduced into the area in February 2017.

—The Canadian Press
July 24, 2018

National park deteriorating badly

Wood Buffalo

A 561-page federal study of Wood Buffalo National Park says industry, dams, climate change, and natural cycles are sucking the watery lifeblood from the vast delta of northeastern Alberta's Peace and Athabasca rivers. The study looked at 17 measures of environmental health, from river flows to Indigenous use, and concluded 15 are declining. Drawing on decades of research, the study is likely to be the most complete assessment on the region downstream of Alberta's oilsands.

—www.thestar.com
July 15, 2018

Mining corruption: Canada & Brazil

Rule by Industry

A new report co-published by researchers in Canada and Brazil, *Tailings dam spills at the Mount Polley and Mariana: Chronicles of Disasters Foretold* compares each country's largest mining disasters – 2014's Mt. Polley tailings spill and the 2015 Mariana mine spill. In both jurisdictions, energy and mining corporations ignored signs warning they were headed for disasters and persuaded governments to streamline review and approval processes, reduce oversight, and ease rules. Four years after the Mount Polley spill, no one has been prosecuted or fined and BC is allowing Imperial Metals to continue draining toxic waste into Quesnel Lake.

—www.nationalobserver.com
August 28, 2018

An act of "absolute treachery"

Treaty Exclusion

In May, three Indigenous Nations – the rightful title and rights holders of the Upper Columbia Basin: the Ktunaxa Nation, Secwepemc Nation, and Syilx Okanagan Nation – were told by the Government of Canada that they would be excluded from direct participation in the re-negotiation of the Columbia River Treaty (CRT) – the largest international water storage agreement between Canada and the United States. Since 2011, the three Nations have been participating in good faith in the CRT renewal process. Grand Chief Stewart Phillip, Chair of the Syilx Okanagan Nation, has called the decision "an act of absolute treachery."

—Syilx Okanagan Nation Alliance
May 23, 2018

Minnows could help contain virus

Mozzie Control

By introducing hungry minnows into bodies of water where mosquitoes breed, researchers at the University of Waterloo may have discovered a new, pesticide-free way to limit mosquito populations and reduce the spread of the West Nile virus. A 3-year study found a 114% decrease in larva density within treatment ponds, compared to control ponds.

©Debris Field

—University of Waterloo
June 18, 2018

Rise in pipeline incidents

Spill Spike

A new Équiterre report has found pipeline incidents are on the rise across Canada. The report examined Canadian government incident and spill data since 2004 and found that 2017 saw more pipeline incidents than any year over the last decade, and 41% more than in 2016 (173 compared to 122). Most (86%) were on oil (as opposed to gas) pipelines

—www.nationalobserver.com,
June 14, 2018

Talking TM

A poll of BC residents shows concern about oil tankers

by Will Horter

Despite an unprecedented propaganda onslaught by Alberta Premier Notley, Trudeau's Liberals, and the Postmedia empire, recent polling suggests British Columbians remain deeply concerned about Kinder Morgan's controversial oil tanker/pipeline proposal. The Trans Mountain pipeline would ship some of the world's dirtiest oil in a new pipeline across British Columbia to a storage facility near Simon Fraser University campus, from where it would be loaded onto 400+ oil tankers for export.

An in-depth poll of 1,255 adults conducted from May 25 to May 28 by Research Co revealed that British Columbians are increasingly conflicted and disappointed about the way Ottawa has handled the Kinder Morgan proposal.

Three in four residents are uncomfortable with using taxpayer money to subsidize Texas-based Kinder Morgan (KM), a foreign company. A majority believes the provincial government has made the right decision by opposing the proposal in the courts, and Trudeau's Liberals should be alarmed that half of voters (and 36% of BC voters who cast a ballot for Liberal candidates in 2015) say they are now "less likely" to vote for the Liberal Party at the federal level.

The survey was conducted after the federal government said it would "indemnify the Trans Mountain expansion against unnecessary delays," but before Trudeau announced that it had agreed to buy the project for $4.5 billion – and pollsters expect opposition against Trudeau's buyout to rise.

The bad news for opponents is that in May a slight majority (52%) said they agree with the proposal. Forty-four per cent still disagreed, down from recent majority opposition.

Clearly the unprecedented state-sponsored propaganda from Alberta and Ottawa is having an impact. While 73% of residents think the project will create jobs, almost 92% overestimate the number of jobs that would be created, with almost half mistakenly believing the proposal would create more than 500 jobs (ten times higher than the 50 direct jobs KM has projected in its regulatory filings).

Not all the propaganda is working. Only 39% of British Columbians agree that KM is needed to "secure Alberta's support for a national climate plan," and only 38% agree that building a new pipeline "will lower gas prices."

While support has risen, it is soft, and British Columbians remain deeply concerned about the proposal's potential impacts. Almost three quarters of British Columbians are concerned about the long-term harm to birds, wildlife, and fish because "bitumen sinks and is impossible to clean up," 72% are concerned "[a] large oil spill will devastate Vancouver and BC's economy," and 70% are concerned about the increased "risk of an oil spill on BC's coast and inland waters."

Tensions could escalate as 67% of residents believe "public participation and activism will play a key role in the future of this project."

Will Horter, formerly the executive director at DogwoodBC and a staff lawyer at EcoJustice, is an activist and writer whose work focuses on reinvigorating democracy, redefining citizenship, and pondering things that matter in the world.

The Take-away

This research indicates that opponents can reverse the soft support by highlighting Trudeau's bully tactics and the deeply-entrenched opposition from across the political spectrum to imposing the "unwanted project on an unwilling province." And also by focusing on people's deep concerns about Trudeau's plan to use taxpayer money to nationalize oil infrastructure and subsidize a foreign oil giant. Opponents should always describe Trans Mountain as an oil tanker proposal (not pipeline), and always highlight oil spills and health and safety concerns when talking about the proposal. —W.H.

Pipeline Down

Opponents win this round, but the battle continues

by Delores Broten

On August 30, the Federal Court of Appeal set jaws agape with its ruling on the twinning of the Trans Mountain pipeline from Alberta to Burnaby BC.

In ruling on a case that amalgamated a multitude of complaints against the National Energy Board (NEB) and the pipeline approval by the Trudeau Liberal cabinet, the court dismissed most of the arguments about the failings of the NEB review process.

However, it went on to quash the pipeline's approval on two grounds: lack of respectful consultation with the affected First Nations on the part of the federal government in the "Phase III," added by the Trudeau government after the NEB report, and the NEB's refusal to consider the impact of project-related tanker traffic on the marine environment, specifically the endangered Southern Resident Orcas.

BC Premier John Horgan was restrained but resolute in his response: "Our position is that the marine environment is part and parcel of our vibrant economy and it wasn't considered by the previous federal government and it wasn't given due consideration by the current government."

The federal Liberals basically said, in paraphrase, fine, we'll do the consultations again, but we are going to build that pipeline. This response was rather puzzling since the judgement was at pains to point out that "Canada failed in Phase III to engage, dialogue meaningfully and grapple with the real concerns of the Indigenous applicants so as to explore possible accommodation of those concerns. The duty to consult was not adequately discharged."

©Protect the Inlet

The Premier of Alberta, Rachel Notley, pulled out of the national climate action plan in anger at the legal judgement, which is rather ironic, since the bitumen Alberta wants to sell will drastically increase carbon emissions.

An hour after the decision was released, Kinder Morgan shareholders in Texas voted to accept the Canadian federal government's offer to buy the pipeline for $4.5 billion. The next day, the federal government sealed the deal.

The fury and the frenzy was put into perspective by Kevin Taft, writing in the *National Observer*: "Canadians need to remember that the requirement to deal with environmental protection and Indigenous issues will be with us for lifetimes to come, while the oil industry will be fading into history within a couple of decades, crushed by the growing crisis of global warming."

Sources:
Federal Court of Appeal, Tsleil-Waututh Nation v. Canada (Attorney General), *https://decisions.fca-caf.gc.ca/fca-caf/decisions/en/item/343511/index.do#_Summary_of_Conclusions*
Kevin Taft, "Notley and Trudeau: no one to blame but themselves," *www.nationalobserver.com*, August 31, 2018

Too Timid to Act?

BC needs a Charbonneau-style corruption inquiry now

By Norm Farrell

BC NDP's unwillingness to appoint a Commission of Inquiry to investigate corruption in public administration is one more sign of timidity, a thing becoming the Horgan government's hallmark.

We've seen much evidence of illegal money laundering at casinos, but no significant penalties have been assessed against corporation or individuals. Gang warfare continues and guns are a deadly reality for BC teens and young adults.

Business as usual continues and good business it's been for insiders.

For years, government tolerated the drug trade and associated criminal behaviour because politicians prized any form of economic activity. The billions gained by gangsters percolate through the economy and BC Liberals sold themselves as guarantors of continuing growth. Ethical behaviour mattered nothing to the Clark/Coleman group while political domination and personal opportunity were the preferred outcomes.

Let there be no doubt. Investments, whether from legitimate or criminal sources, are an important part of the BC economy. Proceeds of crime are laundered and moved from the underground with sources disguised. But it is not only happening at casinos. Law offices and realtors have been implicated and countless retailers supply products that can be resold for clean cash.

It's not an accident that Metro Vancouver is the luxury car capital of North America.

Because of budget constraints, policing in British Columbia has been understaffed for years and the lower mainland's patchwork coverage by RCMP and municipal forces is clearly ineffective.

But our law enforcement problems go beyond policing.

BC Rail

The underhanded sale of BC Rail was never adequately examined after the Gordon Campbell government handed over railway assets, including huge tracts of developable lands, in secret dealings with privileged friends.

Corruption of the judicial system was a part of the BC Rail/Basi/Virk affair. Its apparent conclusion involved unprecedented wrongdoing, including the government's $6+ million purchase of a guilty plea. (That ended the trial, a move aimed at protecting key BC Liberals.) The large payment and waivers of collateral agreements held against real property contravened government rules then in place. Acts by order-in-council appointees required high-level approvals, including treasury board consent. None are recorded.

In addition, the BC Supreme Court and its partisan leadership closed eyes and pretended not to notice that a cash-for-plea deal had been negotiated. A handpicked judge approved the plea arrangement after incorruptible Justice Elizabeth Bennett was removed through a promotion orchestrated by Liberals. The agreement led to a sentence of house arrest, which had so many exceptions, it only required convicted defendants be at home for a few hours after midnight.

But there's much more.

BC Hydro, natural gas, land speculation

BC Hydro has so far paid more than $5 billion above market value to independent power projects, some of which had Liberal insiders involved when they originated.

Natural gas producers that once contributed billions to the provincial treasury have almost stopped paying resource rents, because of royalty credit programs and administrative land lease renewals used in place of public tenders. Taxpayer losses measure in the billions of dollars.

Many billions.

As an example of another set of issues, the *Times Colonist* reported on land sold below market value to Liberal supporters:

> "Taxpayers got 'hosed' last year when the BC government sold 14 parcels of land in Coquitlam to a Liberal donor for $43 million below the appraised value, the NDP alleged Tuesday…. Wesbild Holdings Ltd. purchased the properties on Burke Mountain for $85 million, even though an independent appraiser pegged their value at $128 million."

Sarah Miller wrote about another questionable act: a sweetheart deal government gave a Swiss company with annual revenues of C$120 billion. For each million litres of fresh water it takes, Nestlé pays BC two dollars. No more need be said.

This week, we learned that between 2007 and 2017, more than $5 million in disability benefits were paid to children injured on the job. As a favour to business contributors, Liberals lowered the work-start age from 15 to 12 years.

During the Liberals' reign, a culture of "don't much care" developed among the people responsible for managing public funds and social services. That created an environment where dishonest and self-serving activities were encouraged while efficient deliveries of programs to ordinary citizens were discouraged.

To alter the existing culture and make improvements, the one-year-old Horgan government must get over its reluctance to hold predecessors to account. They are too worried about vested interests raising complaints. It's understandable – Liberals and their friends, including many in corporate media, rode the fast ferries horse for two decades.

