



Western
Environment
Centre
wecnl.ca

Newsletter

Inside this issue...

- sustainability tips
- WEC's annual fundraiser
- updates and articles on fracking
- wind energy
- and much more

From the Editor's Desk

My, how quickly the autumn season approaches! What a beautiful season it is, conjuring gorgeous images of colourful forests, crisp weather, and bountiful harvests.

This past summer, I tried my hand at gardening, using vegetable garden beds. Through the whole process, I was struck by how delicate the balance could be in this mini-ecosystem, but also the critical importance of water. I believe that the lessons that can be learned from a vegetable garden can be applied to much bigger contexts.

There is much in this issue that speaks to these themes of water, food production, and balanced ecology. We have updates on the community garden as well as all the exciting things that have been going on through the Food Skills workshops being sponsored by WEC.

On a different level, these themes relate to energy production in our society. This newsletter contains a number of pieces on fracking but also the chance to develop wind energy in western Newfoundland. The provincial government is to be congratulated for ordering an external independent review of fracking before allowing the operations to go forward. Yet it is everyone's hope that the panel will be able to release a balanced and convincing report, because, as Heather King's summary tells us, the environmental impacts of fracking in the United States are becoming increasingly dire.

A few communities in western Newfoundland have experienced water shortages this past summer, mirroring a growing problem in the U.S. We cannot live without water. We cannot feasibly desalinate ocean water to irrigate our crops and nourish our bodies. We cannot turn water contaminated by fracking fluids into drinking water. But we can change our energy infrastructure. Just as many innovations can be introduced into a small vegetable garden, such as barrels to capture rain water, so too can alternative energies be developed to meet a significant portion of our energy needs. All it takes is innovation, consumer demand, and political will. Nick Mercer's discussion of wind energy offers much food for thought.

It was Maude Barlow, president of the Council of Canadians and author of *Blue Future: Protecting Water for People and the Planet Forever*, who told us that the looming global water crisis means that we must care about every drop of water. It's advice that we would do well to heed.

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: view of the Bay of Islands from Corner Brook (photo courtesy Brittany Taylor)

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 (e.g., Earth Day, Green Drinks, Earth Hour)
- 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

Simon Jansen.....Chair	Danielle Fequet
Rosie Myers.....Vice-Chair	Glen Keeling
Katie Temple.....Treasurer	Nick Mercer
Brittany Taylor.....Secretary	April Muirhead
Rebecca Shea.....Membership Coordinator	Laura Simms
Edwin Bezzina.....Newsletter Coordinator	Stephan Walke

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

Food Skills Workshops!

The Western Environment Center, in partnership with the Food Security Network NL, has been delivering a series of eight Sustainable **Food Skills Workshops** over the summer and into early fall in the **Corner Brook area**. The workshop titles are as follows:

Container Gardening (In partnership with the First United Church): Friday, July 4th

Composting (backyard and vermi): Sunday, July 20th

Edible Wild Plants (In partnership with Qalipu Mi'kmaq First Nation Band): Wednesday, July 30th

Using Culinary Herbs: Thursday, August 14th

Preparing Local Vegetables: Friday, September 12th

Seed Saving (how to grow and save your own seed): Saturday, September 27th

Root Cellars: Saturday, October 11, 2014

Canning/Bottling: Wednesday, October 22, 2014

The workshops were put together by the *Root Cellars Rock* project of the Food Security Network of NL. They are based on the “four Ps” of local food: planting, picking, preparing, and preserving. Together they teach us how to grow and harvest our own produce, make healthy meals, and preserve food for future use. The workshops are a resource for community groups and individuals across the province to help them foster knowledge, capacity, and engagement on healthy and sustainable traditional food skills in their communities.

For more information please contact Corinne Brett by phone at 660-0845 or by email at corinne-brett@gmail.com

With special thanks to:



TD Friends of the
Environment
Foundation



The Blow-Me-Down Community Garden: Summer Solstice Party June 22nd

Even though we didn't have balmy summer temperatures, there was a fantastic turnout of folks celebrating the Summer Solstice at the Blow Me Down Community Garden on June 22nd. All were invited to take part in the festivities which included food, drink, conversation, pinatas, and a seed swap! Dozens of seed varieties, a handful of plants and even potato and asparagus starters were traded among participants. Many gardeners also took the opportunity to tend their garden plots and prepare for a hopefully bountiful season! Thank you to all who attended and those whom shared their goodies!



