



Western
Environment
Centre
wecnl.ca

Newsletter

Inside this issue...

- sustainability tips
- the e-bike project
- updates on fracking
- and much more

From the Editor's Desk

If there is one theme that embodies this newsletter, it is the connection between local action and global issues, with a particular focus on our collective energy future.

Our personal lifestyle choices convey the kind of future that we want to see. The Western Environment Center is currently undertaking an e-bike pilot project that will bring electric bikes to Corner Brook for rental. You can read all about this wonderful project in this issue. Cycling to work certainly reduces one's carbon-footprint; so does walking. Yet although improvements have been made over the years, Corner Brook still has some work to do in making the city more pedestrian-friendly, and Dr. Jamie Spinney tells us why. Lower carbon footprints also can be incorporated into businesses, and Marble Inn Resorts sets a shining example.

The prospect of fracking in western Newfoundland also relates to our energy future. This newsletter contains a summary of the recent public forum on fracking and fossil-fuel extraction held on the Grenfell Campus. Also of interest is the interview with Dr. Ian Simpson on the public health effects of fracking. The interview cites a database that was prepared by the group Physicians, Scientists, and Engineers for a Healthy Future. This database contains about four hundred peer-reviewed articles on fracking, a database that helped to facilitate the recent ban placed on fracking in New York State. Perusing the database summary, the case against fracking is evolving from the argument that there are too many unknown consequences to a stronger sense that the known and increasingly documented public health and environmental effects of fracking are negative.

The proponents of fossil fuel extraction argue that moving away from such energy will destabilize our society and leave us all in the dark. Yet, as scientists increasingly tell us, the bulk of the remaining fossil fuel reserves must remain in the ground if the effects of climate change are to be averted (see the study by Christopher McGlade and Paul Ekins, in the prestigious journal *Nature* vol. 517 [Jan./15]). We thus have to move away from a fossil-fuel dependent society, sooner rather than later. That is not a radical position to take; it is certainly not considered "radical" in Denmark and Germany, where real progress is being made to move to an alternative energy future. It is not even "radical" or inconceivable for Canada; see the study highlighted in the *Globe and Mail* (March 17/15). Innovation developing greener fracking fluids, for example, would be better spent developing renewable energy. Fracking will always have a significant carbon footprint.

It is important for citizens to make their views known. Thankfully, we still live in a democracy where one can question the continued extraction of fossil fuels, without fear of reprisal.

Edwin Bezzina

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We're on Facebook!



You can find us by searching
"Western Environment
Centre"

We're also on Twitter



(www.twitter.com/wecnl)

WEC welcomes comments and questions!

Feel free to write to the
editorial board
(outreach@wecnl.ca) or the
Board of Directors
(info@wecnl.ca).
We'd love to hear from
you.



Cover photo: Gros Morne National
Park (photo E. Bezzina)

WEC's Mandate

The Western Environment Centre (WEC) is a charitable, non-profit, non-governmental organization that is based in Corner Brook and services all of Western Newfoundland. Specifically, the organization strives to:

- engage communities in environmental issues in a balanced, objective, and informed manner
- work with community partners, businesses, and government agencies to build capacity and involvement in projects related to environmental action and sustainability
- create a community of environmentally pro-active citizens

WEC activities can be subdivided into the following areas:

- Long-term projects (e.g., the community garden established at the Blow-Me-Down Ski Park)
- Specific environmental events
- Working committees
- Detailed responses to inquiries about local and regional issues of environmental concern

How to become a WEC member

(and how to encourage friends to become members):

Please fill out the membership form on the back page and then send it by post to our surface address or by scanned copy to our e-mail address (info@wecnl.ca). Becoming a member is a fabulous first step to becoming environmentally involved in your local community!

Board of Directors

| | |
|--|-----------------|
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A big thank you to Nick Mercer, Stephan Walke, and Ron Zawaski for their work on the Board of Directors; we wish them well in their future endeavours!

Five great ways to get involved in WEC

1. Join one of the working committees
2. Join the Facebook group and invite others to do the same
3. Attend WEC events
4. Become a WEC volunteer
5. Participate in the WEC community garden

Don't Sweat It: Corner Brook Electric Bike Share Program *Coming to Corner Brook Spring of 2015*

The Western Environment Centre (WEC), in partnership with MUN Grenfell Campus, the City of Corner Brook, and Cycle Solutions and funding from the federal government is pleased to announce that an Electric Bike Share Program will commence in the Spring of 2015.



The Advantages of the Electric Bike

An electric bike is very much like a normal bike except it has several advantages which drastically improve the way you will commute around Corner Brook's hilly terrain. Each motorized bike features: chain guards, mud guards, front and rear lights and reflectors as well as panier baskets. However, the most impressive advantage are the powerful motors and batteries that each bike is outfitted with. The powerful motor will assist the effort of the rider, making even the steep hills of Corner Brook effortless terrain and giving the rider a "hurricane tailwind" on demand with a simple twist of the throttle. Speed is capped though to ensure safe riding conditions. This product is ideal for people who would love to have an alternative to driving every single day to work, but want to avoid the sweating, headwinds and exhaustion that come with powering up steep hills on a traditional bicycle.

Renting

The Western Environment Centre, a non-profit organization, has secured funding to purchase 9 electric bikes. These will be available for rent at two locations in Corner Brook: Cycle Solutions and Grenfell Campus. You will be able to rent an e-bike for a day or for a week (\$10/day, \$40/week). The project will start in the beginning of May. You can get gift certificates for daily or weekly rentals starting now! Please contact outreach@wecnl.ca or visit Cycle Solutions..