In addition to output from Liberal friendly groups like the Independent Contractors and Businesses Association, several campaigns were mounted by shadowy astroturf groups pretending to represent "mothers, fathers, retirees… from all parts of BC." Charlie Smith wrote about the one run by elderly Christy Clark adviser Jim Shepard, a former CEO of Canfor and Finning.

These group regularly lied to the public, claiming the province experienced a disastrous economy during NDP administrations in the 1990s. If you doubt that lies were told, read my article "Remembering the Desperate Nineties."

Some of the Liberal activists in media have already been saying that a corruption inquiry would take too long and cost too

Continued on Page 10 ⇨

⇦*To Timid continued*

much. These people are from the same organizations that refuse to report on the billions of dollars of tax expenditure subsidies accrued by fossil fuel producers in northeast BC. They were also cheerleaders for the private power business and today neglect reporting that bad deals are costing ratepayers close to a billion dollars a year.

So, Premier Horgan, if you are reading this, please be aware that the opposition Lib/Cons and their friends will never offer fair comment or support, even if you cross the water from Sooke to Tideview Point by foot.

Charbonneau-style inquiry

Clearly, many of us in BC believe that a Charbonneau-style inquiry is necessary to restore honest government. That inquiry uncovered "widespread and deeply rooted" corruption and made 60 recommendations. Unfortunately, the Liberal Government in Quebec City has been slow to implement changes and has even targeted whistleblowers who speak of continuing corruption.

What we need now from John Horgan and associates is an inquiry required to make regular interim reports and a final one within two years. Don't fund it for spin doctors and lawyers paid extravagant fees while they maintain lucrative practices. Focus on experienced accountants and investigators and give them powers to access documents from government and private organizations.

Create a committee of the legislature and hold public hearings. If you must, go back for inspiration to North Carolina Senator Sam Ervin's work. He helped bring down Joseph McCarthy and later, Richard Nixon. The Watergate Committee investigation didn't spend tens of millions of dollars and it took only 16 months.

Act now Premier Horgan. The people of BC deserve it.

Norm Farrell comments on BC public affairs at *https://insights.ca*, where this post was originally published, and is a 2018 candidate for North Vancouver District School Board.

Somewhere a Creature

Upon the planet's stony hide unloved
Where sandstorms scour bones to piles of chalk
A kaleidoscopic rash of domes erupts
Passing sense orbs swivel, rumble, gawk

Each hemisphere a mystery inside
Beast, bauble, arcane chemistry
To look would alter flow of sun and tide
The world's awobble with uncertainty

Beside one dome a garden grows abundant
Beside another knives do claim some flesh
There's talk of secret springs, an end to hunger
Somewhere a creature slips its master's leash

Once the drift toward meaning has begun
It is a thing can never be undone

—Kim Goldberg

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Site C

Is it safe to build a dam on shale?

Honourable David Eby, QC
BC Attorney General
Room 232 Parliament Buildings
Victoria, BC V8V 1X4

Dear Sir:
[....] I am now iterating my request to you to have a public statement by an Independent Professional Engineer that the Site C Project is a safe site for future generations and the downstream citizens should not fear from a potential dam breach such as happened from the Teton Dam in Idaho in 1976.

The written certification by an Independent Professional Engineer is paramount.

This is now critical as in a August 22, 2018 CJDC interview, (Dawson Creek TV), British Columbia Hydro and Power Authority (BCHPA) spokesperson Dave Conway confirmed that there is no bedrock at Site C but that the Shaftesbury shale is an adequate anchor for the dam site.

"We know what rock is here … we're NOT looking for bedrock, the dam is going to rest on shales … and the powerhouse is going to be anchored into the shales".

I would think that you and the rest of cabinet should be extremely concerned with this revelation at this late date. Due diligence would be to demand surety by a written professional statement that the shales are an adequate substitute for bed-rock. (NOTE: In a report presented to the Canadian Dam Association, dated Oct. 15-20, 2017, these same engineers made the following observation: "moderately weak, flaky to fissile shale interbedded with thin beds of siltstone, sandstone and shale." Further in April 2018 BCHPA reportedly hired 3 foreign workers, rumoured to be experts from Italy, to find bed-rock at all costs. Their findings remain a secret.)

In your role as Solicitor General, it is imperative that you follow the Principles of Accountability, Transparency and Truth. Remember this is tax payer money; the integrity of your office is at stake.

Please answer the following questions:

- **Why has BCHPA not provided audited financial statements for the past 3 years? This information needs to be provided immediately.**
- **Who were the 3 foreign experts hired in April 2018? What were their findings? (Need to see a Report.) How much did they charge the taxpayers of BC?**

Please do not pass the buck to your colleagues as my past experience is they operate in a fog of secrecy. Their silence is deafening.

The irresponsible, unsafe and unnecessary Site C project is a convenient vehicle for passing vast amounts of public wealth ($12 Billion) to the boys in the backroom. It needs to be stopped.

Yours truly
Arthur A Hadland, August 30, 2018

Arthur Hadland is a farmer in Baldonnel, BC.

BC after Clayoquot

25 years after the Clayoquot protests, Vancouver Island's remaining old growth rainforest is still disappearing

by Jens Wieting

While many of BC's trees are going up in flames, the most resilient provincial forests that are less prone to fire - intact old-growth rainforests - continue to be clearcut in most parts of the province.

On the 25th anniversary of the historic Clayoquot Sound mass arrest, a new Sierra Club BC map and data show more than 30% of Vancouver Island's remaining productive old-growth rainforest in 1993 was destroyed in the past 25 years. Only about a fifth remains intact.

Many British Columbians and people around the world believe to this day that the Clayoquot Sound protests resulted in a massive victory for rainforest protection for the whole province.

The reality is different. The protests improved the fate of the rainforest in Clayoquot Sound but not for most other parts of the province. The other 90% of Vancouver Island was relentlessly logged, with severe impacts on coastal economies.

In 1993, 60% of the rainforest in the Clayoquot Sound region – the territory of the Ahousaht, Tla-o-qui-aht, and Hesquiaht First Nations – was intact. Although only part of the region (17%) received formal protection after the protests, the vast majority of its old-growth rainforest remains intact today. First Nations have gained greater decision-making power and are engaged in planning to determine long-term land-use designations.

But the situation couldn't be more different across the remainder of Vancouver Island. There, only 29% of intact productive old-growth rainforest remained in 1993, and this number is now reduced to a shocking 19 percent. The amount protected remains dismal, at less than six per cent.

The protests in Clayoquot Sound, led by Indigenous leaders and supported by thousands of concerned citizens, made international headlines as the largest act of civil disobedience in the history of Canada. August 9, 1993, is a peak date of the protests, with more than 300 people arrested (out of a total of more than 900.)

As a result of the protests, the BC government had to change course and give up its plan to allow logging of the majority of the region's old-growth rainforest. In 2017, the Ahousaht First Nation announced a land-use vision seeking Indigenous protected areas for the majority of their territory.

Comparing the state of the forest in Clayoquot Sound and the remainder of Vancouver Island feels like looking at parallel universes. In one small region, most of the old growth still exists and conservation solutions are on the way. But across most of the Island, the old growth is mostly gone and there is no leadership to save what remains.

The destruction of BC's globally rare, endangered old-growth rainforests threatens biodiversity, Indigenous cultural values, carbon storage and other environmental services, and a diverse economy. BC's temperate rainforests represent the largest remaining tracts of a globally rare ecosystem covering just one-half of one per cent of the planet's landmass.

When left intact, they are also considered relatively resilient and less vulnerable to climate impacts such as fire and insect

outbreaks compared to other forests. Yet the current rate of old-growth logging on Vancouver Island alone is more than three square metres per second, equivalent to the area of nearly two soccer fields per hour.

The NDP's 2017 election platform included a commitment to act for old growth, promising to take "an evidence-based scientific approach and use the ecosystem-based management of the Great Bear Rainforest as a model." But one year into taking power, the BC government has not yet taken any meaningful steps to protect endangered coastal and inland old-growth ecosystems outside the Great Bear Rainforest.

The province has still not committed concrete support to the Ahousaht and other First Nations on Vancouver Island who are seeking long-term solutions to save the remaining unprotected old-growth rainforest. It's time for provincial leaders to finally step up to the plate and support solutions for forests across the Island and the province.

The full size map, detailed data, and recent aerial photographs of clearcut logging on Vancouver Island can be found at *https://sierraclub.bc.ca/25-years-after-the-clayoquot-sound-protests-vancouver-islands-remaining-old-growth-rainforest-is-still-disappearing/*

Jens Wieting is the senior forest and climate campaigner for Sierra Club BC.

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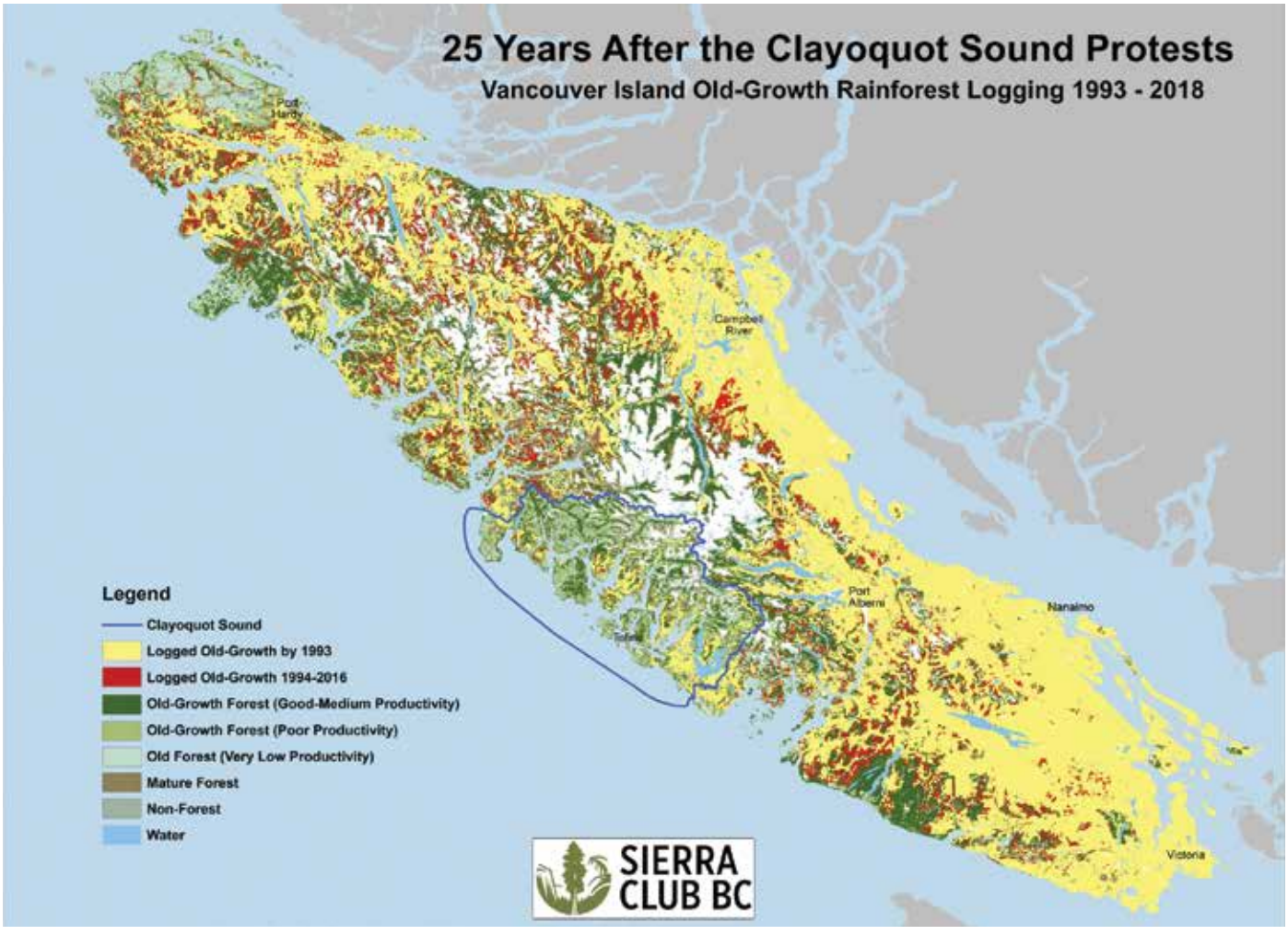


Professional Reliance

Challenge to BC forest industry to enter 21st century

by BC Coalition for Forestry Reform

Members of the BC Coalition for Forestry Reform were heartened by the positive and realistic recommendations proposed in Mark Haddock's Final Report on professional reliance. The report was commissioned by the BC government, and released to the public June 28th. The complex title, The *Final Report of the Review of Professional Reliance in Natural Resource Decision-Making*, couldn't hide the simplicity of its findings: BC's forest industry has to change.