In other community garden news, funds have been allocated to repair the broken windows in the greenhouse and the water source problem is being investigated.

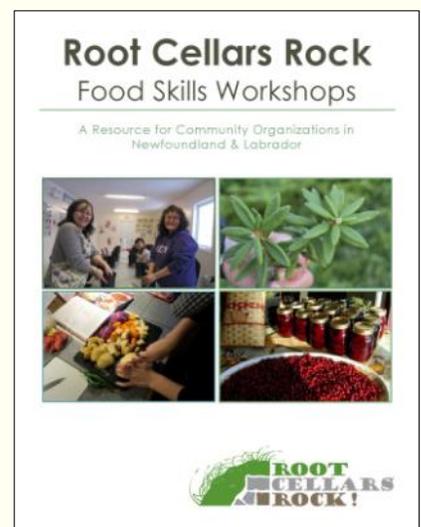
Katie Temple



Photos courtesy E. Bezzina, R. Shea

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>.



green drinks corner brook
meet • drink • talk • think

Come join us at Green Drinks in Corner Brook!

The concept of Green Drinks emerged as a way for environmentally-minded people from a multitude of backgrounds to mingle, network, and connect over a few drinks. Since its inception in 1989 by a group of friends in London, UK, Green Drinks has gathered momentum and now boasts over 800 chapters worldwide. These informal gatherings are agenda-free and offer a congenial social atmosphere.



The Green Drinks events draw a diverse crowd eager to share insights, debate, and meet new people. Future Green Drinks will be held on the first Thursday of every month at King Henry's Pub in the Glynmill Inn—so mark your calendar! Upcoming Green Drinks in 2014 will be take place on **November 6th** and **December 4th** and all are welcome to attend.

logo design by Laura Simms and Daniel Payne; photo by E. Bezzina

Mark your calendars for WEC's upcoming fundraiser: Tuesday, November 4th, 2014

A Western Environment Centre Fundraiser

3RD ANNUAL

Great Meals

FOR A CHANGE

TUESDAY
NOVEMBER 4TH, 2014
6:00 P.M. — 9:00 P.M.

BLOW * ME * DOWN
CROSS COUNTRY SKI CLUB

4 COURSES
MEAT & VEGETARIAN

\$40
TICKETS

LOCAL FOOD
LIVELY DISCUSSION

TICKETS AVAILABLE AT BREWED AWAKENING & BREWED ON BERNARD & ONLINE AT WECNL.VAPSODY.COM

FOR MORE INFORMATION CONTACT INFO@WECNL.CA

POSTER DESIGN: WILLIAM C. PARRIS



A photo from the 2012 fundraiser (photo E. Bezzina)

Welcome to our new Board members!

April Muirhead

April is originally from Charlottetown, PEI and came to Corner Brook for school. During her time in the area she completed the a B.Sc. program in Environmental Science (Biology) at Grenfell Campus, Memorial University of Newfoundland and also finished the GIS Application Specialist program at the College of the North Atlantic. She is currently working with Ducks Unlimited Canada as Newfoundland and Labrador's Conservation Program Specialist. April joined WEC to become involved with environmental activities in the community.



Nick Mercer

Nick was born and raised in Stillwater Lake, Nova Scotia and moved to Corner Brook in 2010. Nick attends Grenfell Campus; having first obtained his B.A. in Environmental Studies, he is now a graduate student in the Masters program in Environmental Policy at the Environmental Policy Institute. Nick served for a year as Vice-President External of the Grenfell Campus Student Union, where he chaired the Environmental Affairs Committee and was one of the organizers of the Farmers' Feast Local Food Soup Kitchen. Nick's main areas of interest include wind energy policy, small-scale alternative energy sources, and outdoor environmental education. Nick joined the Western Environment Centre's Board of Directors in 2014, with the intent to help promote environmental awareness in Western Newfoundland.