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Advertisement Opportunities

Each of the 9 e-bikes will provide an advertising platform on either side (approx. 12' X 8' panel), which offers potential advertising opportunity for your business from spring to late fall. That's about seven months of advertising moving around town; and, let's face it, bikes get noticed in Corner Brook! You can purchase advertising space by season. One side will be available for \$350/season. After our pilot year, it will be possible to purchase a full bike (2 sides for a minimum of five years) for \$3,000.

Advertisement space for that amount of time has never been cheaper!

If you wish to learn more about advertising on our e-bikes and some other great opportunities and perks to sponsoring and supporting this project, please contact us. We will be happy to give you a presentation of the project, provide a demo of the bike, and discuss the project in greater detail. Please contact us for details: www.wecnl.ca or info@wecnl.ca.

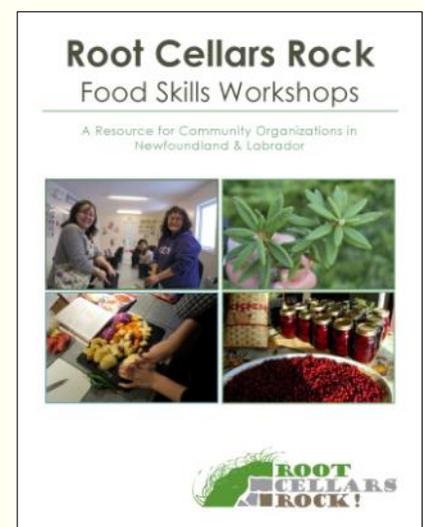
Volunteers wanted!

The Corner Brook Bike Share Program is a pilot program that promotes environmental sustainability. We believe that the future of our society rests in our hands. Our actions can have significant impacts on our future. However, cooperation is mandatory if we are to make drastic changes. We are all shapers. And none of us can do it alone. Whatever time you can spare, whatever small task you can contribute to this project will make it that much better. Imagine Corner Brook with dozens of bike stations, where you leave one place, hop on an e-bike and zoom up the hill to a drop off location without breaking a sweat, all for an affordable price!

Think you can help? Get in touch. info@wecnl.ca

The Food Skills Workshop Kit!

The Food Security Network of Newfoundland and Labrador (FSN) has launched a Food Skills Workshop Kit as part of its Root Cellars Rock project. The Workshop Kit is a new resource for community groups across the province to host hands-on workshops building local food skills and preserving traditional food knowledge. Topics include container gardening, composting, edible wild plants, seed saving, preparing local vegetables, using culinary herbs, canning, and root cellars. Download the workshops for free to start using today in your community: <http://rootcellarsrock.ca/workshops>.



A Commentary on Walking in Corner Brook, by Jamie Spinney, PhD.

Dr. Spinney is a visiting Assistant Professor in the Environmental Studies program unit at Grenfell Campus, Memorial University of Newfoundland. He is an expert on urban geography and sustainable, healthy communities. Here, he provides insight on the value of walking but also the difficulties for pedestrians in Corner Brook.

I am a pedestrian. It is part of my, and all of our, DNA. Unlike all other living mammals, we evolved (or were designed, if you prefer) to walk upright on two legs. Therefore, walking is not simply a personal choice; walking is an important activity for everyone. And, we all need to walk more. Walking is good for you; it reduces stress, it provides an opportunity to think, and it enables recognition of one's surroundings. Because of the increasing demands placed on our time, walking allows us to focus on the interesting things that are happening around us. Conversely, driving a vehicle is a complex activity that requires our undivided physical, mental, and emotional attention. Have you ever walked down a street that you have driven down hundreds of times before? The way that you experience that place is completely different when you are walking. We all need to slow down and smell the roses, which is literally possible if you are walking, but near impossible if you are driving.

Despite my instincts and the obvious benefits of walking, I don't walk in Corner Brook. Well that's not entirely true. I walk along the Corner Brook Stream Trail Network for recreation, but I never walk as a means of active transportation. There are several reasons why I choose not to walk to work, to the grocery store, to the restaurant, or any other purposeful destination, which become much more obvious this time of year. Simply put, this community is not designed for pedestrians. Based on my experience both as an academic, who studies walking behaviour, urban planning, transportation planning, and community design, as well as a being a self-proclaimed pedestrian, this community demonstrates a lack of pedestrian friendliness. For example, my students collected data pertaining to pedestrian safety and found that 47% of cars performed a "rolling stop" at an intersection near campus, 20% were speeding, and almost 20% failed to yield to pedestrians at a clearly marked crosswalk on campus. Therefore, for personal safety reasons, and because I have the option to drive, I begrudgingly choose to drive everywhere I go.



Photo courtesy Jamie Spinney

There are many different design standards for pedestrian infrastructure. Corner Brook exhibits the most dangerous, poorly designed, poorly maintained, and in many instances (as students in my community planning class have demonstrated to me this year) just plain baffling examples of pedestrian infrastructure. In terms of pedestrian safety, the sidewalks, where they do exist, have no setback from the street, there is a limited or no curb to prevent cars from driving on the sidewalk (which is evidenced by the tire tracks on the sidewalk), and the sidewalks are sloped into the street. These issues are exacerbated during the winter months.

