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B E T W E E N T H E
i s s u e s

BETWEEN THE COVERS:

When Fracking Hits Close To Home

Dude, Where's My Bus?



Features

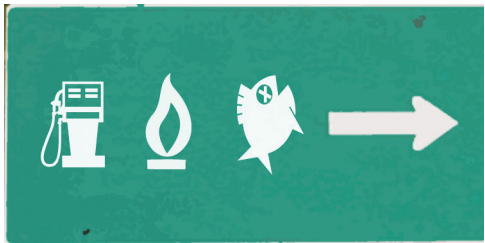
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B E T W E E N T H E i s s u e s

an ecology action centre publication

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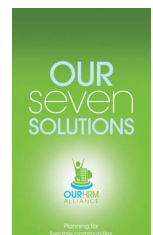
I enjoy receiving your *Between the Issues* publication. I am so glad that you still produce this on paper (and mail it to me). I suspect that there are some in the EAC that would recommend transmuting this to electronics. In my living-room bookcase I have a collection of these magazines. I can pick them up anytime, whenever I want to read about your fascinating projects. If these had been sent to me in an electronic format, I would have to go through the lengthy process of firing up my computer each time. Actually, I probably would have erased them altogether. I have lived off-grid (wind, solar) since February 15th, 1971 (40 years!). This letter was typed using only solar (and sent through Canada Post).

Hans Albarda, Wolfville

hot off the modem

EAC's latest publications are available online at
<http://www.ecologyaction.ca/content/publications-resources>

Our Seven Solutions: planning for livable communities
Our HRM Alliance (March 2012), www.ourhrmalliance.ca



Letter from the centre

New Beginnings!

It's that time again when Nova Scotians begin to dream of putting away the shovels and winter boots in favour of hoes and sandals. It also seems that this time of year brings with it a lot of changes for the EAC and BTI. The biggest news is the imminent departure of Maggy Burns, the EAC's Internal Director and the stalwart captain of the Good Ship *BTI*.

Maggy will be leaving the EAC to take a position with another non-profit organization – but only for one year. We'll miss her drive, enthusiasm and great ear for titles, but we're pleased to know that she'll be expanding her horizons and sharing her talents with another great team! We're excited to work with the person who will be taking over the reins as Internal Director for a year – hopefully, they'll share Maggy's good humour, forbearance, and appreciation of the elasticity of deadlines....

Spring is not only a time of changes – the season itself is changing. Few places on Earth are experiencing this change more profoundly than Canada's Arctic, where loss of sea ice is changing the lives of the people and animals of the north. And just this year, the first evidence of a hole in the Arctic ozone layer was discovered, at the same time that the federal government was dismantling atmospheric monitoring stations as part of its drastic cuts to environmental programs. In this issue of BTI, Heather Hunter examines some of the consequences of the changing Arctic, and Canada's changing environmental policy. While environmental monitoring might not be a government priority, fossil fuel harvesting continues to be. Recent issues of this magazine have exposed the downsides of fracking. This time around Thom Oommen takes a more intimate look at the impacts that the prospect of fracking has had on the community of Lake Ainslie. Meanwhile, Jon Arnold explores the birth of a new community – the Halifax Transit Riders' Alliance – inspired by similar movements in other cities.

In times of economic crisis, issues like fracking tend to get the hard sell from industry and government because they are argued to be good for the economy. But Susanna Fuller turns a critical eye to the way we understand the economy, and argues that a new understanding is needed in order to strengthen it while protecting our environment and our livelihoods. Tourism is one of the places where the impact of the changing environment on the economy can be most easily seen. Emma Boardman speaks with some tourism operators in Nova Scotia to learn how they are responding to changes in their industry spurred by a shifting climate. Sam Fraser also takes a look at one of Nova Scotia's key tourist attractions – Kejimikujik National Park – which now offers a chance for some of the best star-gazing anywhere on the East Coast, having just recently become a Dark Sky Preserve.

For the eager gardeners, we offer a primer by Carlos Gardu-

ño on how to create your own high-quality compost, and a recipe for delicious dandelion greens from Anne Pryde. Jonathan Rotsztein checks on the progress of the implementation of the cosmetic pesticide ban. And in our regular feature Being Green, David Greenberg profiles farmers Bill and Alice Bezanson, who have found that doing things the new way isn't always the best way.

It's a busy issue, and a busy time of change for us here – so here's to new beginnings!

- BTI Editors



EVENTS

For more information, visit www.ecologyaction.ca

Shell Shocked

April 18th, 7pm
Bus Stop Theatre

EAC's Green Avengers in the Blue Nose Marathon

May 18-20th
Run with us, donate, or cheer on the team!
<http://www.ecologyaction.ca/BlueNose>

Oceans Day

June 8th

Oceans Film Festival

June 2012
Details will be found at:
<http://internationaloceaninstitute.dal.ca/FilmFest.htm>

Celtic Mass for the Sea

June 9th
Halifax Waterfront

EAC's Garden Party

June 10th
Doors open at noon; event goes until 3pm
1641 Fairfield Rd. (off Jubilee Rd.)
same venue as last year
Join us at our annual auction
and bid on priceless experiences and treats!