The report contains extensive and frequently harsh criticism of today's forestry regulation and the resulting harvest practices being employed by the forest industry. This was no surprise to BCCFR's spokesperson, Debbie Demare:

"As BC's forests dwindle, logging is going deeper and deeper into community watersheds, previously untouched recreation and tourism areas, and environmentally sensitive areas that even the industry admits they would never have considered harvesting even five years ago. The report's message is clear. The economic and social costs to rural BC are growing as BC's timber supply dwindles. But the industry hasn't adapted to these new realities."

The report's message is clear. The economic and social costs to rural BC are growing as BC's timber supply dwindles. But the industry hasn't adapted to these new realities.

The public submissions that contributed to the report's findings often contained heart-wrenching stories of environmental destruction, small rural communities forced to invest millions of dollars to clean up water coming from previously healthy community watersheds, and an outdoor recreation and tourism industry losing revenue and growth due to overly aggressive clear cutting. That is why the BC Coalition for Forestry Reform (BCCFR) is calling on the provincial government to immediately implement the recommended changes to forestry regulation and governance.

"If the forest industry's leadership won't enter the 21st century we have to inspire them to do so," says Demare.

The BC Council of Forest Industries (COFI) had a different response to the report's findings. COFI's membership list is a who's who of the BC forest industry (and they declare they are "the voice of the BC forest industry"). After 2,200 feedback forms from the public, 102 extensive submissions from stakeholders, 1,800 surveys from qualified professionals, and a 135-page report with 123 specific recommendations for change, which informed the report, here is what COFI said in their news release:

"Mr. Haddock's report misses the opportunity to focus on meaningful improvements to the governance of professional associations, drifting well beyond his terms of reference to propose unjustified changes to the forestry regulatory regime unrelated to professional reliance."

Demare says COFI's "unjustified changes" stance is neither realistic nor appropriate.

"The final report makes it very clear that the forest industry is stuck in the past .... when forests were plentiful, BC's rural economy was largely resource dependent, and the climate was more benign; when reducing wildfire risk had no role in the business of harvest planning, and people turned a blind eye to environmental destruction in favour of short-term economics."

BCCFR agrees that forestry is still an important part of BC's rural economy. But the industry has been shedding jobs for years, replaced by the new economic drivers for rural BC: tourism, commercial outdoor recreation, agriculture and wineries, high tech, and all the supporting services these rapidly growing industries create.

About the BCCFR: The BC Coalition for Forestry Reform is a grassroots alliance of BC communities advocating for culturally and economically sustainable forestry practices: *www.bccfr.org*

Forest Planning

Communities and stakeholders working it out together

by Robert Hart

The forest industry may not be as dominant as it used to be, but it still plays an important role in British Columbia's economy. And as a vital part of local economies, the industry exists alongside other uses of the forest – for example recreation, tourism, and First Nations interests, or for conservation purposes to keep old growth intact and to safeguard areas for wildlife and biodiversity.

Guiding the different uses of the forest comes through management plans first called for in the mid-1990s by the government of the day, in an effort to balance often-competing interests. Each forest district was asked to gather community representatives to develop Land & Resource Management Plans (LRMPs) that would then become the government-approved strategic plans for each district.

Local and First Nations governments, forestry, mining, energy, labour, economic development, tourism, recreation, fish & wildlife, and conservation group representatives came together with the public in each district to develop plans reflecting commonly held values around such things as biodiversity, habitat preservation, and timber harvesting.

Once the plans were created, most of the committees disbanded, but the one for the Kalum Forest District, as it was then called, did not. The plan implementation committee, to use its formal name, continued to meet after the land and resource management plan was approved in 2002.

Committee members continued to represent user groups and perspectives, providing advice, commenting on how the objectives of the LRMP were being followed and working with the government to monitor the plan's effectiveness and review any proposed changes. But gradually over the intervening years, as forest companies went back to their work of timber harvesting and as provincial budget, staffing, and program cuts took hold, forest companies and the province stopped bringing their issues to the committee.

Much of the work and many of the projects intended to balance competing forest uses were quietly shelved, and provincial oversight and public involvement were reduced. A pilot project for harvesting undeveloped watersheds according to a more ecosystem-based management approach was ignored. No one had the money to test out a more tightly planned, well-researched form of forestry.

Meanwhile, new issues arose – raw log exports, second growth harvesting, and proposals for transmission lines and oil and gas pipelines that would crisscross the forests. First Nations continued to negotiate land claims to reclaim large areas of the forest, and local governments acquired and logged their own parcels.

So last year, committee members decided it was time to reaffirm the goals and purposes of that 2002 LRMP and bring it back to the attention of forestry companies and the province. Members each undertook to review a section of the plan according to their expertise and created the *Final Report On the implementation review of the Kalum Land and Resource Management Plan.*

While this was going on, the newly-elected NDP government began to consider how to renew similar plans across the province. It would do well to consider the service provided by the Kalum Plan Implementation Committee.

Communities need to be able to see what is happening in their forests, and companies equally need a place to quietly, professionally and effectively talk about their forest planning and activity. It is their surest route to real social license and the best way different stakeholders can be heard and work together to produce an integrated land use plan that serves everyone.

The review is available at *www.watershedsentinel.ca/forest-planning* or from Karen Birkedal birkparr(at)citywest.ca

Robert Hart has chaired the Kalum Land & Resource Management Plan Implementation Committee since 2011 and represents conservation & environmental groups.

Our Readers on

Fires, Drought, & Forestry

Thou Shalt Not Criticize

As all these voracious fires devour the BC forest and our carbon footprint begins to dwarf that of the Alberta tar sands, British Columbians need to consider their own significant culpability in contributing to global heating. Just as in Alberta, where "thou shalt not criticize, nor recognize tar sands contribution to the global climate change emergency," here in BC, "thou shalt not criticize, nor recognize the significant and direct responsibility of voracious industrial logging to rampant, cataclysmic forest fires."

Clearcutting the provincial forest on a massive scale, big logging strips off canopy shading, utterly desiccating the former forest floor and surrounding edge forest. The clearcutting allows for wind egress, accelerating ground fires into the edge forest, and from there, laddering fire right up into the fringe canopy. Clearcutting desiccates the land, and accelerates the spread of fire... and in the national gnashing of teeth over the BC forest fire emergency, I challenge anyone to show me any significant discussion on the direct culpability of Big Industrial Logging to this ongoing climatic disaster.

(Personal disclosure: I admit that I am not a scientist under the employ of BC's corporate logging industry – such as every single RPF (Registered Professional Forester) in the province – so WTF would I know about logging and its relationship to massive forest fires...?)

—Ingmar Lee, Denny Island, BC

Deadfall and Devastation

I have been living in BC for 55 years. I grew up in commercial fishing up north and today live near Vancouver. My comment is that we need to clean up the dead fall in the forest today, or it will all burn. We have a place near Princeton BC and we have noticed a huge devastation in our forests. We try to go out with chainsaws and clean up every year, but honestly it's out of control. Let us know how we may tackle this before it's too late and we turn into Arizona.

—Mike Wichmann, Princeton, BC

Industry's Veils and Obstacles

Some little known facts about things forest. There is to date no standard for a watershed assessment. Insane as it seems, the forest industry has managed to maintain veils and obstacles to keep their operations at a smooth, free gallop. Any assessments done are considered proprietary information and you cannot just have it, even though they are in your watershed, trashing your backyard and eating our commons, the forest. One "RPF" (timber merchant) told us they calculated ten years to restore the hydrological cycle in a clearcut. Once a Forest Stewardship Plan (really? what a play of words) has been approved, there is NOTHING that can stop it, excepting infractions on First Nations values or if the Province has not fulfilled its duty to consult. If this depresses you, so it should, because we are going to all have to pipe up together. The planet is cooking. No more denying it.

—Angie Herlihy, Grand Forks, BC

When the Sleeper Awakes

News from family in Holland is that farmers there are now forbidden to irrigate their crops, because of high temperatures and drought. Although Holland is to a great extent built on water, underground water levels must be sustained to prevent the wooden poles that support buildings from drying and shrinking. While salt water was tried to maintain the necessary level for buildings, it was found to be harmful to crops. Now the choice is to save the buildings, have drinking water, but kill the crops!

I don't suppose Europeans expected things to get so bad so fast. North Americans should take seriously the effects of climate change, as complacency has already brought us to increasingly high temperatures, droughts, and forest fires. Surely, we will pay heed and protect farming areas from the Site C dam and, locally, do everything possible to ensure protection of our aquifers, not only from contaminants, but from overuse. With eyes on Vancouver Island's Cassidy aquifers by proposed developments, such as Sandstone, Cable Bay, Town of Ladysmith, Timberwest, Island Timberlands, and the Nanaimo Airport, how will the aquifers withstand so much additional need for water?

Is it only crises that will move us to take action? While I prefer to think positively, remember that when the sleeper awakes it already is too late.

—Lavonne Garnett, Nanaimo, BC

BP Offshore

Drilling the East Coast for billions of barrels

by Susan MacVittie

British Petroleum (BP) made headlines in June with a spill of 136,000 litres of drilling mud. The spill was caused by a loose connection in the mud booster line on board the West Aquarius rig, which is drilling about 330 kilometres southeast of Halifax, Nova Scotia.

The operation is part of BP's proposed Scotian Basin Exploration Project that involves drilling the initial well, Aspy D-11. The leak was discovered approximately 30 metres below the sea surface. Drilling operations were suspended once the leak was detected and the loss of drilling fluid was stopped.

The Scotian Basin Exploration Project includes seismic acquisition and drilling across four exploration licences. BP is the operator of the exploration program and BP and Hess Canada each hold a 50% interest. The federal government ruled earlier this year the project is unlikely to cause adverse environmental effects.

In July, the Canada-Nova Scotia Offshore Petroleum Board allowed the company to resume drilling amid criticism by environmental groups who argue the risks of the project are too high. The Council of Canadians has joined environmental and fishing groups to form the Offshore Alliance, which is calling for a moratorium on offshore drilling and a public inquiry into marine oil exploration.

On August 7, BP announced that it had received approval from the Canada-Nova Scotia Offshore Petroleum Board to drill a sidetrack well at the Aspy D-11 wellsite. Sidetracking (drilling a secondary well away from the original well) is standard practice.

Although Nova Scotia's energy minister says he's concerned about the spill, he remains committed to growing the oil and gas industry there.

About eight billion barrels of crude oil or so are projected to be off Nova Scotia and 12 billion of crude oil off Newfoundland. In June, Nova Scotia Energy Minister Geoff MacLellan announced $11.8 million for research in waters off the province that would collect core samples and make maps of the ocean bottom and sub-bottom.

In Newfoundland, the government is committed to oil and gas development and released "Advance 2030: A Plan for Growth in the Newfoundland and Labrador Oil and Gas Industry" earlier this year. The Newfoundland and Labrador's offshore oil and gas regulator is taking bids for exploration in 16 parcels, even in the new marine protected area, the Northeast Newfoundland Slope, which is closed to all bottom fishing activities.

Equinor Canada, formerly Statoil, filed an environmental assessment last month for the Bay du Nord project, announced in July by the Newfoundland and Labrador government. It is poised to become the first oil field to fall under the United Nations Convention on the Law of the Sea. Because the site is 200 miles away (500 kms off the coast), it triggers payment from the federal government to the United Nations under international law, Article 82.

