

# Watershed *Sentinel*

January/February  
2005  
Newstand Price \$3.50

Environmental News from BC and the World



**New Science:**  
**Seismic *Hurts***  
**Ocean Life**

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**Victory on GSX!**  
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Vol 15 No 1 ISSN 1188-360X



# Watershed *Sentinel*

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Educational Society

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**Special Thanks to** Horizon Publications, Hugh McNab, Maggie Paquet, Jim Cooperman, Joan Sell, Norberto Rodriguez dela Vega, Francis Toms, Gloria Jorg, Susan Yates, Peter Ronald, Clara Broten, Kathy Smail, the writers, advertisers, distributors, and all who send information, photos and ideas. This magazine would not happen without you.

Print Run 5,000 Circulation est. 10,000  
Published five times per year  
Subscriptions \$20 one year,  
\$30 two years Canada, \$26 US one year

Distribution by newsstand sale through Disticor (Toronto), by subscription, and to members of Friends of Cortes Island and *Reach for Unbleached!* Free at Vancouver Island and Vancouver area libraries and community centres, in BC colleges and universities, and to environmental groups.

Member British Columbia Association  
of Magazine Publishers

ISSN 1188-360X

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CANCOPY, 6 Adelaide St. E., Ste. 900,  
Toronto, Ontario M5C 1H6

Publication Mail Canada Post Agreement  
PM 40012720



Return Undeliverable Canadian Addresses to:

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## FROM THE EDITOR



### Single Transferable Vote

BC-STV.

One might get the impression that no one likes it much, especially if one pays attention to the (monopoly) media or the political parties. Perhaps that's a good sign.

"British Columbia – Single Transferable Vote" is the recommendation for change of our voting system, the result of an unprecedented experiment in direct democracy – the BC Citizens' Assembly. The members of the Citizens' Assembly were randomly chosen, although with a representative balance of age and gender, from an updated voters' list to consider the issue of changing BC's Winner Take All voting system. Their only qualification was their willingness to dedicate most weekends for almost a year to studying electoral systems. Which, come to think of it, did set them apart from most of us.

What they recommend is a ranked voting system, with more than one elected representative per riding. The ridings will be enlarged. Second and third choice votes get redistributed so that "all votes count" and the legislature is more representative of the vote than our current "First Past the Post" system.

The Citizens' Assembly recommendations are getting a hard ride, especially from NDP strategists such as David Sheck. Despite lip service to proportional representation, no politicians are in favour of BC-STV. The Green Party, and, quite belatedly, the NDP, are officially in favour of a Mixed Member Proportional system, where the party itself appoints additional members, who bypass the local ridings altogether.

The Citizens' Assembly thinks their recommendation will strengthen local representation and voters' influence over parties. Also, the larger parties will have to work in coalition with other viewpoints instead of exploiting their false mandates. As the Assembly notes, "Governments elected with fewer votes than their opponents are not legitimate in a modern democracy."

The BC Citizens' Assembly was a startling experiment in democratic debate outside of the usual party process and power structures. We think the rest of us in BC should accept the impartial advice of our fellow citizens who had no vested interests affecting their selection OR their decision.

*Delores Broten, Whaletown BC, January 2005*

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# Watershed *SENTINEL*



Printed on 100% post-consumer recycled process chlorine-free newsprint, with vegetable inks

No matter where on Earth we live, we are all residents of a watershed. Throughout history clans, tribes and all organized groups have endeavoured to protect their home watershed or territory. Sentinels were stationed throughout the highlands of a watershed to herald the coming of friends or of threats in the form of encroachment, floods, fire or hostile armies.

Threats to our watersheds exist to this day whether they come from careless individuals or insensitive corporations. The *Watershed Sentinel* keeps watch and informs.

## Energy & Climate

Hydro Cancels GSX Pipeline	3
Seismic Testing Risks Marine Life	5
Arctic Changes Will Be Severe	12
Light Up the New Year	26

## The Land

Watershed Down	22
<i>Some drinking watersheds are protected, while others are trashed</i>	

## Fish & Water

Bute's Wild Salmon	9
<i>A victory for First Nations and fish</i>	
Drought-Proofing Saskatchewan	10
<i>Smoke &amp; mirrors &amp; muddy waters</i>	
Groundwater – The Real Story	14
<i>What you see happening with the land is what you get in the well</i>	

## Toxics

One Local Hero's Long Struggle	4
<i>Against BC's Arsenic-Poisoned Forests</i>	

## Society & Technology

Travels in Guatemala	17
Some Ways Out of Here	28
<i>Review of Limits to Growth Update</i>	

## News & Regular

Letters	2
News Briefs	3, 5, 9, 12
Toxics Ink	13
Friends of Cortes Island	21
<i>Will that be paper or plastic?</i>	
MillWatch	25
<i>on markets &amp; local pollution</i>	

Cover by Ester Strijbos

Cover Photo: Killer whale - *Orcinus orca* - spy-hopping in the ice, National Oceanic & Atmospheric Administration (NOAA), NOAA Central Library  
Inside photo: Whale skull at Peggy's Cove, Nova Scotia.  
D. Broten

**Subscription Forms are on the back cover. Please take a subscription to support this magazine - Thank you!**

# From Our Dear Readers

## The Lakes, the Communities

Re: “Will the Lakes Survive?” [*Watershed Sentinel*, Nov/Dec 2004] This article was another very sad example of progress killing the environment on the West Coast of BC. When I read it, I immediately saw many similarities with other developments in this beautiful area. I think Mr. Mortimore’s statement, “*Many people don’t know an OCP from a PCB, and don’t care,*” nails the root-cause of the problem. Many, many people don’t want to participate in community issues. In many communities, we are still very selfish — we are more concerned about the hockey strike (a national tragedy), rather than caring about protecting a lake or a forest, or providing a decent shelter to all members in the community. It is necessary to keep educating our communities and our regional and municipal authorities on these issues, to make everybody understand why these things are so important to the future of our children. At the same time we need to find better ways to define a proper balance between “progress,” protecting our natural environment, and having jobs and shelters for all.

Perhaps it is time to make a special effort to change our self-centred attitude of NIMBY (which not only means *Not In My Backyard* but *I don’t care* is implicit) to CAMC! (*Caring About My Community!*)

*Norberto Rodriguez, Cortes Island, BC*

## Lots of Work

You sure put out a great magazine. I have learned sooooo much from it.

If we wanted to build a really sustainable society, it would take at least 50 years of work to make the shift. So much work, we would have trouble finding workers to do it.

*Baron Fowler, Saltspring Island*

*Ed. Note: Baron, who has been one of our distributors on Saltspring Island, is off to South Africa. Thank you for your help, Baron, and Bon Voyage!*

## Put the Blue Planet First

How much more will it take for society, especially the government and developers, to finally realize, and take action on that realization, that spaceship Earth’s life-sustaining environment will tolerate only so much human-based abuse?

Unfortunately, though, the almighty development/construction buck will always come first — unless, of course, we revert to some version of Plato’s Republic.

Really, all governments should consider the following pertinent question: What good is creating or preserving jobs (when developing pristine lands, for example)

The Watershed Sentinel welcomes letters but reserves the right to edit for brevity, clarity, legality, and taste.

Anonymous letters will not be published. Send your musings and your missives to:

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[editor@watershedsentinel.ca](mailto:editor@watershedsentinel.ca)

— “we’re creating jobs,” the rallying cry of politicians and such wannabes — when people are sick, dying or already dead because of environmental degradation?

It’s quite depressing and worrisome: How long will the “Blue Planet” remain ecologically viable?

*Frank G. Sterle, Jr. White Rock, BC*

## In Memoriam

Listening to the November 11th memorial services on CBC, one statement caught my attention: “You had died so that there would be no more wars.” Please, reflect!

Throughout human history one war has created the foundation of the next one. Soldiers on both sides fought either to satisfy the collective or personal greed of their rulers or in defense of their country against aggression. They died either because of their loyalty to their countries, or more commonly and truthfully, because they had been forced or otherwise obliged to do so...

[After World War Two,] the senseless postwar subdivision and reshuffling of ethnic and religious societies, and similar injustices, led to new wars and suppressions around the world. This process is continuing; there is no end in sight....

Wars may finally end when our suicidal indulgence in greedy exploitation and affluence-seeking destroys our world, or more optimistically, when our societies give up the untenable idea of unlimited affluence, when our economists abandon the discreditable concept of constant and sustainable growth, when our political, religious and other leaders stop misleading us and cease being motivated by the greed for supremacy, when there is reciprocal acceptance of and respect for the diverse cultural, religious, ethnic and other traditions around the world. As we remember those who died due to greed, prejudice or in justifiable self-defence, we should also face reality and do all we can to eradicate the roots of war forever!

The future is in the hands of us, voters! If our present leaders refuse to comprehend and cooperate, we should nominate and elect others who will! It is our basic responsibility to the people of this world. Particularly so as the ills of the world are primarily caused by our insatiably affluent ‘free democracies’ where voting is still possible.

*Frank Tompa, Pender Island, BC*

# Hydro Cancels GSX Pipeline

*Victory for Thousands Who Opposed Natural Gas Solution*

Declaring that “other options” would be more cost effective to supply gas for Vancouver Island, BC Hydro cancelled the proposed Georgia Strait Crossing (GSX) pipeline project in late December. The \$340 million natural gas pipeline had been proposed in 2000 as the best way to supply natural-gas fired electricity generation facilities on Vancouver Island.

Hydro now says that the demand for gas on the island is lower than anticipated and can be met from the existing gas pipeline while there are other less expensive alternatives to burning natural gas as a source of electricity. However, Hydro still plans to proceed with the now-privatised

\$280 million gas turbine generation plant in Nanaimo, only renewing the cables to the mainland which bring electricity to Vancouver Island in 2008.

But the GSX Concerned Citizens Coalition (GSXCCC) which was instrumental in delaying the project un-

til Hydro had time to reconsider, said the same economic and environmental arguments should now help cancel the proposed Duke Point Power gas plant.

The Coalition said cost effective solutions to meet the Island’s short-term energy needs are available: Norske and other large industrial users have offered to take action to compensate for the theoretical brief periods of time, estimated at a few hours per day over a week at most in the winter of 2007/08, when equipment failure could potentially cause a power shortfall.

“Over-sized and over-priced, GSX was doomed from the start,” said GSXCCC director Arthur Caldicott. “So many people on Vancouver Island, the Gulf Islands, the Lower Mainland and Washington State have fought long and hard against the pipeline project and they all deserve credit for this great victory today.”

The GSX Concerned Citizens Coalition has campaigned since 2000 against BC Hydro’s gas strategy for Vancouver Island.

— BC Hydro,  
GSX Concerned Citizens  
Coalition, December 2004

See “Whose Pipe Dream? BC Hydro Has an Urge to Burn,”  
*Watershed Sentinel*, December  
2000/January 2001



## The heroic efforts of volunteers

The breadth of public opposition included hundreds of people who attended five days of hearings in Port Alberni, 900 people in two days at North Cowichan, three massive public meetings in Nanaimo, more in Campbell River — all opposed to gas-fired plants in their communities.

Hundreds more expressed their pipeline objections at National Energy Board and Federal Energy Regulatory Commission meetings, hearings, information and scoping sessions in Victoria, Sidney, the Gulf Islands, Whatcom and San Juan Counties.

Thanks are due to these many caring and courageous residents who read voluminous reports, prepared briefs, participated in regulatory hearings, signed petitions, donated money and otherwise organized to warn of the significant economic and environmental flaws of this project. Without this effort we would still be saddled with a bloated white elephant impeding other future energy options.

Increasingly expensive, locally polluting and greenhouse-gas-producing, natural gas is not a sustainable path for our Island’s energy future.