The solutions to these issues are the “three E’s”: education programs, enforcement of traffic laws, and improved engineering of the pedestrian environment. These changes have important implications for public health and safety, environmental health, and sense of community. Such changes also promote social inclusion of those who are unable to drive. Until significant changes are made to improve the safety and attractiveness of the pedestrian environment, I will not walk in Corner Brook.

WEC Fundraiser November 2014

Thanks to all those who made the Fundraiser a smash hit, especially the Blow Me Down Trails Ski Club and Steve Holisko. The braised moose, photographed on the right, was especially popular!



Photos courtesy Brittany Taylor

Helping WEC as you recycle

Here is a creative way to donate to WEC financially. WEC has an account at Scotia Recycling on 55 Maple Valley Rd (709-634-2025). When dropping off your recyclables, donate by telling the people at the desk that you wish to give the proceeds to the Western Environment Centre. Visit the Scotia Recycling website:



<http://scotiarecyclinggroup.com/services-by-location>. For information on recycling on Corner Brook, visit <http://www.cornerbrook.com/default.asp?mn=1.24.100> or phone their recycling line at (709) 637-1630.

Marble Inn Resort

Marble Inn Resort offers clients beautiful accommodation and dining. Located in the gorgeous Humber Valley, this business serves as a worthwhile example of a business that has applied environmentally sustainable practices in a very dynamic way. The resort was the 2014 winner of the Sustainable Tourism Award, presented by Hospitality Newfoundland & Labrador and Parks Canada. Marble Inn Resort's general manager, Joe Dicks, provides all the useful details.

As a small business entrepreneur, I have had the good fortune to build a resort that contains fifty-two condo units as well as conference facilities, restaurants, and a Pool/Spa component. I consider myself very lucky to have been able to build Marble Inn Resort as a ground-up initiative. From its humble beginnings as Marble Mountain Cabins with its eighteen cottages, built in the 60's, the property has been transformed into Western Newfoundland's only 4.5 star Resort. Throughout the six year construction period, every attempt was made to mitigate the impact of this property's existence on the environment and beauty of the Humber Valley. Wherever and whenever possible, planet before profit was the ambition for Marble Inn Resort.



Furthermore, it is my good fortune that I don't have a seat on any stock exchange. I therefore don't find myself compromising share value when I spend money on systems that trim emissions or reduce fossil fuel consumption. I don't have directors asking me to rationalize sustainable environmental practices. Conventional business thinking would lead one to believe that it's more difficult to build and run a business from an environmentally conscious position and they would be right, at least in the short term. Cost-benefit analysis and payback timelines for each of the environmental elements will be discouraging. Banks and accountants will red flag the added construction costs that such environmental elements would entail. The building process offers another group of challenges. The lack of local expertise is a major hurdle and the "why bother" mentality of the construction labour force takes its toll on one's resolve. Innovations are seen as interesting but they are also perceived as risky and expensive. It's tough to persist and the commitment to be proactive when addressing environmental issues can result in some significant bruising. It is thus easy to see how this influence could turn a project towards conventional methods.

To make the decision to build in a sustainable way and follow through on that commitment is not easy. It will challenge conventions by adding perceived costs and risks to a business plan. Adding costs to a project may impact its ability to access funding. Cleaner air through the lowering of fossil fuel use doesn't seem like a direct benefit to many people and does little to convince decision-makers in the towers of lending agencies. Applying new technologies in a project creates unknowns. Unknowns are expressed in the business model as risks. Risks create concerns and concerns create stress. Development projects are stressful enough so it's easy to get discouraged and abandon innovations that may be more sustainable in the long run. You simply have to believe that the long term impacts of your actions, impacts that extend beyond your own personal existence, will be worth it.

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The following is a list of some of the initiatives employed in the development of Marble Inn Resort:

Solar Panels and LED Lighting

The solar panels provide clean, completely renewable energy from the sun. LED lighting extends the life of this stored energy to something that needs little or no backup. This passive solar energy powers general lighting for the decks, parking lot and greenhouse. The panels were reasonably easy to install. We did have some difficulty achieving National Electrical Code approval due to the inexperience of contractors and inspectors. The benefits are dubious from a cost-recovery perspective, but solar panels help project a very positive image of the company as one that is keenly interested in environmental sustainability. You can't overlook the goodwill that these initiatives contribute.

Mini Split Heat Pumps

This heating/cooling system is a safe, convenient way to provide a comfortable indoor climate to clients at the click of a button. The pumps circulate the air in a given room; the filters clean and purify the air by removing dust, mold spores, odours, smoke and other particles. The use of this technology is recommended; it is now more affordable and it has proven itself. Heat pumps cost much less to run than electric furnaces and now have sufficient power for the right applications. The perceived risks associated with this heating/cooling source have diminished. They are reliable, affordable and clean.

Eco-Air

The ground surface system, also known as Eco-Air, produces fresh, purified air that travels through sixty feet of underground pipe. This unique air flow strategy acts as a heating system in the winter and air conditioning in the summer. This is due to the constant ground temperatures at specific points below the Earth's surface. The geothermal impact on fresh air as it travels through anti-bacterial coated pipe is to temper the air before it enters the building. This is used in general areas to keep the building balanced so doors open with ease and cold air doesn't rush into your building because of the normally negative pressures associated with commercial buildings. Cost-wise, it's not cheap to buy but once placed in the ground it works seamlessly.