No offshore project has ever had to do that before. A 2016 briefing note indicated that the details of how Article 82 will be implemented in Canada are still under development.

Susan MacVittie lives in PEI and is east coast correspondent for the *Watershed Sentinel*.

Focus on Technology

©Thomas Hawk

"The ability or capacity to make something does not constitute a valid reason for its existence."

—Rose von Thater-Imai

What is technology, and how does it reflect and affect the society that creates it? This feature section begins with explorations of technology paradigms and practices – from Indigenous tech to the important perspectives left out of our Western, masculine-dominated technology practices.

As we began to explore this idea of technology, more and more questions emerged, some unsettling. Can we (or should we) rely on techno-fixes to save us from environmental disaster?

At the same time, we can hardly afford to ignore the environmentally helpful technologies emerging daily – including the ability to capture carbon from the air and turn it into fuel – or powerful appropriate uses of modern tech, such as the Amazonian forest peoples using modern GPS systems to declare land and cultural sovereignty.

We hope you enjoy this exploration – and we are sure you will find ample food for thought!

Sponsored by glasswaters foundation

Not Just Gizmos

Technology as complex systems of practice and culture

by Karen Hurley

When we think of "technology," what usually first springs to mind is a gizmo or machine, and today it often means a computer or phone-based thing or an app/program. But to metallurgist Dr. Ursula Franklin, as described in her book *The Real World of Technology*, technology is a system – a practice that includes ideas and myths.

According to Dr. Franklin, technology is not all the wheels and gears and electronics, but rather "involves organization, procedures, symbols, new words, equations, and, most important of all, a mindset." Therefore, the thing that is created (such as tool, dam, subdivision, or even a film) results from systems of production, which include people and practices that "[link] technology directly to culture, because culture, after all, is a set of socially accepted practices and values."

For example, the people and practices in a housing subdivision would include: the engineers, landscape architects, and surveyors that design the proposal; the universities that trained them; their professional codes of practice; local government planners, policy, and politicians; the developer; their lawyers; the builders and trades; the banks; the community; and sometimes activists.

So if we want to change how technology is affecting nature, our communities, and our bodies (which I think we do), we have to evolve our mindsets towards technology – complex systems of practice and culture.

And here it gets even more complicated. According to scholar Judy Wajcman, technology remains the domain of men to "the almost complete exclusion of women from the technological community," including those who offer a critique of technology. Indigenous peoples are also not generally included in Western technological systems of practice. This limits not only important critiques of technology, but the knowledge available for defining problems and solutions. Rethinking technology, therefore, will require that we rethink culture and our roles within in it.

Indigenous laws and practices have much to inform non-indigenous technology systems of practice towards mindsets that privilege nature, community and care. Ursula Franklin believed that women have a unique role because they know there are other patterns and ways of approaching webs of interaction within practices of technology.

Dr. Ursula Franklin (1921-2016) was an experimental physicist and the first woman professor in the Department of Metallurgy and Material Science at University of Toronto. Dr. Franklin published more than 70 scholarly papers on metals and alloys, and the history and social impact of technology. In addition, Dr. Franklin was known for her achievements as a humanitarian and provided technical advice to community groups on such issues as pollution and radiation. As a Quaker, Ursula was actively involved in work for peace and justice, international understanding, and issues related to women.

For example, climate change and its "solutions" are predominantly discussed in terms of the masculinized technologies of cars and electricity production. Women and Indigenous peoples could bring additional nuance and ideas, both to defining the climate change problem and to broadening solutions to include how our lives and societies could change to require less energy and moving around.

Dr. Franklin also urges us to understand the distinction between technology systems that are holistic and those that are prescriptive, based on how processes are conducted and by whom – who has power and control within the process.

Holistic technologies are associated with craft, where individual artisans "control the work from beginning to finish." With prescriptive technology (often referred to as the division of labour), the making of a thing is broken down into distinct steps, with different people doing the work at each stage and needing to be skilled in the task only within their step of production. Control over production or work becomes the responsibility of a boss or

Continued on Page 20 ⇨

⇦*Gismos continued*

manager – increasingly corporate and removed from the localities where their decisions play out.

Ursula Franklin explains that prescriptive technology systems of practice come with an "enormous social mortgage" because to work in a particular industry is to participate in a "culture of compliance … conditioned to accept orthodoxy as normal, and to accept that there is only one way of doing 'it.'" She goes on to argue that "understanding the social and political impact of prescriptive technologies is … the key to understanding our own real world of technology." We often see a strong culture of compliance in technologies that affect nature and our communities: the "I'm just doing the job as I'm told" argument. What will it take to break down the culture of compliance?

In considering technology, Dr. Franklin urges us to "ask new and different questions" which could include:

- Are systems hierarchal or integrated?
- What is the purpose of the design?
- Does it encourage fragmentation?
- Is creativity encouraged?
- Is there a denial of personal responsibility?
-

I would also add the questions:

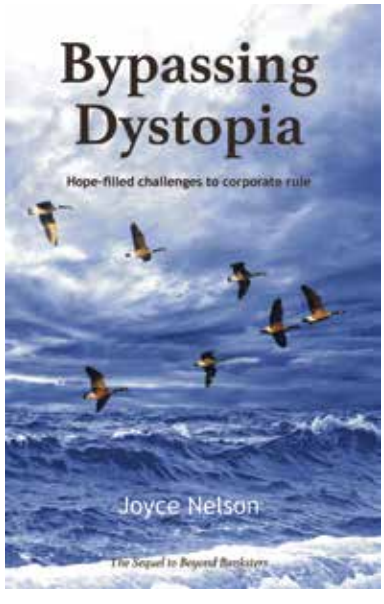
- Are any groups being dominated?
- Are First Nations lands and waters and laws respected?
- Are women involved in the process?

We often see a strong culture of compliance in technologies that affect nature and our communities: the "I'm just doing the job as I'm told" argument. What will it take to break down the culture of compliance?

Dr. Franklin also suggests that we use interdisciplinary inquiries of technology that include nature. She urges us to "look at technology in context … the context of nature and people" and to take up the "urgent task of cleaning up the technocentric and egocentric mindset, to get rid of the notion that nature is just one more infrastructure in the real world of technology."

Cleaning up our old mindsets about technology will not be easy, but we are in a time of change and awakening. As we continue to deepen our understanding of humanity's place within an interconnected world we will come to know that, in being kind and caring towards ecosystems, non-human-beings, and other people, we are being kind to ourselves.

Karen Hurley, PhD. has been an environmental planner, restauranteur, and university lecturer. and is now senior policy analyst at Islands Trust, but has written this piece outside of that role and in her role as an independent futures thinker (*ecoandjustfutures.com*).



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Techno-Fix?

Why climate change isn't our biggest environmental problem, and why technology won't save us

by Richard Heinberg

Our core ecological problem is not climate change. It is overshoot, of which global warming is a symptom. Overshoot is a systemic issue.

Over the past century-and-a-half, enormous amounts of cheap energy from fossil fuels enabled the rapid growth of resource extraction, manufacturing, and consumption; and these in turn led to population increase, pollution, and loss of natural habitat and hence biodiversity. The human system expanded dramatically, overshooting Earth's long-term carrying capacity for humans while upsetting the ecological systems we depend on for our survival. Until we understand and address this systemic imbalance, symptomatic treatment (doing what we can to reverse pollution dilemmas like climate change, trying to save threatened species, and hoping to feed a burgeoning population with genetically modified crops) will constitute an endlessly frustrating round of stopgap measures that are ultimately destined to fail.

The ecology movement in the 1970s benefitted from a strong infusion of systems thinking, which was in vogue at the time. Ecology – the study of the relationships between organisms and their environments – is an inherently systemic discipline, as opposed to studies like chemistry that focus on reducing complex phenomena to their components. As a result, many of the best environmental writers of the era framed the modern human predicament in terms that revealed the deep linkages between environmental symptoms and the way human society operates. *Limits to Growth* (1972), an outgrowth of the systems research of Jay Forrester, investigated the interactions between population growth, industrial production, food production, resource depletion, and pollution. *Overshoot* (1982), by William Catton, named our systemic problem and described its origins and development in a style any literate person could appreciate. Many more excellent books from the era could be cited.

> Why have environmental writers and advocacy organizations succumbed to tunnel vision?

However, in recent decades, as climate change has come to dominate environmental concerns, there has been a significant shift in the discussion. Today, most environmental reporting is focused laser-like on climate change, and systemic links between it and other worsening ecological dilemmas (such as overpopulation, species extinctions, water and air pollution, and loss of topsoil and fresh water) are seldom highlighted.

It's not that climate change isn't a big deal. As a symptom, it's a real doozy. There's never been anything quite like it, and climate scientists and climate-response advocacy groups are right to ring the loudest of alarm bells. But our failure to see climate change in context may be our undoing.

Why have environmental writers and advocacy organizations succumbed to tunnel vision? Perhaps it's simply that they assume systems thinking is beyond the capacity of policy makers. It's true: if climate scientists were to approach world leaders with the message, "We have to change everything, including our entire economic system – and fast," they might be shown the door rather rudely. A more acceptable message is, "We have identified a serious pollution problem, for which there are technical solutions."

Perhaps many of the scientists who did recognize the systemic nature of our ecological crisis concluded that if we can successfully address this one make-or-break environmental crisis, we'll be able to buy time to deal with others waiting in the wings (overpopulation, species extinctions, resource depletion, and on and on).

If climate change can be framed as an isolated problem for which there is a technological solution, the minds of economists and policy makers can continue to graze in familiar pastures. Technology – in this case, solar, wind, and nuclear power generators, as well as batteries, electric cars,

Continued on Page 21 ⇨

⇦*Techno-Fix continued*

heat pumps, and, if all else fails, solar radiation management via atmospheric aerosols – centers our thinking on subjects like financial investment and industrial production. Discussion participants don't have to develop the ability to think systemically, nor do they need to understand the Earth system and how human systems fit into it. All they need trouble themselves with is the prospect of shifting some investments, setting tasks for engineers, and managing the resulting industrial-economic transformation so as to ensure that new jobs in green industries compensate for jobs lost in coal mines.

The strategy of buying time with a techno-fix presumes either that we will be able to institute systemic change at some unspecified point in the future even though we can't do it just now (a weak argument on its face), or that climate change and all of our other symptomatic crises will in fact be amenable to technological fixes.

The latter thought-path is again a comfortable one for managers and investors. After all, everybody loves technology. It already does nearly everything for us. During the last century it solved a host of problems: it cured diseases, expanded food production, sped up transportation, and provided us with information and entertainment in quantities and varieties no one could previously have imagined. Why shouldn't it be able to solve climate change and all the rest of our problems?

Of course, ignoring the systemic nature of our dilemma just means that as soon as we get one symptom corralled, another is likely to break loose. But, crucially, is climate change, taken as an isolated problem, fully treatable with technology?

Colour me doubtful. I say this having spent many months poring over the relevant data with David Fridley of the energy analysis program at Lawrence Berkeley National Laboratory. Our resulting book, *Our Renewable Future*, concluded that nuclear power is too expensive and risky; meanwhile, solar and wind power both suffer from intermittency, which (once these sources begin to provide a large percentage of total electrical power) will require a combination of three strategies on a grand scale: energy storage, redundant production capacity, and demand adaptation. At the same time, we in industrial nations will have to adapt most of our current energy usage (which occurs in industrial processes, building heating, and transportation) to electricity.

A gargantuan investment in technology is being billed as our last hope. But in reality it's no hope at all.

Altogether, the energy transition promises to be an enormous undertaking, unprecedented in its requirements for investment and substitution. When David and I stepped back to assess the enormity of the task, we could see no way to maintain current quantities of global energy production during the transition, much less to increase energy supplies so as to power ongoing economic growth. The biggest transitional hurdle is scale: the world uses an enormous amount of energy currently; only if that quantity can be reduced significantly, especially in industrial nations, could we imagine a credible pathway toward a post-carbon future.