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.

Wind Energy Policy in Newfoundland and Labrador *Harnessing North America's Greatest Energy Resource*

by Nick Mercer

At the Grenfell Campus (Memorial University of Newfoundland) students enrolled in the fourth year of the Environmental Studies program complete the course EVST4950 Independent Project. The course engages students in original research and requires them to write a major report on their findings. Nick Mercer provides us with a summary of his enlightening research on the potential for wind energy in Newfoundland and Labrador.

"The Canadian Wind Energy Atlas indicates our wind resources are among the best in North America, positioning us to become leaders in the development and use of wind power." This quote from our provincial energy strategy (*Focusing Our Energy*, 2007) identifies that Newfoundland and Labrador have the strongest wind energy resources in North America. Despite this incredible resource, we are currently ranked third last among Canada's provinces and territories in installed wind energy capacity. Our province's current 51.7 megawatts of wind energy exceeds only that of the Northwest Territories (9.2MW) and the Yukon (0.81MW). This compelled Nicholas Mercer, a recent Environmental Studies graduate from Grenfell Campus (Memorial University of Newfoundland) to research wind energy policy in Newfoundland and Labrador as part of his academic program's keystone course, Environmental Studies 4950 Independent Research Project. The following is a brief summary of what can be found in my essay: the benefits that we're failing to derive from our wind resources, the obstacles which are inhibiting development, and policy recommendations which would enable our province to capitalize on this tremendous energy resource.

Our province's 51.7MW of wind energy saves consumers up to eight million dollars per year compared to burning fuel at the Holyrood Thermal Generating Station. This wind energy is enough to power 12,300 homes, which is the equivalent to burning 290,000 barrels of oil. By using wind energy, the province experiences a reduction of 143,000 tonnes of greenhouse gases on an annual basis. These are staggering statistics, but nothing compared to what is in fact available to the province. A number of studies indicate that our current energy system can integrate an additional 200MW of wind energy by 2035. An additional 200MW of wind energy would save consumers roughly \$38 million dollars per year, would power 58,000 homes, avoid the consumption of 1.35 million barrels of oil, and reduce greenhouse gas emissions by 670,000 tonnes. A conservative estimate of wind energy available for development in the province is 5,000MW, representing a potential \$10 billion in direct investment, as well as the creation of 12,500 direct job years of employment and 40,000 indirect job years of employment. Does 5,000MW of wind energy sound like an unrealistic possibility? Think again. Hydroelectric projects currently under development and consideration in Labrador amount to 3,074MW.



Image source: [http://en.wikipedia.org/wiki/Wind_turbine#mediaviewer/File:Windmills_D1-D4_\(Thornton_Bank\).jpg](http://en.wikipedia.org/wiki/Wind_turbine#mediaviewer/File:Windmills_D1-D4_(Thornton_Bank).jpg)

So what is preventing our province from capitalizing on this resource? The most obvious obstacle is a lack of policy action and wind energy targets. Our current energy strategy indicates that we are capable of integrating 80MW of wind energy in this province, and yet we offer no incentive to developers and set no targets for new development. By comparison, Ontario has a Feed-in-Tariff program with a target of 10,700MW of additional renewable energy by 2020, Quebec has a target of 4,000MW of additional wind energy by 2015, New Brunswick is seeking 400MW by 2015, and P.E.I previously had a government target of 500MW.

Our provincial government's *Bill 61* is another major impediment to wind energy development in Newfoundland and Labrador. This Bill effectively gives Nalcor Energy a monopoly over the sale and distribution of energy in the province, meaning that no other company will be able to independently develop resources or challenge rates in Newfoundland and Labrador. This bill also made net-metering illegal, effectively prohibiting homeowners with small wind-turbines or solar panels from selling excess energy back to the grid. This is particularly troubling; studies suggest that our province could integrate as much as 440MW of small-scale wind energy into our energy system. Among other things, our provincial government simply has other priorities. This is evident in the comment made in 2011 by an official from the Department of Natural Resources: "The government of Newfoundland and Labrador has recently announced the development of Muskrat Falls as part of the Lower Churchill Project. We believe that this development is the most appropriate project to meet the energy needs of Newfoundland and Labrador, and any wind development projects must take place in the context of the Lower Churchill Project."