Spray Foam

Spray foam insulation is being used by builders all over the world to create buildings with an extended life cycle, lower operating and maintenance costs and greater occupant comfort. It wasn't easy or cheap to access here in Western Newfoundland. As a result, it was the most challenging element to employ. The machinery had to be purchased and we had to be trained on how to use it. Effectively, we started a business within a business. In the end we do have very well-insulated units and buildings, and the spray foam business that we started has since been sold, making the product available to others in Western Newfoundland. I recommend the use of two pound spray foam for any commercial applications. This one pays off.

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Marble Inn Resort *(continued from the previous page)*

Reuse and Recycle

This is a given for anyone traveling down the road of sustainable construction. During our teardown phase, we jacked up and sold off all the buildings that could be moved, while others were dismantled for reuse. All other scrap material was placed in a free pile at the perimeter of the property. Locals were encouraged to help themselves to materials for reuse or simply fire-wood for the upcoming winters. The greatest cost to this initiative was time. This is the easiest and fastest way to commit to the environment. It also has great community and social benefits. A must component!

Joe Dicks, General Manager

The Cleaning Corner: Laundry Spot Remover

Making your own homemade cleaning products is not only the more environmentally sound choice but it's also less expensive, safer for your family, easy, and fun! Use this spot remover to pre-treat stains before being laundered. Home tested and approved!

Ingredients:

- 1 ½ cups water
- ¼ cup liquid castile soap
- ¼ cup liquid vegetable glycerin
- 5-10 drops lemon essential oil

Directions:

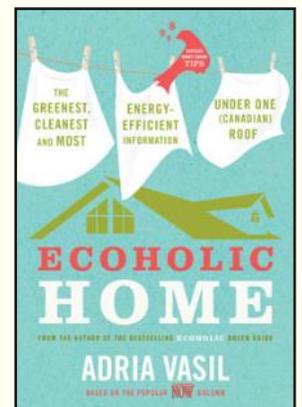
Mix all ingredients together and store in a glass spray bottle.

To use, shake well and apply to stains. This works best if you treat the garment immediately after it is stained; then, let it soak (for as long as overnight) before putting the item into your washing machine. Launder as normal.

Becky Shea

A Great Guide for your Home!

“**ECOHOLIC HOME** gives homeowners, renters, condo nesters and even you dorm dwellers all the most up-to-date Canadian product and service info you need to eco-fy your private space—all while pocketing planet-friendly cash savings. So stop stewing in toxins, chucking energy out the window and feeding the trash treadmill, and start transforming your abode into an **ECOHOLIC haven**” (from the book's website).



Updates and Articles on Fracking

WEC's Position Statement on Fracking

Based on a wide reading of scientific studies, a sub-committee of the WEC Board of Directors prepared the following statement on the proposed fracking operations on the west coast of Newfoundland last summer. The requested hold is now in effect.

The Western Environment Centre (WEC) is a community-based non-profit organization in western Newfoundland composed of citizens who are interested in raising awareness about environmental issues and promoting sustainable development initiatives. As such, we have researched issues surrounding proposed unconventional oil exploration using hydraulic fracturing (fracking).

We recommend that the provincial and federal governments exercise due diligence for the people and the environment of this province. This is particularly important since all the risks and implications of hydraulic fracturing are not fully understood (e.g., waste water disposal, groundwater contamination, air pollution). Therefore, **we call for an immediate hold on unconventional oil exploration and extraction that uses hydraulic fracturing.**

We strongly urge the provincial and federal governments **to establish a transparent and independent panel of balanced representation** to:

1. Conduct a scientific and public review of hydraulic fracturing in Newfoundland and Labrador in order to fully assess the potential health, environmental, economic, and social effects on the region as a whole;
2. Review the associated regulatory, policy, and legislative issues; and
3. Recommend an approach that gives priority to protecting public health and the environment, in addition to fostering sustainable development.

WEC's Commentary on the Review Panel

In 2014, the provincial government of Newfoundland and Labrador announced that it will commission an independent external review of fracking before a decision is made on whether to allow fracking in western Newfoundland. The government formed the panel, but its composition has been attracting commentary. Last December, WEC sent the provincial government the following letter commenting on the panel and suggesting changes (despite requests, a response has not yet been received).

Dear Honorable Derrick Dalley, Minister of Natural Resources:

The Western Environment Centre (WEC) is a community-based non-profit organization in Western Newfoundland composed of citizens who strive to engage communities in environmental issues in a balanced, objective, and informed manner as well as promote sustainable development initiatives.

WEC would like to commend the Government of Newfoundland and Labrador and specifically the Department of Natural Resources for starting an external review of hydraulic fracturing in Newfoundland and Labrador as opposed to an internal review. WEC has taken the time to consider the terms of reference and composition of the panel and would like to offer the following comments in order to ensure the review is conducted in the best possible manner.

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Updates and Articles on Fracking

WEC's Commentary on the Review Panel *(continued from the previous page)*

The Terms of Reference provide some important directions in the review process and the panel requirements. In particular, WEC agrees that "...it is important to evaluate whether hydraulic fracturing is an appropriate activity for oil and gas development in Western Newfoundland and whether it should be banned or approved..." (page 1, Terms of Reference Public Review of the Implications of Hydraulic Fracturing Operations in Western Newfoundland). WEC believes that the purpose of this panel should be to conduct a comprehensive and independent review without being burdened with producing any particular desired outcome. WEC suggests that any mandate of developing regulations be removed from the terms of reference. Developing regulations and best practices at this stage would be putting the cart before the horse and suggesting that hydraulic fracturing will go ahead. The review panel should focus on *if* the Province should proceed, not how the Province *will* proceed.