EAC Annual General Meeting

July 4th, 7-9pm
Bloomfield Centre, Multipurpose Room
Be part of the action!

greenbelting, recycling buildings

(Built Environment Committee) We've partnered with Research In Motion to investigate how people travel to work. This research is about understanding the impact of where businesses choose to locate and is being done with the support of the Transportation Issues Committee. Whether businesses should locate downtown or in a business park is a hot debate, and we want to get some empirical data to inform the discussions. The committee's interest is still high in looking at HRM's deconstruction policies. Should the municipality require the recycling or re-use of buildings if possible? The Morris Building is a perfect example of a building that was saved and is being used for another purpose. The Our HRM Alliance has grown to 35 members. It continues to approach candidates to adopt the seven recommended solutions into their platforms. The greenbelting initiative was launched on Friday, March 16th in conjunction with St. Patrick's Day (greenbelting, green beer... get it?).

w is for workshop and water

(Coastal and Water Issues Committee) We are wrapping up a whirlwind workshop season. February played host to three very successful workshops on Stormwater Management to sold-out groups in Halifax and Saint John, as well as a full house in Digby. The Climate Change Adaptation project brought people together in Cape Breton during two workshops on coastal erosion and the vulnerability of the boardwalk in Cheticamp. Participants from the Atlantic Provinces met over two days to interact with and hear from national water experts at the 2nd Atlantic Water Symposium in Truro. We are continuing to call for a Coastal Act and a Water Act and will be meeting with like-minded groups around the Atlantic region in May and June to build support for regional coastal and water priorities. These discussions will help align Atlantic voices prior to the arrival of the Canadian premiers during the Council of the Federation meetings taking place in Halifax in July. Amongst other issues, the Council will be discussing the province's progress on implementing the national Water Charter.

progress on protection

(Wilderness Committee) We're delighted that the NDP government has been making solid progress towards their commitment to protect at least 12% of our province by 2015. We welcomed the designation of Five Bridge Lakes Wilderness Area near Halifax in October and are pleased with progress towards protecting the Chignecto Game Sanctuary area lands in Cumberland County. We expect final designation any day now. We were also very pleased with the recent government purchase of \$23 million in high conservation value lands for protection in southwest NS from Bowater Mersey. On the downside, industrial forestry practices are as bad as, or worse than, ever. Despite the four-year Natural Resources Strategy process and a commitment to reduce clearcutting, limit biomass harvesting, and ban whole tree harvesting, these destructive practices continue unabated across the province. The government seems to be reluctant to bring in new regulations while the big pulp mills are in crisis mode. We will continue our efforts to encourage them to bring in regulations to prevent environmentally destructive forest harvesting practices.

sowing seeds for spring

(Food Action Committee) The weather is chilly, but the kitchen has been warm, as the Food Connections Project wraps up the winter cooking series, as well as a series of winter soup workshops with our community partners. The Native Plant and Pollination Project has been busy building native plant beds, sowing seeds for spring, building native bee nesting boxes, designing sitespecific rain catchment systems, and making clay signs to install in the gardens along with the native plants in the spring. We have also been busy growing our first winter salads in the new Bloomfield Community Greenhouse, which is lush and lovely. In an effort to help small- to medium-scale farmers save time and extend the production season, Heliotrust built a modified Hanley Hoop House to test crops in fall and early winter conditions, and has almost finished building a batch root crop washer. See www.heliotrust.org for pictures and plans.

one win and one loss for fisheries

(Marine Issues Committee) We've had a lot of action lately, with Off the Hook selected by National Geographic and RARE Planet as one of the top three initiatives in the world that is providing a pro-active and positive example of how to sustain coastal fisheries. A second example is the successful marketing of trap caught shrimp, which is once again an active and lucrative fishery in Chedabucto Bay. On the opposite side of that win – after years of hard work and public opinion in our favor – it looks like, against all odds, the Atlantic Canadian Swordfish Longline fishery will bear the “sustainable” label of the Marine Stewardship Council. Hector the Blue Shark will continue the fight to keep the MSC label credible and keep retailers engaged with reasons not to carry this product

in the meantime through <http://www.friendsofhector.org>.

Open net pen aquaculture seems to be sprouting up on our coasts despite public opposition, increasing global demand for sustainable closed containment, and the fact that we have no provincial strategy or capacity to properly regulate these operations. We are part of an active coalition working on a documentary on aquaculture, as well as providing alternatives to open net pen salmon aquaculture.

renewable storage

(Energy Issues Committee) The world is awash with enough wind and sunshine to power our planet, but what to do when it is dark, calm or both? Why not

skip the fossil sunshine and store renewable electricity for use when there is a dip in the wind. The Energy Issues Committee recently hosted a get together with innovator Danielle Fong, Chief Scientist of Lightsail Energy. (<http://lightsailenergy.com/tech.html>) Danielle was back in her home town of Halifax to tell folks about her regenerative air energy storage system. Like pumped hydro or battery systems, renewable energy would charge the system but with excess wind energy stored as compressed air in tanks. With Lightsail's system capturing and storing both the compressed air and the heat generated during compression, the common piston engine may see life after oil as an energy storage tool! If energy storage charges you up, drop by the Energy Issues Committee meeting (5:30 pm, third Tuesday of every month) to find out more.

giant talking pylons and a transit strike

(Transportation Issues Committee) We worked with St. Stephen's Elementary in Halifax in November on a Stop Drop & Stroll day, hosted by giant walking and talking pylons. It's one of 18 schools involved in School Travel Planning, aimed at getting more students out of cars. Making Tracks saw 150 students trained in skateboarding safety this fall. Our school siting discussion paper received positive feedback from two government departments. Our main message is: locate schools so more students can walk and cycle. TIC sent a letter to the Province urging more investment in sustainable transportation infrastructure, we gave input on its developing NS Road Safety Action plan and we attended a recent provincial Sustainable Transportation workshop. We're making our voices heard for more and better sustainable transportation options for NS! TIC also put its two cents in on the transit strike, pulling together the founding meeting of a Transit Riders Group.



ecobriefs

By Mike Ruxton

Quick Fixes

Science knows of only two agents that contribute to both global warming and air pollution – tropospheric ozone and black carbon (BC). For a quick fix, we have a good general idea what needs to be done: deal with the short-lived pollutants, such as soot and methane. Soot remains airborne for a few weeks, methane for about a decade.