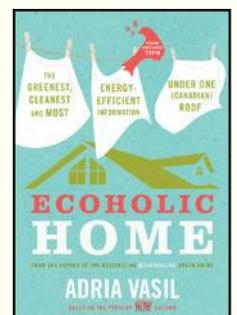
"An additional 200MW of wind energy would save consumers roughly \$38 million dollars per year, would power 58,000 homes, avoid the consumption of 1.35 million barrels of oil, and reduce greenhouse gas emissions by 670,000 tonnes."

In order to capitalize on our tremendous wind resources, the province needs to reconsider its controversial *Bill 61* or the wind energy sector may never get off the ground. The province must develop a comprehensive wind energy plan to guide the development of the resource in the province; such a plan should strengthen wind energy targets and develop higher educational programs for renewable energies. At this time, the province's greatest opportunity for wind energy is small-scale; the government should adopt policies to encourage the development of small-scale wind operations. Our government also must continue pursuing wind export opportunities such as the Maritime Link; this is a step in the right direction, crucial for getting North America's greatest wind energy resource to the energy market.

Nick Mercer

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).



The Cleaning Corner: Homemade Glass Cleaner

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 glass cleaner for your windows and mirrors. It's home-tested and approved!

Ingredients:

- ¼ cup rubbing alcohol
- ¼ cup distilled white vinegar
- 1 tbsp. cornstarch
- 2 cups warm water

Directions:

1. Combine all ingredients in a spray bottle and shake well. Shake well before using, too, as the cornstarch might settle at the bottom (and subsequently plug the spray mechanism if it's not mixed in well).
2. Spray and wipe an intended surface like you would any commercial glass cleaner. For extra shiny and streak-free glass, use black and white newspaper (at least for the final wipe/buff).

Rebecca Shea

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.

Updates and Articles on Fracking

Perspectives published in *The Western Star*

During the summer months, the prospect of fracking on the west coast of Newfoundland continued to be a debated topic. Among numerous letters written to the editor of *The Western Star*, two attracted our notice. One letter was sent on behalf of the oil and gas committee of the Greater Corner Brook Board of Trade. Although WEC was unable to obtain permission from the GCBBT to reprint the letter here, we felt it necessary to summarize its contents. Based on the recent release of the Strategic Environmental Assessment Update by the Canada and Newfoundland Offshore Petroleum Board, the GCBBT argues that the government could develop a world-class regulatory regime for fracking so that companies will be able to pursue an onshore and offshore exploration program. It is argued that with the proper environmental regulations and safeguards, such a program could bring significant economic and social benefits to the region (at the time of the printing of this newsletter, the letter can be read at <http://www.thetelegram.com/Opinion/Letter-to-the-editor/2014-07-19/article-3806181/Oil-and-gas-opportunities-abound/1>). Simon Jansen, a member of the Newfoundland and Labrador Fracking Awareness Network, wrote a response, which is printed below.



The perspective from the Newfoundland and Labrador Fracking Awareness Network

I refer the letter to the editor on June 9, from Sharon McLennon, first vice-president and chair, Oil and Gas Committee, Greater Corner Brook Board of Trade.

The board of trade vice-president stated that the completion of the CNLOPB Strategic Environmental Assessment report “is an important milestone in the industry’s development” and that “science-based decision-making” is part of the “key pillars of our policy on responsible economic development.

The Newfoundland and Labrador Fracking Awareness Network, along with 20 other organizations and sectors, including fisheries, tourism, religious groups and the Newfoundland and Labrador College of Family Physicians also strongly advocate for a comprehensive, science-based review.

But we insist this to be independent and including a health-impact assessment of hydraulic fracturing and other associated technologies associated with unconventional oil exploration and extraction. And so it seems that everyone wants scientific information, but when it becomes available, it is being ignored.