*Peter Ronald, Director, Georgia Strait Concerned Citizens Coalition & Marine Habitat Program Co-ordinator, Georgia Strait Alliance, Victoria.*

## They Say They Just Want to Be Green

Eighty-seven per cent of Canadian voters support the use of green power as a source of electricity, according to a national poll on Green Power released in November by Oraclepoll Research on behalf of Pollution Probe of Toronto. Nuclear power is the preferred electricity source of only 5% of voters. At the bottom of the list is coal-fired power which is the preferred option for only 1% of Canadians. The telephone poll of 700 people had a margin of error of  $\pm 3.7\%$ , 19/20 times.

—[www.pollutionprobe.org/whatwedo/greenpower/index.html](http://www.pollutionprobe.org/whatwedo/greenpower/index.html)  
*Pollution Probe Press Release, November 2004*

# One Local Hero's Long War

**Beetles are killing BC forests. It's an environmental and industrial disaster. Ministry of Forests' solution? Inject thousands of unmarked trees with arsenic. Then, ignore the consequences as loggers fall the trees and beehive burners spread the arsenic sky-high.**

*by Delores Broten*

Appeals to common sense, the precautionary principle, the Environmental Appeal Board, public agitation and internal ministry reviews all failed Josette Wier. The Smithers resident, from her home in northern BC, has struggled since 2000 against the Ministry of Forests' (MoF) desperate attempt to use arsenic against the Mountain Pine Beetle infestation of BC forests.

Four million hectares of B.C. forests were attacked by the mountain pine beetle in 2002 (MoF) and NASA climate researcher Chris Potter now estimates the size of the infestation to be almost 10

million hectares. The beetle, a natural predator, thrives in the warm winters of recent years, and needs several weeks of deep freezing temperatures to control population growth. That hasn't happened for over a decade, probably due to climate change.

Although harvesting beetle kill, and potential beetle kill, is fueling a temporary boom for the interior logging industry, its implication for long-term sustainability of that industry is dire.

So the MoF, in its wisdom, desperation, or drug-dependency, decided to inject beetle-infested trees with monosodium methanearsenate (MSMA) in an attempt to halt the bugs' advance.

Enter Josette. "I was appalled," she says. "In France, I was a pediatrician and I knew what arsenic would do to children." Her angst grew when she learned the injected trees were being logged and their waste bark burned in beehive burners.

Wier used all the strings and levers available to the citizen fighting a lonely battle against a seemingly-insane bureaucratic action. Phone calls, letters, an appeal to the Environmental Appeal Board (hampered because the "pesticide" is currently approved by Health Canada, although not for burning), an investigation by the Canadian

Wildlife Service of woodpeckers accumulating arsenic from the beetles not killed by MSMA, all failed. The Forest Practices Board weighed in and

backed her up. Internal investigations and audits by the Ministries of Forest and Water Land and Air Protection agreed there was a problem with using the arsenic in areas where the trees were then logged. The Pesticide Management Regulatory Agency admitted it was re-evaluating the safety of MSMA, and the company refused to pay for further safety studies (Peculiarly, MoF, enamoured of its deadly fix, offered to pay for the work.) Nothing had any effect, and nothing made the bureaucrats or the media take notice.

Then Wier got lucky.

She filed a complaint with certification auditor KPMG (Performance Registrar Inc.) about Canfor's logging and burning of arsenic-treated trees, and about Canfor's treatment of her complaints.

**Her angst grew when she learned the injected trees were being logged and their waste bark burned in beehive burners.**

photo D. Broten

# Against BC's Poisoned Forests

Canfor proudly holds International Standards Organization 14001 (ISO) certification, which requires environmental management of their forest operations. ISO certification is pretty well a marketplace requirement for quality control. KPMG is the responsible auditor. Not surprisingly, the beehive burners aren't certified, but the wood products must be handled in compliance with all permits. MWLAP told KPMG that burning arsenic was definitely not included in the Canfor air pollution permits. KPMG (PRI) decided Canfor had been less than polite with Wier's "emotionally charged" complaints.

And voila! Bingo! The auditor decided it was all a bit too much.

KPMG has given Canfor 30 days to decide how it is going to stop burning arsenic contaminated wood waste in order to comply with its ISO 14001 certification. In addition, the auditor noted "the issues related to communication [with the public] will also be reviewed in detail during the next site visit to verify that the Company is taking steps to address this concern."

The ruling doesn't deal with other arsenic-injected BC forest areas.

Doesn't deal with outdated and dangerous pesticide approvals.

Doesn't deal with MoF or the new Chief Forester, Jim Snetsinger, the regional manager under whose watch this all took place.

Doesn't deal with all those kilograms, possibly thousands of kilograms, of arsenic out there in the trees, and the woodpeckers snacking on arsenic-flavoured beetles.

Nor does it help any children of BC affected by air-borne arsenic, nor the loggers and sawmill workers dealing with the trees.

Doesn't stop the next dumb idea coming down the pipe.

But you can bet the phone line is burning hot and heavy between Canfor headquarters and Victoria this month.

Salut, Josette!



Josette Wier runs *Chez Josette* bed and breakfast in Smithers BC. She is a pediatrician and a member of Canadian Association of Physicians for the Environment.



See Also: Forest Practices Board Report Nov 2004, *Nadina Beetle Treatments*: <http://www.fpb.gov.bc.ca/News/Releases/2004/11-12.htm>

Environmental Appeal Board:  
<http://www.eab.gov.bc.ca/pest/2001pes003b.pdf>

"Mountain Pine Beetle: Nature's Disaster Relief Troops," *Watershed Sentinel*, August/November 2001 and "What's the Buzz on Beetles?" October/November 2000

## Tembec Gets BC FSC Approval

Tembec has won certification from the Forest Stewardship Council, the system approved of by environmentalists, for logging operations on 140,000 hectares of forest land near Golden, BC. Tembec's Tree Farm Licence 14 is the largest BC industrial forest to receive FSC certification and is the first to be approved under new FSC standards set specifically for BC. The company produces 41 million board feet of lumber from the license area.

Tembec's eastern forests were FSC certified last year, and the company's products subsequently won a contract with Home Depot. Tembec said it was interested in further securing its markets with the eco-certification stamp, not increasing prices.

—*Vancouver Sun*, Nov. 2004

## Tsleil-Waututh Forestlands FSC Certified

The Tsleil-Waututh First Nation announced in November that the Forest Stewardship Council (FSC) has certified the Tsleil-Waututh's logging operations on 280 hectares of forestland in the Indian River Valley north of Vancouver. "The FSC certification represents a major milestone for us," says Leah George-Wilson, director of Treaty, Land and Resources for the Tsleil-Waututh First Nation. "We are very proud of our achievement in bringing a workable eco-forestry operation to even a small portion of coastal BC. Our staff, as well as our partners at Ecotrust Canada, have taken our dream of practicing ecosystembased management in the Indian River valley and made it a reality."

FSC is an international nonprofit organization founded to support environmentally appropriate, socially beneficial and economically viable management of the world's forests through independent forest management certification and marketplace labelling of certified forest products. More than 45 million hectares of forestlands have been certified globally according to FSC standards. The Tsleil-Waututh is the second First Nation in B.C. to receive the globally recognized FSC certification for socially and environmentally responsible forestry. The first was Lisaak Forest Resources in Clayoquot Sound. Currently a half dozen community forests, independent woodlots and First Nations have chosen FSC certification in B.C. These forestry operations cover 100,410 hectares.

—*Tsleil-Waututh Nation*, November 2004

# Seismic Testing Risks Marine Life



Humpback whale—photo courtesy of David Suzuki Foundation

***“Exploring” BC’s oil reserves would put the BC marine environment in jeopardy before one drop of oil is extracted from the ocean floor.***

*by Jay Ritchlin, David Suzuki Foundation*

Coastal communities, conservationists, First Nations groups and other concerned British Columbians breathed a little easier in December when the ‘Pridle report’ on oil and gas exploration on the BC coast was released. This report, one component of a federal review of BC’s 32 year-old offshore oil and gas moratorium, indicated that 75 per cent of BC residents participating in the review, and 100 per cent of BC First Nations groups contacted, are in favour of keeping BC’s coast oil and gas free.

Despite the report’s findings, a final decision on the moratorium is still pending. The provincial government and industry proponents continue to push for seismic testing – the “exploration” phase of oil and gas development – to proceed before a final decision is made.

Their rationale? They need more information. They need to fill the science gaps which, by their definition, means starting exploration. They say they only want to go and “take a look.”

Their solution? Begin exploration, with or without lifting the moratorium, and allow the government to go from there.

The truth is that this purported research means seismic testing, one of the most destructive elements of the offshore oil and gas industry. Seismic testing will only tell geologists where oil and gas *might* be found. This would then be followed by exploratory drilling, another high-risk activity. Lifting the moratorium would open the coast to both of these processes. This “exploration” isn’t nearly as benign as it sounds.

## What is seismic testing?

In the early years of seismic testing, dynamite was used to determine the potential reserves of oil and gas in a given offshore area. Today, seismic testing uses high-pressure air guns to blast the ocean floor, sending sound waves through the water, and causing reverberations deep within the earth. Seismic testing ships shoot between 15 and 20 air guns at a time (each air gun has a pressure capacity of 2,000 pounds per square inch) every 10 to 20 seconds across large areas where there may be potential for oil and gas deposits. These sound waves “bounce” off geological formations below the sea bed, and return to the surface, where they are recorded and the formations mapped on the seismic vessels.

## What are the issues with seismic testing?

Anecdotal evidence strongly suggests that seismic testing damages or kills many marine species. Norwegian fishermen have been complaining for years that catch rates decline when a seismic vessel enters their fishing area. Recently, hard science and a number of high-profile studies have drawn international attention to the serious long term effects of seismic testing on marine life.

In 2001, international attention was focused on Sakhalin Island, in Russia's far east, where a subsidiary of Exxon was undertaking seismic tests in critical grey whale habitat. At this time, the western Pacific gray whale had been declared a "critically endangered species" by the International Union for the Conservation of Nature (IUCN) after a team of Russian and American scientists found that the population was under 100 whales. Scientists further determined that seismic testing in the area was forcing these vulnerable whales off their feeding grounds.

In spite of this, seismic testing went ahead in the feeding areas, where whales were observed to be increasingly bony and emaciated. The International Whaling Commission (IWC) called for an end to seismic tests while the whales were feeding. Both international and local environmental groups continue to press the industry to stop expansion into whale habitat.

The impact of seismic testing on whale populations was not only reported in Russian territory. Reports came of fatal strandings of beaked whales in Mexico in 1998 and again in the Galapagos Islands in 2000. These strandings occurred at the same time that seismic testing was being conducted in nearby waters. In 2002, there were also reports of humpback whale strandings off Brazil, during an offshore oil and gas survey that used seismic blasts.

It is not only whale populations that are being adversely affected by seismic testing. In 2001 and 2003, record numbers of dead squid were found washed up on Spanish beaches. In both instances, it was found that geologists were conducting seismic surveys nearby.

Further study found that these squid died a particularly gruesome death, with hearts and stomachs ripped open, ruptured organs and disintegrating muscles. Not unlike the dead whales found around the world, these squid were

found to have badly damaged ears. Scientists hypothesize that this ear damage disoriented the creatures, causing them to float to the surface and suffocate.

This summer, international attention was again focused on the effects of seismic testing on whales when the IWC released a report pointing to "overwhelming" scientific evidence that noise from military sonar tests and from oil and gas seismic testing are indeed doing serious short and long term damage to whales.

The IWC also pointed out that the number of beached whales found may seriously underestimate the true extent of the damage done to whale populations — ongoing concern exists among scientists that the booming noise from seismic blasting can hinder whale-to-whale communications, affecting their ability to navigate, kill prey, and reproduce.