Despite some clear strength within the Terms of Reference, WEC does have some concerns. There is an absence of any questions that relate specifically to human health. There is also no mention of traditional land use, specifically as it relates to Aboriginal peoples. The Terms of Reference fail to mention modeling the impacts and dispersal of a potential spill. The terms also lack any mention of potential impacts on the fishery and tourism industries or wildlife.

The current panel composition includes considerable technical expertise but lacks proficiency in some vital areas included in the Terms of Reference (as well as the additional areas mentioned above). In particular, knowledge pertaining to environmental and socio-economic impacts on communities (including the case of a potential spill and the resulting environmental and socio-economic effects), comparison of regulatory requirements across jurisdictions and the need for an effective public consultation process is lacking. These areas would require experts in public or environmental policy, someone versed in environmental psychology or community involvement, as well as panel members equipped to model and predict environmental effects from both a natural science and social science perspective.



Port-au-Port Peninsula, photo courtesy Aiden Mahoney

WEC believes that the Minister should amend the Terms of Reference as well as begin a process to add more experts to fill knowledge gaps. The development of the Wheeler Report in Nova Scotia could act as a partial framework for the review process in Western Newfoundland. The Wheeler report identified areas of expertise and qualities which panel members should possess (partially determined from stakeholder input) and then attempted to satisfy as many of those requirements as possible. Notably, panel members were chosen from a list of individuals nominated by the public.

Updates and Articles on Fracking

WEC's Commentary on the Review Panel *(continued from the previous page)*

In light of the fact that the Minister has chosen to enable a system of independent review given the public concern over hydraulic fracturing, WEC strongly recommends the independent process be undertaken in a thorough fashion. For this to happen effectively, a more lenient timeframe should be imposed on the panel. Research and consultation must occur at whatever pace panel members require in order to be comprehensive in their work.

The Western Environment Centre recommends the following four actions:

Amend the Terms of Reference to include a mandate involving human health and Aboriginal land rights as well as the other lacking areas mentioned above;

Establish clear and public criteria by which any additional panel review members will be appointed;

Open a public nomination period to allow all citizens and groups to provide feedback and suggestions on additional panel members who would fill current knowledge gaps; and

Deadlines should be extended to ensure that the panel is as thorough as it needs to be and any modifications to the process can be made as needed.

WEC is a supporter of informed and unbiased, science-based debate on environmental issues. An integral part of the review process should be to involve the public at all stages—including panel composition. It is the sincere hope of WEC that the province can have a finished document in which all viewpoints can trust and respect the process through which conclusions were reached.

WEC would like to thank the Minister and the review panel for their time and dedication to this important matter which affects all Newfoundlanders and Labradorians. We are willing to meet with the Minister, Staff, or the Review Panel to discuss our recommendations in more detail. Also, we are requesting a response to this letter.

Sincerely,

The Board of Directors of the Western Environment Centre



Updates and Articles on Fracking

Interview with Dr. Ian Simpson: The Effects of Fracking on Public Health

Dr. Ian Simpson is a retired physician who lives in the Corner Brook area. He has received a number of awards over the years for his advocacy work, particularly in the environmental field. He has read and commented on many studies concerning the public health effects of fracking and has given numerous seminars on the topic. Edwin Bezzina conducted an interview with him on the emerging science documenting these health effects.



Edwin Bezzina. I have been reading some of the materials and reports that formed the background to the recent ban on fracking in New York State, specifically a database that provides and comments on about 400 peer-reviewed studies. There seems to be an increase in the number of studies that demonstrate the ill public health effects of fracking, far more so than the studies that deny any effects.

Ian Simpson. That database was done by the group Physicians, Scientists, and Engineers for Healthy Energy, who are mostly professors at Cornell University. The two key scientists here are Dr. Anthony Ingraffea, who holds the Dwight C. Baum Professorship in Engineering at Cornell University, and Dr. Adam Law, a professor of medicine who specializes in endocrinology at Weill Cornell Medical College of Cornell University (endocrinology is the study of the hormones of the body. Law has studied the gases released into the air from fracking; many of those gases, such as ethylbenzene, are known hormone-disruptors.

EB. In real terms, does fracking have a greater impact on children?

IS. Yes, especially unborn children and newborns and we're now finding with animals, too. Essentially, they are more vulnerable; by air or skin exposure. Much of this depends on proximity to the fracking well. There are two studies that prove the role played by proximity, one done in Pennsylvania, by Dr. Elaine H. Hill, who studied changes in baby weight for five year periods before and after the fracking started; she discovered a lower baby weight in the wake of the beginning of fracking operations, with a 17% drop in average weight, which is significant because the lower baby weight makes them more vulnerable to illnesses. And, the hospitalization costs are enormous for underweight babies, in the range of \$50,000.

The other study was done in Colorado, by Dr. Theo Colborn. In spite of the obstruction raised by the oil and gas companies, she analyzed the gases near the fracking wells and was able to identify several dozen hydrocarbons (eight of which are known to be toxic to children) and at quite high levels. In a study of birth defects by Dr. Lisa McKenzie, the closer a family was to a fracking operation, the higher likelihood of children having both neurological and cardiac defects.

