MERCURY & AUTISM · TOPOPHILIA · CHILCOTIN | NATURE & SPIRIT ISSUE | Environmental News from BC and the World

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Watershed Sentinel

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Cell Tower Roulette

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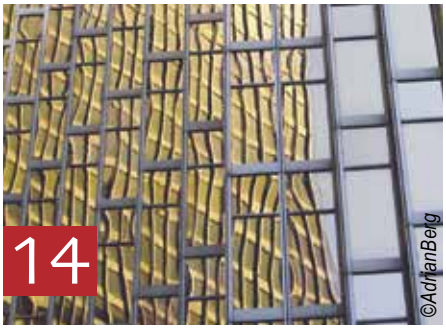
Watershed Sentinel

January | February 2017

Vol. 27 No. 1

Features



Books for Change

Challenges and responses in three books' approach to the current financial, environmental, and democratic crisis.

Nature and Spirit

In nature, we are bombarded by spirit from every direction. Our lives are renewed by this spirit and made whole again. We need a new way of seeing nature, a new relationship with its wonder and beauty. This special section is guest edited by Tom Martin.

Content

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Editorial

Delores Broten

Activist Malpractice

Most of us have experienced it, or indulged in it. Some of it is inexperience, or enthusiasm gone awry. Some is willful blindness, ego, or inability to understand the long game; some just plain cynical exploitation.

As an activist or communicator in the social and environmental justice field, the short term goal might be a living wage for all, or to stop the Site C dam. The long term goal must be to build an inclusive, long-haul movement for system change. That requires personal involvement and growth from all participants.

Activist malpractice turns participation into consumerism and people into a bunch of factors on a spreadsheet – and then treats them like cannon fodder or a cash machine.

Examples?

- Endless emails stating that only "your $5" will save the world
- Petitions on issues that have no hope in hell of effecting change, but do harvest contact information for marketing
- Hijacking a carefully crafted coalition message with your own agenda
- Rejecting coalition work in favour of your own organization's power
- Leading people into conflicts with power, where their future and career is at stake, without their infomed consent
- Selling out the efforts of thousands of people by cutting private deals
- Meetings with a predetermined outcome and a hidden agenda
- Speaking for others, or allowing it to appear that you do, without consultation or permission

All these unpleasant occurances and many more can be, and usually are, indicators of activist malpractice.

We invite you to acknowledge the problem, and name it when you see it. When you catch yourself indulging in it, well ... just stop!

Delores Broten, Comox, BC, January 2016

At the 'Shed

Corrections to November Issue In "Virus Hunter," we misspelled Musgamagw Dzawada'enuxw (we spelled it Musgmagw Dzawada'enuxw). In "Science Panel," we misspelled Tla-o-qui-aht (we spelled it Tla-oq-ui-aht).

Attention Subscribers! The insert in the magazine is to attract new subscribers. You do not need to use it to renew your subscription. When the time comes, you will receive a friendly notice offering you an early bird discount for your renewal. Your expiry date is printed on the mailing label.

Big Thank You to Tom Martin who guest edited the Nature and Spirit feature this issue, and a big thank you to the writers as well.

New York State Gets Wind Farm

Big Wind

Statoil, Norway's huge national oil company, is paying US $42.5 million to lease nearly 80,000 acres of federal waters 14 miles off the coast of Long Island to develop an offshore wind farm. The company estimates that the area could host a 1,000-megawatt project. New York State aims to generate 50 per cent of its electricity needs from renewable resources by 2030.

—Ecowatch, December 21, 2016

Largest Marine Protected Area

Antarctic Seas

A 1.55 million km² marine protected area (MPA) – the world's largest to date – will be established in Antarctica's Ross Sea effective December 2017, according to an agreement by all member countries of the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR). Seventy-two per cent will be a 'no-take' zone, which forbids all fishing, while other sections will permit some harvesting of fish and krill for scientific research. Areas where fishing is limited or prohibited can be compared with areas that are open to fishing, enabling scientists to research the relative impacts of fishing and other changes, such as those arising from climate change.

This year's decision to establish a Ross Sea MPA follows CCAMLR's establishment, in 2009, of the world's first high-seas MPA, the South Orkney Islands southern shelf MPA, a region covering 94,000 km² in the south Atlantic.

—www.ccamlr.org, November2, 2016

Antarctic Ice Shelf

Deep Fracture

Scientists on NASA's IceBridge mission photographed a massive rift in the Antarctic Peninsula's Larsen C ice shelf in November 2016. Ice shelves buttress the grounded ice behind them; when they collapse, the ice behind accelerates toward the ocean, adding to sea level rise. Larsen C neighbors a smaller ice shelf that disintegrated in 2002. The crack is roughly 70 miles long, 300 feet wide, and a third of a mile deep, and completely cuts through the ice shelf but does not go all the way across it – once it does, it will produce an iceberg roughly the size of the state of Delaware.

In November, Antarctic air temperatures were 3.6-7.2 degrees Fahrenheit warmer than normal. Antarctic sea ice set a new record low (as did Arctic sea ice), measuring a staggering 699,000 square miles below the 1981-2010 average.

—NASA, www.nasa.gov, December 2016

Fukushima Fish Cleared

Radiation Shift

In November, all seafood caught off Japan's Fukushima Prefecture tested below the detectable level for radioactive cesium – a first since the 2011 nuclear disaster. Fish have eliminated the cesium or undergone a generation change over the past five years.

The first tests after the disaster found that more than 90 per cent of the samples were contaminated.

Meanwhile, the Woods Hole Oceanographic Institution has for the first time found traces of Cesium-134, the "fingerprint" that indicates the presence of radiation from the Fukushima incident, in seawater samples taken off the Oregon coast in January and February. The levels were extremely low: "To put it in context, if you were to swim every day for six hours a day in those waters for a year, that additional radiation ... is 1,000 times smaller than one dental x-ray," Ken Buesseler, senior scientist at Woods Hole told *USA Today*.

—The Asahi Shimbun, December 6, 2016 Christian Science Monitor, December 13, 2016

Banning Oil & Gas in the Arctic

Protection Now

In December, President Obama used an obscure provision in a 1953 law to indefinitely ban offshore oil and gas in the majority of U.S. Arctic waters. Speculation is that there is no provision to undo the ban by the incoming administration. Prime Minister Justin Trudeau also placed a moratorium on new oil and gas leasing in Canadian Arctic waters, but subject to periodic review. Some fossil fuel companies have relinquished their leases in the Arctic due to the low price of oil, but last year Imperial Oil applied to extend its licences to drill in the Beaufort Sea from 2020 to 2028. Spokeswoman Killeen Kelly said the company would not speculate on whether it would seek compensation if they aren't extended. The last oil well drilled in the Beaufort Sea off the Northwest Territories was completed in 2006 by Devon Canada.

—CBC News, December 20, 2016; Toronto Star, December 20, 2016

Letters

Fair Voting: Time for The Next Step

Over time, Canadians have worked to strengthen democracy. There was strong opposition to extending voting rights to women and to some racial groups but by 1918, women had the right to vote federally; it wasn't until 1960 that First Nations people could vote without giving up their status. Over the years, accessibility measures were brought in, so that work, disability and travel would not be barriers to voting.

During the 2015 election, the Liberal, NDP and Green parties pledged to work to ensure that Canadians would no longer use the flawed "First Past the Post" (or FPTP) electoral system in future elections. It is always difficult for parties in power to work to change the system that brought them into power. But a fairer, more proportional voting system is needed. It would tend to encourage politicians and citizens to cooperate for better policies, across party lines. It would ensure that each vote would count.

The signatories to this letter have, collectively, voted and volunteered for virtually all of the major Canadian parties (except the Bloc Québecois). We expect the federal government to bring in a more proportional electoral system, and to ensure that there are effective limits on the influence of money in politics. Canadians should at least have the opportunity to give proportional representation a try.

—Jan Slakov et al

Biochar Inspiration

As long time "back to the landers," organic vegetable gardening is one of my passions. Your article by D. Suzuki on biochar [Terra Preta, September/October 2016], purchasing the book *Terra Preta,* and studying the website *Biochar Journal* led in short order to asking our mechanic sons to build a Kon-Tiki kiln for me. Over the past month I have done 4 burns, creating 40 cu. ft. (4 m^3) of biochar using waste biomass including old pallets, clean construction wood, scotch broom, and tree branches. I already have enough compost charged with urine/food waste/biochar to supply our 2000 sq. ft. garden for next year.

Biochar can easily be made in a sloped pit in the ground – build a pyramid to facilitate top-down, smoke-free burning, add dry material when white ash starts to form, and smother at completion with water (or soil). Even your woodstove produces charcoal. Pick out the unburned charcoal when cool and add to your compost.

It is important to know that the average person produces 2½ 45 gallon drums (500 litres) of urine every year laden with nitrogen & phosphorus and that biochar is very effective in absorbing it, capturing the nitrogen and releasing it slowly to plants after composting.

I asked our local paper, the *Gulf Islands Driftwood,* to do an article and it is online in the October 19 edition.

All the best and keep doing your good work!

—Rick (and Juliette) Laing, Salt Spring Island, BC

Timely Tome

Congrats to you Sentinel folks on publishing Joyce Nelson's *Beyond Banksters.* I had the good fortune of meeting her in Toronto last week and bought a copy. I couldn't put it down.

This book is so timely. When Trudeau et al are moving quickly to fulfil the Banksters' needs, we need to shake Canadians into taking action. I think Joyce – and you folks – have just done that.

—Judy Kennedy,
Granville Ferry, Nova Scotia

Fatally Flawed First-Past-The-Post

After nine years under the Harper government that never got over 40% of the popular vote, it's easy to see why proportional representation is an issue. Our first-past-the-post system leads to two parties with the same basic platform and can, as we saw in the US election, provide the voters with the two most unpopular candidates. Which is why 95% of democracies use some form of pro rep.

—Jim Erkiletian, Nanaimo, BC

Hope & Sanity

I just wanted to tell you how much I appreciate the *Watershed Sentinel* and the brilliant work you are doing as its editor. The folks at Pacific Gardens [Cohousing] obviously feel the same way, because the 10 issues that arrived a week ago were snapped up almost immediately. Your magazine is a voice of hope – and sanity – in these troubled times. Thank you!

—Kathryn-Jane Hazel, Nanaimo, BC

Tanker Noise on Fisheries' Radar

TMX and Orca

The federal government is seeking a way to regulate underwater shipping noise as part of its plan to protect an endangered group of 80 southern resident killer whales from increased oil tanker traffic off Vancouver. Shipping noise interferes with the whales' ability to communicate and track prey, and is considered a key stressor on the population.

Three environmental groups are challenging the Liberals' approval of Kinder Morgan's Trans Mountain pipeline expansion (TMX) in court, alleging the government failed to mitigate the project's impact on the whales. The TMX would see an increase from about 5 to about 34 tankers per month moving diluted bitumen from the pipeline terminal in Burnaby through Burrard Inlet and into Juan de Fuca Strait.
.
Fisheries will release its amended recovery plan for the whales in January 2017 – updated after the draft plan received some 11,000 public comments.

—www.montrealgazette.com, December 19, 2016

Canada's Parks Free in 2017

Park Promo

Parks Canada is offering free admission to all Parks Canada locations in 2017 in honour of Canada's 150th anniversary. Free 2017 Discovery Passes can be ordered on Parks Canada's website, and only one pass is needed for groups or families travelling together. Passes will also be available at the gates.

Admission to all national parks, national historic sites, and national marine conservation areas operated by Parks Canada is included; however, regular fees still apply for other experiences and services such as camping, hot springs, mooring, reservation fees, guided tours, firewood, and overnight backcountry use.

—www.pc.gc.ca

Four Times Over Emissions Targets

LNG Reality

A new analysis from the Vancouver forecasting firm Navius Research projects BC's greenhouse gas emissions will hit 66 megatonnes by 2050, which is eight megatonnes higher than 2016 emissions and soars above the province's stated goal of reducing emissions to just 12.6 megatonnes by 2050.

The projected emissions are largely the result of an LNG industry expected to produce 48 million tonnes of fuel for export by 2030 onward, assuming all three of the Petronas-led Pacific NorthWest LNG, Shell-Canada-led LNG Canada, and Woodfibre LNG projects proceed. The Pacific Institute for Climate Solutions, Pembina Institute and Clean Energy Canada backed the Navius report.

—vancouversun.com, December 5, 2016

Costs Soar at Muskrat Falls Dam

Boondoggle

A new contract to settle construction disputes at the delayed Muskrat Falls hydro project in Labrador will drive the price tag to almost $11.7 billion. Stan Marshall, CEO of crown corporation Nalcor Energy, says the new deal with Italian contractor Astaldi has jumped to $1.8 billion from just over $1 billion, and that he can't rule out more increases. Marshall confirmed last June that costs had jumped almost $4 billion since the project was approved four years ago, and has repeatedly said that, with more than $7 billion spent or contractually committed, there's no turning back. The added costs are on top of electricity rates for domestic customers that are forecast to hit 21.4 cents per kilowatt hour in 2021, almost double the 12 cents consumers paid in the province last year.

—www.ctvnews.ca, December 21, 2016

Fuel From Sewage

Poo Power

Metro Vancouver wants to be the first wastewater treatment utility in North America that creates biofuel from sewage. The US Department of Energy has licensed its hydrothermal liquefaction (HTL) technology to Utah-based Genifuel Corporation, which will build a demonstration plant, with start-up in 2018.

HTL uses high pressure and temperature to create biocrude, which can then be refined using conventional petroleum refining operations. HTL could provide significant cost savings by virtually eliminating the need for sewage residuals processing, transport and disposal. The pilot project will cost $8-9 million with Metro Vancouver providing nearly half the cost,.

A single person could generate two to three gallons of biocrude per year.

—www.canadianbiomassmagazine.ca, November 9, 2016

Mercury and Autism

Quicksilver's dreadful effects are feared at Muskrat Falls

by Claire Gilmore

Two new international studies in *Metabolic Brain Disease* have validated the link between mercury and autism.