Closer to home, a new study released this fall by Canada's Department of Fisheries and Oceans found that female snow crabs showed short and long term damage, including hemorrhaging and detached reproductive organs, after a 12-day seismic experiment off Cape Breton Island. These findings have both environmental and economic significance for the important east coast crab fishery. In

BC's Queen Charlotte basin alone, the crab fishery is worth approximately 22 million dollars per year.



**Cuvier's beaked whale with hemorrhaging consistent with injury from intense sound.** — photo Vidal Martin, SECAC

## "Going out and taking a look"

Exploring for BC's oil reserves would put the marine environment in jeopardy before one drop of oil was extracted from the ocean floor. To lift the moratorium "for exploration purposes only" would be disingenuous, economically irresponsible, and potentially fatal for BC's rich assortment of marine mammals and other marine life.

The Queen Charlotte Basin, where much of the proposed seismic testing would take place, is acknowledged to have one of the richest marine floras in the world, supporting a variety of species that includes over 400 species of fish, 6,500 species of invertebrates, 121 bird species, and 29 species of marine mammals.

The distinct oceanographic conditions of BC's coast support the only known living glass sponge reefs on Earth,

*Continued on Page 8* ➡

↩ *Seismic continued*

in an area proposed by UNESCO as a World Heritage site.

The Scott Islands, also proposed for potential oil and gas exploration, have been recognized internationally for their priceless bird habitat. Over two million seabirds live and breed on the islands every year. Three species — Cassin's Auklet, Rhinoceros Auklet and the Tufted Puffin — have globally significant populations in this small area. BC's north coast is often likened to the Galapagos Islands for its ecological diversity. It attracts visitors from around the world for its unique and pristine environment. From sport fishing to whale watching, from kayaking to the multi-million dollar cruise ship industry, tourism provides more jobs to British Columbians than any other industry, and generates an estimated 9.5 billion dollars in revenues and 112,000 full-time jobs annually.

BC's commercial fishery — the lifeblood of many coastal and First Nations communities — would shoulder the greatest risk under oil and gas exploration. Recent statistics show that BC's wild fisheries generate 545 million dollars annually. With scientific studies suggesting that seismic testing can destroy the swim bladders of a variety of species of fish, seismic testing seems especially reckless

and short sighted.


Ninety per cent of the world's biomass exists in the oceans. Understanding this is key to understanding the broader impacts of seismic testing. From crabs to squid to fish to whales, all marine life exists in a delicately balanced ecosystem, that is already threatened by pollution, overfishing, and the effects of climate change.

Until now, the moratorium has protected BC's coast from disasters like the *Exxon Valdez* oil spill or the more recent spill of 170,000 litres of crude oil off Newfoundland. The continental US has had a moratorium in place on offshore oil and gas exploration since 1991. From Jeb Bush's Florida to Arnold Schwarzenegger's California, American policy makers and much of the American public believe that the risks far outweigh the benefits.

When considering the global ecological importance and significant economic spinoffs of BC's marine environment, it becomes clear that ours is a coast that requires stringent protection and ongoing advocacy — not a high-risk and low-benefit offshore oil industry.


**"Exploration" for offshore oil and gas isn't nearly as benign as it sounds.**

# BC *The British Columbian Quarterly* STUDIES



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BC Studies gratefully acknowledges the support of the Government of Canada through the Canadian Magazine Fund.

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# Victory for Homalco First Nation and for Bute's Wild Salmon

In December Fisheries and Oceans Canada (DFO) discontinued its environmental review of a proposed salmon farm in Bute Inlet, saying that the proponent, Heritage Aquaculture, has withdrawn its application.

In 2001, the Bute Inlet Downie Range site was proposed as an alternate location for environmentally problematic salmon farms in Alberni Inlet and Barkley Sound. The application met strong opposition from key stakeholders including the Xwémalkwu (Homalco) First Nation, the Georgia Strait Alliance, the Stuart Island Community Association, the commercial and sports fishing sectors, the eco-tourism industry and the Comox Strathcona Regional District, which denied zoning for the proposed site in August of 2001.

This past spring the Xwémalkwu (Homalco) First Nation and the Georgia Strait Alliance formed an official partnership to work collaboratively towards the restoration, protection and sustainability of Bute Inlet. "Salmon farming as currently practiced is not consistent with the Xwémalkwu (Homalco) vision of Bute Inlet or the recommendations of the Johnstone-Bute Coastal Plan," said Xwémalkwu Chief Darren Blaney.

In a follow up victory for First Nations and salmon on December 28<sup>th</sup>, the Homalco won an injunction under the Supreme Court Haida ruling, when a BC Supreme Court judge ordered Marine Harvest, the fish-farming arm of the Dutch multinational Nutreco, to stop putting Atlantic salmon smolts into its pens at the mouth of Bute Inlet. The site had been licensed to raise Chinook, a prized salmon native to the area. The fish farm is located directly in front of the band's traditional village and reserve known as Church House, at the mouth of Bute Inlet and on the

migration route of wild salmon that spawn in Bute's rivers.

The judge ruled that the provincial government had not adequately consulted with the Homalco about the company's application to switch to Atlantic salmon. The judge also ruled that there could be irreparable harm as a result of moving Atlantic salmon into a watershed such as Bute Inlet and that this irreparable harm should be avoided until a full hearing on the duty to consult was held in January. He also ordered a judicial review of the process which granted the fish farm license in 2002.

—Georgia Strait Alliance,  
December 2004

## Orcas Get US Endangered Protection

Canadian conservation groups celebrated in mid-December when the US federal government listed the Southern Resident population of orca whales under the US Endangered Species Act (ESA). Last year Sierra Legal, the Georgia Strait Alliance and the Western Canada Wilderness Committee joined their American allies in a successful court challenge to force the US government to list these highly endangered trans-boundary whales under the ESA.

The Southern Resident orcas live in the waters off the coast of British Columbia and Washington State. In Canada, this dwindling population was designated as 'endangered' in 2001 under the federal *Species at Risk Act*. Designating this population in US waters as endangered under the ESA will help to alleviate human-caused threats that have reduced the population to as few as 85 whales - a decline of 20% since the early 1990s.

—Georgia Strait Alliance, Western Canada Wilderness Committee,  
Sierra Legal Defence Fund, December 2004



# Drought-Proofing Saskatchewan

## *Smoke and Mirrors and Muddy Waters*

Being An Account of a Typical Meeting in the Life of a Sustainability Warrior

by Elaine Hughes

The Saskatchewan Agrivision Corporation (SAC) held the “Drought Proofing the Economy” meeting in Regina in early November, as part of the \$300,000 Phase One of the federal-provincial 50-year Water Development Plan for Saskatchewan. Red Williams and Al Scholz, SAC, began by pointing out that the solutions to the province’s economic problems all lead to water; we’re not making good use of it and, by ‘re-jigging’ current methods, we can find a balance between the economy, the environment and people.

Wayne Clifton and Graham Parsons, Clifton Associates, described how their 50-year plan would revitalize the rural economy through enhanced water use. This was followed by short presentations from Saskatchewan Forest Centre, Farm Credit Corp., the Blood Tribe from southern Alberta, Tourism Sask, Sask Mining Assoc., Sask Power. The Minister of Rural Revitalization, Clay Serby, was the featured speaker at lunch.

All participants acknowledged that:

- Climate change is a reality,
- The glaciers are melting faster than they can be regenerated,
- Saskatchewan suffers from drought 2 years out of 10,
- Saskatchewan’s water “flows right past us and makes no contribution to our well being,”
- In becoming the new food processing hub in Canada, southern Alberta (Feedlot Alley!) uses an ever-increasing amount of water from the same rivers that flow into Saskatchewan and,
- Although we say our water is not for

sale, the US will soon be wanting our water real bad!

So, part of the 50-year plan is to realize the full benefits of water development by building 15 dams and reservoirs on our rivers, Lake Diefenbaker already being in place. This will ensure a constant supply of water for development, “use it or lose it” for more gas and oil, more mining, more intensive cropping, more value-added processing, and more Intensive Livestock Operations (ILOs) for Saskatchewan’s “Green and Prosperous Economy.” Rural development, including processing centres, will be strategically placed in clusters around these irrigation systems. This activity is already occurring in the Outlook area.

**“I suggested that, for just a moment, we all step out of the little pink bubble we’d been sitting in all day.”**

Ann Coxworth of the Saskatchewan Environmental Society asked how well the presenters understood the role played by the underground aquifers in our ecological systems and how interference with the natural flooding process which regenerates many aquifers, rivers and lakes would affect those systems. In his response, Mr. Clifton indicated that the government was no longer keeping records of the aquifers and that he/they had no data on aquifers: where they are, how big they are, how much water is in them, etc. (In our opposition to the pig factories, we have maintained the

terrible threat that this lack of knowledge presents to our precious drinking water.)

Sandra Finley of Saskatoon stated that she was dismayed by the manipulation of information in Graham Parson’s Powerpoint® presentation. For example, she pointed out that the graph that shows the fluctuation in the water levels of the South Saskatchewan River in the period 1912 to present shows declining fluctuation, presented as a positive consequence of a large dam on the river: “What is the change in VOLUME of water in the river over the same period?” Graham Parsons: “Yes, the fluctuations have declined...” Ms Finley: “I did not ask about fluctuation. I clearly asked ‘What is the change in VOLUME of water?’” Graham Parsons never did answer the question. (The reality is that over the period 1910 to the present the volume of water has decreased by 80%. The flow level is 20% of what it was in 1910.) Several other questions drew attention to the selective nature of the information presented.

Following his luncheon address, Isabel Muzichuk of Buchanan asked the Minister of Rural Revitalization, Clay Serby, what his government was going to do about the ongoing toxic emissions from the hog barns at Rama that are making people in the area sick. The minister responded that our regulations are the best in the world and “If we’re producing 1 million hogs per year now, I want to increase that to 2 million hogs per year.”

Investors can now apply to Sask Water Authority for permits to build private dams. All the design work for

the High Gate Dam on the North Saskatchewan River west of North Battleford is complete. (The spokesperson for that project said in a recent *CBC Radio* interview that she had private investors ready right now to invest the \$700 M for it — private ownership of Saskatchewan’s drinking water.)

Campbell Eaglechild from the Blood Tribe Reserve in southern Alberta demonstrated the workings of their 25,000 acre irrigation project (the largest such operation in Canada, second in size to the world’s largest one belonging to a First Nation in the US). The water they draw from the St. Mary’s Reservoir supports 6,000 head of cattle and grows hay which is then shipped to the US and Japan as value-added products. He alluded to neighbouring farmers being unhappy with the tremendous amount of water used by the Reserve but he shrugged and carried on with his presentation. (I couldn’t help but contrast his ‘commercial’ attitude about water to that of the First Nations people at the recent Safe Drinking Water Foundation Conference. To them, water is a sacred trust to be protected and cherished.)

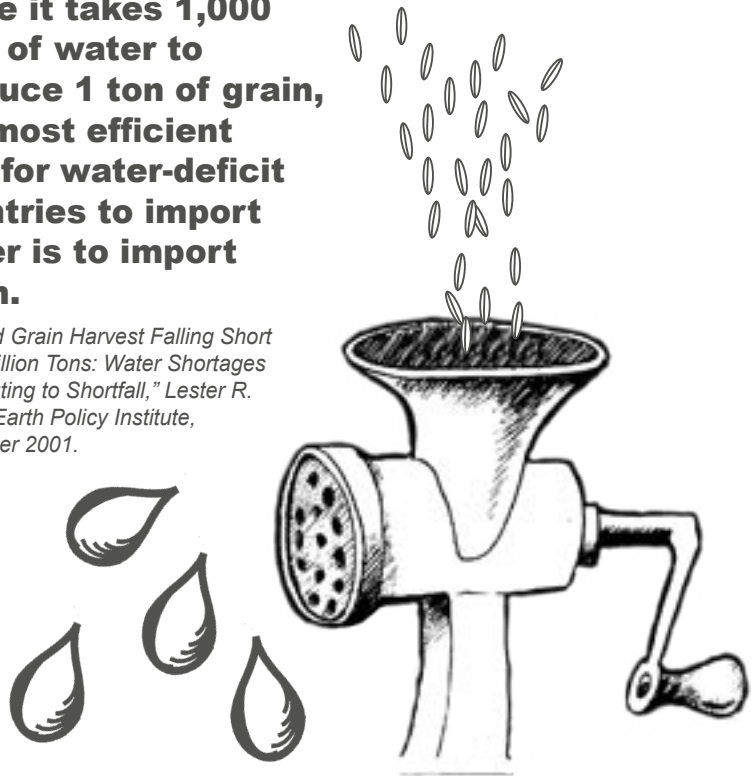
Mr. Patrick from Sask Power indicated that they had been working closely with the Clear Green Company that has developed a biodigester which uses the manure from one of the mega hog barns at Cudworth to produce electricity for the industry plus the power grid.