To provide more detailed advice, two dozen scientists from a half-dozen countries, five disciplines, and 13 organizations evaluated about 400 already tested emission control measures for methane and soot that would improve air quality and reduce global warming. Their screening showed that the top 14 measures realized nearly 90 percent of the global warming potential reduction. Seven of the measures target methane emissions, covering coal mining, oil and gas production, long-distance gas transmission, municipal waste and landfills, wastewater, livestock manure, and rice paddies. The other seven address emissions from incomplete combustion. Technical measures cover diesel vehicles, biomass stoves, brick kilns, and coke ovens, and associated regulatory measures include banning agricultural waste burning, eliminating high-emission vehicles, and providing modern cooking and heating technology. All fourteen measures use existing technologies and are ready to be implemented.

The team of scientists modelled the impact of these measures, and concluded that, largely due to reduced methane emissions, global warming trends would be decreased by about half a degree Celsius by 2050. The drop in soot emissions would have substantial impacts on human (and animal) health.

The costs of the methane reduction measures are more than reasonable. On average, it would cost less than \$250 to prevent the emission of a metric ton of methane, while realizing a benefit of about \$1,100. The benefits of soot reduction are less easily quantified, but

the authors argue “the bulk of the [soot] measures could probably be implemented with costs substantially less than the benefits given the large valuation of the health impacts.” The health benefits largely fall to the countries that control their emissions.

UNEP/WMO Integrated Assessment of Black Carbon and Tropospheric Ozone: Summary for Decision Makers, 2011 Simultaneously Mitigating Near-Term Climate Change and Improving Human Health and Food Security - Science 13 January 2012

Turn That Noise Down!

September 11, 2001 changed our world view forever. It also provided various opportunities for unique scientific observations. One such opportunity arose for a team of scientists led by Rosalind Rolland of the New England Aquarium, Boston. The Aquarium conducts annual studies of baleen whales, who congregate in the Bay of Fundy during late summer to feed and nurse their calves. Ship traffic in the Bay immediately after 9/11 decreased substantially. Rolland was studying baleen whale reproduction, and sampling whale feces to check hormone levels. Concurrently, Susan Parks of Pennsylvania State University and colleagues were recording sounds in the Bay of Fundy to understand right whale behaviour.

Then, in 2009, while preparing for a workshop on noise and cetaceans convened by the U.S. Office of Naval Re-

search, Rolland realized the data sets she and Parks had gathered could be combined. They compared their whale dung and noise measurements from 2001 through 2005.

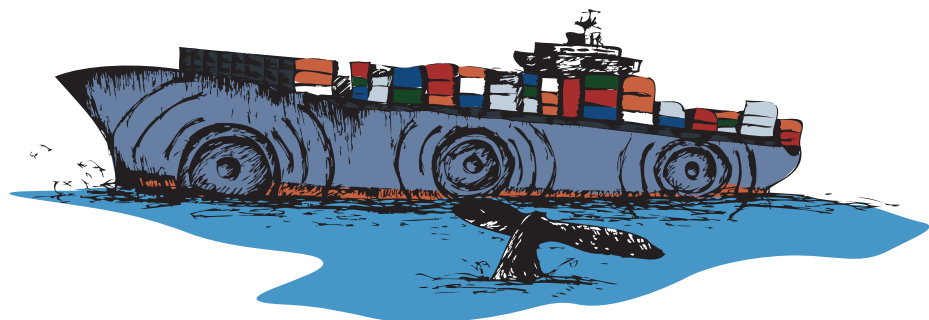
Parks’ observations showed a 6 dB decrease in overall background noise immediately after 9/11. More significantly, the noise spectrum below 150 Hz changed dramatically. In Rolland’s study, whale dung samples were collected and measured for reproductive and stress hormones. The only year in which whales’ stress hormones decreased was 2001, when noise and ship traffic also decreased.

Right whales alter their vocalization behaviour in noisy habitats; they essentially yell to be heard over the background noise of ship traffic. Maybe we could turn down the volume on our sound systems.

Evidence that ship noise increases stress in right whales – Proc. Royal Society B: Biological Sciences (8 February 2012) Science – 7 February 2012

Comparing Tar and Crude and Coal

A recent commentary in Nature Climate Change by Neil Swart and Andrew Weaver of the University of Victoria, BC, summarizes the potential CO₂ contributions of various fossil fuels to the global warming budget. They focus on the Alberta tar sands, and consider three categories: resources ac-



tively under development; reserves amenable to current development methods, i.e. proven reserves; and oil-in-place, oil products which in theory could be extracted. They estimate oil-in-place would contribute about 0.36°C to global warming if fully extracted, with substantially smaller contributions for proven and active resources (0.034°C and 0.005°C). The same calculations are made for conventional oil, gas and coal, and unconventional oil and gas. Coal and unconventional gas development are by far the two biggest obstacles to meeting the commonly advocated 2°C ceiling.