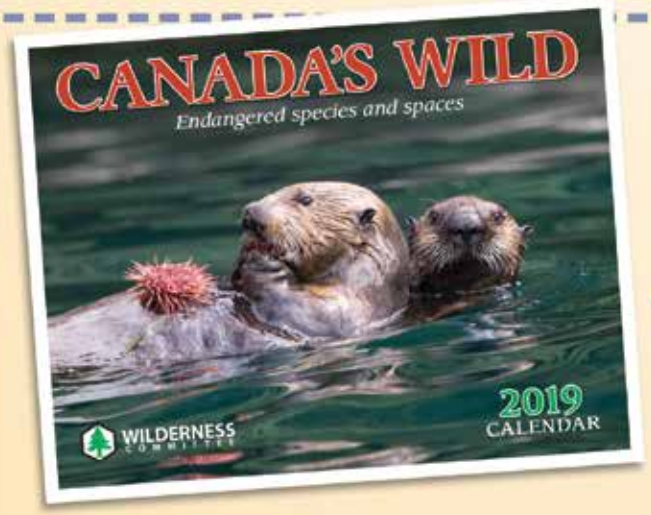
Downsizing the world's energy supplies would, effectively, also downsize industrial processes of resource extraction, manufacturing, transportation, and waste management. That's a systemic intervention, of exactly the kind called for by the ecologists of the 1970s who coined the mantra, "Reduce, reuse, and recycle." It gets to the heart of the overshoot dilemma – as does population stabilization and reduction, another necessary strategy. But it's also a notion to which technocrats, industrialists, and investors are virulently allergic.

The ecological argument is, at its core, a moral one (as I explain in more detail in a just-released manifesto replete with sidebars and graphics, *There's No App for That: Technology and Morality in the Age of Climate Change, Overpopulation, and Biodiversity Loss*.")

Any systems thinker who understands overshoot and prescribes powerdown as a treatment is effectively engaging in an intervention with an addictive behavior. Society is addicted to growth, and that's having terrible consequences for the planet and, increasingly, for us as well. We have to change our collective and individual behavior and give up something we depend on – power over our environment. We must restrain ourselves, like an alcoholic foreswearing booze. That requires honesty and soul-searching.

In its early years the environmental movement made that moral argument, and it worked up to a point. Concern over rapid population growth led to family planning efforts around the world. Concern over biodiversity declines led to habitat protection. Concern over air and water pollution led to a slew of regulations. These efforts weren't sufficient, but they showed that framing our systemic problem in moral terms could get at least some traction.

wilderness & wildlife matter



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Why didn't the environmental movement fully succeed? Some theorists now calling themselves "bright greens" or "eco-modernists" have abandoned the moral fight altogether. Their justification for doing so is that people want a vision of the future that's cheery and that doesn't require sacrifice. Now, they say, only a technological fix offers any hope. The essential point of this essay (and my manifesto) is simply that, even if the moral argument fails, a techno-fix won't work either. A gargantuan investment in technology (whether next-generation nuclear power or solar radiation geo-engineering) is being billed as our last hope. But in reality it's no hope at all.

The reason for the failure thus far of the environmental movement wasn't that it appealed to humanity's moral sentiments – that was in fact the movement's great strength. The effort fell short because it wasn't able to alter industrial society's central organizing principle, which is also its fatal flaw: its dogged pursuit of growth at all cost. Now we're at the point where we must finally either succeed in overcoming growthism or face the failure not just of the environmental movement, but of civilization itself.

The good news is that systemic change is fractal in nature: it implies, indeed it requires, action at every level of society. We can start with our own individual choices and behavior; we can work within our communities. We needn't wait for a cathartic global or national sea change. And even if our efforts cannot "save" consumerist industrial civilization, they could still succeed in planting the seeds of a regenerative human culture worthy of survival.

There's more good news: once we humans choose to restrain our numbers and our rates of consumption, technology can assist our efforts. Machines can help us monitor our progress, and there are relatively simple technologies that can help deliver needed services with less energy usage and environmental damage. Some ways of deploying technology could even help us clean up the atmosphere and restore ecosystems.

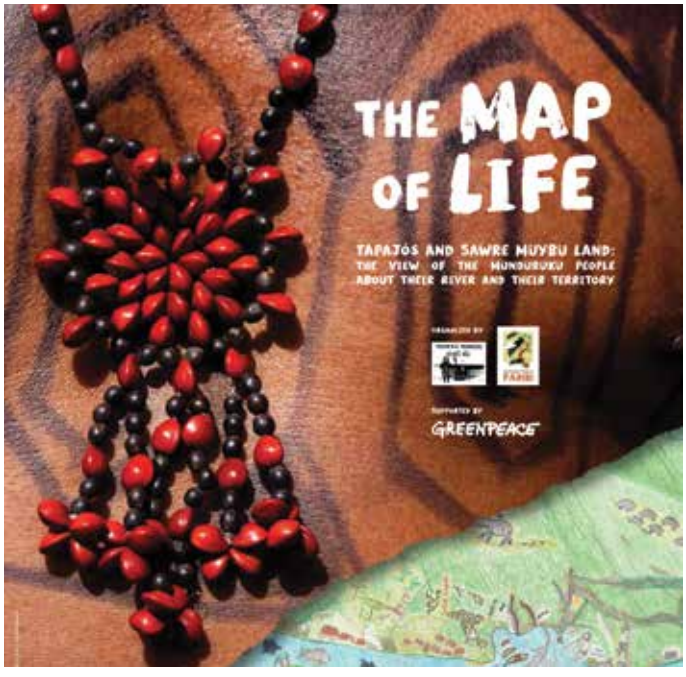
But machines won't make the key choices that will set us on a sustainable path. Systemic change driven by moral awakening: it's not just our last hope; it's the only real hope we've ever had.

This article was originally published on *www.ecowatch.com*

Richard Heinberg is Senior Fellow at the Post Carbon Institute and is regarded as one of the world's foremost advocates for a shift away from our current reliance on fossil fuels. He has written and lectured extensively on energy, economic, and ecological issues and is the author of 13 books.

Counter-Mapping

Amazonian forest peoples and the power of maps



by James A. Fraser

In 1707, a Jesuit missionary from what is now the Czech Republic named Samuel Fritz published one of the first detailed maps of the Amazon River. Fritz spent much of his life in the region and his map names and locates (often incorrectly) many of the Amazonian forest peoples he encountered. In this sense, his map helped tie them to certain places, and to particular colonially-defined identities.

While Fritz was mapping out the Amazon, other Europeans were hard at work in tropical forested countries across the globe, drawing up boundaries that ignored and criminalized forest peoples' customary rights to live in their ancestral territories.

Maps have always been part of the imposition of power over colonized peoples. While map-making might be thought of as "objective," it is fundamentally political, a necessary part of controlling a territory. Maps inscribe borders, which are then used to include some and exclude others.

During a late 19th-century rubber boom, Amazonia became increasingly well mapped out as the young nations of Peru, Bolivia, Brazil, and Colombia vied for territorial control. The rights and interests of Amazonian peoples were never included in this process, and they would be continually denied rights, recognition, and citizenship from these nations until the 1980s and 1990s. Even following legal recognition, their territorial rights – critical for their continued existence – are still often ignored in practice.

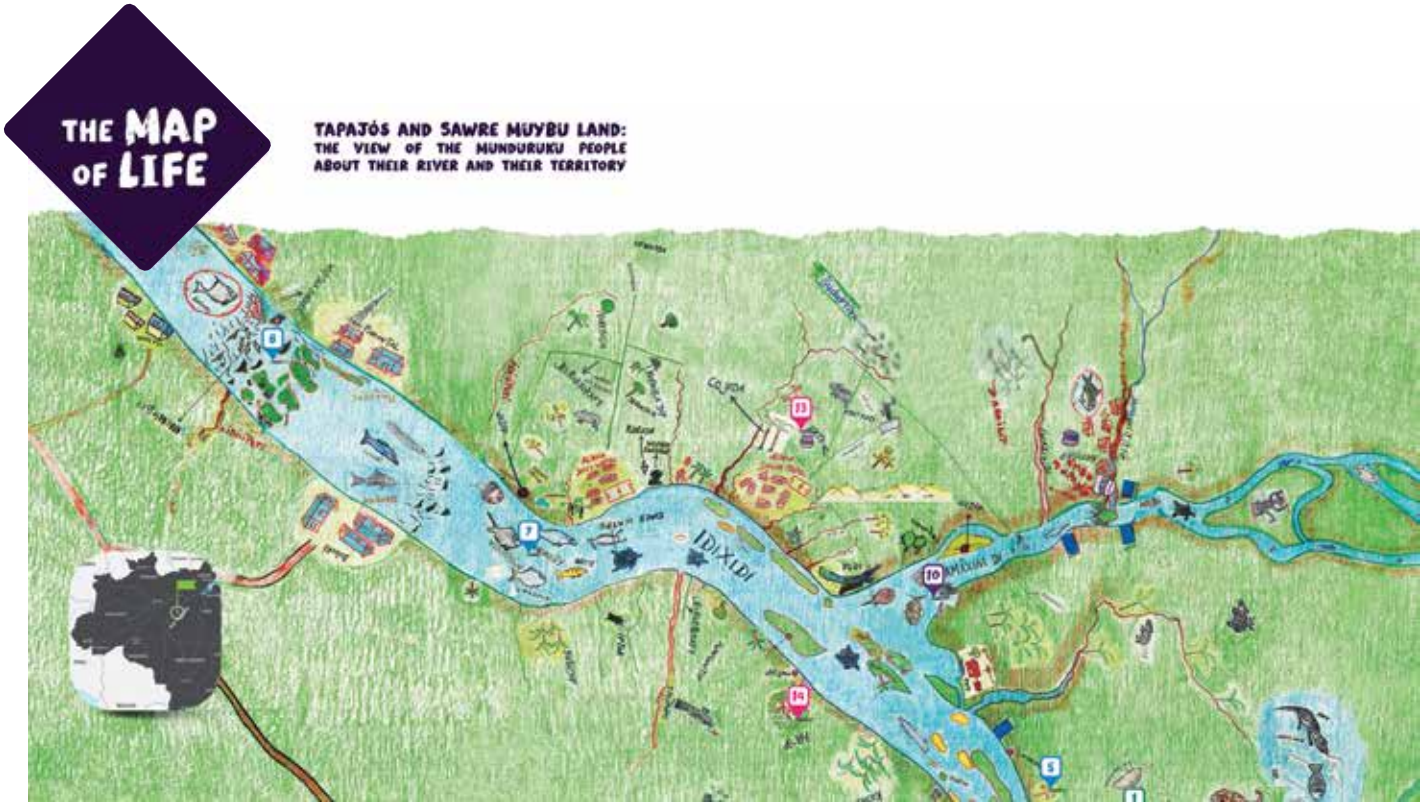
These marginalized people are now working together to reclaim the process of mapping itself. In the central Brazilian Amazon there has been a recent flurry of "counter-mapping," used by forest peoples to contest the very state maps that initially failed to recognize their ancestral territorial rights.

Counter-mapping first came to prominence in the 1990s, when it was particularly influential in Indonesia. Back then, it was rudimentary and new maps were produced by hand. Today, communities have access to GPS and smartphones and are able to walk along trails marking out their territorial claims.

In Brazil, counter-mapping falls under the wider term of "auto-demarcation," which also includes various other forms of territorial monitoring that would normally be carried out by the state. The goal is to safeguard the integrity of territory, defined as much more than just land (schools, for example, are one stated objective).

In Brazil, recognition of forest peoples' territorial rights can take decades. The government, acting in the interest of rural elites, is currently attempting to roll back these rights.

The Munduruku people of the middle Tapajós river, a southern tributary of the Amazon, provide the most iconic example of counter-mapping. The auto-demarcation of their ancestral Sawre Muybu territory is part of a wider Munduruku political



> Auto-demarcation can be understood as a combative form of dialogue with the state, of struggle for access to territorial rights

movement, Ipereğ Ayũ, against dam construction and industrial mining on their land.