In my comments, I pointed out the significant economic benefits our small village receives from the tourism industry, and that changing or fouling our as-yet pristine natural surroundings and water would be “anti-economical” and devastating. I also noted that water is a **human right** and no one has the right to deprive people of it or hold them up for ransom over water! And yet, this 50-year plan appears to be all about privatization of our precious water.

I suggested that, for just a mo-

**Since it takes 1,000 tons of water to produce 1 ton of grain, the most efficient way for water-deficit countries to import water is to import grain.**

—“World Grain Harvest Falling Short by 54 Million Tons: Water Shortages Contributing to Shortfall,” Lester R. Brown, *Earth Policy Institute*, November 2001.



ment, we all step out of the little pink bubble we’d been sitting in all day and look at this issue from a different point of view. I added that if, in fact, they know very little about the location or size of our precious underground aquifers, I would then, on behalf of the yet unborn children of Saskatchewan, request that they apply the Precautionary Principle combined with a Polluter Pay Assurance Bond so that this whole scheme doesn’t backfire on all of us. (It’s disconcerting to note that there were no presentations on protection or conservation programs to educate the public about how to more wisely use the water we have.)

In his closing remarks, Mr. Williams offered their federally-funded report, *Water Wealth: A 50 Year Water Plan for Saskatchewan* for sale at \$100 each and concluded with a call to arms: “Let’s Get Going!” He then declared Mr. Clifton the Chairperson of the newly formed Saskatchewan

Water Council, the mandate of which is to “optimize development of Saskatchewan’s ample water resources.”

The evening concluded with supper and pre-recorded video messages from both Prime Minister Martin and Finance Minister Goodale, congratulating SAC on their ‘vision’ and on their report, and promising support for the project.



Most of the presentations, the report, the executive summary, and the terms of reference for the newly formed Saskatchewan Water Council are on the website: <http://www.droughtproofing.com/publications.html>

*Elaine Hughes of Archerwill, Saskatchewan, birdwatcher and protector of nature, actively opposes expansion of mega hog barns with the Stop the Hogs Coalition at [www.stopthehogs.com](http://www.stopthehogs.com) She is at [tybach@sasktel.net](mailto:tybach@sasktel.net).”*

# Arctic Changes Will Be Severe



Polar bears with dead seal

—Historic C&GS Collection, NOAA

An international team of 300 scientists, other experts, and elders have prepared “*Impacts of a Warming Arctic*,” a comprehensive analysis of the impacts and consequences of climate variability and changes across the Arctic, including the impacts from increases in UV radiation due to depletion of the ozone layer in the north.

Dr. Robert W. Corell, Chair of the Arctic Climate Impact Assessment, summarized the findings:

“The Arctic is now experiencing some of the most rapid and severe climate change on Earth. Over the next 100 years, climate change is expected to accelerate, contributing to major physical, ecological, social, and economic changes, many of which have

already begun. Changes in arctic climate will also affect the rest of the world through increased global warming and rising sea levels.

“These climate changes are being experienced particularly intensely in the Arctic. Arctic average temperature has risen at almost twice the rate as the rest of the world in the past few decades. Widespread melting of glaciers and sea ice and rising permafrost temperatures present additional evidence of strong arctic warming.”

Predicted changes include: A further warming of 4-7 degrees Celsius following on the last 50 years warming of 3-4 degrees C; Possible complete melting of the Greenland Ice Sheet with subsequent ocean rise of 27 metres; and probable extinction

of polar bears and seals

The full report can be read at <http://www.acia.uaf.edu/> A free summary brochure is also available.

## Human Rights

The Inuit of the world’s Arctic, along with other poor and threatened peoples, say that the dangers they face through climate change are a human rights issue. The Inuit are seeking a ruling from the Inter-American Commission on Human Rights that the United States, by contributing substantially to global warming, is threatening their existence. The ruling would have no legal force but would create a precedence for later legal action.

—*New York Times*, December 2004

## New tools to reduce our share of climate change

A couple of easy-to-use tools provide practical things to do to help protect nature and reduce our impacts on climate change.

*One Tonne Challenge*, developed by the federal government of Canada, is available at <http://www.climatechange.gc.ca/onetonne/english/>. There is a calculator to estimate and keep track of our greenhouse gas emissions. A *Tips Guide* identifies new actions you can take to reduce your greenhouse gas emissions. Many of the tips will help you save money, improve air quality and protect our environment.

The *Nature Challenge* from the David Suzuki Foundation, available at <http://www.davidsuzuki.org/WOL/Challenge>, describes the “10 most effective ways to help conserve nature and improve our quality of life,” including: reduction of home energy use by 10%; choice of an energy-efficient home, appliances and vehicles; meat-free meals one day a week; purchase of locally grown and produced food; and more. If we all work together, we can limit the extent of climate change. These tools can help.

## Solar Sales Soar

Earth Policy Institute reports that world production of solar cells soared to 742 megawatts (MW) in 2003. With 27 percent annual growth over the past five years, world production now stands at 3,145 MW, enough electricity for over a million homes. This growth is driven primarily by government incentives such as the Solar Roof programs in Japan, Germany and Italy and the Chinese commitment to renewable energy for rural China.

—<http://www.earth-policy.org/Indicators/2004/indicator12.htm>



### "Mock Neurotransmitter"

In December, the *Japan Times* reported results from the Japanese government's CREST (Core Research for Evolutional Science and Technology) program on the "Effects of Endocrine Disruptors on the Developing Brain," which found that a common herbicide increased male aggression in rats. Researcher Yoichiro Kuroda said that Glufosinate, widely used in the US as a super herbicide for herbicide-resistant genetically modified crops, is like a "mock neurotransmitter." The study reported decade-old research that found that the herbicide, commonly found as residue in food, seriously increased aggression in baby rats exposed to it. Kuroda also said PCBs are "mock hormones" that disrupt gene functions and neural-network formation in children, resulting in lower IQ scores and hyperactive tendencies.

— *GM WATCH, Organic Consumers Association, December 2004 from Japan Times*

### Indium and Your TV

Indium is a common natural element that forms a soft, silver-like metal found in the waste from zinc processing and tin ores. It is used, often in combination with arsenic,

cadmium, or chlorides, as a spray on the surface of liquid crystal displays and flat screens for TVs and computers, to electroplate lead alloys used in bearings to protect them against attack by lubricants, and in diodes and transistors.

Indium is known to be toxic; its compounds damage the heart, kidney, and liver, and may be teratogenic. The US National Institute of Occupational Safety and Health (NIOSH) notes indium chloride as a mutagen.

Environmental effects are not known.

What is known is that Japanese doctors have found the residue of indium-tin oxide (ITO) in the lungs of workers with fatal lung disease after a few years' exposure to the aerosol. Japanese researchers have reported severe lung disease in lab experiments with animals.

A British electronics industry spokesperson assured the BBC in December that consumers are safe because the screens were manufactured in the Far East and "by the time they reach the UK they are totally sealed." Disposal is governed by EU directives on potentially hazardous waste.

—<http://www.lenntech.com/>  
<http://www.cdc.gov/niosh/rtecs/nl155cc0.html#X>,

*BBC News Online, December 2004*

### On Track On Chemicals

Health Canada appears to be on track with its mammoth task, assigned by the *Canadian Environmental Protection Act* in 1999, to examine the health impacts of all 23,000 unscrutinized chemicals introduced into industrial life before 1988. The agency has bypassed corporate stonewalling to develop data from the public record and then prioritised chemical characteristics for study and action. The Canadian model may be used by the similar EU Reach program

—*Delores Broten,*  
*from Health Canada materials,*  
*November 2005*

### You Grow It, It's Yours!

On January 1<sup>st</sup>, a new German law will require strict provisions for those growing Genetically Engineered plants (GE, also called GMO, Genetically Modified Organisms), making farmers using GE plants legally responsible for the contamination of non-GE crops and obliging them to enter all land used for GE cultivation in a public register. At the same time, the European Union and its peoples continue to split over approval of GE crops. UK scientists have announced that GE herbicide-tolerant varieties of sugar beet and rapeseed (canola) are harmless, while in November, EU experts refused Monsanto's GE corn for the eighth time in a row and also refused to require member states banning all GE products to allow them.

—*Reuters, November 30, 2004*

### Mercury in Fish Review

Health Canada is reviewing its fish consumption guidelines on mercury due to new scientific evidence about the impact of mercury on child development. Children can be exposed to mercury either through blood in the placenta or in mothers' milk. Airborne mercury, from sources such as coal burning and garbage incineration, is transformed to a biologically active form by bacteria in water. Many freshwater fish in lakes across the country are already subject to consumption advisories due to high mercury content.

The US Environmental Protection Agency has now advised women of childbearing age to eat no more than 12 ounces of seafood a week, due to estimates that over half a million children in the US are exposed to dangerous levels of mercury via their mothers. Even low-level mercury exposure can lead to lower intelligence and learning disabilities. [See "Mercury: It's Global; It's Local: It's Nasty," *Watershed Sentinel*, July-August 2004]

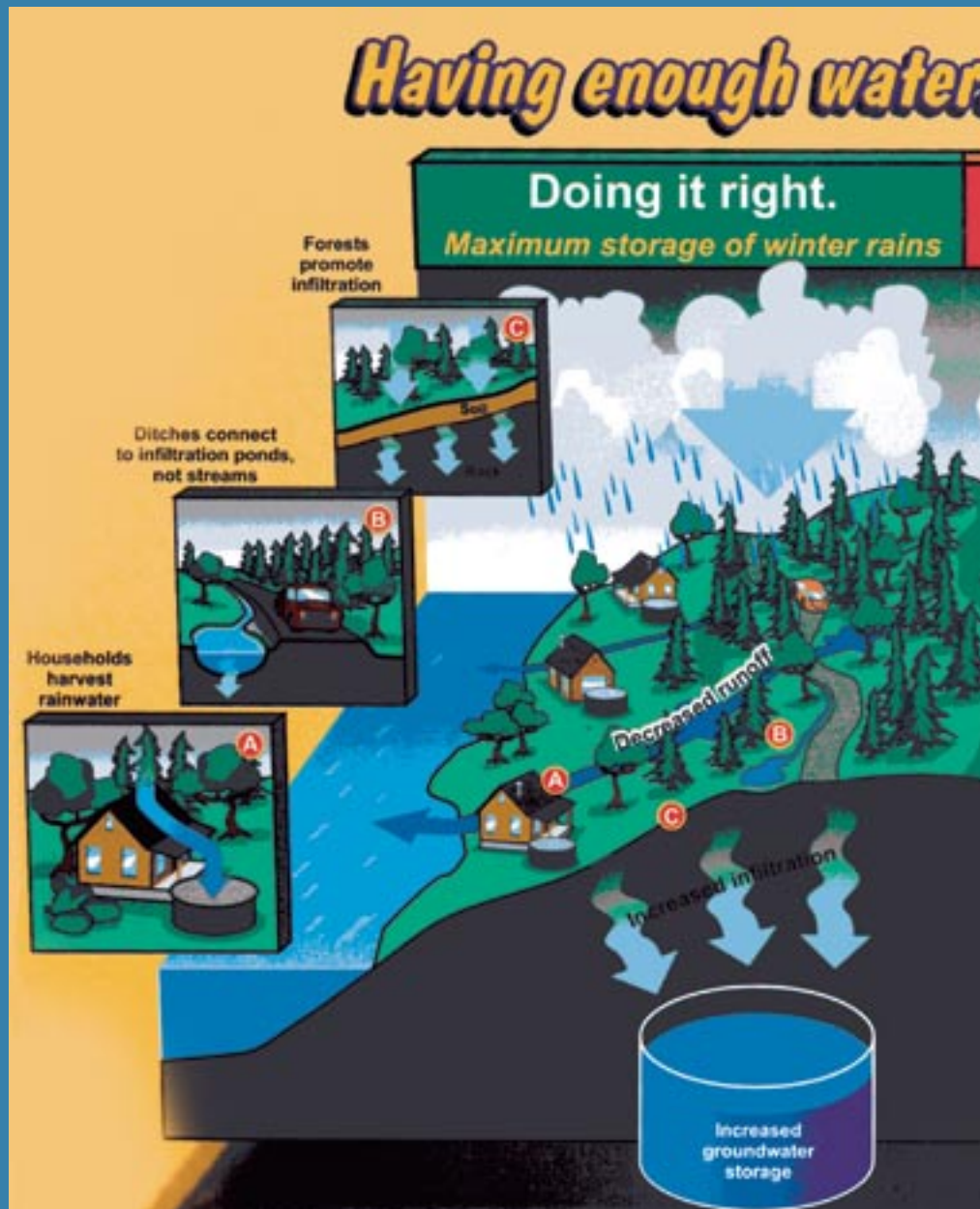
—*Canadian Press,*  
*November 17, 2004*