Alberta oil industry supporters argue these numbers demonstrate that environmentalists are wrong about the impact of tar sands development. That's typical misdirection. We should make informed choices across the spectrum of energy sources. Dig into the details of Swart and Weaver's numbers, in Charpentier et al for instance, and you find well-to-refinery, well-to-tank, and well-to-wheels estimates, and GHGenius, a model used by Natural Resources Canada. Tar sands extraction methodology is subcategorized into Surface Mining & Upgrading and In Situ & Upgrading. GHGenius calculations of global warming contributions for well-to-refinery production give the ratio Conventional Oil : Surface Mining & Upgrading : In Situ & Upgrading = 1:2:3.

In Situ & Upgrading is the recent tar sands extraction method in which steam heats the bitumen underground. Tank-to-wheels global warming impact is essentially identical for conventional and synthetic oil products.

Swart and Weaver sketch the worldwide, long-term picture, and conclude "If ... policymakers wish to limit global warming to less than 2°C they will clearly need to ... ensure a rapid transition of global energy systems to non-greenhouse-gas-emitting sources, while avoiding commitments to new infrastructure supporting dependence on fossil fuels." Not Keystone XL, not Northern Gate-

way, but rather a third way.

Swart & Weaver - The Alberta oil sands and climate – Nature Climate Change - 19 February 2012

Charpentier, Bergerson & MacLean - Understanding the Canadian oil sands industry's greenhouse gas emissions - Environmental Research Letters - 4 (2009)

Groundwater and GRACE

In March 2002, a joint mission of NASA and the German Aerospace Centre, the Gravity Recovery and Climate Experiment (GRACE) was launched, to make detailed measurements of the Earth's gravity field. Two satellites – Tom and Jerry – orbit the Earth in tandem, 220 kilometres apart, measuring changes in speed and distance between themselves as they travel. The measurements produce gravity maps which are three orders of magnitude more accurate than previous work, and are useful to oceanographers, hydrologists, glaciologists, geologists and other scientists studying phenomena that influence climate. GRACE has been used in mapping the hydrologic cycle of the Amazon Basin and the geological consequences of the 2004 Indian Ocean tsunami. A similar pair of satellites has recently been orbiting the moon.

Jay Famiglietti of the University of California Center for Hydrologic Modelling is the lead scientist of a team us-

ing GRACE observations to estimate global groundwater levels and how they are changing over time. The results aren't fine-grained; after accounting for snow-pack, rivers, lakes and soil moisture, scientists can detect a centimetre rise or fall in groundwater over an area about the size of Nova Scotia.

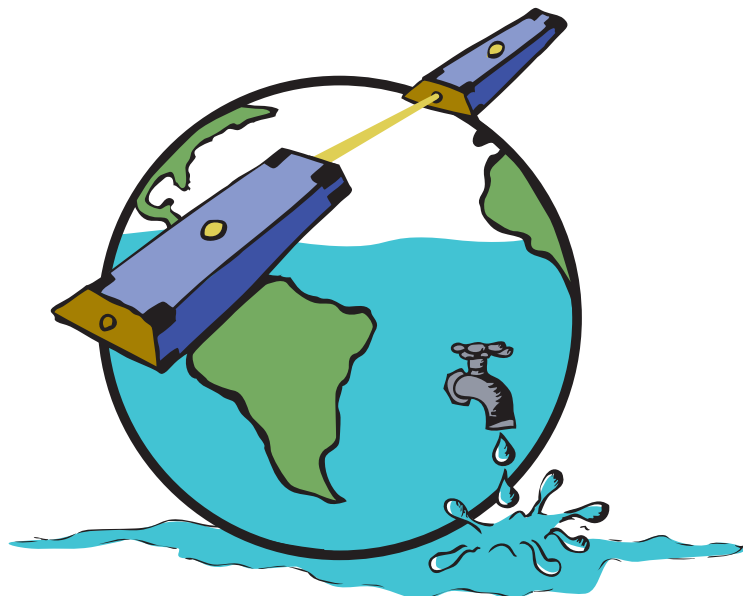
Famiglietti's team presented their results at an American Geophysical Union meeting in December. GRACE has been especially useful in areas where scientists don't have good ground observations. The study's results have been controversial, not because the science is complex or disputed, but because of political impacts. Areas where measurements indicate long term decline in groundwater reserves include China, India, California, the Middle East, and North Africa. Almost certainly the major reason for large drops in groundwater levels globally is farming.

The GRACE observations have one key shortcoming. They only estimate the long term trends; they don't quantify the size of the aquifers. We don't know how much water is left.

<http://www.youtube.com/watch?v=6419BZWJHfM> (53 minutes)

Barringer - Groundwater Depletion Is Detected From Space – New York Times, 30 May 2011

Powell - Groundwater dropping globally - Science News – 14 January 2012



The Fragile Arctic Frontier

By Heather Hunter



At this critical juncture in history, our defining challenge may boil down to the choice we make between continuing to exploit earth's resources for economic benefit versus protecting the natural environment. This high stakes battle is now being fought in a new frontier – the Canadian Arctic.

With evidence of unprecedented glacial melting and a new hole in the Arctic ozone layer, science is entreating us to slow down and protect this fragile ecosystem. Yet the pressure to develop, exploit, and prosper from the untapped resources of our environment are stronger than ever, particularly in the face of recent global economic instability. So where does the Harper government stand on this critical issue? Well...you can probably guess.