Neighbouring riverine peasants who self-identify as "the Beiradeiros," are counter-mapping their community of Montanha-Mangabal to resist land grabbing, illegal mining and logging. The Beiradeiros and the Munduruku have passed from being enemies to allies through joint political action against major proposed hydroelectric projects and now work together to auto-demarcate their respective territories.

But can counter-mapping really liberate these communities? Research on counter-mapping in Nicaragua and Belize in the 1990s and 2000s shows it did result in the recognition of Indigenous land rights. But land can't fix everything. Even reclaiming their land couldn't free Indigenous Peoples from colonial social relations. State-Indigenous relationships continued to be oriented around property rights, the basis of modern politics.

Counter-mapping can also be ineffective. In the Chaco region of Bolivia, years of stalled land titling led some Guaraní indigenous people to give up on state recognition of their territory. Instead, they signed an agreement with Repsol, a Spanish oil company, which acknowledged their property rights. Despite this having no legal standing in Bolivian law, the Guaraní saw an agreement with an oil company as better than a state land title.

In central Brazilian Amazonia, however, auto-demarcation has in some cases forced the government to act. For instance, the Munduruku have gained official recognition of their territory, Sawre Muybu.

Auto-demarcation then can be understood as a combative form of dialogue with the state, of struggle for access to territorial rights, much more than just the materialization of these rights.

The Indigenous Peoples of the middle and lower Tapajós are now considering the links between their struggles and those of the Zapatista movement in southern Mexico, where auto-demarcation was used as part of reclaiming their sovereignty.

The degree of political agency and empowerment that Amazonian forest peoples acquire through the process of auto-demarcation is striking. Independent of whether it leads to state action and guarantees of territory, this is an important achievement.

James A. Fraser is a lecturer in political ecology at Lancaster University. This article was originally published on *The Conversation*, September 26, 2017.

Indigenous Tech

by Rose Thater Braan-Imai

The Native American Academy was founded by a group of Native scholars and Traditional Knowledge Holders dedicated to increasing respect for and understanding of the Indigenous worldview and to broadening the contemporary concepts of science and learning. Since its inception, it has grown into a network of Native and non-Native people using research, dialogue, writing, and action projects focused on making Indigenous knowledge visible to the Western-trained mind.

The Academy in collaboration with The Cultural Conservancy is creating a series of Sculpture Gardens of Native Science and Learning, the first one will be in the San Francisco Bay Area in Northern California. Envisioned as emblematic libraries, these Gardens will use an inter-tribal collective art project to communicate Native Science: in Cree, *wahkohtowin,* "knowing how you are related to all creation."

There is a commonly held assumption that western science is supra-cultural.
Actually science emerges from culture.

Native Science is a term that defines
an adaptive, living knowledge.
It is a study of the whole and
includes spiritual, ethical and social dimensions.
Native science is specific to place and
brings forth its knowledge of
an evolving ecology in a process that sustains and
deepens relevancy over time.

These bodies of knowledge
held by the Indigenous peoples of the Earth
share many of the same principles
and also employ the precision and rigor
associated with western science.
The difference between these two methods of knowing the world
rests in the ways in which the world is perceived.

There is a quality of consciousness
that is brought to bear in the gathering of knowledge by Native peoples.
It is an awareness and a lived experience
of a relational universe where time and space are bound,
and where time is nonlinear and described
as movement within a flux of layers of
flashing webs that appear and disappear
in an infinity of patterns.
It is those patterns and the harmony of their interconnectedness
that guides the search for knowledge.

It is the dedicated study of relationships
that guides the creation of Indigenous technologies
and which provides a context to describe their characteristics.

What are the characteristics that are distinct to Indigenous technology?

First Indigenous technologies are recognized as animate, imbued with the breath of life, they live in form and function having emerged from the realms of the invisible.

Indigenous technologies emerge from the implicate order to reflect the art of skillful living. Indigenous technology is pragmatic. It is responsive and responsible to the ecology in which it lives.

Indigenous technologies attract the learning spirit(s) they provide a learning ecology that supports the revitalization and transformation of awareness and knowledge.

Indigenous technology is intended to enhance the ability to maintain and renew balance and harmony within a multi-dimensional environment.

Indigenous technology is created within a sensory environment that builds on our sense of relationship, meaning, balance, feeling, memory and place as well as sight, sound, smell, taste and touch.

Through meaningful interactions Indigenous technology seeks to engage and evoke significant knowledge and experiences reflective of the Indigenous world.

Indigenous technologies have the obligation to come into existence, to be used and to transform within an ethical space that is responsible to life in all its forms.

The ability or capacity to make something does not constitute a valid reason for its existence. Indigenous technology is coherent with the natural order.

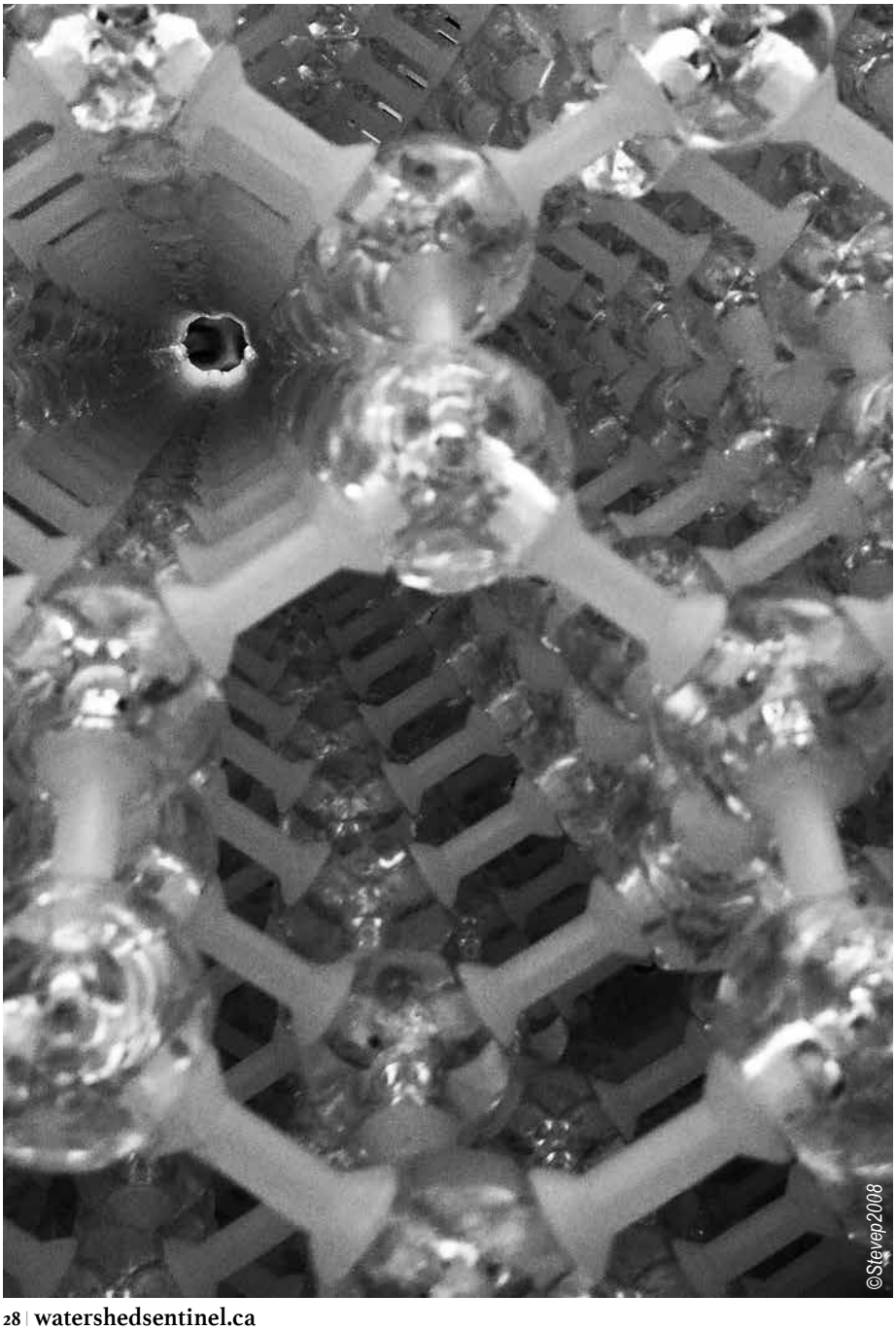
Indigenous technology has a different life trajectory than a fax machine. The Pukea (A carved Polynesian trumpet) will not find itself in a landfill replaced with something sleeker and faster. It's efficacy has not diminished over thousands of years of use. The Pukea is an authentic example of technological design coherent with the natural order.

Indigenous technologies have intrinsic value because we know their ancestry where they came from, what their place is in our world. We know they will transform and pass from this place to return to the realms of energies.

Rose Thater Braan-Imai (Tuscarora):
After a lifetime in the arts became the director of Education at The Center for Particle Astrophysics at U.C. Berkeley. for 11 years, she led collaborative efforts to cultivate a scientific culture that values diverse worldviews and ways of knowing. She is a visual artist, a writer, a Mother, wife and grandmother. She is the director and a co-Founder of The Native American Academy. These writings emerged from ceremonial dialogues convened by the Academy over the last 20 years.
www.silverbuffalo.org

Carbon Tech

Sucking carbon out of the air to make fuel



by Gavin MacRae

The ability to cost-effectively vacuum carbon dioxide out of the air and turn it into carbon-neutral fuel went from theoretical to viable this summer. The development could lead the way to dramatic changes in the way we tackle climate change, but the technology is not without its critics.

Direct air capture (DAC) is a technology that removes carbon dioxide from the atmosphere. Carbon Engineering, a Calgary-based company, has managed a huge drop in the price of processing carbon from the air – from a previous benchmark of US$600/ton to potentially under US$100/ton. This means DAC has gone from being experimental to something that could be developed to commercial scale right now. Carbon Engineering's founder David Keith and others documented their breakthrough in the journal *Joule*, garnering accolades for transparency in sharing proprietary technology.

Carbon Engineering's small test plant in Squamish, BC, is the proving ground for the price drop. At its heart the plant is a compilation of established industrial processes borrowed from other industries. Despite using known technologies, the project took 100 person-years of work, deep collaboration with machinery vendors, and "an immense amount of development on apparently trivial items."

Carbon Engineering believes larger plants using their technology could capture one million tons of CO_2 per year, equivalent to the yearly emissions of 250,000 cars.

A second and distinct part of Carbon Engineering's technology is the creation of carbon-neutral hydrocarbon fuels. "Carbon-neutral hydrocarbon" sounds a tad absurd, but it works like this: the CO_2 emitted into the air when the fuel is burned has already been pulled from the air to make the fuel – effectively making a closed loop.

For Carbon Engineering, the fuels create a market for the CO_2 they pull out of the air, which would be competitive in jurisdictions with mandated low-carbon fuel standards. Made by combining the harvested CO_2 and hydrogen, the fuels emulate gasoline, diesel, or aviation fuel. The key to making these fuels carbon-neutral lies in using renewable energy sources, both to power the DAC, and to create the hydrogen by water electrolysis.

It slices, it dices

So what should we use this technology for?

At first glance the answer would seem "to fill my car," but with electrification of transport taking off, trying to keep gasoline-powered cars relevant in the years ahead could be a losing battle. Chris Goodall, an expert and author on new energy technologies, said the growth rates of electric vehicles are so high, and the commitments by manufacturers so great, electrification of ground transport is "unstoppable." Producing carbon-neutral gasoline to fuel personal cars would mean a convoluted series of steps to get the same result as simply charging an EV from a renewable energy source.

Two obvious targets for carbon-neutral fuel are aviation and marine shipping, which have both struggled to enact meaningful carbon cuts. These are stubborn industries that require the high energy density of hydrocarbons, or have such long turnover in infrastructure that they require a "bridge" to decarbonize in the short term.

Energy carrier

Goodall also sees huge potential for Carbon Engineering's fuel as a long-term storage medium for renewable energy.

Renewables, although still a modest percentage of total global energy supply, are growing quickly, and their cost continues to fall. Because of the intermittency of renewable energy, at times there are periods of oversupply.