EB. Let's delve into this issue of distance a bit further. If fracking operations were brought to western Newfoundland, would people be vulnerable, given that the well pads would be about four kilometres apart, along the shoreline, where many people live?

IS. The health studies that have been undertaken were done at distances of within 500 meters, within 1,500 meters and further away. The illnesses to adults are well documented in Pennsylvania.

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Updates and Articles on Fracking

There is also a study that was done in 2013 in Queensland, Australia, where they are fracking for coal-bed methane, an extraction operation that may be more toxic than shale bed drilling. The Department of National Health responded to people's complaints but never did a serious study nor visited any households. Then, a physician, Dr. Geralyn McCarron, went to each household and found and documented serious health effects, such as persistent nose-bleeds that are lasting and frequent, severe and chronic headaches as well as fainting episodes. She was able to track the changes over time before the arrival of fracking operations and then the increase in the health effects afterwards (although it's true that some residents experience no complaints, before or after). She compiled the results in a 124-page report ("Symptomatology of a Gas field: An Independent Health Survey in the Tara Rural Residential Estates and Environs," April 2013).

EB: These health effects were never studied before fracking picked up momentum; and no baseline data was taken. Perhaps the regulatory framework that had been set in place is insufficient for tracking and dealing with the health effects of fracking.

IS: There was no baseline data taken before, certainly. The regulatory agencies have been delinquent, for example in Alberta, and even obstructive, as in Texas. In fact, in the new shale play in Texas, the Eagleford play, towns have tried to pass legislation banning fracking in their boundaries. The State of Texas has taken them to court, supported by the oil and gas people. The regulators often do not do proper tests, conducting tests inconsistently and sporadically, missing the peaks when the effects of fracking are most keenly felt by those who live near the wells. Several officials who worked for the regulator in Texas had been interviewed and they claimed that there were significant problems with the regulatory process; after doing so, they were dismissed from their posts.

EB: The fracking proponents have often presented Alberta as the example of robust fracking regulations and sound fracking practices, claiming that there has never been an accident related to fracking in this province. Is that true?

IS: One might question if it is. Remember that the Alberta Government and the environmental regulator are being sued by Jessica Ernst, a former consultant for the oil and gas industry, for the contamination of her water supply. There are other individuals taking legal action. Moreover, the Alberta regulator is being funded by the oil and gas industry, but regulator and industry should be separate, in order to avoid a conflict of interest.

"...Dr. Geralyn McCarron went to each household and found and documented serious health effects, such as persistent nose-bleeds that are lasting and frequent, severe and chronic headaches as well as fainting episodes."

In the Fox Creek in Alberta (incidentally, where the big seismic activity took place last weekend), there has been a change in the regulatory process, arguably a loosening of oversight and due diligence. Before, every pad had to have regulatory supervision, but now the whole play, the whole district for fracking, is assessed and approved en masse, without recognizing that each well site can be different and should be examined individually. The regulatory changes made speed up the approval process but weaken the regulatory framework. So the problem is that the regulators are not being diligent enough and that is why it might seem to some that there are no problems with fracking.

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Updates and Articles on Fracking

Interview with Dr. Ian Simpson: The Effects of Fracking on Public Health

(continued from the previous page)

EB: Let me go back to that report that came out of New York, the summary of 400 peer-reviewed studies. The studies were broken down into specific categories: the effects of fracking on health, on water quality, and on air quality. Most of the studies assessed in each category state that there are ill effects associated with fracking in these categories. Yet why would some of the studies say that there are no ill effects?

IS: It's a bit like climate change science. The vast majority of peer-reviewed scientific studies, mostly university studies, present strong evidence for the ill effects of fracking, but there are always the naysayers, as with the science of climate change. Then one must side with the majority opinion, especially if it is supported by a solid methodology and by strong evidence. Some of the pro-fracking studies that I have examined were problematic in terms of depth and methodology. The governmental bodies that should be doing comprehensive studies are not necessarily doing that. Remember that the EPA has had its fingers clipped by the Republican Party; and the broader, comprehensive study on fracking that the EPA had started has since been shut down. On the other hand, the epidemiological studies are mostly done by university groups and independent groups, and these studies are quite clear that there are major problems associated with fracking.

Then there is the toxicology side of fracking, which asks what chemicals are in the fracking fluids. These chemicals are known to be hazardous, but much depends on the concentration and the dosage. This can differ for newborns, small children, animals, who are far more vulnerable to lower doses than adult humans.

It is not always easy to document the effects, certainly, because the families can be affected at different levels, for example due to wind direction. But, increasingly we are able to detect ill effects depending on the proximity to the well.

EB. What is the actual source of these ill effects? What part of the fracking process?

IS. From the off-gassing from the fracking pads, we can detect benzene (a known carcinogen), toluene (a neuro-toxin), ethylbenzene, and xylene. And there are also dangerous chemicals that we don't know about, such as methylene-chloride. In this latter case, it's likely that the fracking chemicals are mixing with chemicals down in the wells and coming back as something else.

Then, the chemicals are stored in open-air ponds, which can overflow during rain storms. The chemicals also can become airborne, because of the vapours and condensation. One should not forget that there are court cases against operators who were dumping fracking chemicals into rivers, because they couldn't be bothered to take it to a waste treatment facility.