The Arctic's Ecological Status

Environmental conditions in the Arctic are changing at an unprecedented rate. Warming is occurring two to three times faster than the global average. This makes the future rather uncertain for Arctic animals such as polar bears, seals, walrus, and seabirds, which rely on the presence of sea ice for survival. Additionally, the disappearance of a significant number of Arctic lakes in the past few decades – at least 125 by one recent count – is linked to global warming, specifically thawing permafrost. When this

normally permanently frozen ground thaws, the water in the lakes can seep through the soil, draining the lake, much like pulling the plug out of the bathtub. When the lakes disappear, the ecosystems they support also lose their homes.

Because the Arctic plays a special role in global climate, environmental changes there will not only affect local people and ecosystems, but also the rest of the world. As sea ice declines significantly, less solar radiation will be reflected. More heat and light will be absorbed by darker-coloured oceans and lands, thereby increasing both regional and global warming. Receding glaciers and melting sea ice will cause sea levels to rise and extreme weather patterns to escalate globally.

In the Arctic stratosphere, conditions are even less stable. From 2010 to 2011 nearly 40% of all stratospheric ozone over the Arctic disappeared. In October 2011, *Nature* published a paper on the first genuine ozone 'hole' detected in the northern hemisphere. Because ozone helps to block potentially harmful ultraviolet radiation from the sun, its depletion could raise the risk of health problems such as skin cancer in northern populations.

The Allure

Despite the predictions of significant environmental damage, many view the melting Arctic ice as economic op-

portunity. For example, melting sea ice and glacial retreat are opening up new trade routes through the Arctic Ocean, and nations such as Canada, Russia and the United States are clamouring to claim and develop the Arctic's substantial and suddenly accessible oil, natural gas and mineral resources. Significantly shortened shipping routes would save billions in shipping costs, while exposing the fragile environment to multiple dangers, particularly oil spills. These potential economic opportunities are particularly appealing in the current global economic environment.

The Federal Government's Position

Recognizing that development of the north seems inevitable, the Aspen Institute's Commission on Climate Change in the Arctic outlines several strategic actions governments need to take to manage the new north. The April 2011 report calls for ecosystem-based management, which means thinking about the impacts of an activity on the entire ecosystem rather than just one piece. Canada's approach to the Alberta tar sands development suggests that environmental impacts will not be a key concern for the government.

Recent Environment Canada cutbacks and the muzzling of government scientists are further evidence of where federal priorities lie. For example, in 2011 – the year that saw the first confirmed hole in the ozone appear in the Northern Hemisphere – the federal government decided to drastically reduce Environment Canada's ozone science and monitoring programme and cut about 300 jobs. Moreover, since 2007 Environment Canada scientists have been prevented from communicating with the public unless given approval and 'approved lines' of script from the Prime Minister's Office. In addition, university scientists not directly working for Environment Canada may be punished with reductions in funding if they speak to the media. Coverage of climate

science in Canadian media has declined more than 80% during Harper's time in office, and Canada's backing out of Kyoto as well as the government's performance at the Durban Climate Change conference suggests that we are possibly the industrialized country working hardest to block international action on climate change.

While cutting back on environmental monitoring research, the government is funding projects such as geo-mapping for energy and mineral resources or projects to identify oil and gas reserves. In other words, research is geared towards making a profit from the northern territories. Meanwhile, military presence in the Arctic has dramatically increased under the Harper government, as it works to substantiate Canada's claim to this potentially resource rich area.

Putting It All Together...

Today, in an oil-dependent economy, the pressure to create jobs and find new sources of oil, coal and natural gas is high. But how much more prodding, drilling and burning of fuels can our planet realistically take? We are currently experiencing a state of rapid climate and environmental change, largely driven by the burning of fossil fuels. Yet it is these industries that are poised to benefit most from Arctic investment and development. Is our planet's long term health really worth risking for an economic boost? Is it smart to plunder now and hope that future generations will be able to repair the ecological damages left behind? The choices we, as citizens, and our elected representatives make will define what the planet looks like for future generations. What will our legacy be?

Heather Hunter is a writer and researcher working at the Participatory Action Research and Training Centre on Food Security at MSVU.

Take Action

Want to learn more about the challenges facing Inuit people as they struggle to adapt to a rapidly changing climate?

Check out *People of a Feather* by Joel Heath, a documentary about a unique Inuit culture that relies on arctic eider ducks, and the daily struggle to adapt to changing sea ice ecosystems.

Contact your MP to ask what they are doing about cutbacks to Arctic research, and to environmental research in general.



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Starlight, Star Bright

By Sam Fraser



ESO/S. Brunier

Nova Scotia, so much to see! The majestic lighthouse at Peggy's Cove, the picture-perfect town of Lunenburg, the historical significance of Annapolis Royal ... yadda, yadda, yadda, we've heard it all before. How about the red supergiant Betelgeuse, the potentially earth shattering asteroid 2005 YU55, the colourful Ring Nebula, or Muin and the Seven Bird Hunters? All of these things are visible in the night sky right here in Nova Scotia. Just step outside on a cloudless night and look up and the wonder and majesty of the universe will unfold above you, exciting the imagination as it has done for countless others, ever since there were eyes on earth to probe the mysterious heavens.