In the first study, a team of nine scientists from leading Egyptian universities and medical schools studied children with Autism Spectrum Disorder (ASD) along with control groups of healthy individuals and healthy siblings of ASD children. They measured blood levels of mercury and lead as well as urinary excretion of biomarkers for mercury toxicity, and found that children with the highest mercury levels had the most severe autism symptoms.

The second study, published in June 2016, saw an international team of physicians and scientists show a positive linear relationship between mercury levels and the severity of autism symptoms.

At least six American studies have linked autism presence or severity to mercury exposure. And in Novmber, Robert F. Kennedy, Jr. reported in *ecowatch.com* that the two newest studies are "only the latest in a series of leading Egyptian doctors and scientists linking mercury exposure to autism."

Muskrat Falls

These findings underscore the concerns of communities downstream from the Muskrat Falls dam in Labrador. In November 2012, Nunatsiavut, the Inuit government of northern Labrador, partnered with Harvard University and others to begin research on methylmercury and the unique environment of the area. The Harvard team's research suggested methylmercury levels could rise as much as 380 per cent if only partial clearing takes place in the reservoir.

First Nations communities in the area fear having their traditional sources of food poisoned for generations to come. Patrick McCully explains in his book *Silenced Rivers: The Ecology and Politics of Large Dams,* "Mercury is naturally present in a harmless inorganic form in many soils. Bacteria feeding on the decomposing matter under a new reservoir, however, transform this inorganic mercury into methylmercury, a central nervous system toxin. The methylmercury is absorbed by plankton and other creatures at the bottom of the aquatic food chain. As the methylmercury passes up the food chain it becomes increasingly concentrated in the bodies of the animals eating contaminated prey."

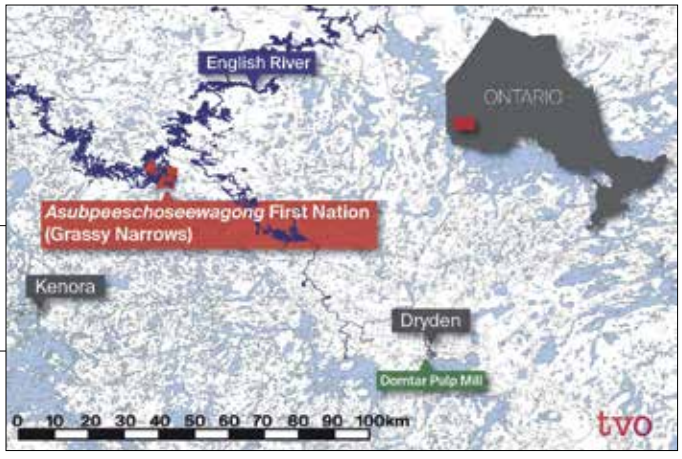

©Charlene Croft

Crown energy corporation Nalcor began the first phase of reservoir flooding in November 2016, following protests, hunger strikes, and occupation of the site by Innu, Inuit and settler Labradorians. A number of land protectors were arrested. The campaign's central demand was full clearing of the site prior to reservoir flooding to reduce the amount of organic matter that produces methylmercury as it breaks down.

The partial reservoir flooding was deemed necessary ahead of winter freeze up to protect the integrity of the hydro infrastructure. Indigenous leaders gave their approval, although vigils continued.

The Independent reported on Nov. 18, 2016 that the provincial government and Innu leaders had agreed that water levels in the reservoir would be lowered in the spring, after which a new Independent Expert Advisory Committee will study the issue.

The Story of Grassy Narrows



by Delores Broten

Mercury contamination is not new in Canada. Ontario for decades has published a fish consumption advisory book which, lake by lake, details the contamination of fish with pesticides and mercury. Meanwhile, BC Hydro's Fish and Wildlife Compensation Program is studying still-elevated levels of mercury in fish from the Williston Reservoir of the WAC Bennett dam, built on the Peace River in 1968.

But the most notorious case of all is that of the Wabigoon River and the Grassy Narrows First Nation.

In 1873, the government of Canada signed *Treaty 3* with the Ojibway of northwest Ontario, including the Asubpeeschoseewagong (Grassy Narrows) First Nation. The First Nations ceded all the lands between Ontario's 1873 borders and the province of Manitoba. The Grassy Narrows First Nation is granted a reserve on their traditional lands along the Wabigoon River.

1913: Dryden Timber and Power starts the first kraft pulp mill in northwest Ontario.

1962: Dryden Chemical, relying on a mercury-based process to produce bleaching agents for the paper mill nearby, begins dumping untreated mercury waste into the Wabigoon River.

1969-70: High levels of mercury are discovered in the water and fish downriver from the plant. Dryden Chemical had dumped more than 20,000 pounds of mercury into the Wabigoon.

1970: The government of Ontario closes the Wabigoon-English river system commercial fishery, removing one of the primary sources of income for residents of Grassy Narrows.

1975-79: Dryden Chemical first stores mercury waste on-site for later safe disposal, and eventually changes its processes to eliminate its use of mercury altogether.

1977: The Grassy Narrows and Wabaseemoong First Nations begin legal actions against Dryden Paper and Reed Limited, seeking damages for the health and economic effects of mercury pollution.

1985: The governments of Canada and Ontario, as well as Reed Limited and Great Lakes Forest Products, reach a legal settlement with the Grassy Narrows and Wabaseemoong First Nations, providing nearly $17 million in compensation ($34 million in 2016 dollars) for the health effects of mercury in their communities. Ontario grants the Dryden mill and any future owners a broad indemnity, assuming all environmental liabilities related to the mill and its mercury dumping.

2009: Domtar, now merged with Weyerhaeuser, closes the last paper machine at Dryden mill, leaving just pulp production.

2011: The Ontario Ministry of Environment orders Weyerhaeuser to monitor mercury levels around the Dryden site. Weyerhaeuser goes to court to stop the order, saying the indemnity Ontario provided in 1985 makes environmental monitoring the government's responsibility.

2014: Government scientists warn that logging would exacerbate mercury pollution, leading the Grassy Narrows community to request an environmental assessment of the logging permits. The provincial government rejects the request.

July 2016: The Ontario Superior Court rules that the wide-ranging indemnity Ontario gave Great Lakes Paper in 1985 still applies, and exempts Weyerhauser from monitoring requirements.

Sept. 2016: Japanese experts in mercury poisoning report that 90 per cent of the population of Grassy Narrows and Wabaseemoong First Nations show signs of exposure to the toxin, including people born years after the dumping of mercury ended.

Excerpted from "How the waters of Grassy Narrows were poisoned," by John Michael McGrath, TVO.org

A Millwatch Special Report From Reach for Unbleached! http://www.rfu.org

Pipeline Trouble

An Open Letter from Grand Chief Stewart Phillip

Dear Prime Minister,

You completely failed to do your job when you arrogantly announced that you were acting in the national interest by approving the Kinder Morgan Trans Mountain Expansion (TMX) and Enbridge Line 3 pipelines. Your main job as leader of Canada is to protect Canadians' health and safety.

You failed to do your job when you approved two tar sands pipelines that will put rivers and coasts at risk and that will undeniably lead to much more of the devastating climate-change effects that we are already feeling and that will one day soon wipe out our cultures and all of life on earth.

You also failed in your sacred duty to respect the Title and Rights of the indigenous peoples that you share this land with. You knew you would irreparably harm a relationship that you publicly and repeatedly claimed is more important to you than any other.

You also must have known that allowing two pipelines to carry over a million barrels a day of additional tar sands production is not the way we are going to solve the climate crisis. No one could truly believe that more oil will help us get off oil. It's too ludicrous to even contemplate.

You boldly lied to Canadians, and not very well – I am surprised that you think we are stupid enough to believe that approving two more tar sands pipelines and drastically increasing Canada's GHG emissions is the best and only way to protect the environment.

You cannot truly believe that the Kinder Morgan sevenfold increase in tanker traffic is not a real risk to the BC coast, to everything that Coast Salish Peoples hold dear, including the fishing and tourism industries, to the orcas, shellfish harvesting, and the dynamic life systems in the ocean and on land.

Not after we just saw a major accident mere weeks ago further up the BC coast which devastated the Heiltsuk Nation and could have proven unimaginably catastrophic if the barge that the tugboat was attached to had been carrying oil.

Do not tell me that this is about jobs and the economy. We have seen that the oil industry is a roller-coaster ride and the ride will soon come to a full stop in any event. That is not a recipe for jobs and a sustainable economy for Alberta.

I believe that as a young leader you felt you had played nice for long enough and had enough political clout, both nationally and internationally, to be able to take the gloves off, make an extremely unpopular decision that will secure you political favour with dirty oil supporters and get away with it.

Thankfully, we as indigenous peoples do not have to play those games. We are stewards of Mother Earth and must make sure she is safe and can take care of, and provide for, our children and future generations. You can count on us to do our job, Prime Minister. We will not let our people down. And what gives me hope is that we are not alone. While leaders around the world are failing their people and not doing their job, the people are picking up the slack.

In just beyond a week, more than 10,000 Coastal Protectors have signed up at

Stop Kinder Morgan March and Traffic on Cambie Bridge

coastprotectors.ca to do what needs to be done to stop Kinder Morgan. [Ed. now 20,000]

The Treaty Alliance Against Tar Sands Expansion now counts well beyond 100 First Nations and tribes from all across the continent who have joined together to stop both Kinder Morgan, Enbridge Line 3 and any other tar sands pipeline that rears its ugly serpent head, including Keystone XL and Energy East.

And when push comes to shove in the near future, when battle lines are drawn over the construction of these pipelines, I still like to hope that you will relent, that you will see the error of your ways and that you will not allow the same kind of ugly, hateful and violent reaction to the peaceful prayers of our brothers and sisters at the Standing Rock camps.

So we will go do our job, Prime Minister. The job you could not do. All we ask is that you let us go do it in peace.

Grand Chief Stewart Phillip is the President of the Union of British Columbia Indian Chiefs

From Quebec

Trudeau and the Pipelines: a Bad Gamble

by Louise Morand

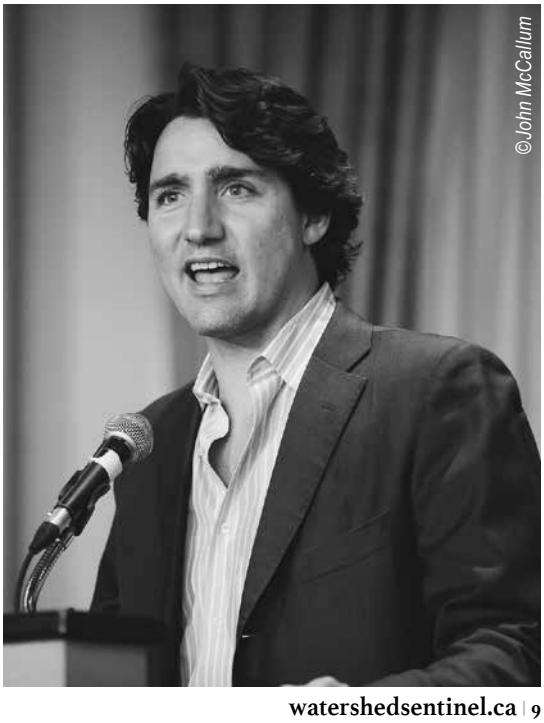
By approving two new pipelines, Justin Trudeau goes against the recommendations of scientists, experts in climate science and energy transition, who have repeated ceaselessly that for humanity to avoid a runaway increase in planetary temperature, with all its associated impacts on biodiversity and the economy, the known reserves of fossil fuels must remain in the ground.

This includes the coal, gas and oil deposits of Canada and the United States. In brief, now that the industrial nations have 10 to 15 years in which to eliminate their greenhouse gas emissions, no new exploitation of hydrocarbons or its transportation infrastructure should see the light of day.

By approving two new pipeline projects, Justin Trudeau is gambling that the oil money will pay for the energy transition. At least that is what he wants citizens to believe. This argument does not hold up when we consider that the effects of greenhouse gases are cumulative. Where we are now, the only way to make the energy transition is to radically put the brakes on the emissions. Need we be reminded that past a certain threshold of saturation of greenhouse gases in the atmosphere, the Earth will continue to heat on its own from the loss of ice cover and the release of methane from the permafrost? This phenomenon is well underway in the arctic and many scientists think that the battle is already lost for humanity.

By approving two new pipeline projects, perhaps Justin Trudeau is betting that the population will make a wall on the land to prevent the work from going ahead, as we see with the Dakota Access in the U.S. More than 5000 people occupy the land there to block the bulldozers from advancing. The activists face a small private army trying to dislodge them. Having now satisfied the rich donors to his party, Trudeau can always fall back on the lack of social acceptability to finally let the courts give justice to those who wish to protect their water, agricultural land, and the means of survival for their children and grandchildren.

One thing is certain: he who was elected head of the Canadian government by promising that assessment of pipeline projects will take science into account, cannot ignore the urgency of the energy transition. By refusing to call a halt to all new tar sands development projects, Trudeau shows a lack of leadership. He leaves the burden of the fight against climate change squarely on the shoulders of the people. Like Nero playing his fiddle while Rome burned.



Louise Morand is a member of Comité vigilance hydrocarbures de l'Assomption

Investment Puzzle

Turns out EVs only come in grey...

The Whipp Report, October 2016

Electric vehicles (EVs) have been touted as one of the key elements of reducing our reliance on fossil fuels. There are many benefits - current and anticipated - associated with them.

Not just reducing fossil fuel consumption, but also less air pollution, less vehicle maintenance, less wear and tear on roads, less noise, more pleasant experience for cyclists and pedestrians etc. EVs have the potential to completely transform the experience of being on our roads. And I can personally attest that they cost less to drive and maintain. (Full disclosure – I drive a fully electric Kia Soul – and yes, it is grey!)

We have seen many companies enter the EV space in recent years, and hence the responsible investing universe. They fall into three main categories:

- Car manufacturers – both the large mainstream ones and the niche ones such as Tesla
- Battery developers and manufacturers
- Companies involved in developing, installing and operating charging stations

It seems obvious that investing in such companies would make sense for responsible investors. They are where the puck is going, so to speak, whether they are niche disruptors or large established companies developing new divisions as they see the writing on the wall. There are many choices depending on your investment objectives and risk tolerance, and this is an area we often get asked about by new clients.