# GROUNDWATER

**C**ommunity discussions regarding local groundwater supplies can often be complicated by conflicting claims about the nature of groundwater and how human activities may or may not affect groundwater supplies. This is not surprising. None of us can see the underground groundwater system. What we know about groundwater comes by observation of wells and springs. So groundwater remains a rather mysterious subject.

For example, some Gulf Island residents believe that their groundwater flows underground from far away - either from Mt. Baker or Vancouver Island or the Mainland. Scientific evidence, however, would suggest something quite different - island groundwater is rainwater that has percolated down into the ground. In other words, each island produces its own groundwater. Is the "Mt. Baker" myth just a harmless tale? Perhaps it is not. A community that imagines its groundwater flowing up to their island from far away might not see a connection between land use practices on their island and the quality and quantity of their groundwater resource.

The purpose of the *Gulf Islands Waterscape poster* is to clarify what we know about Gulf Island groundwater and the potential impacts on groundwater by human activities, based on our best available science. The poster was developed by federal and provincial agencies in partnership with the Islands Trust, groundwater professionals, and Gulf Island community members. The agency partners are Natural Resources Canada (NRCan), Environment Canada, and BC Ministry of Water Land Air Protection. Support also came from the BC Groundwater Association, the Canadian Water



*New groundwater information poster for Gulf Islands - by Bob T*

Resources Association, and BC Ferries. Community consultation included two public design workshops attended by over 70 people, and ongoing participation from an advisory committee.

The poster content is available on the internet at [www.islandstrust.bc.ca](http://www.islandstrust.bc.ca) (see link under "Stewardship Programs") and can be ordered through the Geological

# THE REAL STORY



Furner, Richard Franklin, Murray Journey, and Shannon Denny

Island ([www.bowenland.info/waterscapes](http://www.bowenland.info/waterscapes)). The water poster series follows similar public education posters by Natural Resources Canada and partners on community geoscience issues ([www.geoscape.nrcan.gc.ca](http://www.geoscape.nrcan.gc.ca)) and regional climate change issues ([www.adaptation.nrcan.gc.ca](http://www.adaptation.nrcan.gc.ca)). Similar water posters are under development for the Bow River Basin (Calgary region) and the Okanagan Basin.

So what did we consider the essential generalizations about groundwater on the Gulf Islands? All of these are illustrated on the poster. We list them below.

**#1 All our water comes from the sky.** Rainwater feeds the fresh groundwater zone under every island.

**#2 Groundwater and surface water are one connected, interdependent system.** Surface water feeds the groundwater system through percolation. Likewise, groundwater springs feed most streams. That's why streams continue to flow long after the last rain.

**#3 We have a storage problem rather than a supply problem.** We get lots of winter rain. But most rainwater flows quickly to the sea in streams, or is lost to the atmosphere by evaporation

and transpiration of forests. Only a small amount is stored in lakes and wetlands, percolates into groundwater storage, or is captured in roof-fed cisterns. Harvesting rainfall from roofs, a practice common in many dry climate communities, is an effective way for individual homeowners to deal with summer water shortages.

Survey of Canada in Vancouver at (604) 666-0529 or [gscvan@nrcan.gc.ca](mailto:gscvan@nrcan.gc.ca). Further information on groundwater is available at [wlapwww.gov.bc.ca/wat/gws/gwis.html](http://wlapwww.gov.bc.ca/wat/gws/gwis.html) and [www.bcgwa.org/education.htm](http://www.bcgwa.org/education.htm).

The Gulf Islands water poster is the second in a new water poster series by NRCan and partners on community water issues. The first poster was for Bowen

*Continued on Page 16* ➔



**#4 A limited zone of fresh groundwater underlies each island.**

The fresh groundwater zone is surrounded and underlain by salty groundwater.

This zone of fresh water expands as it is fed by winter rains, and shrinks in the summer as water is lost through springs, forest plant use, and wells.

**#5 During our dry summers, we depend on stored winter water.** And our islands go dry just as our visitors arrive. So demand for water peaks just as our supplies dwindle.

**#6 Conservation is crucial.** The easiest way to increase supply is to decrease demand. We need to shift from wasteful homes to conserving homes.

**#7 Nature needs water too!** Nature has specific water needs – stream riparian and wetland communities depend on a certain seasonal water supply. Excessive pumping of wells can reduce groundwater flow to streams and wetlands. These ecosystems provide us valued services – water filtration, water storage, wildlife and fish habitat, aesthetic values.



**#8. There are no underground lakes and streams.** Groundwater occurs within small cracks in rock, and small pores in gravel and sand. Water-filled fractures are very irregularly distributed underground.

When nearby wells produce very different amounts of water, this likely reflects the different number and connection of water-bearing cracks intersected by each well.

**#9 An island's groundwater system is a shared resource.** Excessive pumping of a well or wells can cause the water table to fall excessively, causing nearby wells or streams to go dry.

**#10 Saltwater intrusion** can occur where excessive pumping of fresh groundwater from wells causes the boundary between fresh and salty groundwater to move inland or upwards, allowing salty groundwater into wells.

**#11 By protecting our land, we protect our water.** Each water-supply lake, reservoir, or stream has an area of

land referred to as its watershed area. The water supply is fed by surface runoff from this watershed. By protecting the land of the watershed area, we protect the water supply. Likewise, each groundwater well has a capture zone. Within the capture zone area, surface waters that percolate down into the groundwater system may enter the well. So by protecting the capture area, the well waters are protected. A groundwater professional may be required to determine the capture zone of a particular well.



**#12 There are many ways to increase storage.** For example, protecting island forest lands maintains the recharge of surface waters to island aquifers. Road-ditch water can be directed to infiltration pits that recharge groundwater, rather than directing ditch water to streams that flow to the sea. Increasingly popular are households that harvest their roof-top water into cisterns. This supply is available to any island household!

**#13 Keeping surface water clean is just common sense.** Best practices exist for almost all human activities. These “best practices” reduce the risk of contamination to surface and groundwaters. For example, livestock should be fenced out of streams, runoff from

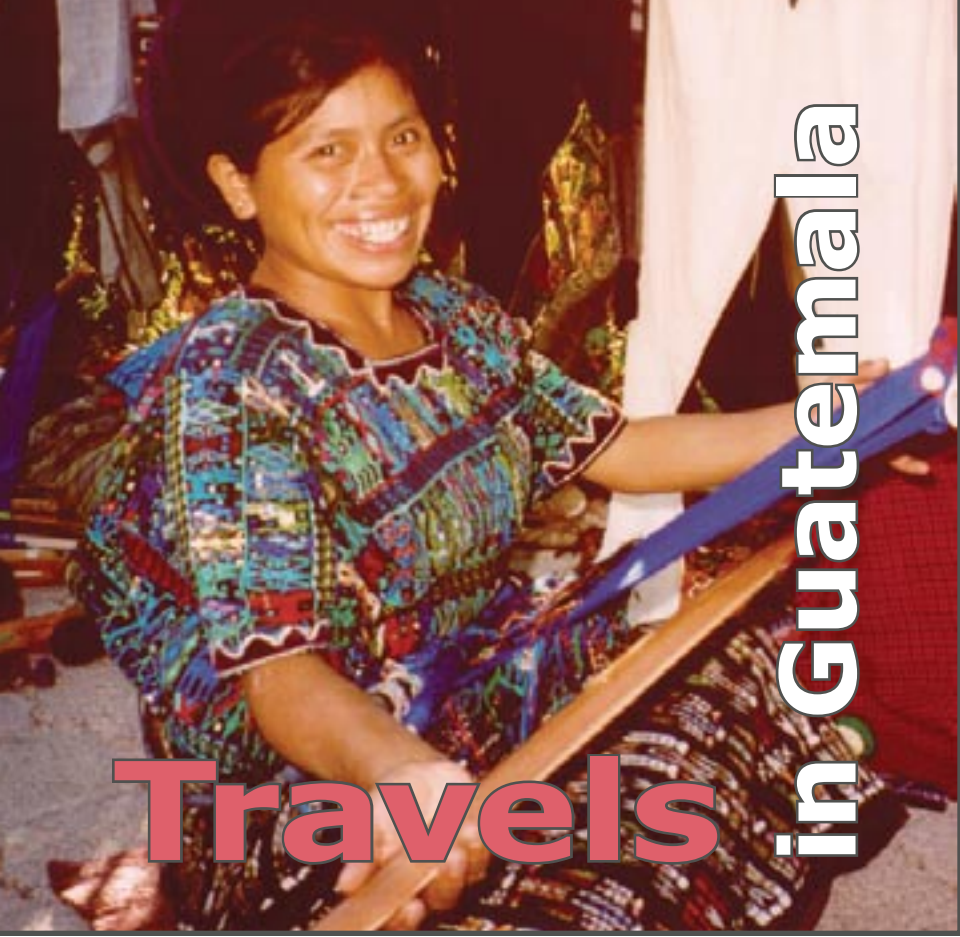
road and site construction should have silt traps, pesticide and herbicide use should be reduced or eliminated, and heating oil tanks should be above ground and include containment.

**#14 Groundwater is often contaminated by poor well-head protection.** If a septic field becomes plugged, septic effluent can rise to the surface and flow overland. If it encounters an unsealed well, it can flow down the well and enter the groundwater supply.

**#15 There are safe wells and unsafe wells.** A safe well has a well cap, is sealed by grout, and protrudes from a mound so that surface waters flow away from the well head.

*Bob and Murray are scientists, and Shannon is a GIS specialist, with Natural Resources Canada in Vancouver. Richard is a graphic artist in North Saanich, B.C.*





FEATURE

lorn next to a large, colourless plaza where the locals appeared dejected. Inside, the place stands mostly empty as government moved out some time ago. The once grand stained glass windows are now being restored after most were destroyed during the war. We joined up with a small group being led by an English-speaking tour guide who brought us into the now-covered inside courtyard where the daily “changing of the rose of peace” was underway. A heavily armed honour guard removed yesterday’s rose and replaced it with a new one, in a ceremony that has occurred daily since the country’s peace treaty was signed in 1996.