What's that you say? Not sure if that's the Seven Sisters or a plastic bag stuck in a tree? Big Dipper obscured by big building? Forget the shape of the Milky Way? We look up and see a gray haze of smog obscuring the pinpricks of light we slowly forget are hidden there. Light pollution or sky wash robs our skies of natural darkness and the canopy of stars loses its power to enthrall us. We are more interested in the supernova brightness of movie stars and the social constellations of our Facebook networks than we are in the vastness of the universe around us.

Happily, there is a safe place here in our backyard where we can go and be enveloped in the night sky and give our spiritual and scientific imaginations free reign. The Keji DSP, the Dark Sky Preserve of the Kejimikujik National Park, is a welcoming place to reconnect with

the stars above us. Enter the Sky Circle, a wooden observatory complete with reclining chairs, and explore the celestial canopy with their 25cm computerized Dobsonian telescope. Weekly workshops invite you to participate in the star lore of the Mi'kmaq people alongside the star lore of the Royal Astronomical Society of Canada. The heavens certainly are big enough for more than one perspective on their nature.

The Keji DSP sets the high water mark for Canadian Dark Sky Preserves. The initial application for the preserve, written by Jonathan Sheppard of Parks Canada, who is currently spearheading the work on the Sable Island national park, and local Royal Astronomical Society of Canada leaders Dave Chapman and Quinn Smith, set the gold standard for applications of this type. There is no artificial lighting within the DSP core area, which occupies almost all of Keji except for a buffer zone around its perimeter and along its roads: no car headlights, no CFLs, no rotating spotlights luring you to a downtown punk rock concert. It's dark.

Why do we need a dark sky preserve? We humans can be very careless about the amount of light we use, wasting a ton of energy (in the States, over-illumination accounts for about two million barrels-worth of oil per day, according to one estimate). A lot of that superfluous light is sent up into space. As we are now realising, over-illumination negatively affects our mental and physical health.

Too much light at night or in the early morning will disrupt our circadian

rhythms, leading to sleepless nights and headaches and fatigue. A dark night is important to our wellbeing! Furthermore, think of the innumerable nocturnal creatures who rely on a cloak of darkness to hunt and to defend themselves. We can add light pollution to the list of ways we are disrupting the delicate ecology we live in.

Kejimikujik is preserving not only the dark sky and local nocturnal ecology but also ancient human culture. Keji has a special designation among national parks as a National Historic Site, because of its connection with the indigenous history there, made visible by over 500 petroglyphs or stone carvings. The DSP is merging Western scientific attitudes toward the night sky with traditional Mi'kmaq understanding through weekly workshops held at the Sky Circle. In a manifestation of the philosophy of Two-Eyed Seeing, visitors will get two different interpretations of the pierced black dome above them. Two-Eyed Seeing is a phrase used by Eskasoni elder Albert Marshall to describe an approach to the world around us: one eye with the strengths of Western ways of knowing, and one eye with the strengths of indigenous ways of knowing.

Hundreds of people came out last August 2011 for the first Dark Sky Weekend to explore the heavens with experts of different cultures. August 15th-17th, the darkest weekend of the month, will be the time for the next one. Save the date!

Sam Fraser is a member at large on EAC's Board of Directors. This is his second article for Between the Issues.

Take Action

Visit the Keji Dark Sky Preserve for the Dark Sky Weekend, August 15th - 17th.

Invest in lighting products approved by the International Dark Sky Association.

Look up!

Step Aside, Pesticides

By Jonathan Rotsztain



Citizens of Nova Scotia, beware. You, your neighbour or your local retailer may be in violation of the provincial Act to Control Non-Essential Pesticides since it became law in April 2011 by incorrectly selling or illegally using controlled cosmetic pesticides. And you might not even know it. Pesticide Free Nova Scotia (PFNS) has released the results of their December audit and found that while the legislation has made changes on store shelves, further education is required to keep poisonous chemicals from our lawns and gardens.

PFNS—a coalition of which the EAC is a member—is strongly concerned about the risks of cosmetic and non-agricultural pesticides to our health and the environment. The group's principal goal is the reduction and elimination of cosmetic and non-agricultural pesticide use. As such, the group was influential in advocating for and shaping the content of the new law.

The EAC's Healthy Lawns Coordinator Stephanie Hughes says, "The legislation is an excellent step forward. It demonstrates a clear commitment to protecting us and our environment from harmful chemical products. However, as with any legislation, it's only as good as its implementation." She adds that the audit "shows that the province needs to invest more to ensure that retailers have the tools they need to carry out the necessary consumer education, and implement the law effectively."

In September and October nine volunteers plus Hughes hit retailers across

the province. They visited both businesses that hold Class 1 Certificate of Qualification, a designation in the Act that allows approved vendors to sell certain banned substances under strict conditions, as well as those that don't. Class 1 holders or "certified domestic retailers" are meant to keep "excepted-use pesticides" locked away from consumers, provide information from Nova Scotia Environment regarding the legal use of the pesticide to the purchaser, and train certified pesticide handling employees. Non-Class 1 vendors are not permitted to sell banned products at all.

The PFNS audited a total of 26 vendors, looking at each aspect of implementation, with mixed results. The volunteers were not experts. However, because all volunteers were thoroughly and equally prepared, there is an impressive continuity and consistency to their results, which highlight significant insights about retail treatment of the cosmetic pesticides ban.

Most but not all Class 1 vendors kept banned products locked away and in one instance, a volunteer repeated a visit and found products properly stored. A total of five retailers provided information about the ban. This included some, but never all, of the required literature. Certified vendors were trained and available at a few stores, and trained but not available at a few others, while most stores failed to have certified staff available. A few locations had limited product, due to the survey being conducted at the end of gardening season. Gener-

ally, volunteers noticed a good selection of allowed products and natural lawn care product on the shelves.