The Council of Canadian Academies was mandated by the federal minister of Environment to assemble an expert panel to assess the scientific state of knowledge about the impacts of shale gas petroleum exploration extraction using hydraulic fracturing in Canada. The council is a not-for-profit organization that supports independent, science-based, authoritative expert assessments. The report notes that few peer-reviewed articles on the environmental impacts of shale gas development have been published. They stress that society’s understanding of the potential environmental impacts has not kept pace with development, resulting in gaps in scientific knowledge about these impacts. The expert panel also states that the health and social impacts of shale gas development have not been well studied.

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Updates and Articles on Fracking

The perspective from the Newfoundland and Labrador Fracking Awareness Network *(continued from the previous page)*

The council notes that there can be advantages in “go-slow” approaches to allow for additional data collection, to permit adaptation to the implications of new information and to encourage integration of multidisciplinary expertise. That’s good advice to the parties, but so far, the report seems to be ignored by both federal and provincial governments, the CNLOPB and the board of trade. If you want the science everyone seems to be talking about ... read it. It is available at <http://www.scienceadvice.ca/en/publications/assessments.aspx>. And when you are done, let us make a decision together as a region.

The CNLOPB has conflicting roles for petroleum industry development, worker safety and environmental health. Its predominant focus is on oil and gas exploration and development. They are losing credibility and legitimacy with the general public. The CNLOPB conducts strategic environmental assessments to supposedly determine if it is appropriate to proceed with oil and gas development in Newfoundland’s gulf waters and, at the same time, it is allowing seismic testing, issuing licences, making land ownership and control agreements with oil companies and otherwise facilitating oil and gas exploration and development. I believe a regulator should not be a facilitator at the same time. There should be a separate independent regulatory agency for worker safety and environmental protection as recommended by Judge Robert Wells. We feel that the support expressed publicly by the board of trade as being “a significant opportunity for quality of life in the greater Corner Brook area and western Newfoundland” is premature. Fracking operations in other parts of North America have turned regions into highly industrialized zones. If “quality of life” is merely measured in financial terms, Ms. McLennon might have a point, but surely those of us who chose to live here are appreciating our region for far more than mere dollars in our pockets.



Energy projects like the proposed wind farm are a far better fit for the region and would also create economic growth and really show leadership on the world stage.

Simon Jansen, Newfoundland and Labrador Fracking Awareness Network, Corner Brook



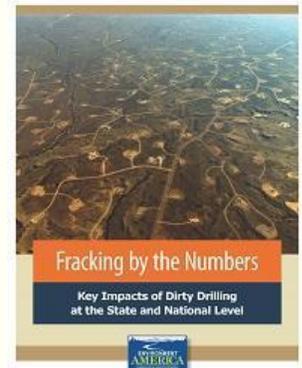
We commend the provincial government for announcing in August 2014 that it will commission an independent external review of fracking before making a decision on whether to allow fracking in western Newfoundland. A coalition of twenty organizations and groups had made the request earlier this year. The panel has since been formed and it is everyone’s hope that it will undertake an objective, arms-length, and balanced evaluation of the potential environmental and health impacts of fracking and what fracking could mean for the people of western Newfoundland. The composition and mandate of the panel has been attracting criticism. For its part, WEC is in the process of forming a statement on the panel.

Updates and Articles on Fracking

The following is a summary of an enlightening summary report produced by Environment America Research and Policy Center on the emerging effects of fracking in the United States:

“Fracking by the Numbers. Key Impacts of Dirty Drilling at the State and National Level.” Produced by Environment America Research & Policy Center. Written by Elizabeth Ridlington, Frontier Group, and John Rumpler, Environment America Research & Policy Center. October 2013.

This report seeks to quantify some of the cumulative environmental impacts of fracking for oil and gas in the United States. Figures presented were derived from data collected largely from state oil and gas regulators, while other non-governmental or non-industry sources include SkyTruth (satellite imagery) and FracFocus (the Chemical Disclosure Registry). Broad categories where environmental impacts of fracking were examined include water, air, and land quality, with some socio-economic impacts also briefly discussed.