(Photo courtesy Aiden Mahoney)

Updates and Articles on Fracking

Furthermore, the fracking fluids cannot always be so easily treated in waste facilities. In Pennsylvania, they had to close one of the waste treatment facilities because they could not handle the fracking chemicals. So the stuff is being trucked to Ohio and dumped into empty oil wells, which may be contributing to earthquakes. In Nova Scotia, they had only five test wells, and they're still having difficulty finding a facility to treat the chemicals or dispose of them. New Brunswick is not going to take Nova Scotia's fracking waste; and they have their own fracking waste that they have to deal with. There are not many facilities that can handle the fracking flow-back fluids, and thus disposing of it or treating it has become a real problem.

Moreover, in eastern Canada there is radon and other radioactive chemicals in the bedrock, which will come up once it is fracked. Many of these radioactive chemicals are very difficult to remove from the flowback fluids. In rehabilitated areas in Pennsylvania, they are finding scattered pockets of high dosages of uranium-232. Remember that radon is the second largest cause of lung cancer in humans, after tobacco.

EB. Could fracking be regulated so that it could be done safely?

IS. Everything must be out of the hands of those who have vested interests in oil and gas development. That could even mean that the regulatory body should not be run by a government department. In Newfoundland, the regulator is the same agency that promotes the oil and gas industry.

We also need transparency. They say that the chemicals in the fracking fluids are only a half percent of the total, but that half percent is still hundreds of thousands of litres. We don't know a lot about chemical interactions at low dosages, although we're beginning to find out. What scientists in Colorado are discovering is that even low dosages of fracking chemicals are producing foetal problems, chemicals that are working at a molecular level that are difficult to track but certainly are having a greater effect on foetuses and newborns. We know this from rubella (German measles) and other such viruses. We know the foetus is at increased risk in very early pregnancy, when we remember the Thalidomide disaster fifty years ago, and the effect of German measles on the foetus. And recently Dr. Paul Winchester, a paediatrician, showed the relationship of Atrazine exposure (a pesticide) to neonatal abnormalities, when the exposure is in the early months of a woman's pregnancy. Dr. Colborne and her group in Colorado have been showing that very small doses of some chemicals cause effects on the hormone systems of the unborn child. Some of these may take years to show up.

EB. In the eyes of the proponents every industrial activity has risks and dangers. Can not the same be said about fracking?

IS. Then before any decision is made about fracking in western Newfoundland, let's quantify these risks and dangers, let's be honest about them, and let's not try to hide them, which is what's going on in many instances. I'll tell you one interesting recent development: Occupational Health and Safety in the U.S. has now placed fracking at right up at the top of dangerous activities for workers, worse than construction, worse than agriculture. Some of this danger involves road accidents or health issues suffered by people around the fracking area. There have been three different cases, for example: a healthy man was found dead at the bottom of a fracking fluid tank that he had been cleaning. The scientific literature on the effects of fracking is growing: air-and-water studies, the lab studies, the epidemiological studies on what is happening on the ground, are coming together, especially in Pennsylvania.

Updates and Articles on Fracking

The Public Forum on Fracking and Oil Development in the Gulf of St. Lawrence (Grenfell Campus, MUN, February 2015)

On February 1, Grenfell Campus was host to a public forum on The Gulf of St. Lawrence, Oil, and Fracking. Panel members were marine ecologist Dr. Irené Novaczek, economist Dr. Michael Bradfield, and Chief Mi'sel Joe, Miawpukek Mi'kamaway Mawi'omi [Conne River Mi'Kmaq Tribal Nation]. Coming from diverse perspectives, all of the speakers urged unified public action toward preventing hydraulic fracturing activity from taking place on land or in any of the waters of provinces bordering the Gulf.

Dr. Novaczek spoke about the unique and sensitive ecosystem that is the Gulf of St. Lawrence. Home to more than 6,000 marine species, the Gulf is one of the largest estuarine ecosystems on the planet, and has been recognized since the 1970s as the most productive marine ecosystem in Canada. In 2001, the Department of Fisheries and Oceans (DFO) identified the Gulf as globally significant and highly diverse: "extraordinarily sensitive and vulnerable to oil pollution and related industrial activities." This body of water is presently under threat from pollution, overfishing, and a variety of other man-made forces, which reduce oxygen levels and promote acidity. For example, there are now areas at depth where oxygen levels are so low that former northern cod spawning grounds can no longer sustain living codfish. Dr. Novaczek warns that as human-induced and climate change stressors increase, the Gulf is moving dangerously toward becoming a 'dead zone.'

Enter into this already threatened ecosystem the disruption of oil and gas exploration and potential drilling for fossil fuels—particularly at the site known as 'Old Harry'—and there brews a recipe for disaster. Old Harry sits atop the Laurentian Trench at a depth of approximately 450 metres, at the convergence of shipping lanes, whale and fish migratory routes, cod spawning grounds, commercial fisheries, and even iceberg alley. The DFO reported in 2001 that the consequences of any spill or accident in the Gulf would be amplified by its nature as a complex and enclosed ecosystem that flushes only once a year. A spill or blow-out would result in dead wildlife, tainted and lost fisheries, lost tourism, reduced quality of life for coastal residents, and long-term disease and dysfunction in fish, marine mammals, and sea birds. Canada's Commissioner of Environment and Sustainable Development has acknowledged that eastern Canada does not have the capacity to adequately respond to, or control, a blowout or spill. Modelling has estimated that the best clean-up effort possible would result in 2% - 10% recovery of escaped oil: an alarming prospect indeed.