Goodall believes using the surplus energy to split water molecules, and cull the freed hydrogen, is the best way to save the energy for future use. This could be done by electrolysis (inducing an electrical current into the water). The resulting hydrogen becomes an "energy carrier," holding the energy in a stable form.

The second step would be to convert the hydrogen into hydrocarbon fuel using Carbon Engineering's technology. When the sun isn't shining or the wind dies, the fuel would power turbines to create electricity.

The versatility, ease of storage, and compatibility with existing infrastructure would give liquid fuels an edge over straight hydrogen or other long-term energy storage concepts.

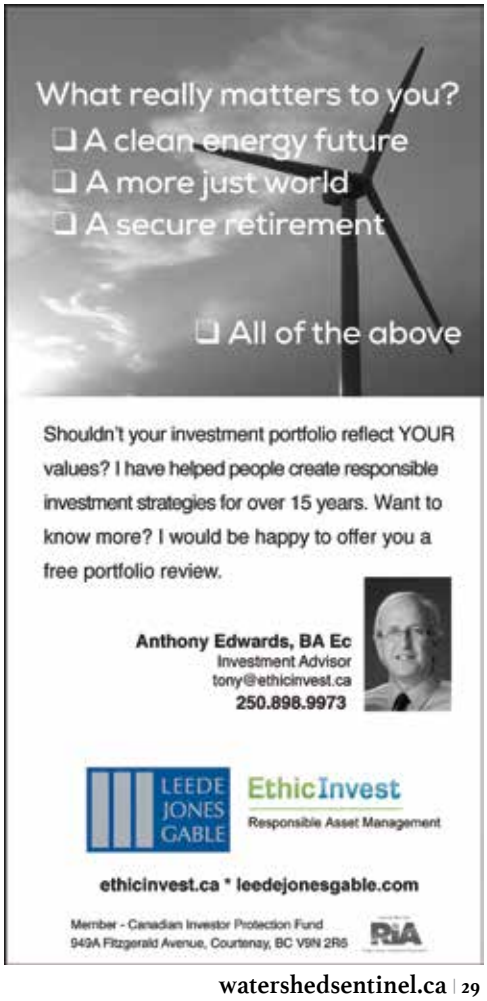
Carbontech

Atmospheric CO_2 harvested using DAC has many uses beyond carbon-neutral fuels. Building materials, chemicals, plastics, concrete, fertilizers, and even vodka could all be formed from, or made lower-carbon with, CO_2 from the sky. Conceivably any product made from fossil fuel feedstocks could be fair game. This technology, using waste carbon to create products, is called carbontech.

Matt Lucas, Associate director of the Centre for Carbon Removal, sees carbontech as the key to unlock a paradigm shift in how we think of and use carbon, and a way to revitalize manufacturing that is both profitable and climate conscious.

The potential market for carbontech has been estimated at around one trillion dollars, and vast untapped profits mean

Continued on Page 30 ⇨



⇦*Carbon Tech continued*

DAC and carbontech could enjoy widespread political support. "We need to talk about carbon as an economic opportunity," said Lucas, "not just as a liability and a thing to be mitigated, the way we've been talking about it thus far."

Negative emissions technologies

DAC can also be used for carbon capture and storage, without creating fuels or other products with the carbon. In this scenario the carbon is sequestered in depleted oil or gas wells, or underground aquifers. Using DAC this way would make it a negative emission technology.

With the window quickly closing to meet Paris Agreement targets, it's looking very likely we will not only have to stop dumping carbon into the atmosphere, but we are also going to have to start taking it out. This is what negative emissions technologies (NETs) do.

NETs can be conceptually very different from each other, but they all have the end result of taking carbon out of the atmosphere or the oceans and locking it away in the earth. The Intergovernmental Panel on Climate Change have many modeled pathways to meeting Paris goals which rely on negative emissions – according to critics a little too much.

Is there a catch?

Some observers have reservations about negative emissions. An article in *Science* by research scientists Kevin Anderson and Glen Peters typifies the rationale. Anderson and Peters argue relying on unproven negative emissions technologies in the future allows policymakers to avoid politically and economically tough climate policy in the present. This reliance on a techno-fix down the road constitutes a "moral hazard" and an "unjust and high-stakes gamble." Critics also note that negative emissions are more expensive, ton-for-ton of carbon, than reducing emissions.

In a written rebuttal, scientist Klaus Lackner and 45 other signatories argue that the critics provide no evidence that negative emissions technologies are having any effect on the pace of climate mitigation efforts or the failure of countries to cut emissions. Shelving negative emissions technologies, they wrote, would remove "important options for mitigating and ameliorating climate change."

DAC is able to sidestep much of the controversy since it doesn't use large areas of land, require sustainable biomass, or have potential impacts on biodiversity, as bio-energy with carbon capture and storage does (where biomass is grown to burn for energy and the carbon released is then captured and stored).

Goodall and Lucas are bothwell-acquainted with the arguments for and against negative emissions.

Goodall said he's pessimistic about the world solving climate change unless decarbonizing technologies harness capitalism. "I believe that self-restraint, tough measures to reduce carbon emissions *per se* are actually less effective than pushing the technology as hard as you can to make it economically viable, make it economically beneficial to use zero carbon technologies for the creation of fuels."

Lucas explains DAC is part of a suite of necessary measures regardless of ideological arguments. "Even if you magically flipped a switch and turned off all the emissions today, we've emitted so much carbon into the atmosphere, and locked in so much climate change, that we're going to need to do negative emissions anyhow."

"I would never advocate for slowing down decarbonization because we have negative emissions," Lucas adds, "but I think the bigger concern is that the [climate] models say that we need negative emissions, and nobody's working on it."

Both camps in the negative emissions debate agree on one point: NETs should be used as an adjunct to decarbonization. Used this way, DAC could make a versatile compliment to aggressive carbon cuts, a sort of plucky sidekick used to solve tough-to-decarbonize trouble spots and undo the damage we've already done – as long as our main focus is kicking fossil fuels to the curb.

If, however, the public or policymakers believe negative emissions technology can be used as a brute-force tool to "reverse" climate change without decarbonizing, the critics will be proven right.

Gavin MacRae is a writer suffering mild eco-anxiety as a side effect of recent fatherhood. He is also *WS'* new editorial assistant, and lives in the Comox Valley.

The filling station of the future

Way Forward?

German scientists are developing a filling station to serve vehicles running on electricity, hydrogen, or natural gas (methane) in the most efficient, cost-effective way possible.

The stations will use the grid to charge electric cars' batteries with renewable electricity (sourced, for example, from wind power plants). A large stationary battery will store unused power, and if the battery is full and recharging electric cars cannot deplete it, a second step will convert the electricity into hydrogen and store it. "Tomorrow's filling station" will include a third stage to produce methane when the hydrogen storage tank is full and demand from fuel cell cars is low. If refueling cars do not deplete the methane supply, the surplus gas is stored and then piped into the natural gas grid when the storage tank fills up. The most efficient use of regenerative electricity is to power electric motors. Stages two and three – conversion to hydrogen and then methanation – are only an option once demand for electrical power has been met.

—Zentrum für Sonnenenergie- und Wasserstoff-Forschung (Centre for Solar Energy and Hydrogen Research) Baden-Württemberg (ZSW)
February 20, 2018

Pipeline pain relief on the horizon?

Bitumen Balls

The University of Calgary has developed a method of turning bitumen into hockey puck-like balls, for easy shipping by rail. While it's not the first attempt to create a solid form of bitumen, inventor Ian Gates says these pellets can be rapidly produced without polymers or other additives, and without the need for complex equipment like microwaves.

The balls, which float when spilled, can be produced at the wellhead, making the process as economical as pipeline transport. Once shipped, the pellets can be refined just like regular bitumen. That is, if upgrading is necessary – Gates says Alberta's energy future may be better off using bitumen for carbon-demand products like carbon fibre and graphine. He says this first generation of bitumen balls will be ideal for road paving, without the need to upgrade it further.

—www.ucalgary.ca
Sept 6, 2017

Sound waves to control algae

Dutch Buoy

A Dutch water treatment company has created an environmentally-friendly solution to the problem of algae contamination of lakes and reservoirs. The MPC-Buoy is a floating, solar-powered system that combines real-time water quality monitoring and LG Sonic ultrasound technology to control algae in large water surfaces, such as lakes and drinking water reservoirs, without using chemicals, and without affecting other organisms in the lake such as plants and fish.

—LG Sonic
July 19, 2018

Quick and cheap housing

3D Printing

Companies from Russia to China, the US, and the Netherlands have proven that a house can be 3D-printed cheaply, efficiently, and easily. In March 2017, Apis Cor, 3D-printing specialists with offices in Russia and San Francisco, announced they had 3D printed the self-bearing walls, partitions, and building envelope of an entire home, installed it on site, and added the roof and interior finishings, all in 24 hours. It happened in the dead of winter in a tiny Russian town named Stupino, using Apis Cor's on-site printer, for a cost of around $US 10,000. New Story, a Silicon Valley-based nonprofit that builds housing in the developing world, just unveiled a new 3D printer that can print a house in less than a day for $4,000.

DUS Architects, a Dutch architecture studio that has been 3D-printing houses since 2012, has unveiled the KamerMaker, a huge 3D printer that can build using local recycled materials, slashing transport, material and manufacturing costs.

—www.techcrunch.com
May 8, 2018

Electoral Reform

A citizens' guide to what we need to know

by Réal Lavergne and Gisela Ruckert

There are numerous explainers out there on the three proportional representation options that will appear on BC's fall referendum ballot. However, this is only one part of what voters need to know about the referendum, and probably not the most important.

The first thing voters need to know, before even considering the technical aspects of different proportional representation models, is where their interests lie as citizens.

Our view is that proportional representation is unambiguously in citizens' interests. It has, in fact, been recommended by almost every commission, assembly and report ever produced in Canada and the provinces – 14 of them by our count. The only exceptions were reports of all-party committees led by a party that promised reform while in opposition, but changed its mind once in power.

Vested interests versus citizens' interests

So why has proportional representation never been implemented in response?

Keep in mind that electoral reform needs to be enacted by the very governments elected under the existing first-past-the-post system (FPTP) and that most governments under FPTP are elected with a "false majority."

Federally, every government since 1984 has achieved majority government status with less than 44% of the vote. BC has had only one true majority government since 1952. In 1996, the NDP won a false majority with fewer votes than the Liberals had achieved.

Knowing that such "false majorities" would not be possible under a proportional electoral system creates a huge disincentive for governments to reform the electoral system. In a system that is typically dominated by two major parties, both may prefer taking turns wielding unbridled power based on false majorities over the alternative of sharing power and cooperating with other parties on an ongoing basis. This clash of interests runs deep. Those on the side of the status quo include politicians elected under the current system, the political organizers who brought them to power, lobbyists, and others with a vested interest in the existing system.

This is the inconvenient truth of why electoral reform is such a challenge, and citizens need to look carefully at who is against proportional representation before accepting their arguments. The clash between the interests of the political elite and citizens who want to hold politicians to account must be understood as we try to digest the information, misinformation and fearmongering being thrown at us.

Referendums, understood from this perspective, are as much a tool of political elites to forestall change as they are a way for citizens to express themselves on an important issue. Referendums are notoriously difficult to win because of what is known as the "status quo bias," meaning that voters tend to vote for the devil they know over the devil they don't know. This allows vested interests to play on voters' fears.

In a round of referendums in the 2000s, the governments of BC, Ontario, and PEI took no chances and further stacked the deck against change, requiring 60% sup-

port province-wide and majority support in 60% of ridings. This is how the 2005 referendum in BC came to "fail," even though 58% of voters supported change.