Looking at the available numbers, the authors determined that approximately 82,000 wells were fracked in the US from 2005 to 2013. They estimate that, during that time, 250 billion (US) gallons of fresh water were used, contaminated, and lost to the water cycle; 2 billion gallons of chemical additives were injected into the earth; 100 million metric tons of CO₂ equivalent air pollutants were released into the atmosphere; and 360,000 acres of land were directly damaged by fracking activity, e.g. by construction of well pads. Further tables which break down the numbers by state and/or shale ‘play’ are included in the report.

At the top of the report’s list of environmental impact concerns was fracking’s insatiable demand for fresh water, and the resulting depletion of fresh water aquifers. Noting the high concentration of fracking activity in states with ‘dry’ regions, such as Texas, Colorado, and North Dakota, the authors report that, “nationally, nearly half of all fracking wells are located in regions with very limited water supplies.” For example, from January 2011 to September 2012, 47 percent of wells fracked were located in areas with “high or extremely high water stress.” In these areas, drilling companies sometimes compete with residential customers for available fresh water. Consequently, not only are drinking water aquifers being depleted, but the cost of fresh water is increasing due to competitive demand from industry, placing a higher economic burden on residents at the same time as the quality of their water diminishes. This problem will only increase over time.

The authors also address the unsolved problem of wastewater disposal. According to oil and gas industry estimates, 99.2% of fracking fluid is water, leaving the remaining .08% the frequently ‘proprietary’ mixture of chemical additives that unlocks the oil or gas from its rock matrix. At a glance, .08% may seem like an insignificant amount, but when multiplied by the total volume of fracking fluid reportedly used in the US from 2005 to mid-2013, that low percentage translates to two billion gallons of chemicals injected onto the earth, many of which are toxic. In 2012, fracked wells across the US produced an estimated 280 billion gallons of ‘flowback’ or chemical-laden wastewater, which in the central U.S. is commonly disposed of via re-injection into deep earth wells. The authors report that routine testing across the US in 2010 revealed that 2,300 injection wells failed to meet mechanical integrity requirements established by the EPA. In one instance, two Ohio wells, designed in the 1980s to securely contain toxic chemicals for 10,000 years, leached those toxins into drinking water wells 80 feet from the surface in less than 20 years. They also report that since 2007 seismic activity in areas of re-injection increased by 1,000 percent over previous decades. Other disposal methods are even less satisfactory, with no completely safe method yet developed.

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Updates and Articles on Fracking

Fracking by the Numbers *(continued from the previous page)*

In the category of damage to air quality, the primary culprit identified was fugitive methane, while emissions from peripheral industrial activity were also considered as polluting factors, but difficult to quantify. Citing an MIT study, the authors report that the average fracked gas well completed in 2010 released 110,000 pounds (55 tons) of methane during the first nine days of operation. Across the various US shale gas plays, uncontrolled methane emissions ranged from 2.2 percent to 11.7 percent of total gas produced, with a mean of 3.3 percent of the methane produced over the life of a well lost into the atmosphere as fugitive emissions. In the extreme case, in the Bakken play of North Dakota, 29 percent of all gas produced is flared off, due to lack of infrastructure to capture it and transport it to market. The overall impact of these emissions on global warming cannot yet be adequately quantified.

The impact on land is measured in the acreage required for well pads and peripheral activities, damage to wildlife habitats, loss of forest and agricultural land, industrialization and associated pollution, and destruction of landscape vistas. Although it's difficult to quantify something like 'destruction of landscape vistas,' it was estimated that, while it varies from state to state the average well pad occupies about three acres of land, with a further two acres per well pad affected by associated peripheral disruptive activity such as road construction, all of which contribute to wildlife habitat fragmentation, as well as loss of forest and agricultural lands. According to a February 2013 analysis by the Natural Resources Defense Council, seventy of the US's largest oil and gas companies held leases to 141 million acres of land, an area larger than California and Florida combined, and that number was on the rise. Visual effects on landscapes can be seen clearly in aerial photographs included throughout the report.