Environmental issues

Sounds great right? Actually, in terms of environmental practices, turns out that EVs are not as sustainable as they may seem. This may create investment risk and unknown legal exposure for the companies involved. A report done earlier this year by Devonshire Research Group, an American hedge fund, documents several issues that have been percolating for some time. Here are some examples:

- The mining of graphite and lithium, required for the batteries, results in significant environmental impacts and social dislocation. Much of the world's graphite is mined in China, with limited regulations and oversight. (This is an issue for all lithium ion batteries – including those in our cell phones and other devices)
- Using coal fired electricity to recharge the batteries, as happens in much of the US and in parts of Canada, may result in worse greenhouse gas emissions and other environmental consequences than does driving a gasoline-powered car.
- Most batteries, even in the first world, end up in landfills, where they may be compacted or punctured resulting in toxic heavy metals being released.
- Pounds of toxic cobalt and unstable lithium are present in each vehicle, presenting a safety hazard.

So, one might say that these are the challenges of a transitional technology. They will get worked out over time as the technology becomes more mainstream and as subsidies for the gasoline car industry inevitably fade. As investors interested in driving the low-carbon economy, maybe some of us can accept what appear to be significant environmental concerns and investment risks in service to a longer term vision.

This is a good example of an interesting phenomenon in the responsible investing world. It seems we are sometimes quick to ignore or excuse environmental or other risks in companies that seem to share our values and aspirational goals. Their marketing to consumers and investors plays to that sense of value connection. They are the 'good guys' so to speak – so we cut them slack. We don't hold them to the same standard we might hold other companies with which we feel less affiliation and sense of shared mission.

Should we do this? What does it say about us that we feel so enamoured of the latest technology that will supposedly save the planet that we turn a blind eye to some pretty significant environmental or other risks? If we accept these known costs of the

technology today, where do we draw the line going forward? How "responsible" are we really being?

Just for comparison, think about two companies/brands with which you may feel less values-connection – Loblaw (Joe Fresh) and Nike. Partly as a result of the actions of responsible investors, these companies have been held to a high standard regarding the social risks associated with clothing and footwear manufacturing in the third world – child labour, low wages, poor working conditions and so forth. At the time, they experienced significant brand devaluation as a result of the public and investor reaction to those risks. Most responsible investors would likely agree that this is a fitting response and consequence of poor corporate behavior.

It creates an interesting juxtaposition when placed next to the tolerance some of those same investors have for the significant environmental risks associated with EVs and their batteries. The trick seems to be to not let our hopefulness about new technologies blur our vision about acceptable corporate behavior.

Stephen Whipp, CFP, RIAC works only with responsible/ethical investments. His island based team, at Stephen Whipp Financial, Leede Jones Gable Inc. (Member CIPF) can be reached through: *www.stephenwhipp.com*.

Power Walking

by Tim Radford, Climate Energy News

US scientists have found a new way to generate energy at home: the tribo-electric floor. Tread on it and it will convert the kinetic energy of a footstep into a current of electricity. And it's made from the waste wood pulp that already serves as cheap flooring throughout the world.

Xudong Wang, an engineer and materials scientist at the University of Wisconsin-Madison and colleagues report in the journal *Nano Energy* that they have taken cellulose fibres from forest waste material and chemically treated them in a way that creates an electric charge when they come into contact with untreated wood pulp fibres.

The result: a patented, tribo-electric nanogenerator floor covering that can harness the energy of any footfall, and turn it into electric current that could light up a room or charge a battery.

So far, it exists only as a laboratory prototype, but it promises, the scientists say, to be cheap and durable.

Long wait

The gap between any laboratory experiment and a commercial success is huge, and many promising products never make it, or take years of further experiment.

But this study is yet another example of the extraordinary explosion of ingenuity prompted by the need to generate energy in ways that sidestep the greenhouse gas emissions that have been driving dangerous climate change. Engineers, nanotechnologists, and chemists have tested ways to make windows and even solar panels by making timber optically transparent.

They have looked more closely at the tree's relationship with the sun and fashioned a bionic leaf that can exploit sunlight 10 times more effectively to create biomass that could be turned into a liquid fuel.

They have dreamed up an electric car battery that can renew itself with atmospheric carbon dioxide, and a bacterial fuel cell that generates electricity from waste water.

Energy conserved

Such research starts from the laws of thermodynamics, which dictate that energy must always be conserved. The energy involved in a plate of food, a footstep, the sprouting of a seedling or the turning of a turbine is still energy: there could be a way to recycle it rather than let it dissipate as heat into the atmosphere. What Professor Wang and his team have done is exploit the same property that creates static electricity in clothing: the tribo-electric effect which turns vibration into charge. In theory, a busy motorway could become a renewable power source.

The team have tested a fabric less than 1mm thick made of tiny chemically treated and untreated wood pulp fibres: in contact, electrons move from one to the other. This electronic transfer creates a charge imbalance that must be righted. But as the electrons return, they pass through an external circuit and deliver energy.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Tower Roulette

As the wireless industry rapidly unleashes new technologies, should we be concerned?

by Ron Gordon

In June of 2015 Renee Adams* of Maple Ridge, British Columbia was awakened by the sound of heavy trucks and workers affixing microcell broadcast antennas to a telephone pole 100 feet from her front door.

Surprised by the lack of warning and concerned about possible health effects, the single mother of two autistic boys asked for an explanation, but was told by workers that it was "none of her business" and ordered out of the construction zone. Finding no government department at any level willing to listen to her concerns, she appealed to city council. Council, however, was unaware of the plan to deploy the antennas, confused about responsibilities, and uncertain of dangers.

As the wireless industry rapidly unleashes new technologies onto a public unaware of potential consequences, should we be concerned? As with tobacco and asbestos, once promoted by health authorities as "safe," is it not prudent for citizens to ask about the potential for harm? I set out to find answers, but quickly found that the many available "answers" depend upon whom you ask and can be as confusing as the technology itself.

On one hand, wireless companies and government agencies provide seemingly convincing reassurances of safety. But on further examination, it becomes clear that no actual proof of safety is offered, or available. Further questions on the topic raise eyebrows, sometimes resulting in hints of "anti-technology zealotry" or "resistance to progress." On the other hand, a number of self-organized volunteer citizen groups and independent scientists seem obsessed with pointing out a veritable mountain of "evidence" and potentially lethal dangers. Who's telling the truth here?

Microwave radiation – the type emitted by microwave ovens, smart meters, wifi, cell towers, and cell phones – is difficult to understand, or even conceive of. We can't see, hear, smell, touch, or taste it, and the cell tower at the end of the street appears to sit inert and lifeless. But turn on your cell phone, even in remote locations, and you'll almost always get an instant connection. That's because the air around us has been 'leased' to telecom companies, which fill it with silent and invisible microwave radiation. Vibrating atoms at billions of times per second, microwave radiation penetrates the walls of most buildings and can't be compared to other substances we are wary of such as tobacco or asbestos. The best way to conceive of it may be as a silent energetic environmental pollutant.

Health Canada sets human exposure limits for microwave radiation with Safety Code 6 (SC6). Though it sounds reassuringly official, it turns out that SC6 is not actually a law, but rather a guideline. It was originally drafted 40 years ago primarily to protect workers from antenna

burns at radar sites, before cell towers even existed. But how does it rate in protecting us against low-level, near universal, 24/7/365 non-ionizing microwave exposures? It doesn't.

SC6's outdated test of "danger" is a radiation source (like a cell phone or tower) that raises the temperature of a liquid-filled mannequin more than 1°C in a 6 minute period. If the device being tested doesn't do that, it's deemed "safe" and given the official stamp of approval. The problem is that literally thousands of scientific studies have demonstrated potentially harmful effects from far lower exposures. SC6 conveniently ignores all these studies, as well as recent ones showing substantial increases in cancer mortality near cell towers. The effect of this SC6 loophole is that it allows the wireless industry to expose unsuspecting citizens to a potentially lethal environmental toxin with no fear of legal repercussions.

I asked Frank Clegg, ex-Microsoft Canada president and current CEO of the national volunteer group Canadians for Safe Technology if citizens should be concerned about living near cell towers or telephone pole mounted transmitters. Clegg had this to say:

"Citizens should be concerned. In May 2011, the World Health Organization classified exposure to wireless radiation a Class 2B possible carcinogen. Since that decision, there has been a call from many experts to upgrade the classification to Class 2A, probable carcinogen. Potential carcinogens (including lead and DDT) are placed on the 2B list so that we pay attention and reduce our exposure to it. Health Canada's Andrew Adams recently admitted that there are studies showing harm below Health Canada's Safety Code 6 guidelines. These studies include links to cancer, sperm damage, brain/nervous system impacts and developmental or learning disabilities.

"Over forty MDs from across Canada signed a declaration calling for Health Canada to develop and support strategies to raise awareness about microwave radiation impacts and to minimize prolonged exposure to microwave radiation in schools and other places where children are regularly exposed."

Clegg went on to say that the best protection from harm is to stay as far away as possible from wireless radiation sources, and to reduce your cumulative exposure time to the minimum possible.

Researching this article recalled the history of other public health failures related to thalidomide, DDT, tobacco, lead, asbestos, depleted uranium, and others. I was left with the impression that "wireless" may be just one more painful addition to the list.

(*Not her real name)

Ron Gordon (pen name) is a Vancouver area businessperson, freelance writer, and brain tumor survivor active in raising awareness of wireless health effects.

"We can't see, hear, smell, touch, or taste it, and the cell tower at the end of the street appears to sit inert and lifeless."

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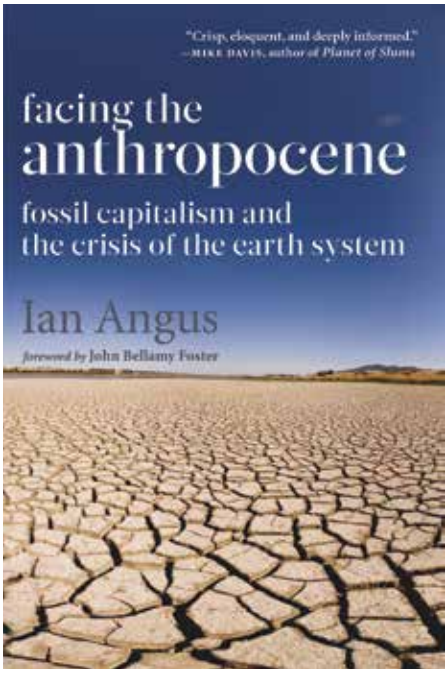
Books for Change

For those who love this planet, challenges and responses



by Heather Menzies

Excerpted from the original published by *CCPA Monitor,* January 2017

A couple of centuries ago (not long, in Earth time), a host of public interest regulations that had kept the fledgling English capitalist economy operating within the carrying capacity of the social and natural environment were repealed – largely due to the lobbying power of the emergent capitalists. The social movement that arose to resist the devastation this unregulated transformation unleashed, Luddism (or the Luddites), came to be so demonized that at least one edition of *Webster's Dictionary* defined it as "a misguided attempt to stop progress."

This historical note nicely reviews what people in today's social movements are up against – including at the level of naming reality, directing public policy and shaping public perception. It also reminds us that what we're "for" is not utopia, but a renewal of a vision of humans living in right relation with each other and the planet, a vision that has served countless societies for millennia.

Three recent books approach the current crisis – financial, environmental, democratic – from the same public interest perspective. In *Facing the Anthropocene: Fossil Capitalism and the Crisis of the Earth System* (Monthly Review Press, July 2016) Ian Angus suggests corporate conglomeration, militarization and the acceleration of "fossil capitalism" all but guarantee we will be engulfed before we can adequately address climate change.

Joyce Nelson's new book on big finance, *Beyond Banksters: Resisting the New Feudalism* (Watershed Sentinel Books, October 2016), locates a citizen lawsuit to restore the original public interest mandate of the Bank of Canada within the larger context of conglomeration and acceleration in that sector. With adroit interpretive skill, she links recent bank-related developments to a blizzard of "free trade" deals that weaken public interest regulation in areas like education and public infrastructure, but which also seek

to prevent democratic governments from expanding public governance of finance.

The third book reviewed here, *A World to Win: Contemporary Social Movements and Counter-Hegemony* (ARP Books, June 2016), edited by William Carroll and Kanchan Sarker, personalizes the financial and climate crises as being part of the ongoing colonization and integration of people into the fast, competitive, individualist consumer society that global market capitalism has produced. This important anthology then lays out a range of hopeful, helpful responses to the seemingly ineluctable status quo based on what people are doing in the here and now.

Facing the Anthropocene speaks from the fecund, fairly recent convergence of the social justice and environmental movements. By extending a socialist perspective into an ecosocialist one, Angus makes it easier to see that what has been done to human communities has also been done to nature as a living community, with similar destabilizing effects. He lays out the breakdown in nature's carrying capacity in much the same way that sociologists have described how deepening poverty and polarizing inequality have destroyed the social carrying capacity of many cities and even regions.

The term Anthropocene, Angus explains, was coined some decades ago to mark the point where human systems started to overwhelm earth's self-regulating systems, ending the relatively peaceful Holocene era and bringing the world to the tipping point of Earth-systems collapse. The key system on the human side, he argues, has been fossil capitalism, the first phase of which was coal-based, followed by oil. Today, there is more money in oil and gas than in any other industry.

As one thread in a well-woven tapestry of analysis, Angus points out the close link between fossil fuel and the military, and also with big government. Winston Churchill was the first global leader to see the strategic importance of oil, especially cheap oil from the Middle East, and the advantage of controlling it at the source.

Cheap fuel has also made possible the acceleration of the post-war market-capital economy, and corporate conglomeration adds another dimension to the situation by concentrating and rigidifying vested interest in maintaining the status quo. From a post-war surge of mergers and acquisitions, notably in the petrochemical business, conglomerates spread through the corporate sector, engulfing the media, communications, and financial industries while maintaining close links to the state.