Suzanne MacFarlane acted as a volunteer mystery shopper for the audit. "There seemed to be lots of confusion around the new rules and frustration was expressed by several vendors when I probed further for more info," she says. "They complained that the new rules were imposed without adequate education and support. They are left to deal with consumers who are for the most part uneducated about the new rules and the dangers of using cosmetic pesticides."

MacFarlane concludes that "it also seemed that the vendors who were most informed about new rules regarding cosmetic pesticide use seemed to be individuals who were personally passionate about living in a healthy environment" and that "education for both vendors as well as the general public is paramount to the success of enforcing the new rules and hopefully attaining a healthier environment."

PFNS makes a number of recommendations for improving the legislation based on the results of the audit. Nick Langley of the Canadian Cancer Society – a member of PFNS – comments that "public and consumer education is a critical component of this legislation, and the fastest route to ensuring that people understand its importance. Pesticides pose major threats to our health, and if the legislation is going to protect people, it must be accompanied by education – both via retailers and directly to the public."

Jonathan Rotsztain is a graphic designer and green gardener in Nova Scotia.



When Fracking Hits Close to Home

By Thom Oommen



Coralie Cameron

View of Lake Ainslie

“This is as good as it gets,” Marilyn MacDonald says of Lake Ainslie and her life here. If you’ve ever been to Lake Ainslie then you likely understand what she means.

Rebecca and Robert Parkins understood, and that’s why they relocated to the shores of Lake Ainslie almost five years ago. All it took was a vacation to Cape Breton and they were convinced to leave the hustle and bustle of southern Ontario behind them. Coming from Ontario, they’d be hard pressed to find a place like Lake Ainslie there. “This is the first time in my life that I have felt like I have a home. There isn’t a bar big enough to pry me off this island,” laughs Robert.

Many people are attracted to Lake Ainslie for just these reasons. Rebecca and Robert chose Lake Ainslie so they could have a different, less consumptive, slower paced lifestyle. They wanted to grow gardens, explore sustainable energy, and fulfill Rebecca’s dream, which is to start a donkey rescue. Now one rescued donkey called Ainslie has begun the dream.

Marilyn grew up at the head of Lake Ainslie and after a few years travelling and working, she returned to the Lake for many of the same reasons as Robert and Rebecca. “I was never looking for another home – it was just time to come home,” she states clearly. Now both Rebecca and Marilyn have growing businesses in the area and Robert works for another local business. Life is good.

No Drilling, No Spilling

So it was a surprise to all last summer

when the Nova Scotia government approved a test well for oil and gas next to Lake Ainslie. Even more of a surprise is that the approved well is 75 metres from a home and two water wells, 30 metres from a stream (the Nova Scotia government conveniently calls it a drainage ditch) that flows into Lake Ainslie, and 350 metres from Robert and Rebecca’s front door.

PetroWorth Resources, a Toronto-based company, has the rights for a 383,000 acre parcel called the Ainslie Block. The company has been exploring in the area and applied for the drill permit. At first, Rebecca and Robert admit they thought of small pumper rigs out west and saw the exploration as a good thing for Cape Breton. But the more they talked with people in the community and read about slickwater hydraulic fracturing (fracking) for shale gas, as well as the various modern methods of conventional oil/gas exploration, the more their concerns grew. The provincial government took one year to respond to a letter from them dated August 17, 2010. The response was dismissive of their concerns. Letters to PetroWorth remain unanswered, some after almost two years.

“I now question my trust of the government and its lack of transparency with the proposed drilling at Lake Ainslie. As I see the actions of both the provincial and federal government regarding regulations of the oil and gas industry, I find that lack of trust increasing immensely,” Rebecca explains.

Even though they are personally af-

ected, they are particularly worried about the precedent-setting nature of this site regarding drilling, venting of natural gas, the potential of flaring and the use of toxic chemicals so close to homes, wells, lakes and streams. If the well next to Lake Ainslie and so close to homes proceeds, then a well could be drilled practically anywhere in Nova Scotia. With roughly half of Nova Scotia comprised of current oil and gas leases and lapsed leases, the threat is real.

With this in mind, Rebecca and Robert now spend hours every day organizing, researching and collaborating with other concerned citizens in the community, around the Maritimes, and across Canada. Rebecca estimates that she spends at least two hours a day, six days a week on oil and gas.

Marilyn puts it bluntly, “I’m pissed off that so much of my time is taken by this issue. It’s the responsibility of the government to do governance, assess costs and benefits. Citizens are now having to do the provincial government’s job. My job is to run a business. What are they doing for the wages they receive?”

Take Action

Ask your local representatives for their positions on oil and gas exploration and production. Tell them what you would like to see for your area.

Call the Department of Energy to check if your home is located in a current or lapsed oil and gas lease.

Join the Protect Lake Ainslie Facebook group for information and updates.

Visit www.savelakeainslie.org – a vast resource on the oil/gas issue. Join local groups opposing oil and gas in your area such as around Windsor, Tatamagouche, Pictou and Antigonish.

Mobilizing a Community

One of the fortunate consequences of the proposed well is that citizens are coming together to build the future that they want to see. "This situation has shown us that community self-determination is a number one priority. If we don't take leadership for setting directions within our communities, then we are always at risk of outside interests imposing their visions on our communities," says Marilyn.