In their discussion of socio-economic impacts, the authors cite a 2008 study by Headwaters Economics which found that Western counties [*location detail not provided*] that have relied on fossil-fuel extraction for growth are doing worse economically than their peers, with less-diversified economies, a less-educated workforce, and greater disparities in income. A Texas study showed a decrease of as much as fourteen percent in property values near fracking sites, and in other areas it has been observed that economic change can undermine local agricultural economies. Over the long term, fracking activity can result in higher taxes to cover expenses such as higher public spending on infrastructure, social programs, and environmental clean-up.

The overall thrust of the admittedly not-always-clear statistics presented in this report is that previous estimates of environmental impacts from fracking have underestimated the true long-term consequences to water, air, land, and human well-being; that "damage from fracking is widespread and occurs on a scale unimagined just a few years ago." The authors make several suggestions for policy changes to at the very least regulate fracking activities; some of these policy suggestions are now in the process of being adopted. In conclusion, the report argues that the data, even though limited, is sufficient to make a case against fracking.

Heather King

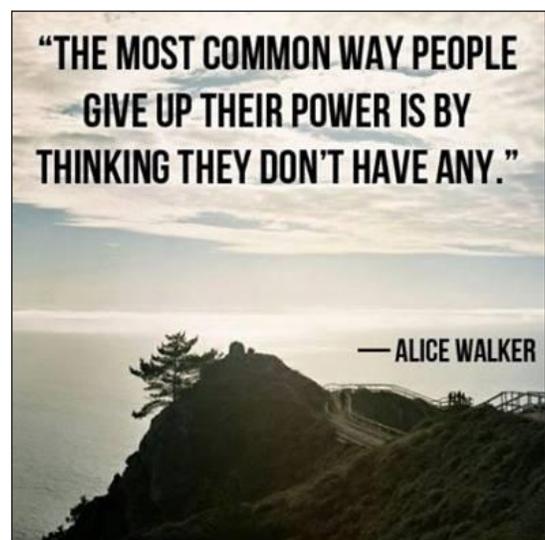


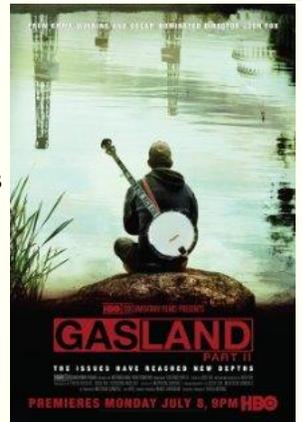
Photo courtesy Aiden Mahoney

Updates and Articles on Fracking

Film Review: Gasland II

EOne Studios/HBO Documentary Films, written and directed by Josh Fox, 2014.

Gasland Part II, the follow-up effort to Gasland by writer/director Josh Fox, was released on DVD in 2014 by Home Box Office (HBO), the same purveyor of Six Feet Under, True Blood, and Game of Thrones. Clearly, HBO does good television. But, does it do good science? On the basis of this documentary, this answer is no. Yet, if you recognize Gasland Part II as infotainment rather than science reporting, then we can all get on with it. Gasland Part II is advocacy journalism, with a narrative demonstrating a transparent anti-fracking point of view. Reviewing the documentary at this time is highly relevant because the Newfoundland and Labrador government has revisited its moratorium on fracking and, on August 11, 2014, decided that an external independent review of the industrial process was required. The local and provincial debates continue.



Fracking (hydraulic fracturing) as it is currently practiced can be bad for the environment...that much of the science is well understood. There are concerns about leaky wells (5% of all brand new wells leak according to Fox), the associated contamination of ground and surface water, contributions to greenhouse gas emission levels, explosiveness in local housing, and an overall emerging lack of trust in the regulatory system that is supposed to protect citizens. On-screen, Josh Fox is monotone in his communication style about these sad realities. In actuality, this serves a primary narrative goal of not detracting from the central message: that fracking can have serious environmental and social implications.