Nelson has been tracking the interconnections between money, information and government for decades, as well as the key personalities and institutions involved. Her newest book, *Beyond Banksters*, examines the effects of the speed-of-light financial and information systems now driving the global economy. Anything slowing or impeding this "high frequency" movement of money is, as Nelson points out, targeted for elimination in "next generation" trade deals.

As with the other acceleration-boosting developments, the expansion of "free" finance began shortly after the Second World War with the direction to governments from the Bank for International Settlements to borrow privately at market interest rates rather than publicly from national banks. Still, the paradigm-shifting changes only occurred under the neoliberal deregulation drive of the 1990s.

The repeal of the US' *Glass-Steagall Act* during the 1997-99 Clinton administration collapsed the barrier between commercial and investment banks, opening the way to the high-risk realm of derivatives trading and ultimately to the financial collapse of 2007-08 and the deepening of inequality – not to mention massive public bailouts of private banks – in America and around the world.

The rise of public-private partnerships (P3s) and flat-out privatization of public infrastructure has also been part of this agenda, raising troubling questions – like how corporate interests seem to acquire these assets at a fraction of what it cost taxpayers to build them, or why, for example, the Ontario government would sell off shares in Hydro One when the utility generates hundreds of millions of dollars in profit a year for the province and its people. Equally disquieting is the loss of public knowledge.

Still, the more troubling aspect arising from Nelson's analysis is how the expansion and acceleration of financialization has shaped public perception on what's normal. It makes the shift from public interest governance to corporate management across a widening range of public institutions and infrastructure systems seem like the normal thing to do, the new reality. This in turn helps to neutralize public concern over the moves to permanently disable public interest governance through "free-trade" agreements.

One of the book's strengths is the depth of knowledge and insight that Nelson marshals to describe the Trans-Pacific Partnership (TPP), Canada–EU Comprehensive Economic and Trade Agreement (CETA) and the lesser-known Trade in Services Agreement (TISA). While lowering trade barriers is part of these deals, their larger impact will likely be to tie the hands of government by, for example, preventing a reinstatement of the *Glass Steagall Act,* permanently legalizing trade in financially risky products, and challenging the legitimacy of public banks along with the public interest mandate of Crown corporations.

Such is the power of naming reality and managing public perception – the result of canny connections among key people, think-tanks and governments – that regulation is now a dirty word. For many, government has come to imply "interfer-

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⇦ *Books for Change continued*

ence." Worse, the information inequalities and polarization of our times are creating additional barriers to asserting the public interest in the public's own voice.

According to an exposé quoted by Nelson, during Occupy Wall Street the FBI, Department of Homeland Security and New York police came together with key Wall Street firms to conduct surveillance on protesters in Zuccotti Park, with the FBI labelling participants a "terrorist threat." More recently, Canadian security legislation, including *Bill C-51,* designates certain transportation routes, including energy pipelines, "critical infrastructure," giving legal heft to Natural Resources Minister Jim Carr's statements about using defence and police forces to make sure "people will be kept safe" from opponents to pipeline projects.

The scene is being set for a future in which citizens raising public awareness about overextended social and Earth systems are labelled not just Luddites, but "threats to security." The We who would resist this are therefore in a struggle to think for ourselves, and to articulate and sustain action toward an alternative to the catastrophic status quo.

Carroll and Sarker are determinedly hopeful in *A World to Win*, even as they acknowledge that we are habituated inhabitants of this individualized, commercialized short-attention-span world that we are trying to change.

Carroll draws on great thinkers and theories, and uses words like "hegemony" and "colonization" (plus counter-hegemony and decolonization) to name the challenge facing would-be changemakers in the social and environment movements. He gently warns against short-term, feel-good, pragmatic reforms while acknowledging that the cultural politics of personal, grounded, local and pragmatic action that makes a difference in the here and now is an essential first step in claiming agency and building capacity.

The book is an excellent study guide to the many threads of alternative-building that are currently at work. David McNally's chapter, "Neoliberalism and its Discontents," combines statistics on today's economic divide – e.g., 44% of Ontarians living between Toronto and Hamilton are "precariously" employed – with reports from the protest zones of elaborate self-governing social infrastructure, such as the medical stations, food centres and child care set up in Cairo's Tahrir Square during Egypt's 2011 uprising.

Laurie Adkin's chapter on political ecology and counter-hegemony takes the analysis to the more systemic level that Carroll argues is essential for sustaining genuine change. Her definition of political ecology introduces a "way of thinking" about the world that highlights the "mutually constitutive relationship between human societies and nature." This thinking offers a bridge for solidarity-building between people of settler descent and Indigenous people on their journey to reclaim their traditions, their naming of reality and with it their connection to the land.

Many chapters demonstrate the feminist mantra that "the personal is political," often in combination with lessons from the LGBTQ, disability and student politics of more recent decades. As Warren Magnusson writes, "we need to foreground the political if we are to make sense of the world in which we live." This means refusing the neoliberal position that favours "markets" over politics as society's key public decision-maker, with its hidden assumption that "markets" aren't political.

The theme of capacity building runs throughout the book, making it particularly timely post-US election. One chapter, on direct action, explores the efficacy of "solidarity networks" to support otherwise isolated temporary workers and serve as "real-life training" in thinking strategically and working with others.

Michael Bueckert's chapter, "Solidarity with Whom?," takes up the tough question of scaling up and weaving initial issue-action into a larger and longer-term program of change. Bueckert suggests a disciplined dialectic in which rotational leadership and other practices can be employed that develop solidarity among different interests, and allow them to build. The alternative, he says, is wishful idealism and "the tyranny of structurelessness."

This ability to scale up and sustain actions over the long term is essential to the challenges contemporary social/political/environmental movements face today. The task is no less than reasserting the primacy of the public interest and the commons where so many governments and mainstream political parties have abandoned it.

Nelson's airing in *Beyond Banksters* of the tangled, ideology-driven web that seeks to cement and increase the theft of the commons highlights the need for civil society to take on these larger issues. The information on political ecology in *A World to Win* and ecosocialism in *Facing the Anthropocene* provide helpful theoretical guidance to the agenda of revitalizing public interest governance.

With their emphasis on self-governance, direct democracy and accountable interrelationships, these books also seem to draw on long-standing legacies associated both with self-governing commons and Aboriginal traditions regulating, for example, the buffalo hunt on the Prairies and the harvesting of red cedar bark and wapato roots on the Pacific Northwest. An Earth-based vision can help reverse the remote-control perspective of contemporary globalization and its foundational information and financial systems – as though the view from an orbiting satellite is all that matters.

Heather Menzies is the author of 10 books, including the award-winning *Reclaiming the Commons for the Common Good*.

Human Population

A giant and growing problem: the economy and population are tightly linked, like two yoked oxen.

by Hans Tammemagi

The world faces many difficulties. Mammoth efforts are expended in trying to alleviate these woes, but the troubles keep on mounting. The issues are complicated, but one underlying cause is simple: it's we humans. In particular, there are too many of us, the numbers are constantly increasing, and we're addicted to consumerism.

The most frightening – and fascinating – thing I have ever seen is a graph of human population. For aeons the population remained less than one billion, but starting in about 1800 the curve suddenly spikes almost straight upward, and this incredible growth continues. In my lifetime, the human population has increased by five billion people.

Since about 1950, the western world has witnessed a golden era of prosperity. GDP, number of cars per family, home size, and electronic gadgets have all increased significantly. Population and the standard of living are both growing unabated. Life has been good, but for the long-term future it's a double whammy. Earth's vast cradle of resources is being severely depleted, and the environment is being trampled underfoot. The graph predicts dire times ahead.

The fascinating part is that few care. This vital topic is largely ignored.

False: population growth has slowed

One reason that human population is ignored is the decades-old myth that population will peak at about 9.5 billion in 2050 and then decrease: thus, the problem will go away. Many believe that global population growth is already slowing or even decreasing. This misconception is based on percentages. Global population growth peaked at more than 2% in 1968, and today the growth is 1.1%, which seems like a significant decrease.

Looking at actual numbers rather than percentages shows no decrease whatsoever. In 1968, the world's population was 3.6 billion. With an annual growth rate of 2.1 % the population increased by about 75 million people that year. Forty-six years later, in 2014, with 7.2 billion people and a 1.1% growth rate, the global population increased by about 78 million.

The annual increase in numbers of humans has remained approximately constant for more than four decades.

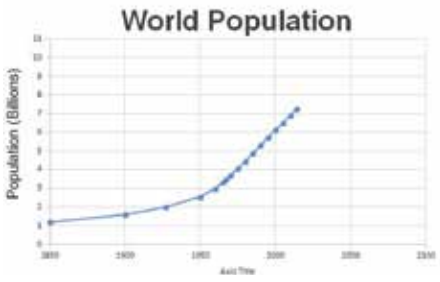
Another frequently quoted statistic is that in the 1950s women bore approximately 5 children each, while today that number stands at 2.5. Yes, the birth rate has halved; however, the number of women has doubled. One cancels the other, so the same number of children is being born annually.

Dealing with percentages rather than actual numbers hides the fact that global population growth hasn't slowed at all. And as the population swells, it becomes ever harder to slow the juggernaut.

A 2014 United Nations study projects that the global population will increase to about 11 billion by 2100 and will con-

Global Population Growth from 1968 to 2014

Year	1968	1976	1984	1992	2000	2008	2014
Total Pop. (billions)	3.56	4.16	4.77	5.37	6.09	6.71	7.18
% increase	2.1	1.73	1.72	1.51	1.26	1.18	1.08
Increase (millions)	74.8	71.9	81.9	82.1	76.6	79.2	77.8



tinue to grow slowly beyond that. This is dramatically higher than previous projections and has important ramifications, especially since the current global population already far exceeds the world's carrying capacity.

In some industrial countries population growth is slowing. For example, the Russian population is decreasing (but new policies encourage higher birth rates). However, population continues to grow vigorously in poorer countries, and primarily in Africa, arguably the continent least capable of absorbing more people.

Population yoked to economy

The reasons for ignoring the population dilemma are usually related to sanctity of life, religious and political dogma, and the divide between rich and poor nations. These are true to some degree, but the close link between population growth and economic growth tends to be overlooked. Politicians strive unrelentingly for economic growth because it creates jobs and raises the standard of living.

An expanding economy, however, requires ever more people to manufacture and then to purchase the increasing number of cars, houses, cell phones, giant TVs, etc. The economy and population are tightly linked, like two yoked oxen. Since politicians will not allow the economy to slow, don't expect population to slow either.

False: Technology will save us

Many believe that green technologies like solar panels, electric cars, etc. will save us. Wrong! A growing population is like an incoming tide. For example, blue-box recycling was introduced in North America in the early 1980s and today is ubiquitous. However, total municipal solid waste sent to landfill in the US actually increased from 134.4 megatons in 1980 to 136.1 megatons in 2014. Significant waste recycling (34.6%) is more than matched by the garbage created by growing population and consumerism.

The same applies to motor vehicles. Catalytic converters, lead-free gas, and other improvements have decreased a typical car's emissions to 10% of those in the early 1970s. Today, however, more people own more cars and drive them farther. The result: vehicle air emissions are greater now than in the 1970s and domes of health-damaging smog hover over all major cities.

If we cut energy consumption by, say, 10% per capita, this robust savings will be wiped out as soon as the population grows 10%, which will take about nine years in the United States or Canada.

This argument applies to most technical improvements. For example, technological improvements have greatly reduced televisions' energy consumption – but now we buy giant-screen TVs. As William Rees, inventor of the ecological footprint concept, says: "The ship is already overloaded. More goods, even efficient ones, will only delay the sinking of the ship."

Where is the planet headed?

At first pollution was local. After World War II, industrial output soared and with it came acid rain, which was regional, drifting across national borders. In the 1970s, the protective ozone layer in the atmosphere was damaged by chemicals released from hair sprays, air conditioners, and mosquito sprays, the first case of humans having a global-scale impact. The next major international emergency was climate change.

History is clear: As human numbers and technology increase, so do the scale of environmental problems. Interestingly, these problems are seldom predicted beforehand. It's a safe bet that even larger surprises await beyond global warming. How will we cope?

Solutions?

Finding answers to the complex population problem is difficult. However, it's time to bring the topic out of the shadows and start discussing possible solutions.

Population can be restrained by voluntary and humane means such as empowering women and encouraging couples to marry later, have children later, and have no more than two children. This can be achieved through education, improved family planning, and tax incentives. Applying these programs in poorer countries, especially Africa, is urgent. Help, encouragement, and foreign aid will be required from developed nations.

Economy, the other "yoked oxen," must also be slowed. We humans, especially in developed nations, need to step back from the pursuit of material goods. We need to seek both a steady-state economy and a steady-state population – a mammoth challenge.

Hans Tammemagi is a writer and photographer who lives on Pender Island, BC

Nature & Spirit

by W. Thomson Martin | Guest Editor

The feature topic of this issue is Nature and Spirit.

Every culture has its own understanding of nature. Ways of seeing nature range from "other than us" to recognizing "all my relations." In my recent book I give a definition: "Nature is matter and spirit in a continually creative, spinning spiral of life, ebbing and flowing with an infinite variety of mysterious beauty."

Nature is a bountiful banquet of beauty.

Spirit is more difficult to define. Spirit is a mystery. Experience tells us that spirit is a connector. Spirit connects us to each other, to nature, and to the universe. Spirit connects us to our communities, cultures, and bioregions. Someone with a scientific background may define spirit as an invisible particle or wave so small and variable that it cannot be detected or measured. Spirit is a mystery.

We need both beauty and mystery in our lives. Mystery edifies our spirit just as food and water feeds our bodies. Without a sense of the mystery of spirit we may become arrogant and destructive.

In nature, by the river, on the mountain, in the forest, we are bombarded by spirit from every direction. Our lives are renewed by this spirit and made whole again.

We settlers in North America need a new way of seeing nature, a new relationship with its wonder and beauty. When we dream, we may sometimes see through the eyes of other beings — an owl, a beaver, or a dandelion.

A dandelion sees and seeks the sun, reflecting its colour. Through photosynthesis, it uses solar energy.