We left the city later that morning to go to Antigua, the ancient colonial Spanish town that is now a popular tourist destination. When a major earthquake nearly levelled what was then the capital in the mid-1700’s, the government moved to Guatemala City. Some of the churches still lay in

ruins from this earthquake, but most of the town has been re-built and its cobblestone streets wind past ancient stone walls that now house gift shops, Spanish schools, restaurants, travel agencies, hotels and even a McDonalds and Burger King! After one night here we headed to the Volcano rimmed Lake Atitlan to experience the Mayan culture and visit our friends.

We ended up hanging out in the tourist town of Panajachel for four days while we waited for our friends to arrive from Canada in their truck. One day was spent at the famous craft market in the mountain town of Chichicastenango, and another day hiking in a small nature reserve

Continued on Page 17 ⇨



**W**e have chosen November as our month to travel, in part to escape the pre-skiing and post-gardening blahs and to make up for all those years that we did not travel while we were busy raising a family and working on environmental causes.

We make an effort to use some of our travel time to learn more about the rest of the world. This year we chose to go to Guatemala to visit friends who live there and to see some Mayan ruins, before returning to Costa Rica to explore some parks we missed during our last trip there two years ago.

Guatemala is not a country for the faint of heart. In order to travel there, one must be willing to tolerate the stark contrast between the wealthy few and the poverty of many as well as the sadness of a people still recovering from a brutal war. Travelers also have to endure the diesel smoke, the pollution, the crowds and the ever-present dangers in the city and in the country. Most tourists avoid Guatemala City and usually head to the town of Antigua as soon as they get off the plane. Because we arrived so late in the evening, we chose to spend the night in the heart of the city at a very old, and once grand hotel.

The next morning we walked down a very narrow street crowded with vendors to visit one of the few sites to see in the city, the palace. It stands somewhat worn and for-

Text and Photos by Jim Cooperman

← *Travels continued*

near the lake.

Since most of Guatemala has had human settlement for thousands of years, most of the nature reserves, like the one we visited, are restoration areas where nature is quickly reclaiming former plantations or fields. From the displays at the reserve, we learned about the enormous mistake that has negatively impacted the lake's ecology. Non-native fish were introduced to the lake in the early 1960's; these bass and tilapia quickly consumed all the smaller fish resulting in the local extinction of the native fish and nearly 20 species of birds, including some rare populations of grebes.

Once our friends arrived home to their lakeside cottage near the town of Santiago, we spent six glorious days enjoying the beauty of the area and meeting some Mayan villagers and local expatriates. On our first evening there, we walked into town to participate in a traditionalist's celebration for Maximon, the patron saint of Mayan sorcerers. We were ushered into a small room where a marimba band was playing loud music. After downing some obligatory shots of cane liquor, we danced with a few Mayan ladies as the room filled with smoke from the incense burning in front of the small statue of Maximon. We left as more people were arriving and the chanting began. The ceremony would go on all night, but for us the smoke was unbearable.

**Santiago was one of the worst hit areas** during the civil war that raged in Guatemala in the 1980s. Over 3,000 people were killed in this village, most of them community leaders. It was the scene of massacres where the army shot many of the townspeople and even the local priest (Father Stanley "Aplas" Rother) was shot dead because he supported the local people. Yet the people here actually fought back and eventually drove the army away with pitchforks and machetes. A few of the soldiers were even jailed for the shootings. Despite the poverty and the sadness that underlies this community suffering through a "post-holocaust" phase, it is still a vibrant artistic community filled with tourist shops selling colourful complex weavings, intricate carvings and magnificent paintings.

**The Mayan culture is also very alive here** especially amongst the women who mostly all wear traditional dress and speak the local Tzutuhil dialect. But cultural change is coming all too quickly here as young people play computer games, consume junk food and watch westernized TV. And this community, like many others in Central America, is overrun with Evangelistic churches, camps and missions. We heard from some Canadian health care workers during one of our many boat trips, that an increase in AIDS and

teenage pregnancies is due in part to evangelistic pressures to reject all forms of birth control. And when we left the country, we were amazed to see so many adopted (or perhaps purchased?) Mayan babies heading back to the USA with their new parents.

Many of the expatriates that live in and near Santiago are also part of this artistic scene. A number of them have created art and craft based businesses that employ the local people. One lady has established a very successful weaving cooperative that produces high-end fashion products for shops around the world. Another woman produces intricate bead work also for exclusive stores, while another photographer and painter couple team up to produce coloured black and white photo prints that are sold in shops throughout the country. Their homes, overlooking the volcano-rimmed lake, are also very creative spaces built mostly from stone and timbers by local Mayan craftsmen.

Environmental problems seem minor when compared with all the social problems that prevail in this country where indigenous people are still suffering under the weight of massive oppression. Yet, pollution is a major issue and adds to the health problems created by a lack of sanitation. The volcanic soil here is still rich and produces abundant crops but the farmers are now addicted to the use of pesticides. Everywhere we walked, we saw young men spraying herbicides, without protection, on tomatoes, beans and squash. These chemicals end up in the lake and, along with sewage and laundry soap, make the water unsafe for drinking. The lake itself has dropped over 15 feet in the last two decades, in part due to lack of rainfall caused perhaps by climate change. There are minimal efforts for recycling, which means millions of plastic containers (including the many water bottles) go into the waste stream. Canadian mining companies, including subsidiaries of INCO, have also contributed and continue to contribute to the environmental degradation of the countryside as well as the violence against the local people (see [www.incowatch.ca/report/10072003-4](http://www.incowatch.ca/report/10072003-4)). There are also now serious complaints about Glamis Gold's Marlin Project in the southwest of the country for its probable environmental and social impacts (see [www.miningwatch.ca/newsletter](http://www.miningwatch.ca/newsletter)).

One of the highlights of our stay in Santiago was the hike we took with the amateur archaeologist son of two of the expatriates, into "Cutinamat," which was once the ceremonial centre for the region's Tzutuhil people. We learned how these people migrated from Mexico around 900 BC and developed a strong civilization that was centred near what is now Santiago and was based on the wealth of the ca-

**The volcanic soil here is still rich and produces abundant crops, yet the farmers are now addicted to the use of pesticides.**

cao bean. The Tzutuhil were one of the last Mayan groups to be conquered by the Spaniards in 1538. When the friars arrived in 1538, the great stone temples and pyramids in places like Cutinamat were destroyed and much of the usable stone was used to build the local churches and colonial buildings. We hiked up through the cornfields and garden plots that now cover the ruins and saw a few carved stones and the remains of some temple stairs. What little was left of this once great Mayan city-state after the Spaniards destroyed the buildings has been since taken for sale to collectors. Nonetheless, there are pottery shards still found everywhere in the soil and whenever a hole is dug, most often bones and other relics are found.

Even though we have now been home nearly a month, we still often think back about our travels to Central America. The most enduring memories are not flower filled views but the memories of the always friendly and gracious Mayan people who in some ways actually seem happier than their overfed northern neighbours. We look forward to hearing from our friends in Guatemala to find out how all the people we met are faring. As Guatemala slowly recovers from one of the most repressive periods in its history,

tourism is becoming an important and growing part of its economy. Hopefully this article will help entice some readers to travel to this culturally rich country.

[Next issue: The ruins of Tikal and the rich biodiversity of peaceful Costa Rica]



Further Reading: *Silence on the Mountain: Stories of Terror, Betrayal, and Forgetting in Guatemala* by Daniel Wilkinson, *Scandals in the House of Birds: Shamans and Priests on Lake Atitlan* by Nathaniel Tarn, and Martin Prechtel, *Secrets of the Talking Jaguar* and *Long Life, Honey in the Heart* by Martin Prechtel.

Photos:

Despite their sad history, the friendly Mayan people always appear happy.

Strong winds blow often across Lake Atitlan. From the small, peaceful town of San Pedro, three volcanoes; Toliman, Atitlan and San Pedro can be seen.

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## Global Markets and Local Pollution

### Crack in the Norske Stack

NorskeCanada Crofton's power boiler developed a crack in the exhaust stack in late December. The *Cowichan News Leader* on Vancouver Island reported that an employee noticed the stack was swaying in the wind more it was designed to do, due to a crack that went about 120 degrees around the stack. The company said no extra emissions came out, and the stack has been braced, allowing the mill to operate as usual.

—*Cowichan News Leader, December 2004*

### Chilean Swans

Locals in Valdivia Chile are blaming a new local pulp mill for the death of thousands of black-necked swans in a nearby sanctuary. Scientists say the birds may be starving since a massive die-off of their prime source of food, a Brazilian waterweed known locally as luchecillo. But townspeople believe the culprit is the \$1.2 billion Arauco pulp mill, which began operating in February upriver from the wetland sanctuary. The birds are not an endangered species, but their death is a national embarrassment and a flashpoint for concern about the mill and its use of resources.

—*Reuters, January 2005*

Clean Air Concert Tax Receipts have now been mailed. Contact the Reach for Unbleached office if you did not receive yours; many were returned by the Post Office.

## Office Paper Buying Club

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### Office Depot Works with Norske

The Office Depot is working with NorskeCanada and Price WaterhouseCooper to develop an "independent chain of custody tracking system" for its North American marketing papers. For Office Depot to consider paper as environmentally preferable, it must contain postconsumer waste (PCW) recycled content or certified content, containing fibre from forests that are verified as responsibly managed by a "recognized forest certification standard."

—*Office Depot, November 2004*

### Kleercut.net

In November, Greenpeace and Natural Resources Defense Council launched a campaign targeting Kimberly-Clark as the world's largest manufacturer of tissue products such as Kleenex, complete with a spoof website at [www.kleercut.net](http://www.kleercut.net). The campaign is aimed at getting the company to use significantly more post-consumer recycled paper or agricultural residues in its products and give up its primary role in destroying Canada's boreal forest.

—*Greenpeace, November 2004*



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# Winter Reflections

## On bringing home the groceries

**A**nother holiday has passed followed by yet another January of reflections on the consumerism of the season. Yes, I also am guilty of the self-imposed pressure to “make good” under the Christmas tree. Old habits and vague childhood memories of how things could have been clung to me as I joined the frantic swell of holiday shoppers crooned to by Bing and Perry.

This year I did manage to restrain myself and have actually not gone into the New Year in debt. So even though I chose smaller and less, when I surveyed my well-hidden stash in order to sort and wrap, I was astounded by the number of plastic bags that I had amassed in the process of hauling the loot home. I know I should bring bags from home; I often say no to the cashier when they ask if I need a bag. I also try to spare trees by choosing plastic over paper but I’m never quite comfortable with the decision.

Brian Halweil of Worldwatch Institute says that “Compared with paper bags, producing plastic ones uses less energy and water and generates less air pollution and solid waste.

Plastic bags also take up less space in a landfill.”

On the other hand, they are manufactured from petroleum and often never make it to the landfill. Instead, they litter our roadways, forests, and beaches, sometimes to the detriment of birds and other creatures.



Here’s another twist. In his article *Paper or Plastic? What’s the environmentally correct choice?* Aviya Kushner quotes Peterson of the Sierra Club. “If you recycle your bags, but drive your SUV to the grocery store, the gas-guzzling vehicle is having a

much larger impact. And what you’re buying there is important too. If it’s an artificial cheese product, that’s not helping either. What you drive and what you eat are the two biggest decisions you can make, along with how much you drive. The third biggest factor is your household – how big your house is and how insulated it is.”

Okay, so this bag stuff may just be a drop in the bucket, but the following points taken from *Good Stuff?* provide rich food for thought.

- Factories around the world churned out a whopping 4 - 5 trillion bags in 2002, ranging from large trash bags to thick shopping totes to flimsy grocery sacks.
- North America and Western Europe account for nearly 80 percent of plastic bag use.
- Each year, Americans throw away some 100 billion polyethylene plastic bags. (Only 0.6 percent of plastic bags are recycled.)