At the same time, realistically, fracking can serve a number of persuasive economic and political goals, and it will continue to unfold as a practice as long as the incentives for doing it endure. The challenge remains to ensure that fracking is undertaken only where population densities are low and affected landowners can be equitably compensated, and where the underlying geology is such that environmental contamination can be contained in a meaningful way.

Since the presentational style of Gasland Part II is informational rather than promotional or delusory, attempts at balance were able to be explored. For example, a number of the pro gas-fracking points are presented: that fracking can help make nations self-sufficient in energy for a century or more, that a nation can be freed from trading with petroleum-rich terror regimes, that the price of fossil fuels can be attenuated in the shorter run, and that a supposedly cleaner fossil fuel than oil can be made more plentiful (namely, natural gas, although Fox clearly opens the dialogue regarding suppositions about natural gas and its "cleanliness").

Overall, the film's narrative was comprehensive, despite focusing on gas fracking and largely overlooking oil fracking: it was descriptive, analytical and explanative, and often evaluative, although superficially. Its units of observation involved a combination of primary evidence like personal interviews with affected landowners and attendance at public hearings (including local council meetings and Congressional hearings), and secondary evidence like water analyses and archival footage. Some drama was conjured when the writer/director was denied access to a Congressional hearing, an instance of the classic journalistic blunder of the reporter becoming the story and thereby clouding objectivity. *(continued on the next page)*

Updates and Articles on Fracking

Film Review: Gasland II *(continued from the previous page)*

Aside from this weakness, Fox consistently tried to let the evidence speak for itself. Both the Bush dynasty and the Obama Administration are taken to task, thereby contributing further to the film's sense of balance. Overall, the vilification of gas companies ruining the water of local landowners in the vicinity of fracked wells emerged as the strongest issue, as it should. After all, how can a civilization possibly be sustainable without clean water or clean air? Some things left unsaid in the documentary include an underlying reality that nobody wants to deal with: if a large economy like that of the United States or Canada gives up its petroleum demand and focuses on alternative energy sources like wind or solar, then the fall in demand for petroleum products will reduce global prices, and make other economies elsewhere in the world more competitive as they capitalize on new demand and supply conditions for fossil fuels. This is a theme that nobody wants to talk about...economics, in theory, demands that we exhaust fossil fuels in all their forms before other technologies can truly be developed and made viable. The exceptions, of course, involve those countries that have no domestic fossil fuels and should be aggressively targeting alternative energy sources.

At the same time, a number of science-based issues with the documentary did emerge, like the *Man with the Plan* saying that the energy needs of the planet can be met with wind, without him seeming to realize that wind and other sources of electrical power can't fly planes or rockets, or reliably defend nations from external aggression (excepting nuclear submarines). There is also the issue of the writer/director's authenticity as a commentator on issues outside of fracking like the BP Deepwater Horizon oil spill in the Gulf of Mexico. Fox's membership in *the relevant group* to comment on fracking is established by his threatened home in Pennsylvania. His authenticity to comment on the Gulf of Mexico debacle is less clear.

For anybody who wants a cautionary tale about the perils of fracking as a resource extraction technique, then this is a rewarding documentary. It has much to recommend it from the visceral accounts of lives ruined by gas companies and the machinations of capitalism, to the improved production values over the first Gasland. And, the thesis that natural gas is not the solution that political parties would have us believe is explored. Conversely, for viewers seeking the fundamentals of the social and physical science of petroleum, they are asked to use this documentary merely as a point of departure. At some future point, our culture will move beyond fossil fuels, and those petroleum companies that stayed in the energy-provision game will have amassed the alternative energy patents needed for their stranglehold on the industry to endure. This is the true seven-generation view that governments have to plan for.

Nick Novakowski

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>

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

Company websites and information:

Shoal Point Energy
<http://www.shoalpointenergy.com/>

Black Spruce Exploration
<http://www.blspexp.com/>

for the scoping document and project description, visit
<http://www.cnlopbnl.ca/environment/bsespe.shtml>

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.coalitionssaintlaurent.ca/en/coalition>
e-mail: coalitionstlaurent@me.com
Sylvain Archambault phone (418) 686-1854; cell (581) 995-4350



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