Dandelions have a highly developed seed dispersal system using wind energy. They grow deep roots drawing moisture and nutrients from the earth — a form of geothermal energy. The dandelion has much to teach us about a sustainable future. Dandelions have a spirit of persistence. They have learned how to survive even in the face of derogatory descriptions like "weed" or "nuisance" by their human relations.

Dandelions, seen with new eyes, are a wonder and a beauty.

I hope you enjoy the ways of seeing nature indicated by the writers of this issue of the *Watershed Sentinel*. I thank them all for their excellent contributions. Spirit permeates these articles.

W. Thomson Martin is a retired microbiologist who lives in Victoria, BC. He is the author of *From Democracy to Biocracy: Finding the River of Life*.

Doing the Work

Troubled times break our hearts – it's by accepting our pain that we can act with the boldness that our times demand.

by Maggie Ziegler

I'm finding it hard to face up to how things are. Present and future dangers have been stepped up by the election of Donald Trump, with terrifying implications for climate change, the environment, human rights, and our global intertwined world. Depression, denial and diversion call me, just when what is required is to step more fully into an open-hearted and courageous life.

For decades Joanna Macy – activist, eco-philosopher, Buddhist scholar, systems thinker and writer – has been developing a series of evolving and powerful group processes. In her pioneering offering, *Despair and Personal Power in the Nuclear Age*, she considered that it wasn't indifference that stops us [from acting?], but rather an internal distancing that happens because we don't know how to face our feelings (grief, fear, anger) about the state of our world. We retreat to a wide range of defenses – we numb ourselves, deaden our empathy, and displace our energies into pretending all is well.

In 1983, when that book was published, I was a young psychotherapist and a social activist struggling to integrate inner and outer worlds and not fully feeling part of either. Macy's emphasis on facing together our suffering for the pain in our world offered a conceptual and practical path to honour individual and collective pain in a way that widens rather than narrows engagement with a broader community of life. It made room both for those too discouraged to participate and for those working so hard for change that the emotional processes driving their activism were hidden, often resulting in burnout and withdrawal. As I began to integrate these processes in my therapeutic group work, I saw the power this shared exploration has to melt frozen and wounded hearts and bring us together.

Many years later, a dear friend Jackie Larkin and I attended a week-long retreat with Joanna Macy. The beauty of a Salt Spring Island hillside reached into each person present, giving the steadiness required for speaking and witnessing grief and anger, uncertainties and inadequacies. Joy and sorrow co-existed, offering an embodied understanding of our place in the web of life. We gained clarity about our own intentions, finding new and renewed energy for what Macy and others call the Great Turning: the movement towards a life-sustaining society and away from what is exploitative and life-destroying.

Troubled times break our hearts. Opening to that, over and over, requires an ongoing and loving vigilance. These days, I find myself sheltering in the processes of the Work That Reconnects (Macy's term for her offerings), finding them more relevant than ever in helping step forward with the boldness that our times demand.

I'm wandering in the forest, conscious of my gratitude and appreciation. When my human landscape is one of fear and grief, I know that the woods can hold me as I allow a path inwards to embrace that pain. I know that my human community can also support me. As I do my best to honour and validate my deepest feelings as evolutionary gifts that connect me to the larger body of earth, I see myself as a being wired for relationship and solidarity and find my commitment to action strengthened.

"Troubled times break our hearts. Opening to that, over and over, requires an ongoing and loving vigilance."

Since attending their first retreat with Joanna Macy, Maggie Ziegler and Jackie Larkin have been co-facilitating workshops that integrate diverse experiences while holding the Work That Reconnects at their core. Their next residential retreat will be offered March 10-14, 2017 on Bowen Island, BC. www.reconnectingtolife.org

Put the Bible on the Shelf

Thomas Berry – an earth spirituality out on the edge

by Mike Bell

One day in April of 1990 I was listening to the CBC radio science program, Quirks and Quarks. It was a special Earth Day program and they were interviewing Thomas Berry, a cultural historian, a monk in the Passionist Order, and a Roman Catholic priest.

He had become quite famous because of his writings and his speaking out against abuses to Earth. I knew him. We had been members of the same religious order, and in my younger days as a student for the priesthood we lived together in the same monastery in New York.

Toward the end of the program the interviewer asked Berry what the Christian churches could do about Earth Day. He responded, "It would help if they put the Bible on the shelf for about twenty years." That answer reverberated around the world and made its way to the Vatican.

Berry was a man who lived on the edge of the institutional church. He lived in the present; but, like the Roman image of the Janus with a face looking in two directions, he could see into the past and the future at the same time.

When he looked back within the church he saw an institution he loved and whose written scriptures inspired him. But he could also see that it was an institution locked up in its history with a suspicion of science and a belief that it was the only true church. It was bound by countless rules, regulations, and an unceasing emphasis on sexual matters to the exclusion of other more pressing concerns. And like many other mainline Christian churches, it was losing its members – particularly among the young, many of whom believed it had become irrelevant.

When he looked into the future outside the church, he saw a new world of great scientific advances that was teaching us more about Earth than we have ever known before. He also saw harmful multinational corporations, rampant capitalism, and extractive economies that were destroying Earth. But the church seemed unaware of what was happening. It was like a damaged ship adrift in an ocean, buffeted on all sides by violent storms, trying to fix the leaks but unable to steer its way through.

From Berry's point of view the church was unable to come to grips with the modern world around it. It saw the world as something "out there," something totally distinct from itself. It did not see its members as Earthlings, part of Earth and the universe. It had lost its essential relationship with Earth and the universe. For Berry that relationship was critical. It was the key to all spiritualities and the primary source of divine revelation. He often noted that if we lived on the moon, our minds, emotions, speech, imagination, and sense of the Divine would all reflect the desolation of the lunar landscape. He noted that "We can no longer hear the voice of the rivers, the mountains, or the sea. The trees and meadows are no longer intimate modes of spirit presence. The world about us has become an 'it' rather than a 'thou.'"

But what is an Earth Spirituality?

I found out one day on one of my trips to visit him in North Carolina. I was living in the Arctic and working as a consultant in Inuit and Dene communities. I said to him, "Tom, a lot of people in the Arctic are interested in earth-based spiritualities. Have you ever written anything on an earth-based spirituality?" He paused for a moment and said, "No, I haven't." Then he said, "But I have written something on the spirituality of Earth that you might find interesting." That's when the lights went on.

I finally understood what he had been saying in all his writings. We are Earthlings, part of the living Earth and the universe. Just as our human consciousness is the universe reflecting upon itself, so our human spirituality is an extension of the anima mundi – the Earth soul. This is what gives meaning to his famous comment about putting the Bible on the shelf. Our relationship with Earth – its beauty and its munificence, its ecosystems that are the means of our survival – is our source of life and what makes us aware of the Divine influence in our lives. This is also the primary source of revelation available to all religious traditions, to all indigenous traditions, to all nations, and to all individuals no matter what their cultures, histories or belief systems.

Berry often noted that in this relationship we are not a collection of objects, we are a communion of living subjects, linked to a living Earth and all its species. He saw this Earth spirituality as something that must be deeply imbedded within us.

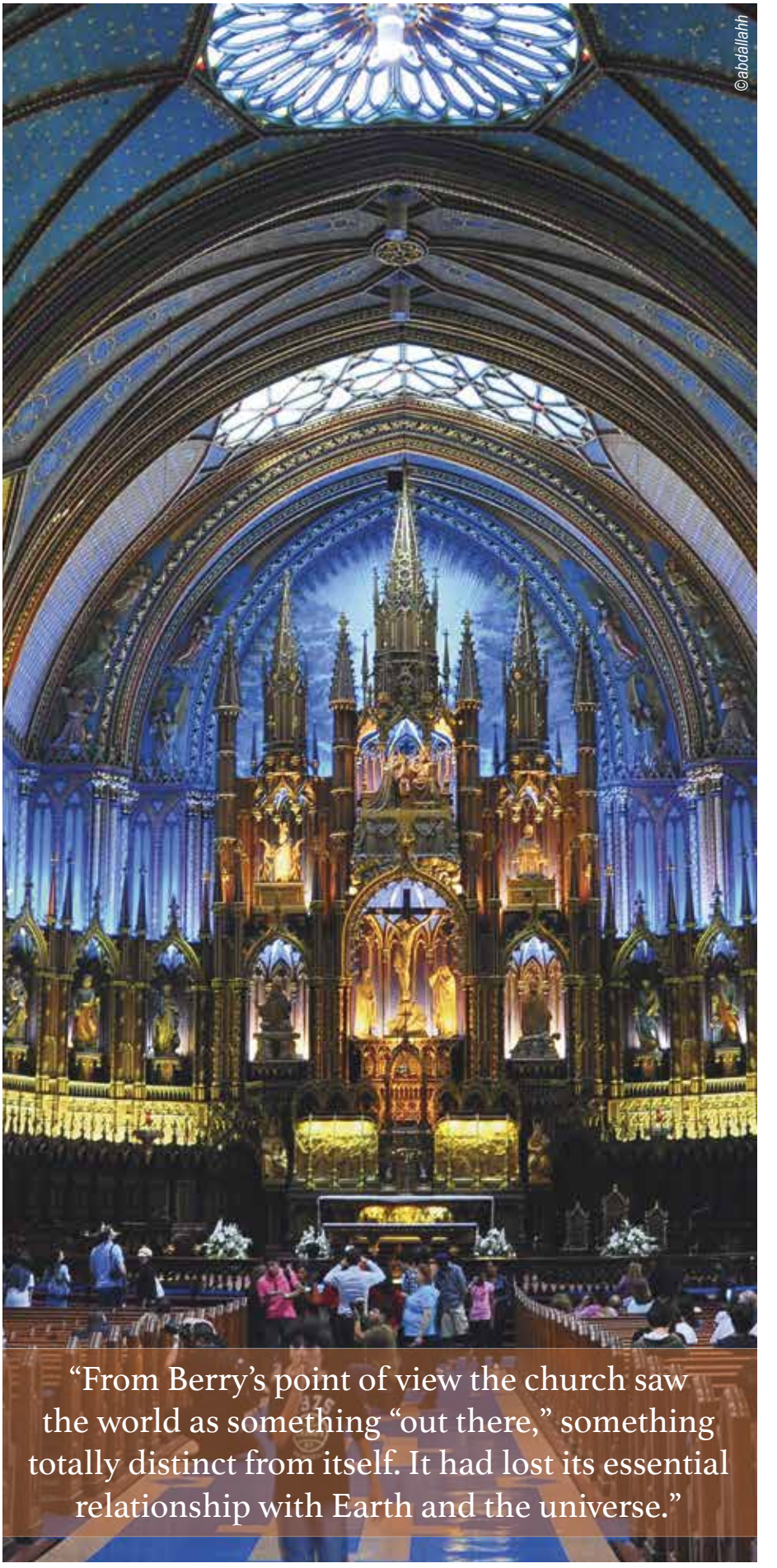
But we must also live on the edge.

We must look deeply into our lifestyles, institutions, and systems that are helping to destroy Earth. And this must awaken within us a "love of the land," to use a traditional indigenous expression. More importantly we must translate this awareness into action. We must look forward to the world we are leaving to our children and grandchildren. We must work to stop the abuse of Earth and care for its health and vitality. We must adopt the mission Berry described as the Great Work: creating a mutually enhancing relationship between our species and Earth. This Great Work is healing work.

In this Anthropocene age of runaway climate change, we must learn to live on the edge with an Earth Spirituality. We are continually groping our way forward and it can be very uncomfortable out there on the edge. But it begins with an awareness best expressed by one of Thomas Berry's mentors, Teilhard de Chardin:

"We are not human beings on a spiritual journey; we are spiritual beings on a human journey."

Mike Bell, once a fellow monk with Thomas Berry, has a special interest in bringing Berry's Earth Spirituality to local communities. He lives in Comox, BC



"From Berry's point of view the church saw the world as something "out there," something totally distinct from itself. It had lost its essential relationship with Earth and the universe."

Far Meadow

A place at peace with itself contains worlds past and present, human and wild

by David Williams

"There are always mystical countries that are part of one's childhood. These we remember and visit sometimes when we are asleep and dreaming."

—E.Hemingway, True at First Light

As I slide the canoe into the water, the loons call me from across the lake. Two ravens, pinions flaring, swoop overhead. The water is like glass this September evening, so I am going to see how the beaver are faring in the new lodge they have built after the grizzlies destroyed their old one.

My first mystical country, the place by the river where I roamed free as a boy, is now a used car lot. Yet I do still dream of it as it was, and in that I am fortunate. But here, in Far Meadow, this present mystical country is as real as the breath that courses through my body. When I walk the ground here, its energy encompasses me.

Twenty-five kilometres from the nearest road lies Far Meadow, the old homestead where we built this log cabin twenty years ago in the centre of one hundred and fifty-five thousand hectares of wild land. Still remote, its secrets are not given up easily. Yesterday I backpacked in that twenty-five kilometre trail, over deadfalls, through swampland, and wading across the small river where grizzlies were feeding on the spawning chinook. In winter, on snowshoes, the journey can be daunting. I've holed up under a spruce tree with a good fire when a blizzard roared in unexpectedly. During our twenty-five year tenure it has suffered through three massive wildfires. This is harsh country with its ever-changing weather.

This is old country in terms of its relationship with my species. *Tachelach'ed*, or Place Between the Waters, is where the people of the Xeni Gwet'in First Nation hunted deer, elk, and caribou, perhaps for as long as ten thousand years or more. It is a place where wild horses roam as they have for over two hundred and fifty years, a place where the grizzly bear, the wolf, and the cougar can be seen moving along the wild trails. Crumbling hay sleds, old log hay pens and horse-drawn implements dot the meadows, abandoned from a time when Tsilhqot'in people were learning to adapt to the new reality of an invading culture. Kikwillie holes (pit houses) can be found if you know where to look. Spirits linger everywhere.

Yet, for me, it is the presence of the truly wild that provides the magic here. As our species devours every corner of our small planet, it is difficult to find places like this, places that so many of us long for. Here, where I hear the wolves howling in the night, find large cougar scratchings or tracks on a trail, watch a mother grizzly

and her two year old cubs saunter past my front door, or simply enjoy the wavering, darting flight of the harrier hawk over the meadow as she hunts for field mice and voles.