The global consensus among climate scientists is that 80% of known fossil fuel reserves must remain undeveloped if carbon emissions are to be curbed. Criteria for determining which reserves to leave untouched include: those posing highest risk of uncontrollable blowout; most remote; deepest; areas of cultural and/or spiritual significance; those close to other important economic activity that would be negatively affected; and those in the most sensitive types of environments. The Gulf of St. Lawrence scores high in all categories. Dr. Novaczek urges concerned citizens of the provinces of eastern Canada to join forces in putting pressure on governments to protect this fragile and sensitive ecosystem, and to enact a ban or moratorium on further oil and gas exploration and development in and around the Gulf.



Updates and Articles on Fracking

Dr. Michael Bradfield brought to the forum his experience as a panel member of last year's Independent Review of Hydraulic Fracturing in Nova Scotia. He holds strong reservations about that report's chapter on economics, pointing out that its final conclusions were less about true 'economics,' which involves the well-being of people, than they were about the finances of the companies involved. Bradfield cautions against the report's emphasis on potential jobs and royalty payments to the province, arguing that many of the advertised benefits of oil and gas development in our region are illusory, overstated, and short-term, and that potential long-term costs such as damage to the environment, human health, and established economic activity (e.g. agriculture and tourism), are ignored and not factored into industry, or even government, profit and loss calculations. He predicts that were those costs added to the final expense column, developing further oil and gas reserves would be seen to be not economically beneficial in the long run.

Bradfield further cautions that many unknowns make oil and gas development a high risk proposition at this time. Solid baseline data, by which environmental and human health consequences could be monitored, are lacking, yet should be considered essential before any development can proceed. He noted that the effectiveness of the present regulatory regime is overrated: regulations are designed by the industry and inspections are carried out by industry professionals, creating a situation in which the integrity of the system breaks down. He also stressed the importance of public consultation and social license, citing the example of Nova Scotia's review process, where valuable, well researched public input served as a genuine influence on final policy recommendations. He encouraged Newfoundlanders to pay attention, and to demand transparency and public consultation as the review process is carried out here.

Chief Mi'sel Joe drew attention to the lyrics of the Ode to Newfoundland, which had been sung at the opening of the forum. He referred to the anthem as an official document, sanctioned by government, the words of which declare the love of the people for all the harsh and beautiful natural aspects of their province. Chief Joe suggested that if Newfoundlanders are not prepared to actively live the spirit of the Ode, they should change the lyrics to reflect a more accurate reality. He challenged all Newfoundlanders to live up to the commitment of the Ode, to see beyond a potential short-term economic boom toward taking seriously their custodianship of the land, to preserve and protect it from permanent damage and destruction that could be caused by oil and gas development in what remains of this province's pristine wilderness.



A final speaker, concerned youth citizen Claire St. Croix, asked for greater education in schools about fracking, and how it relates to pollution and global warming. She would like to see her generation become more aware of the consequences of an economic paradigm that places its emphasis on jobs now, rather than sustainable quality of life. She appealed for strong action toward preserving Newfoundland's natural environment for hers and future generations to come.

Heather King

(Photos courtesy Aiden Mahoney)

Updates and Articles on Fracking

Check out the **Port au Port/Bay St. George Fracking Awareness Group** on Facebook for useful links and information!

Save Gros Morne and Our West Coast Facebook Site

Save Gros Morne and our West Coast aims to disseminate timely information on proposals to conduct horizontal slick-water hydraulic fracturing (fracking) along the West coast of Newfoundland. See their facebook site for updates, news, announcements, videos, photos, and especially an extensive list of resources relating to fracking dealing with many aspects of the topic (public health, fracking chemicals, what is happening in other provinces, and so on). It's a wonderful resource!

<https://www.facebook.com/SaveGrosMorne>

<http://savewestcoastnl.wordpress.com/>



Photo courtesy Natalie Thomas

The St. Lawrence Coalition

From their mission statement: The St. Lawrence Coalition was created to persuade government bodies to issue a moratorium on oil and gas exploration and exploitation in the Gulf of St. Lawrence as soon as possible. The St. Lawrence Coalition aims at bringing the gulf communities together, which share the same concerns and appreciate the natural resources of the Gulf of St. Lawrence. Our coalition is inter-provincial as five provinces are involved: Prince Edward Island, New Brunswick, Nova Scotia, Québec, and Newfoundland and Labrador.

website: <http://www.coalitionsaintlaurent.ca/en/coalition>

e-mail: coalitionstlaurent@me.com

Sylvain Archambault phone (418) 686-1854; cell (581) 995-4350



How to get involved in fracking awareness

1. Read the reports on fracking (for these, start with <http://savewestcoastnl.wordpress.com/>).
2. Attend the fracking awareness meetings and presentations.
3. Call or write to your MHA and MP.
4. Speak with your town council.
5. Check regularly the relevant websites on fracking on the west coast.
6. Tell your friends.
7. See the Council of Canadians Fractivist's Toolkit:

<http://www.canadians.org/blog/fractivist-toolkit-how-you-can-take-action-protect-water-and-stop-fracking>

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The Blow-Me-Down Community Garden is about to start another season (well, when the snow eventually melts)

For more information, contact Rebecca Shea
rannescott@gmail.com



A photo of the greenhouse, which has windows that automatically open

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Notes