Imagine what this would mean if they/we chose paper over plastic? The next time I head to the stores, I’ll be more diligent and check that I have my stash of recycled or, better yet, hemp canvas bags handy.

**For more ideas on responsible consumerism, go to [www.worldwatch.org](http://www.worldwatch.org) and look for the free, downloadable pdf, Good Stuff?**

The ramblings above were from the desk of Kathy Smail. If you would like to add your thoughts or would like more information, please contact the FOCI Resource Centre. Phone: 1-250-935-0087 Email: [foci@island.net](mailto:foci@island.net) Mail: Box 88, Whaletown BC, V0P 1Z0

**T**his year’s winner of the Jo Ann Green Environmental Award is Delores Broten. From the Cortes Island Forest Committee and FOCI to Reach for Unbleached and the *Watershed Sentinel*, Delores’ ongoing work as an environmentalist has had profound impacts both on Cortes and off. She continues to inspire folks all across Canada. Congratulations Delores!

*Our 2004/2005 Board of Directors includes Chair Hubert Havelaar, Vice Chair Norberto Rodriguez dela Vega, Secretary Myann Woolley, Treasurer Ted Bannister, and Directors at large: Richard Andrews, Garvin Morris, Carol Tidler, and Fran Woodcock.*

# Watershed Down



Photo by Michael Copland

**T**here is a certain path not far from where I live in Shawnigan Lake. It curves up the mountainside where the ferns spill over a small stream shadowed by stately cedar and fir. But as the trail ascends, an ominous brightening warns of an impending change. At the final bend, the sylvan reverie is ruptured abruptly as the light exposes a scene of sombre desolation. The little creek, now shorn of its protective foliage, trickles forlornly through the thorny wreckage of a clearcut.

## THE LAND

by Mary Desmond

**D**espite the presence of a nearby sign admonishing, “Caution: Water Intake Downstream,” no one would ever guess that nestled in the valley below lies the “community watershed” of Shawnigan Lake. This official designation, bestowed by the Ministry of Forests, allegedly protects watersheds such as Shawnigan which supplies drinking water for 8,000 to 10,000 people in the Shawnigan-Mill Bay area, from the most harmful excesses of logging. But those who have witnessed the ecological mayhem evident on these mountains have a hard time accepting its legal sanction by the very authorities charged with protecting public drinking water.

This is a theme recurring with weary familiarity throughout British Columbia’s community watersheds, especially those whose forests are privately owned and thus at the mercy of the woefully inadequate provincial *Private Forests Practice Regulation (PFPR)*. Vancouver Island and the Lower Mainland contain several communities [Sunshine Coast, Saltspring, Nanaimo, Shawnigan, and others] held captive by corporate giants whose large private holdings are often the unfortunate legacy of the original railway grants. In the Nanaimo watershed tons of chemical fertilisers were used surreptitiously, causing sickness among the forestry workers. There, habitat for the once-thriving marmot has been so severely eroded that this creature is now trivialised as a “cute” mascot of endangered wildlife. These domains are ruled like medieval fiefdoms by the timber companies, TimberWest and Weyerhaeuser, etc., with only the barest of restraints conceded by the *PFPR*. This edifice of appeasement seems to be designed to alleviate any fears that environmental measures might infringe upon company profit margins.

The significance of protecting wetlands [bogs, marshes, swamps] and riparian [river, stream, and lake] areas – landscape features that regulate and refine water flow and quality, obvious values for watershed health – is virtually dismissed. Even though wetlands prevent droughts in the summer and floods in the winter, Weyerhaeuser has located a road centre ribbon in a swamp on one of its cutblocks. Under the anemic auspices of the *PFPR*, Division 3 – “Specific Requirements for Fish Streams and Water Supply Areas,” a modest 40 trees each side every 200 metres of a large stream [at least 3 metres wide] must be retained. The retention level is even more meagre for small streams [more than 1.5 metre but less than 3 metres], as the amount of trees retained is reduced to 20, hence the lack of meaningful riparian buffer zones. As for wetlands, their existence is conveniently ignored, as are the many small seasonal streams whose measure is less than 1.5 metres. This assumption, that small streams don’t matter, contradicts the findings of American and Canadian scientists engaged in studying the effects of timber harvesting on fish habitat and watershed

processes. In his paper, *Riparian Zone Protection for Small Streams: A Brief Review of the Literature*, Tom Bradley of the Silva Forestry Foundation quotes from several such authors, forming the following conclusion:

*Of all the issues surrounding riparian areas...Silva maintains that protection for smaller streams is the most important. All water features, including small and ephemeral streams, require a degree of protection from logging.... entire hydrologic systems must be carefully maintained to protect fish habitat. ...small creeks are a critically important part of a watershed.*

Not that the logging standards are more than a notch higher for Crown lands under the jurisdiction of the *Forest Practices Code (FPC)*. At the western-most reaches of the Shawnigan watershed – a stone’s throw from the sacred precinct of the CRD watershed – lies cutblock 30-3-D, part of TimberWest’s TFL 46 license. There, thin rows of cedars slump over a coffee-coloured stream like a drunken honour guard. The riparian buffer zone proved completely inadequate and, blown over by the winter winds, released all the sediment from the upended root sections into the stream below. By the side of the road, heaps of recently cut small to medium sized logs are stacked with signs warning against illegal activities, such as firewood cutting. The size of the logs reveal their relative immaturity and guarantees that the higher market value for denser, mature timber will never be achieved.

But our biggest bone of contention is the drastic loss of forest cover that once protected our reservoir. Almost 75% of the forests surrounding the lake are privately owned, leaving it easy prey for quick, irresponsible extraction, followed by the logs being exported and the land being flipped for real estate. Once the trees are down and the houses are up, the forestry sector jobs are lost forever. This sequence illustrates a paradigm of corporate supremacy triumphing over community welfare: Not only is the landscape being liquidated, but also the livelihood of future generations. During the past decade, as much as 65% of the good quality mature forest in the Shawnigan watershed has been erased. Shawnigan Lake Watershed Watch (SLWW) members monitor the various parts of the watershed almost daily, and report logging ribbons and surveyor’s string beribboning the region so that it resembles a large, doomed birthday cake about to be cut and consumed. At present, activities appear to be reaching a frenzied crescendo, with seven separate operations recorded since last September. We fear

**With wanton audacity, the last few fragments of mature second growth forests, classified as endangered ecosystems by the provincial Conservation Data Centre, are about to fall prey to the profit lust of the timber privateers.**



Photo by Michael Copland

Winter 2003: Malloch logging on Mt. Baldy

this immediate assault will surpass an earlier onslaught of logging that occurred early in the last century, provoking even worse repercussions. In the late 1920s, when logging operations around the lake achieved a climax, a dramatic

change in the ecology of Shawnigan’s water was observed. A huge increase in sediment and nutrient loading affected the water quality for a considerable length of time. Due to the ruthless efficiency that allows modern corporate logging to be conducted in a greatly condensed time frame, the potential for harm to our water supply is intensified.

This approach flies in the face of science and history. As events from elsewhere in the province can confirm, unless the forest cover that shields watersheds is left undisturbed, catastrophes can happen. Occasionally, “surface water sources can act as conduit for contaminants leaching from formerly forested lands” [*Muddied Waters*, Sierra Legal Defence Fund].

Continued on Page 24 ⇨



Photo by Michael Copland

Fall 2002: South east corner Shawnigan Lake, Timberwest activity.

The turbidity created by poor logging practices can mask the presence of harmful parasites, such as *Giardia* or *Cryptosporidium*. Instances of water-borne disease have been documented in BC [Revelstoke, New Hazelton] when surface water became infested with parasites and dirt particles. Indeed, the consequences of careless logging can lurk undetected for several years, then manifest themselves unexpectedly as a land or rockslide. Here in Shawnigan Lake, neighbours still complain about changes in their water tables/septic systems more than three years after Mt. Wood was logged by TimberWest and Weyerhaeuser. Even the removal of a couple of acres on a steep slope can cause calamitous results: One resident clearcut a small amount of land, the road below washed out, well levels were erratic, and so on.

These instances alarm as much as they inform. Scientists largely agree that the value of an intact forest cover in protecting drinking water at source cannot be overestimated. According to the findings of the Clayoquot Sound Scientific Panel, Report V, the amount cut from a watershed should be strictly curtailed in relation to area size and time frame:

*In any watershed larger than 500 hectares in total area, and primary watersheds of 200-500 hectares in total area in which harvest has exceeded 20% of the watershed area in the most recent 10 years, allow no further harvest until the watershed conforms with the specified rate-of-cut.*

In addition, Herb Hammond [RPF] of Silva Forestry Foundation has studied the question of watershed logging extensively, and views the maturity of the trees as significant:

*One generality that is easy to defend is the older the forest, the better the water. Old growth forests, because of their tight nutrient cycling, large canopies that intercept and store water, and high volumes of decaying wood, which stores and filters water, produce the highest quality water and best regulate flows. Anything less in a watershed results in poor quality water and out of balance flow regimes e.g. frequent floods and droughts.*

*Generally, practice, coupled with the scientific literature suggests that cutting any more than 10% of an old growth forest will cause significant degradation to water. You could have an entire watershed forested with young trees, like much of Vancouver Island, and not have good water protection.*

To add insult to injury, companies and owners of private forest land are seldom – if ever – required to inform local residents of changes in ownership or intended alterations to land frequently used and valued by the community.

In areas such as Shawnigan, the “woods above the water” have acquired the unofficial status of common land due to the dearth of “officially” endowed recreational greenspace. For small communities, the lack of demographic clout [and corresponding dollars] often translates into a paucity of parkland, hence the absence of formally ordained greenspace from Goldstream to the Koksilah. Sometimes the first inkling that a cherished grove has been designated for the chopping block is the whine of the chainsaws and the rumble of heavy equipment lumbering through the neighbourhood. Consequently, any fundraising campaigns to actually acquire property are impossible to organise. Two recent examples illustrate this point.

- When falling boundary ribbons were found in a cut-block unique in its biological diversity and historical legacy off Renfrew Road last winter, we contacted the owner, Weyerhaeuser, and were informed that cutting would begin in mid-March. Realising time was of the essence, we alerted other local organisations that shared our enthusiasm for this property. A letter was sent in late January asking to meet with company representatives to discuss our concerns. A reply from Bill Holmes, a senior level forester with their Island division, conveying his pleasure at such an assignment, duly arrived about a fortnight later. Lulled into a sense of false assurance, we were shocked to discover falling vigorously underway the very next day. Even when support to lease the land was authorised by the Cowichan Valley Regional District, and many outraged citizens sent protest letters to Linda Coady, then Vice-President of Weyerhaeuser’s Coastal Group, the company’s response remained one of staunch oblivion to community distress.
- Over the last few years, several discussions between TimberWest and Shawnigan residents have highlighted the place of Mt. Baldy in the hearts of the community. Popular with hikers, particularly in the spring when 26 different wildflowers bloom on its bluffs and glades, the natural attributes of Mt. Baldy were recognised by the provincial Sensitive Ecosystem Inventory. Alarmed by the appearance of logging tapes in the spring of 2000, we met with company representatives in October of that year who promised to inform us of any prospective plans to sell or log the property. But a year after this meeting took place, neighbours were stunned when logging trucks rolled right up beside their homes and began clearing an access road. To compound our sense of betrayal, the new owners, Malloch Logging, stressed the sensitivity of their harvesting style and announced that the trail system on the west side of the mountain would be left untouched. But their promises have proved hollow; the sensitive ecosystems on the crown have been brutally thinned and the western

trails obliterated.