I developed Far Meadow into a small research centre fifteen years ago to protect the area from clearcut logging. Such destructive industrial development would have destroyed all pretence that the land could survive as a viable and healthy ecosystem. A generation of graduate students and biologists have come here to study the unique combination of a strong and surviving indigenous culture, wild horses, and a full complement of predators. These knowledgeable visitors have enabled us to extend and deepen our understanding of this place and its inhabitants. Working side by side, we have deepened our knowledge even more by working in friendship with the people descended from those who have walked these wild trails for thousands of years.

Now, thanks to the work of many, it is a protected area, either in the Xeni Gwet'in title and rights area or the Dasiqox Tribal Park. People are not excluded, but they acknowledge their place as only one of the myriad species whose home this is.

Sometimes in the evenings, after a long rambling walk through the lodgepole pine forests that surround us, we sit on the porch of the cabin observing the birds (we have counted over one hundred species), fisher, or muskrat – or, if we are so fortunate, wild horses in the meadow. At the same time, we wonder what good things we did in an earlier life to be granted this time in such a place.

When here alone, as I am now, I realize I am far from alone. My real neighbours are the chattering red squirrels preparing for winter, the lone coyote trotting by, the swallows nesting on the porch, and a small pack of five wolves that crossed the frozen lake one winter a few years ago, disdaining to so much as look up when we tried to howl them in.

I think that my story here is about a lost part of what we call British Columbia, about what it was and what it has become, because this is now so rare a place. But it is also about what it might become again – a place more at peace with itself and with a healthier, less exploitive view more respectful of the land so many of us now call home. I hope so.

Perhaps we need to be reminded, from time to time, that for those who always called it home it was, and remains, in some measure, sacred.

I know for many, and for me, too, even should I never return here again, it is enough to know such a place still exists. As such, it will be in my dreams for as long as I draw breath.

Now, as the paddle speeds me across the lake, a muskrat glances up to see me bearing down on him and quickly dives. A small flock of bufflehead scoot out of my way. The dark shadow on the far edge of the lake turns out to be a lone cow moose. As I near the lodge I hear a large splash as one of the beaver takes alarm at my presence. Happy to see they have survived, I turn the canoe towards home and against the breeze that has sprung up. Paddling becomes difficult, so I kneel towards the centre of the canoe, tilting it slightly to give me more control. The small light I left burning in the window of the cabin offers a beacon of warmth and security in the fading light and the promise of my dinner left simmering on the old wood stove.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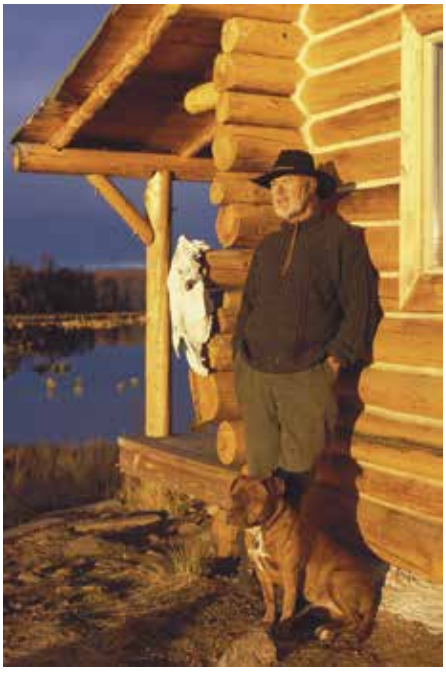
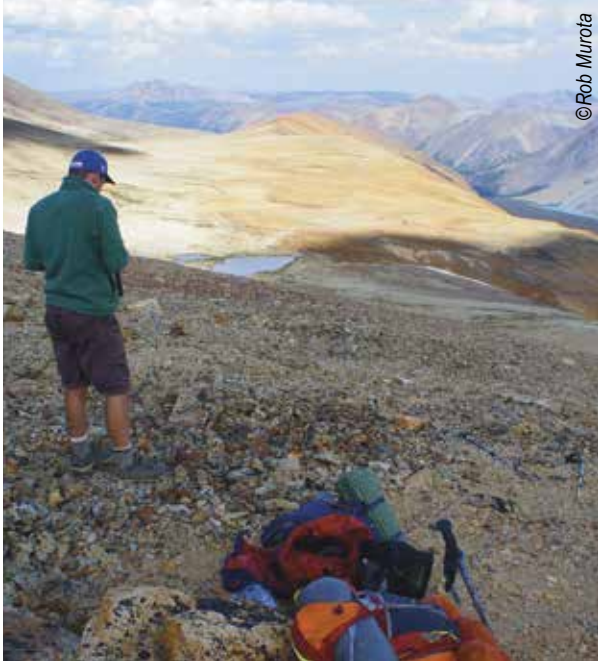


David Williams is a passionate advocate for the land and waters of British Columbia, and for the rights of indigenous people. He is founding President of RAVEN and of Friends of the Nemaiah Valley. He is descended from early settlers and is a great, great grandson of Chief Joseph of the St'at'imc Nation.

Wild Country

Spirit, Practice and Place on the Chilcotin Plateau



by John Schreiber

"When you find your place where you are, practice occurs."

—Master Dogen, 13th C.

In 1967, after an extended stay in Europe, I began a series of exploratory trips into some of the wilder and more fascinating parts of the BC Interior, a region ecologically quite dissimilar to the north (rainy) end of Vancouver Island where I grew up. I soon found myself strongly drawn to the Chilcotin Plateau, that vast, dry, big-sky country west of the great Fraser River, east of the Coast Mountains and north of Lillooet.

And what country it is, ranging from grassy sagebrush slopes and parklands to fir, pine and spruce forests, high elevation sub-alpine meadows, and bare alpine rock. I have "come into that country" many times, spring, summer and fall, travelling up there as frequently as five or six times a year, short visits and long.

For all that, I must say that I've only scratched the surface of a few Chilcotin corners here and there: Empire Valley and lower Churn Creek, Graveyard Valley, Nemaiah Valley, the Tchaikazan River, Big Eagle Lake, the Tatlayoko Lake area (including the Potato Mountains and West Branch), Heckman Pass and the Atnarko River at the head of the Bella Coola Valley, to name some. I go to these places for their open beauty, wide expanses, mountains, wild creatures, (winged and four legged), eco-diversity, history (aboriginal and settler), ancient trails and routes, old corrals and campsites, time-worn log cabins (most long empty), and ranch buildings shrinking inexorably into the landscape. Above all else, I go there to drive, walk and climb wild places, where I can sense and comprehend the liveliness of true (self-regulating) wil-

derness yet again. Such a privilege! Such quiet joy! Such peace.

With each trip north to the Chilcotin, my knowledge and love of wild places deepened. Following the lures of that grand Chilcotin land, place by place, season by season, became a fundamental part of my backwoods practice. By simply showing up, walking the trails and ridges, and staying receptive to what is, I underscore the lively presence of those places. More and more, I am bound to stop and listen. I look around and up and down, and try to take in the details and contexts and signs of life in front of me. I ask questions and search for connections, moments of understanding, and possible conclusions. And more and more, my heart-mind opens to wild country stillness and silence, that silence "deep enough to be heard."

Over the years, I sought harder-to-reach, wilder, less-known places on the edges of the backcountry. My presence pushes those edges a little. "Life is in the interfaces," some forgotten seer stated. Sometimes I travel alone, though less so now given the inevitable limitations of old age. And, as an underlying aspect of my basic practice, I sit quietly and meditate: at home, on the road, back in the bush – any fairly quiet place will do. After decades, I believe my view and sense of the world, inner and outer, have become at least a little more integrated and open. I am better able to hear, and occasionally, in the spirit of surrender, I simply, silently, know.

Thus, bit by bit, I became aware of the possibility that all or most things in nature, sentient and insentient, small and large, in their myriad forms, have a subtle, lively essence about them, if I'm open and quiet enough to sense it. It may be a mountain, a river, or a weather-worn log shack that catches my deepest attention, or it might be swamp and pond edges, dark earth, plants, trees, animals, a stone, even a handful of dry sticks meant for burning that draw me. It could be slender lodge pole pines that seem to lean in close behind me as I walk; it could be night shadows and the bright light of a rising moon – it's all lively. Walking alone on old trails, in deep woods, especially at dusk or dawn, the margins of the day, can be a living practice in its own right.

"The Chilcotin Plateau, in all its vastness, lives: thus so, it merits all possible respect in all our relations with it."

We might well recognize and acknowledge that the liveliness I'm referring to here is the liveliness of spirit, the spirit that for many is at the essence of things. For me, "spirit" implies most subtle, the finest relative. Further, I believe that the spirit world is inclined to be a connecting world, to be lively parts forming greater wholes, and forever so.

Of course, to indigenous peoples, particularly in earlier, pre-contact times, the natural and supernatural were one and the same, inseparable. Their world was full of spirit, spiritual powers, spiritual entities: their sheer survival necessitated it. To hunt successfully – to understand, predict and become connected with potential prey – refined vision, both material and spiritual, was essential, as was the etiquette and practice to help hone such refinement. Many a hunt began in the hunter's or dreamer's dream world, in the present tense, before the physical hunt actually commenced. Respectful acknowledgment, humility and gratitude are fundamental qualities towards such understanding.

So, can a place speak? Long-used campsites and old home-places with the residue of past, lived lives about them do. My deepening experience tells me that most places have a voice, but generally we are not attuned, open, or interested enough to hear. The Chilcotin Plateau speaks to me, persistently, over many years, just not in spoken words. The recurring statement, I sense, is one of acceptance, inclusion and best truth: I've learned to trust my "ears" in such matters. My means of "hearing" is that sense of quiet, inner knowing that can express itself at any time. When I seem to be close to some sort of inner truth, that sense can be powerfully or lightly reinforced by waves of Kundalini energy coursing through my body-mind. These are passing events that I have experienced, often, over most of my adult life. I trust those moments: they cannot be predicted, but they are confirming, and they never let me down. Truth speaks to truth, light to light. I am clearly a small working part of a much larger whole. The Chilcotin Plateau, in all its vastness, lives: thus so, it merits all possible respect in all our relations with it.

In The Mountains and Rivers Sutra, Master Dogen (1200-1253), founder of the Soto school of Zen Buddhism states, "The blue mountains are constantly walking ... He who doubts that the mountains walk does not yet understand his own walking."

John Schreiber lives in Victoria, BC. He has worked at various industrial jobs, and as a teacher-counsellor in schools. He has written three books on the Cariboo-Chilcotin.

This Moment

In the Rocky Mountains, aurora borealis and a close encounter with wolves provoke moments of deep connection and peace

by Rob Kaye

Tired from nine days of following the movements of hunters while on anti-poaching patrols in the basins and along the ridges straddling the Jasper National Park boundary in the Moosehorn Valley, I went to bed not long after dark. Sometime around 4:00 in the morning I awoke feeling fully refreshed. I had slept soundly.

The moon had sunk behind the towering peaks but a light still filtered through the windows, casting an eerie diffused glow on the interior log walls of the old warden cabin. It was of a different spectrum and it was pulsating. I looked out. The sky was lit up with incredibly vivid green arcs of light, dancing and flickering against the backdrop of mountains on each side of the valley – the aurora borealis at its best. I dressed, walked out into the meadow, and watched the show. The majestic mountain panorama encircled the valley and the galaxies extended endlessly above. I felt small, but not alone. I stood and gazed in awe and wonder: the vast expanse of the aurora, bright stars along its glowing flanks; the silhouettes of ancient peaks against the gigantic movie screen in the sky; a reflection of the iridescent green aurora in the sparkling clear waters of a cool mountain creek; the musky autumn scent of Mother Earth at my feet. Life couldn't be better than this. I felt… *this moment is my life*.

As I stood spellbound by the brilliant display around me, I heard the familiar "ting" of a horse bell. My companions were close by, perhaps a couple hundred metres upstream from the cabin. The sound of the bell told me that they were awake and had commenced their morning feeding. Enraptured by the lightshow, I picked up a halter and set out to locate the horses, the glow from the stars and aurora lighting the path enough that I could find my way. I found Lucky and Harvey grazing in their favourite meadow. I sat near them for a while as they continued to feed. I drifted to thoughts of thankfulness for my cherished companions in the wilderness, for their countless hours carrying my weight and guiding me along ancient trails. Lucky and Harvey took a break from their feeding, sauntered over to where I sat, and stood over me. "Yes, buddies, it's time," I said. I slipped the halter over Lucky and led him back to the cabin, with Harvey following behind. They both nickered in anticipation of their treats and Lucky impatiently pawed the ground as I filled their canvas bags with oats.

As I leaned up against the hitching rail alongside the horses, I was profoundly aware of the enlightening moment I had experienced. Time seemingly stood still. I'd had this being-at-one-with-the-universe before and I would experience it again.

A few years later I was on foot patrol and had just completed a several-hour climb to reach the summit of Folding Mountain. The mountain is situated eight kilometres east of Jasper's east park gate, where the western fringes of the foothills meet the massive uplifted folds of the Rocky Mountains along the eastern boundary of Jasper National Park.

My final destination was Mystery Lake, another 11 kilometres to the south, where I had planned to camp for the night. Roughly two-thirds of my trek would take me along a series of three alpine ridges east of the Jasper National Park boundary and then another two alpine ridges that follow the park boundary. The ridges fan out along the southern shoulder of Folding Mountain, each one losing an average of 350 metres in elevation, then gaining approximately the same elevation before the summit of the next – a high-elevation roller coaster. These ridges and numerous alpine basins comprise the area between

Folding Mountain and Mystery Lake, where we had received recent reports of poaching activities. The latter third section of the trek would lead off the summit of the last ridge, where I would then have to bushwhack down steep terrain to reach Mystery Lake.

When I left the summit for the nearest ridge, the low cloud and drizzling rain I had been experiencing suddenly turned into an all-out snowstorm with high winds. Five hours later, exhausted from my trek up and down the ridges in white-out conditions, the snow turned to rain. I was exhausted and soaked to the skin. I had reached the valley floor at the base of the last ridge. Not sure exactly where I was, I emerged from the forest into an open meadow and walked up to the top of a small grassy knoll to behold a panorama that is etched forever in my mind.