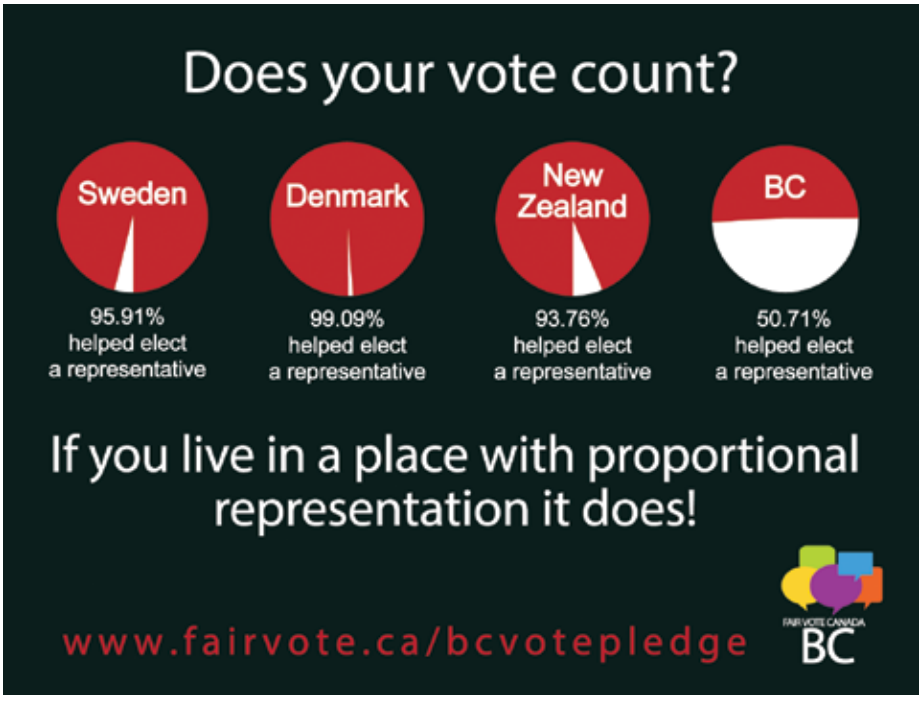
Pro Rep from a citizen's perspective

We all know that FPTP distorts electoral results. The winning party gets a winner's bonus (a share of seats larger than its share of the vote), and other parties get less than their share. The smaller the party, the greater the handicap. This is why the Green Party won only three seats in the last BC election even though it took almost 17% of the vote, and why the Conservative Party in BC has been relegated to the sidelines. In Alberta, Saskatchewan and Manitoba it is the Liberals that have been decimated.

Within BC, every party routinely achieves less than its share of the seats in one region or another. In 2017, the BC Liberals did particularly badly on Vancouver Island, where they won only one of 14 seats despite having taken 28.5% of the vote.

Imagine instead a political scenario involving four parties able to take their rightful share of the vote in BC and win a corresponding number of seats: Conservatives, Greens, Liberals and the NDP.

As citizens, we want our voices to be heard. We need to know that wherever we happen to live and whomever we vote for, our vote will have as much of an impact on the results as anyone else's. As voters, we want to have a meaningful selection of candidates and parties to choose from, beyond marking an X for a candidate who is likely to win anyway, has little chance of winning or is not our preferred choice. Most citizens would also like policies to be based on a reasonable social consensus in which different views have been taken into account – policies that will stand the test of time. Achieving consensus does take longer, but is well worth the effort.



"Citizens need to look carefully at who is against proportional representation before accepting their arguments."

It is no coincidence that more than 80% of OECD countries – and countries around the world – use some form of proportional representation, including some of the best-governed countries in the world. The evidence shows that proportional representation countries perform better on just about any indicator you could think of. What is more, they do so based on a more consensual form of democracy involving co-operation among parties instead of the hyper-partisan approach that we have become used to in Canada.

Viewed from a citizen's perspective, proportional representation is not a partisan issue. Remarkably, because policy-making requires a more consensual approach and more attention to long-term issues, proportional representation would make it possible to better meet the objectives of both conservatives and progressives. Consider that proportional representation countries spend more money on social programs and less on prisons, while doing a better job of balancing the books; they are characterized by greater political stability and less domestic conflict; they are less subject to domestic terrorism, and have less corruption, less unemployment and lower inflation. There is a lot to like about proportional representation!

With so much evidence in favour of change, voters should look carefully at

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⇦*Pro Rep continued*

the arguments being put forward by opponents of proportional representation. We should not allow them to frame the discussion in terms of irrelevant cases like Israel and Italy, which use systems very different from those proposed for BC, or phoney arguments about "rigging the process."

In New Zealand in 1992 and 1993, as in PEI in 2016, similar referendums passed because citizens took things in hand and responded that they had had enough of FPTP. This is our chance to do the same and not be misled by defenders of vested interests.

The choice of systems on the ballot

From a voter's perspective, the BC referendum rides almost entirely on the first of the two questions being asked. Do we want to stick with the status quo or give proportional representation a try, knowing that there will be a second referendum after two elections under the new system? That is the core question.

The second question asks voters which of three proposed proportional representation systems they prefer. All three – Dual Member Proportional (DMP), Mixed Member Proportional (MMP) and Rural-Urban Proportional (RUP) – would be excellent choices for BC, providing substantially the same outcome. Parties' shares of seats in the legislature would match their level of popular support, and because voters would have more than one MLA representing them, the vast majority would end up with at least one MLA they voted for. All three systems share common features: all retain local representation; all keep the number of MLAs more or less the same; and in no case would regions have fewer MLAs than they have now. All use a relatively simple ballot.

> "Referendums are notoriously difficult to win because of what is known as the "status quo bias," meaning that voters tend to vote for the devil they know over the devil they don't know."

These are systems chosen with BC's traditions and geographical realities in mind, and while the fine details are not fully defined at this time, the criteria and process for finalizing those details are clear and credible.

That said, it is fitting that the choice of systems be left to voters, and fitting that the second question be optional. This allows voters to engage in a way that matches their own level of comfort.

The only comment we would like to offer on specific systems is with regard to Rural-Urban Proportional (RUP), which will affect voters differently in urban and rural areas. If you live in an urban area – as do 86% of British Columbians – you should think of RUP as primarily a system of multi-member districts with ranked ballots – the Single-Transferable-Vote (STV) model. If you live in a rural area, RUP for you will be much like the Mixed Member Proportional model.

Getting it right

What really matters in this referendum is that citizens decide where their interests

lie and avoid being misled by those with a vested interest in the current system. We suggest that voters study the evidence for themselves. Many neutral commissions have found the evidence overwhelmingly favours pro rep over FPTP. Most advanced democracies have moved to pro rep. And 88% of expert witnesses who testified and expressed a preference before the special parliamentary committee on electoral reform in 2016 called for proportional representation.

The BC referendum provides an opportunity to finally get this right. If we do, BC could become a beacon for the electoral reform movement across the country. Depending on what happens in the coming Quebec provincial election in October (in which all of the opposition parties have come out in favour of PR), BC could find itself in a neck and neck race with Quebec to become the first province in Canada to finally reform its electoral system.

Réal Lavergne is the president of Fair Vote Canada, and Gisela Ruckert is the president of Fair Vote Canada BC.

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See also: www.fairvote.ca/bc-pr-systems

Wild Times Hole in the Parks

by Joe Foy

Back in the early spring of 2002, the BC Liberal government of then-Premier Gordon Campbell lost no time in rolling out a massive assault on BC's world-famous provincial park system, slashing park budgets, laying off rangers, closing park interpretive centres - even cutting essential supplies like toilet paper. It was all done to appease Campbell's most powerful supporters, owners of the province's major logging, mining and fossil fuel companies, that saw parks as competitors for raw resources.

After the budget cuts, the government in Victoria brought out the chainsaws and bulldozers. In June 2002, a large logging company, International Forest Products, proposed building a logging road through several kilometres of Manning Park to log out Ghost Pass Valley. Located on the western flank of the park, the heavily forested valley is not only home to a popular hiking trail, but also is designated as spotted owl habitat. The spotted owl is one of Canada's most endangered species.

This was just too much for the Wilderness Committee. It took three weeks of raising a ruckus – but eventually the BC government cancelled the road and logging plans. Whew!

We thought Manning Park was in the clear. We were wrong.

In 2003, the BC government quietly issued its own logging company, BC Timber Sales, a Parks Use Permit for an existing mine access road to the Manning Park Donut Hole – a 5,800 hectare wild area sandwiched between Manning and Skagit provincial parks, left unprotected because of a pre-existing mine tenure.

Then in early 2004, clearcut logging commenced in spotted owl habitat within the Donut Hole.

The Wilderness Committee scrambled to stop the logging, but the surprise attack by BC Timber Sales succeeded in leveling a string of clearcuts. Public outrage was so intense that the provincial government eventually declared all of the low elevation forests in the Donut Hole off-limits from logging, to preserve spotted owl habitat.

But what would happen to the high elevation forests? In June of 2018, BC Timber Sales was back, constructing logging roads into high elevation forests that are important grizzly bear habitat. Some of the planned clearcuts are smack dab in the viewshed of Silverdaisy Peak, a popular hiking destination accessed via a trail that starts in Manning Park.

But there is a new sheriff in town.

The NDP's Premier John Horgan is in charge these days. Will he rein in BC Timber Sales before the view from Silverdaisy Peak is scarred and the Manning Park Donut Hole is gutted and stripped of key wildlife habitat?

It's time to call a truce in the war on Nature launched by former Premier Campbell. This hole in the parks needs to be fixed now. Our new government in Victoria must act fast to acquire the mineral tenure and then add all of the Donut Hole to our protected area system.

www.wildernesscommittee.org/ManningPark

Joe Foy is the national campaign director for the Wilderness Committee.

Thank you!

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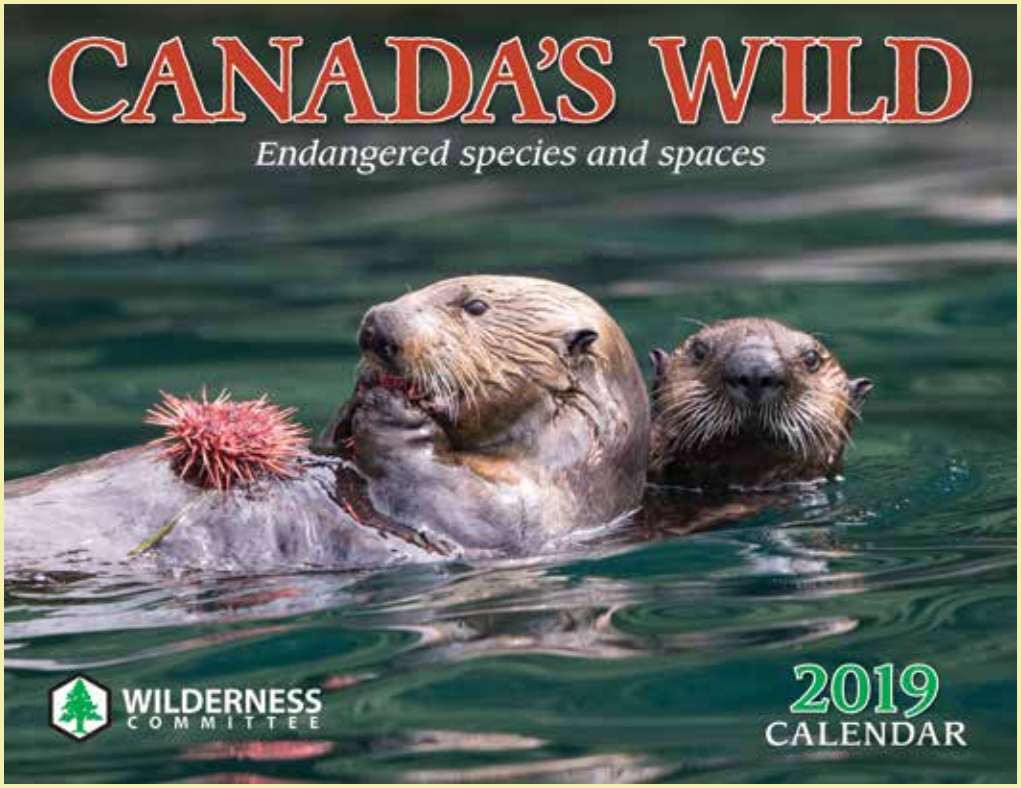

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