With wanton audacity, the last few fragments of mature second growth forests, classified as endangered ecosystems by the provincial Conservation Data Centre, are about to fall prey to the profit lust of the timber privateers. These older – but not old growth - stands, which serve as the final refuges of a rich variety of animal and plant life, once covered most of east Vancouver Island and the Gulf Islands but are now reduced to a pitiful 2.6% of the total landscape. Recently, as we surveyed particularly rich woodlands of this type straddling the Shawnigan-Mill Bay region, a tiny salamander skittered between the lifeless forms of fallen trees, some as venerable as 200-250 years in age, lining the road. A little way on, cougar prints marked the big cat's path toward a small stream bordered by falling boundary ribbons. We wondered how long these two creatures – so disparate in size yet equally vulnerable to the holocaust that would soon raze their homes – would survive. A reverential sorrow descended as we gazed round at the doomed magnificence of the forest silently awaiting execution by Weyerhaeuser. We realised we would never see these stands again in our lifetimes.

Block by block, stand by stand, tree by tree; the pace is relentless and little mercy is shown. It is as if we are living in an active war zone; our monitoring rounds are shrouded in an atmosphere of numbed resignation as we view the latest atrocities wreaked upon Nature. Where the birds once sang and the wind stirred the trees is now a desolate wasteland, all purpose and beauty spent. Our mood of elegiac gloom is not lifted by sanguine assurances that, "The trees will grow back." Research from parts of Europe, including



BC Wildflowers - Photos by Ester Strijbos

**Popular with hikers, particularly in the spring when 26 different wildflowers bloom on its bluffs and glades, the natural attributes of Mt. Baldy were recognised by the provincial Sensitive Ecosystem Inventory.**

Germany, has revealed that this is not always the case. Problems establishing re-growth have occurred during the fourth and fifth rotational cycles.

Yet, despite evidence from other sources, scores of scientific studies and, what should be the most compelling reason of all, objections from its citizens, the government refuses to change its position. Voices representing various aspects of the timber industry are resolutely ignored, except those of the corporate sector. Our request for a temporary logging moratorium, to be implemented until a proper analysis of the watershed has been completed, is met with mantras of predictable and bland denial. Repeatedly, we are instructed to "work within the system" and to "consult with the companies." What good "beating our heads against a brick wall" will do we still haven't figured out. Although forest ministers in BC have postured and blustered with open defiance against the perceived injustices of American import tax duties, they routinely – regardless of political party – cringe in obeisance before the collective might of the lumber barons. This policy of cowering appeasement prevails over all other considerations. One wonders who is really running the show. Until the inhabitants of the Legislature demonstrate that they, not the companies, are in charge, the inheritance of future generations will be squandered, community watersheds will be defiled, and the owls on all the Mt. Baldys around the province will hoot in agitation at the desecration of their habitat.

From the summit of the eastern ridge along the lake, another far different watershed can be glimpsed. In this hallowed realm, restrictions governing human ac-

*Continued on Page 26* ➔

Photo by Michael Copland



Fall 2004: TS A52585 Sign Environmental Management

tivity of any kind are so strictly supervised that admittance to unauthorised persons is prohibited. Resource-based industries are shunned since they might mar the perfection of this pristine domain, thus impairing the quality of Greater Victoria's drinking water. But cross the border into Shawnigan's watershed and all hell can legally break loose. This disparity begs the question:

Why are the rules that administer the Greater Victoria watershed not applied to other provincial watersheds? The government's attitude seems distinctly hypocritical on this subject; on one hand, announcements are made with a self-congratulatory flourish that funding for water quality monitoring has been increased by \$5 million, while on the other hand, our desperate pleas for a \$200,000-\$300,000 Environmental Assessment [ordered by the previous administration] elicit unconvincing rhetoric about budget cuts. Lest the powers that be forget, the provincial government,

unlike its federal counterpart, is not immune from prosecution should public water supplies fail.

Surely it is time to end this dangerous inequality. The "rights" traditionally associated with private ownership, long imbued with a mystique of inviolate holiness, must be re-examined when they imperil public welfare. The assurance of safe and unsullied drinking water should be a "right" of every citizen. When the welfare of a community watershed is at stake, the importance of public drinking water must take precedence over all other claims of legal entitlement and not be diminished by abstruse disputes over property rights nor subjugated to the profiteering instincts of industry. The crucial steps to resolve this imbalance must be enacted by official forces for, ultimately, it is they, not the companies, who hold responsibility to enshrine true social and environmental resonance in the laws of the land. In this way only will every community watershed be granted the status it deserves and the question of injustice among water supply areas be laid to rest.

■  
*Mary Desmond lives in Shawnigan Lake and is happiest exploring the woods with her dog, Chloe, and other canine friends. Ph: 250-743-2278, Email slwwa@uniserve.com*



## One Tonne Challenge to Light Up The New Year

**Concerned about climate change?** Now is the time to buy your family's carbon offsets for 2004, and contribute to Third World villages at the same time. Here is how it works: Every time we drive, turn up the thermostat, get on a plane or a ferry, buy groceries, or do just about anything, we burn fossil fuel, which produces carbon dioxide and other greenhouse gases (GHG) that contribute to global warming.

Each islander is responsible, on average, for about 10.5 tonnes of GHG each year, including the fossil fuel energy needed to grow and transport conventionally-grown food. Flying can increase the total dramatically—a trip to Hawaii adds an additional 3 tonnes.

The Salt Spring One Tonne Challenge (part of a Canada-wide initiative) encourages everyone to save energy and reduce their annual GHG emissions by one tonne. But what about the unavoidable GHG emissions left after energy conserving measures have been taken?

One suggestion is to 'buy' carbon offsets by donating to organizations that reduce the amount of fossil fuels needed elsewhere in the world. One such organization is the University of Calgary's Light Up The World (LUTW). LUTW has developed a simple LED lighting system suit-

able for remote locations. A small solar array coupled with very high efficiency LED lighting provides a village with lights for reading, replaces the use of kerosene lamps, and may eliminate the need to hook up to a fossil-fuel powered electrical grid. Kerosene lighting is expensive and is responsible for many serious burns and respiratory problems in addition to producing GHG emissions. The LED lighting projects are enormously popular with villagers wherever they are installed. The demand for LUTW services is massive but lack of funds means that LUTW must reject many viable projects.

Carbon emissions are currently valued at about \$10 to \$15 a tonne. If everyone on Salt Spring, for example, donated \$10 to offset one tonne of GHG, we would raise \$100,000, enough to provide lighting to dozens of villages. Now that would be something to light up the New Year.

To find out more about LUTW, or to make a tax deductible donation, go to [www.lutw.org](http://www.lutw.org). Or send a cheque, payable to University of Calgary (LUTW), to LUTW, Electrical and Computer Engineering, University of Calgary, 2500 University Drive NW, Calgary, Alberta, T2N 1N4

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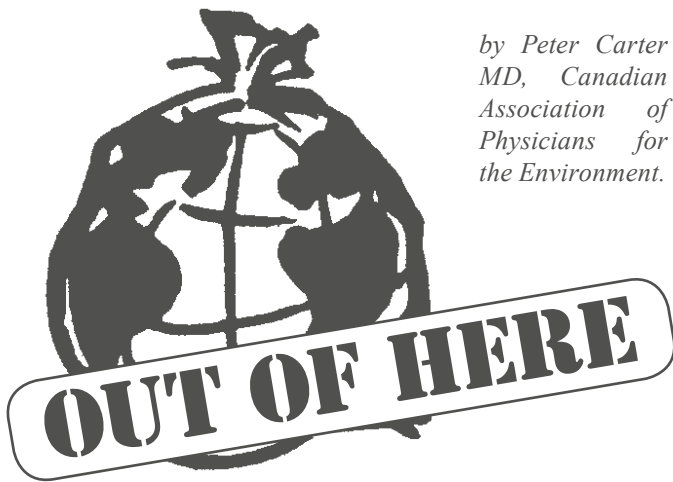
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# Some Ways



by Peter Carter  
MD, Canadian  
Association of  
Physicians for  
the Environment.

## Dedicated to the late Donella Meadows

Sustainability — the term hit the headlines 30 years ago. In 1972, the authors were bright young systems dynamics theory experts at MIT and they crunched their global data with the biggest computer of the day. The result, commissioned by the Club of Rome, was *Limits to Growth*.

Reaction was immediate. Coming on the heels of the first Earth Day in the US, it strengthened the cause of the environmental movement and an increasing number of environmentally concerned politicians. The US government acted on a mandate to protect the natural environment.

For many people in the 1970s, *Limits to Growth* confirmed what they suspected: the “American Dream” was turning into a dangerous fantasy. As the book then said, “If the present growth trends in world population, industrialization, pollution, food production, and resource depletion continue unchanged, the limits to growth on this planet will be reached sometime within the next one hundred years. The most probable result will be a rather sudden and uncontrollable decline in both population and industrial capacity.”

It is possible to alter these growth trends and to establish a condition of ecological and economic stability that is sustainable far into the future. The state of global equilibrium could be designed so that the basic material needs of each person on earth are satisfied and each person has an equal opportunity to realize his individual human potential.

If the world’s people decide to strive for this second outcome rather than the first, the sooner they begin working to attain it, the greater will be their chances of success.

In 1992, the authors re-crunched more advanced com-

*Limits to Growth: The 30-Year Update*, by Donella Meadows, Jorgen Randers, and Dennis Meadows. Chelsea Green Publishing, 2004. 368 pgs. \$22.50 US Listed at \$15.75 Amazon ISBN:1-931498-58-X

puters with the latest data and *Beyond Limits to Growth* was published. This essentially confirmed the 1972 findings and they issued a rather stronger advisory, while taking some reassurance from Agenda 21 agreed to by all nations at the UN Rio Earth Summit that year, which called for a very different kind of world economics.

This 2004 update observes that the sustainable development agenda is “almost paralyzed by a variety of ideological and economic disputes, by efforts of those pursuing their narrow national corporate or individual self interests.”

So now the team is much more pessimistic about the global future than they were in 1972. The book is clear about the limits to computer modeling, but 30 years later, their findings are standing the test of time. And time has, to some extent, run out. The world was last in a sustainable state in the 1980s. Now we are in “overshoot.”

This means we are drawing down the environmental capital of the planet. To be more direct, it can be said that we are stealing from our children and grandchildren. To avoid an economic and environmental crash, the computer says that we now have no choice. We must control population growth and reduce our ecological footprint and change to greener more efficient industry and technology. We have to do all three and do them worldwide. That is the price of thirty years of merely talking and arguing.

The book patiently, once again, explains the catastrophe that must come from exponential growth in consumption.

In this edition, the authors offer their own ideas for a way out of global destruction. As systems experts, they cite a sustainability revolution to follow on and modify the agricultural and industrial revolutions. The paradigm shift, or transformation, depends on, first, “relevant, select, powerful, accurate and timely information” (*Watershed Sentinel* being an obvious example), and then it depends on the work of innovators.

From a personal perspective, they propose and explain the tools they recommend of visioning, truth-telling, learning and loving; the obvious example being the late Donella Meadows.

*Limits to Growth* has been widely used in education, and this revised edition is invaluable for the inevitable return to environmental and economic sanity. The question now is: When does it become too late? The computers don’t answer this. The common sense and basic morality of every one of us will, day by day, provide the answer.

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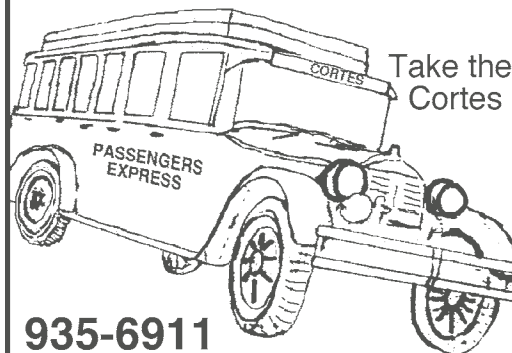
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