The tranquil waters of Mystery Lake lay before me. The rain had tapered to a light shower and mist from the lake was rising up the slopes of the surrounding forest. The effect was surreal, almost ghostly.

As I stood on the knoll surrounded by the wild landscape, time stood still. I was in one of those "feeling of oneness" euphoric states: spiritual bliss. It was the same meditative state I had experienced in the Moosehorn Valley under a brilliant luminescent sky of northern lights.

Seemingly in slow motion, my senses, specifically my sight, brought me out of my dreamlike state. I became aware once again of my surroundings. Looking away from the lake and forested slopes, I focused on the meadow immediately below the knoll. I was not alone. Not more than 15 metres away, standing stiff-legged from stopping dead in its tracks due to my sudden appearance on the knoll, was a magnificent black wolf.

Frozen in stance, we stared at one another for several seconds. The wolf's intense amber eyes seemed to pierce right through me. Then, just off to my right, I noticed some dark forms emerge from the mist-shrouded, shadowy edge of the forest. It took a few moments for the forms to take shape: six more wolves, moving as a group, were loping towards their big black companion and me. Startled, they scattered into a wide arc behind what I assumed to be their leader, the great black wolf standing before me – the alpha male. They paced back and forth nervously, their eyes on me. I remained motionless, thrilled at this incredible encounter with the wolves.

The alpha male retreated towards the pack. All seven wolves were alarmed and nervous, yet curious, a typical reaction when meeting humans in the wild. I expected them to flee at any second. Instead, the group slowly spread out. One or two wolves backed off towards the lake on my right while another two retreated to my left. The remaining wolves didn't know what direction to go in. There was some tail wagging and other body language. A few wolves barked uneasily. Finally, they grouped together and fled off to my right, along the northern shore of the kilometre-long lake.

The wolves stopped a minute later, turned, and took a quick glance back at me from down the lakeshore. They postured, and with tails wagging, each at different hierarchical positions, rubbed up against one another.

A few wolves licked the faces of the more dominant members of the pack, with the alpha male receiving the most attention. Comfortable that they had distanced themselves from me and had re-established pack harmony, they settled down, held their heads to the sky, and howled. Watching them and listening to their chorus left me enraptured.

Another moment: a period of bliss – a profound interconnection with the natural environment, Mother Earth, and the universe.

Rob Kaye is a retired National Park Warden and author of *Born to the Wild*. He lives in Qualicum Beach, BC.

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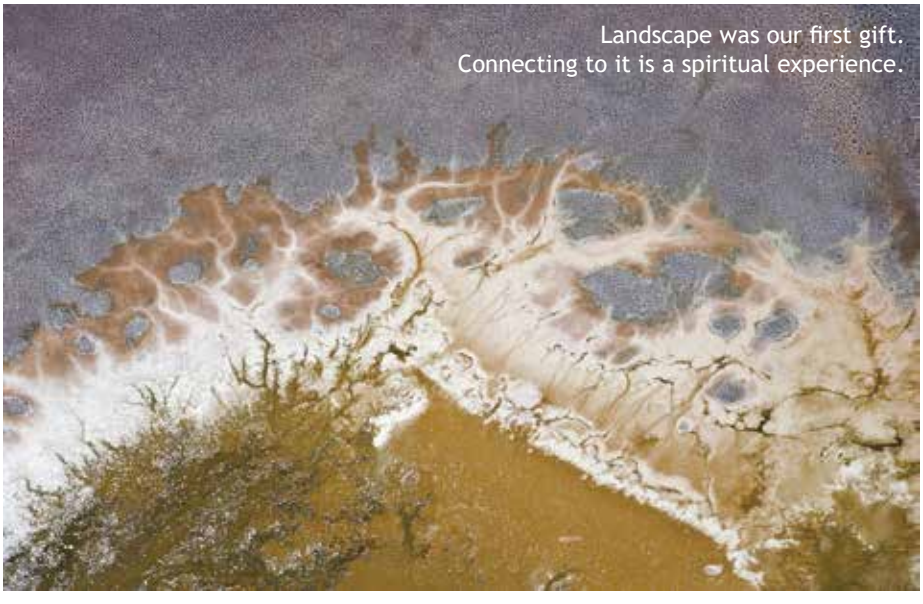
Topophilia

Photographing the beauty of the land fosters a spiritual connection

by Chris Harris



Landscape was our first gift.
Connecting to it is a spiritual experience.

At birth, my mother gave me the spirit for adventure, and when I was twenty my father gave me a 35mm Lordette camera. It was a good start.

In the mid 1980's, I moved to the Cariboo Chilcotin region of central British Columbia where I explored and photographed the land by foot, canoe, horse, raft, and plane. As my connection with the land deepened, my sense of place was enhanced, and my identity increasingly became this place. The word for this feeling is topophilia: a sense of place and a love of home gained from intimacy and experience. It takes time to develop, but it grows deep roots.

In 2008, with a book project in mind, I set off with camera in hand to explore a vast volcanic plateau, eventually finding my sense of topophilia in the shield volcanoes of the Anahim Volcanic Belt. It was where I felt my deepest connection with the planet; where my personal spiritual make-up resonated with the land I was hiking on.

At first I had little understanding of the area's natural history. The shapes of the mountains, the textures of the rocks, and the array of colours in them were unfamiliar to me. Not knowing the names or histories of the minerals and basalts, I enquired of volcanologists, geologists, and botanists. I soon learned about tectonic plates, molten mantles, and the North American Plate. Over millions of years the cinders below my feet had been built up and coloured as they were cast out of the earth in fire, only to be broken down and reshaped by two ice ages.

Receding glacier reshapes the land

As I hiked, I merged this information with how these stones felt in my hand, how I saw them with my eyes, and how I felt energized by walking on them. It was here that I felt connected to the earth in a new way – it seemed more than innate matter, it seemed alive with what I might call a spiritual energy.

Thomas Berry wrote, "At its core, even our spirituality is Earth-derived. If there is no spirituality in the Earth, then there is no spirituality in ourselves." When I first read this quote, I realized that Berry's "Earth-derived spirituality" was in fact the same feeling of topophilia I experienced when walking on stone that had

A thousand images of this moment, from a thousand points of view, would not be sufficient to exhaust its artistic potential.

travelled as molten energy from 3,000 km beneath me. It was here that I contemplated how to make imagery and how to respond to it emotionally.

As an artist I had to go beyond documentary images of us hiking over a volcanic landscape. That would merely duplicate the world as we normally see it. There would be no mystery in that. I wanted to add soul or spirit to my craft.

As I walked more into my own experience, I began to realize that the emotional connection between the living planet and myself was beauty – the beauty of a living world. Eagerly, I attuned myself to moments of light, line, form, colour, and texture. I felt alive, and my heart soared. I turned to expressionist abstraction. When I was lucky, I was able to turn such moments into art.

The poet John O'Donohue wrote: "The human soul is hungry for beauty; we seek it everywhere – in landscape, music, art, companionship, love, and in ourselves. We feel most alive in the presence of the Beautiful for it meets the needs of our soul."

It was here on these volcanic slopes that I was awakened to the call of beauty. I became aware of new ways to see, experience, and photograph the world. Photography enables me to make a deeper connection with the earth, to sense the spirit of the land – the spirit of all things living.

Chris Harris is an award winning narrative photographer and publisher. His most recent book is *British Columbia's Cariboo Chilcotin Coast: A Photographer's Journey.*

May the Forest Be With You

Can we let the self-sustaining, flexible, and deep order of the Wild into our civilizations – and ourselves?

by Ray Grigg

"May the Forest Be With You" is instantly recognizable as a blessing that is more grounded and earthy than its Star Wars source, "May the Force Be With You." This is because "forest" connects us directly to the familiar. It offers us an alluring intimation of kinship with a suggestive hint of wisdom hiding somewhere in the dark recesses of its treed and mossy complexities. Forests have always lured us with the promise of something that we intuitively know to be elusive yet profoundly wise.

But what is it? And why is it not immediately obvious?

We know what it isn't. Forests such as tree farms and plantations are monocultures of human contrivance that may superficially resemble forests but are committed at their inception to be less complex, organic, and living and therefore less vital and enduring. Instead of originating and developing by the inner creative randomness of biological chance, they are conceived with a purpose and controlled by the contrivance of a defined objective. They are not real forests because they are not wild.

Yet even real forests can lose their wildness if they are disturbed by our influence. The enchantment provided by the wild seems so serenely integrated and balanced that one often feels it could be violated by as little as a human footstep – sometimes by a mere sound or breath. Maybe this is why real forests invite the same quiet reverence as cathedrals, temples, and holy places that demand nothing less than silent awe. A person in a real forest is in the company of the wild, close to a presence so deeply primal and profound that it only communicates wordlessly.

The poet, philosopher, linguist, and typologist Robert Bringhurst explores this profundity in *The Tree of Meaning: Language, Mind and Ecology.* "People accustomed to orchards, farms and gardens," he writes, "very often think of the wild in opposition to the domesticated or tame. The garden, they say, has greater order than the wild. But it's the other way around. The order of the garden may be easier to see, but it is fragile and superficial. It is artificial and unnatural in a very convincing sense: it cannot take care of itself. The order of the wild is self-sustaining, flexible and deep."

This brings us closer to the meaning of the wild in a real forest. In Bringhurst's words, such forests are "a living, ever-changing shrine to timelessness." The wild contains a level of ordering that transcends the influence and control of humans. "The wild is by definition unmanaged and unmanageable, and in some sense unconfined by those who would manage it." Expressed differently, the wild has a spontaneous rightness that arises from itself and happens of itself, an unfolding perfection and continuing completeness that is powered from within.

This begins to explain why real forests – wild forests – are so very special. They provide something far greater and more profound than human intention and planning, something more complex and permanent than the sophistication and durability we assign to the contrivances that constitute our civilizations. Indeed, as Bringhurst correctly observes, "Forests are also highly developed civilizations." But they do not "need or want our managerial interference." In reality, they contain a crucial wisdom that we would do well to learn, respect, internalize and emulate. In Bringhurst's words, "human civilizations actually start to resemble" a real forest when they begin "to sense and respond to [the same] supple and reinforcing order" that is represented by the wild. And so, he concludes, "the wild isn't something to conquer or subdue; it's something to try to live up to: a standard better than gold."

The wild that inspires the unfolding of forests and civilizations is also active in the unfolding of our individual selves. So the forest is a teacher, a steadfast reminder that we can be who we are just as it is itself. The same inherent spontaneity that grows a wild forest is also growing the fullness of our own character. Just as

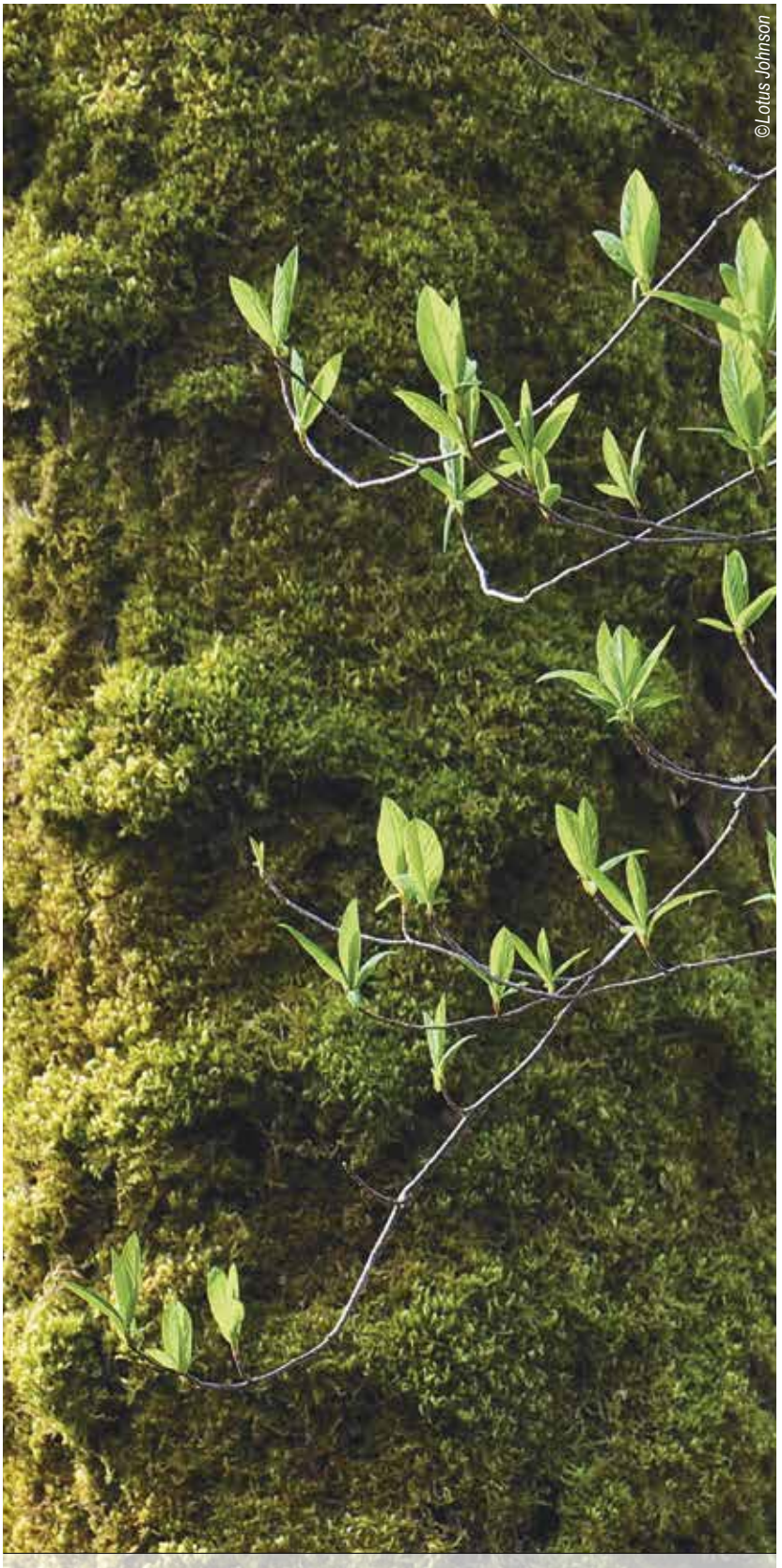
each wild forest is unique, so too are we each unique, the organic consequence of a complex and uncontrived unfolding that happens of itself. We each become who we are just as a wild forest becomes what it is.

This comes as close to the meaning of wild as we are likely to understand, and to the meaning of the blessing, "May the Forest Be With You." Forests are ourselves as we could become. So we feel peaceful and whole in them because the freedom that makes them what they are is the same freedom that invites us to be who we are. Entering a wild forest is like gaining access to our deepest selves, like coming home to the elusive promise of who we really are. The feeling of rightness and completion that pervades a wild forest is the creative power of nature fulfilling itself – with an invitation to each of us to do the same.

"The wild isn't something to conquer or subdue; it's something to try to live up to: a standard better than gold."

Without the wild in forests, we are overcome by the demands and manipulations of the world, held captive in a construction of conventions and expectations. We lose our character, our integrity, our essence. We need such forests as a reminder to both our civilization and to ourselves that what we seek is not a contrived thing to be, but a sacred way of becoming.

So the blessing hidden in "the Forest" is the wisdom awaiting those who are willing to be lost and then found in its mystery. In mythological terms, "May the Forest Be With You" is an invitation to return to the Garden, to the creative spontaneity that occurred before it was spoiled by the impositions of discrimination, deliberation and purpose. The forest, therefore, contains the wisdom to set us free – to let us be ourselves, to let nature be as it wants to be, and to let the world unfold as it will.



Ray Grigg is the author of seven books on Taoism and Zen, and during the last 15 years has been writing a widely-published environmental column, Shades of Green. This and comparable articles will be appearing in a forthcoming three-volume collection of his environmental writing. Ray lives on Quadra Island, BC.

Quest

What is Nature? What is Human Nature?

by Stan Tomandl

How do these two Natures fit together? Sometimes well, sometimes not?

Is there some essential force, energy, substrate, spirit, essence that underlies these two separable/inseparable Natures? I believe a deep strong connection exists, having experienced transcendent moments of unity, a oneness of the universe and time – as many (if not all) people likely have. And yet, in our ordinary consensus reality world, occupied by objects and customs that most of us agree to operate within, I lose or forget those ineffable experiences. Sure, I can meditate or walk in the woods or splash on a river bank to reconnect, and this re-inspires me, but only for a short while. Even while living in the bush for twenty-seven years, that "mystical" connection to Nature came too seldom and short.

I attempt, with some success, to use ritual and ceremony to establish and re-establish "kindred relationships" with plants, animals, other humans. Leaving tobacco or a hair from my head when gathering herbs, thanking the kindred spirits of the fish or meat I consume. Feels better than not doing, though somehow not enough. Most settlers, like me, have not been raised in an atmosphere of appreciation for the sacrifice of other beings for our sustenance. I end up, too often, feeling alone from the life forms I want to claim as kin. I compensate by honouring, celebrating, working for, creating relationship to Nature in a very conscious, sometimes stilted, way.

I have learned from W̱SÁNEĆ, Snuneymuxw, Nuu-chah-nulth, and Tahltan elders, studied under bush pilots and cowboys and river runners, been mentored by environmentalists and ecologists, apprenticed with loggers and miners, trappers and commercial fishers. And I am still on this great Quest to be 'one' with everything.

Journey with me now, crossing a whitewater river on a rickety wooden cable car running on a frayed rusty cable. Up a trail past long-abandoned settler cabins and a blacksmith shop. Traversing a rockslide to sit in front of the dark entrance to a small gold mine. Gaze down to the white river sounding below. Across the grassy lodgepole pine valley to the park-like mountainside and eyes up into the open alpine, then to the multi-layered gray sky. All existence, Human Nature and natural Nature: miner's tunnel dug for moiling gold; the scenery laid out in vast expanding panorama; and something holding me, it, all together.

We humans are able to separate ourselves from Nature. How else could we mine and log and fish and farm and pollute in such devastating unsustainable ways? Since we continue to separate from Nature, I believe we can also continue to remember, to reconnect, to reaffirm, to reconcile, and to bring restitution in stronger and stronger ways to all peoples, lands, and waters.

Thank you for reading and being on this magnificent, enduring Quest: from walking in the forest to the Upper Walbran Valley, beachcombing to no more tankers, organic gardening to Site C. We are one.

Stan Tomandl works for Fair Mining Collaborative and maintains a consulting and counselling practice with his wife Ann Jacob in Victoria.

"Hemas Kla-Lee-Lee-Kla was sent out into the wilderness to become one with nature.... He had to be imbued with nature's lessons before he was qualified to be a chief and a leader of his people.... He was adopted by wolves and taught [for four years] to be one with nature."

—Bill Wilson, Hereditary Chief of the Musgamagw Dzawada-enuxw Nation

Letters

Freighters, Naval Fleets, Seismic: Tragedy for Ocean Life

Last Thursday evening, one of the local Churches hosted a documentary titled "Sonic Sea." What an eye-opener, to say the least.

Imagine that you are quietly sitting around your living room with your family; talking, laughing and relaxing. Then, suddenly, a painful, continuous noise engulfs the entire neighborhood. The torturous barrage of noise is so intense it begins to burst the eardrums of those family members on the block. The adults and children cover their ears, and run outside in an attempt to get away from the life-threatening sound waves. Imagine most of these neighbors ending up dying on the sidewalk, with eardrums so damaged that blood runs from the ear openings.

This is what is happening today in the oceans of the world where sonic noise from naval fleets, seismic explosions from oil/gas exploration, and the engine/propeller noise of freighters are destroying the environment in which orcas, dolphins, porpoises, whales of all species and fish thrive. A quiet ocean environment allows these intelligent species to communicate with each across thousands of miles of ocean water. A pandemonium of human sonic "pollution" in ocean waters destroys the mammal communication system … imagine how pods of whales and dolphins cannot share information or locate their offspring or mates because of the sound interference of 60 thousand ocean freighters each day. These supertankers are shipping cargo to support our consumer-oriented lifestyle.

Some immediate and necessary solutions are: a) stop naval "sonic" activity in waters where fish and whale life will be threatened; b) redesign oil/gas exploration methods to not include destructive sound waves which kill mammal life; c) redesign ship engines and propeller systems to be silent; d) become conscious of our interconnection with life in the oceans and on land – and then, act in ways which honor and support the natural world around us.

—Bill Woolam, Duncan, BC

Too Cheap to Save the Planet?

Just stumbled over "Sentinel" trying to find out specifics on Trudeau Sr.'s unholy deal with BIS [Bank for International Settlements].

It is ever clearer that the big problems we face, in particular the degradation of the planet, are solvable if we apply resources, material and human, to those problems. We have the human and institutional resources, and certainly a wealth of material. Why doesn't it happen? Simple "they" say: "We haven't got the money." What??? Currency? Debt issuance? Not enough? Something as materially ephemeral as "money" is in the way of saving the bloody planet? It's odd that we could find the money to fight wars, but not for literally saving the earth.

I am excited to find this journal. Hope someday to talk to you.

—John Harrop, Naramata, BC

Beyond Bottled Water

Re: "Living Waters 2016," November/December 2016.

We read plenty about water, particularly bottled water, which deservedly takes it on the chin. However, there's something in the discussion that has always struck me as strange: bottled sugar-based beverages are only rarely mentioned by anyone in any depth ... just the war on bottled water.

Some time ago I decided to test a long-held theory that bottled sugar-based drinks dominated the mind, heart and taste bud of the consumer. I studied consumption of water and soda drinks of four countries – all world top-ten consumers of each product – Saudi Arabia, Mexico, USA, & Germany. Combined, the four countries consume ANNUALLY 77,730,013,041 litres of soda beverage product, and 23,865,489,791 litres of bottled water (2015)! I found that on average people in those four countries (which I believe to be a reasonable marker for all) drank 3.379 times the bottled sweetened beverages than plain bottled water. And we rail about bottled water consumption!

Should we continue to rail against "bottled water"? Sure, BUT let's now examine the harm of not only the plastics/chemicals at play here, but the harm sugar in all its forms – artificial sweeteners et al – represent, then redirect the fight toward the real curse – bottled chemical-laden liquid sugar – over 3 times the problem bottled H_2O represents worldwide.

—Alvin Shier
Lethbridge, AB

Wild Times A Fixed Game

by Joe Foy

Prime Minister Trudeau has certainly wasted no time in revisiting the environmental laws weakened back in 2012 under the Harper regime.

Some may say Trudeau is merely trying to calm the growing storm of opposition to his recent highly unpopular decisions to let the Site C dam project proceed and to greenlight Kinder Morgan's dirty tar sands pipeline. Both decisions are despised by many in BC where trampling on First Nations rights, flooding entire valleys for no good reason and polluting the ocean and climate are behaviours severely frowned upon.

Nevertheless, a federally appointed "Expert Panel" has been diligently travelling from town to town to hear submissions from the public regarding how to repair the torn and tattered Canadian Environmental Assessment Agency (CEAA).

However, rather than calm the storm, some of the submissions are bound to stir up even more opposition to Trudeau's terrible decisions.

For example, Harry Swain, who headed up the Environmental Assessment Panel Review of the Site C dam project, had this to say in his submission dated December 14 2016: "Among the critical things lost in 2012 were the requirement for proponents to be up-front about the need for, and alternatives to, the project at hand. Reinstating this would properly return project economics to the centre of the debate. In the case of Site C, as well as the Lower Churchill and Conawapa projects, a good examination of costs and benefits would have obviated the need to study First Nations and environmental impacts at all, as these projects were financial stinkers from the start."

Swain's submission shines light on the dodgy financial footing of BC Premier Christy Clark's Site C dam project, which is funded by $9 billion public dollars. The premier was never required to show a need for the project or how the people of BC would ever be paid back their $9 billion. Financial stinker indeed!

Gwen Johansson, who sat on the BC Hydro Board of Directors (1996-2001), wrote in her December 5, 2016 submission that: "The Agricultural Land Commission … was prevented by the province from reviewing the impact of Site C, despite the fact that the Peace Valley contains a substantial amount of very productive agricultural land ... It produces heat-loving crops such as watermelon and cantaloupe on commercial scale, a rarity at this northern latitude."

Grand Chief Stewart Philip at a Site C courthouse rally.

A Fixed Game. A game of Risk in Mount Robson Provincial Park.

The fix was in to push the Site C dam project through regardless of how much farmland went underwater.

In his submission, Swain says: "It has been clear for years … that indigenous peoples have extensive land rights that cannot be ignored, and that the tests for infringing on these rights are onerous."

Swain concludes: "It was shocking to me that in two applications for judicial review of the Site C decision, counsel for governments argued, and judges agreed, that these issues could not be considered and that recourse should be via civil suit – long after the transgressions happened. Gosh, Ministers are not bound to observe the Constitution! It was equally shocking that the federal government, in publishing its decision in favour of Site C, did not give reasons for decision."

Trudeau's "Expert Panel" has certainly heard some hard truths. But until the Site C dam and Kinder Morgan's pipeline are stopped, who would believe anything his government promises again? The fix is clearly still in.

Joe Foy is the national campaign director for the Wilderness Committee, Canada's largest membership-based wilderness preservation organization.

Mount Polley

New Cause for Concern for the Fraser Watershed

by Jacinda Mack

The Fraser River watershed is the bloodline of our beautiful province. It reaches from deep in the Rocky Mountains and winds 1,375 kilometres south to the Strait of Georgia at Vancouver.

Its major tributaries, the Nechako, Quesnel, Chilko and Thompson Rivers, expand its watershed across the province. It provides vital habitat for endangered salmon and sturgeon, water for crops, recreation for fishers, support for local economies and a living connection between diverse regions. All of this is threatened when reckless mining operations pollute our watershed.

As a member of the Xat'sull First Nation, I live with the aftermath of the 2014 Mount Polley tailing dam collapse. Two years later, clogged water filters and slimy beaches at Quesnel Lake have replaced pristine waters. We still fear for the Fraser River salmon who are born here and the long-term impacts on our connected survival. We are afraid to drink the water and afraid to eat the fish. The few tins of canned salmon the mine distributed to Xat'sull last December offer no comfort. 2016 was the worst year for returning salmon in my entire life.

Now Mount Polley Mine is proposing to continuously dump partially treated wastewater into Quesnel Lake – which still contains mine waste from the dam collapse – and into groundwater via Bootjack Lake as their long-term water management plan. In other words, the company wants to use BC's precious clean water to clean up its dirty mess. It's an outrage.

Mount Polley wastewater does not meet all water quality guidelines "at the end of pipe." The company wants to dilute it in our lakes and rivers instead. For a company who claims its decisions are based on science and not cost, this seems like a pretty low-tech solution that assumes unlimited clean water forever. It's also the cheapest and least invested solution that has been repeatedly refused by local and downstream communities. It doesn't take a scientist to see what's really going on. BC routinely permits "dilution zones" from mines, but it is time to stop this madness and demand our health and livelihoods be protected.

Seriously outdated mining laws and low water quality standards threaten us all. The government's expert commission on the Mount Polley disaster estimates that there will be two dam failures every 10 years if we continue on without change. We must raise the bar on standards and demand best available technologies and practices. Our children's future – and the mighty Fraser watershed – depends on it.

Everyone who is connected to the mighty Fraser River for water and food or any other use should be alarmed. Everyone who lives near a mine in BC should be alarmed – serious precedents are being set with this decision. Please use your voice for change. Let the BC Minister of Environment and the Premier know that, at minimum, Mount Polley Mine's long-term water management plan should meet all water quality guidelines at the end of pipe.

ENV.Minister@gov.bc.ca
premier@gov.bc.ca

Remember: what happens at Mount Polley doesn't stay at Mount Polley.

Jacinda Mack is a coordinator of FNWARM (First Nations Women Advocating Responsible Mining,)

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