Practically speaking, this has meant that a coalition of concerned groups has come together to oppose any oil and gas drilling in the Lake Ainslie watershed. The coalition includes citizen groups, First Nations, local development associations and environmental groups. Many groups are approaching the municipality for support, and the municipality has responded positively.

Specific to Lake Ainslie, the Lake Ainslie Development Association (LADA) is now working to build on the boundless potential of the Lake Ainslie watershed. The organization is focused on food and sustainable farming and is currently studying the feasibility of economic growth opportunities, especially around food security. LADA is also looking to enhance tourism opportunities and is active in promoting Lake Ainslie as an extraordinary place to visit.

"The province talks a lot about transparency, consultation and community involvement but it's just that: talk. There is no meaningful process. They make the decisions based on what they value and their criteria. The decision-making process does not include the values or criteria of the communities affected by these decisions," says Marilyn. Nova Scotians like Robert, Rebecca and Marilyn are

pretty tired of this attitude. So they, like many others, have decided to act.

We Are Lake Ainslie

Concerns with oil and gas drilling next to Lake Ainslie have brought people together and are doing so across the province. In Cape Breton, a few people have a tendency to see a difference between those who moved to the island from away and native Cape Bretoners. But as Marilyn, Rebecca and Robert show, regardless of where you were born, your home is home and must be protected. Everyone breathes the same air and drinks the same water. Marilyn makes it clear, "We have the same goals. Labels are not the issue – the issue is the issue."

Thom Oommen lives with his family and grows a small market garden in the Ainslie Block. He's thinking of biking around Lake Ainslie this summer. Why not try it yourself?



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The New Economy

By Susanna Fuller



“The environmental crisis, the equity crisis, and the crisis of distributed production all have their roots in the current economic system, with implications for our culture, for our society, and for our health and well being. What would an economy built on principles of fairness and sustainability look like? How do we model it; where is it emerging; how do we collectively strategize to fully implement it? These are the pressing questions of our time.” The New Economics Institute, 2012

The Occupy movement, its persistence and popularity, and the fact that it became a household word, penetrating all aspects of political and economic discussions on a global level, is significant. Even Bank of Canada Governor Mark Carney and former Prime Minister Paul Martin expressed support for the general articulation of distress about how we are doing things in the world today.

Since the advent of Gross Domestic Product (GDP) as a measure of success, there have been criticisms of how we count this success. Marilyn Waring, the first female Minister of Finance in New Zealand, is well known for her critique of the valuation of women in her documentary, “Who’s Counting? Marilyn Waring on Sex, Lies and Global Economics”. Countries like Bhutan have, with their Global Happiness Index, suggested that there are alternative measures to money. Atlantic Canada’s Genuine Progress Index has produced numerous reports on how to better measure progress, using a triple bottom line model that includes social and environmental measures on an equivalent basis to pure financial gain.

The Nova Scotia government’s “Back to Balance” campaign is focused on getting our fiscal house in order – balancing provincial expenditures on programs ostensibly for the public good with revenues gained largely through taxation and some offshore oil and gas revenues. This line of thinking could bring us back to one sort of balance – where inputs and outputs are matched. But the process isn’t really questioning the very nature of those inputs and outputs and from where the money is derived from or where it is going.

What might a new economy look like in Nova Scotia? In some ways we are ahead of the game; the cooperative movement started by Moses Coady was embedded in social equity. We are the only province that has legislated sustainable economic development in the Environmental Goals and Sustainable Prosperity Act. The provincial government’s jobsHere Strategy mentions social enterprise and claims innovation as one of its key strategies. But really, what would a new economy look like?

On January 12, 2012, around 25 people who are interested in changing the way things are done in Nova Scotia got together at the Hub in downtown Halifax. Under the auspices of creating “abundance”, small business owners, academics, government staff, non-profit members, and even an elected official collectively came to the conclusion that the timing has never been better to embark on a new way of doing things.

Mike Kennedy, 2010 Nova Scotia Chartered Accountant of the Year, remarked, “As a relatively small province, our rich network of people, industries and natural resources, with improved coordination, could be brought together in many innovative ways. With some critical analysis and mapping of current value chains and a realignment of those chains towards a triple bottom line, we could become one of the most interconnected and vibrant economies in the world, serving as a model for many to follow. Frankly, with the number of economic challenges facing the province,

we’re in need of some major shifts in thinking. A more collaborative, interconnected economy is the way of the future.”

We could start with the basics. How we feed ourselves. How we raise our children. How we heat our homes. Ken Meter, of Crossroads Research Centre in Minnesota, has been researching regional food systems for the past three decades. “As the pendulum has swung toward a globalized economy, more people are realizing the huge costs associated with the singular pursuit of maximizing profit, employing cheap labor, and ignoring environmental concerns. A shift is underway to promote sustainable local economies, in part a necessary response to increased fuel costs and global warming threats.” All of these threats are a regular and daily experience, if not a concern, to most Nova Scotians.

The EAC’s Food Miles report, co-authored with the Federation of Agriculture in 2010, reveals that currently only 13% of our food is produced locally, but with a move to 50%, an additional 16,500 jobs would be created. Off the Hook Community Supported Fishery has resulted in increasing the income of fishermen, and increasing local access to fresh and fairly caught fish. EAC’s forestry team is aspiring to create a Community Supported Woodlot – where subscribers would get to know exactly where their wood comes from, and be

Take Action

To help make the shift to a new economy:

Buy local and fair trade whenever you can

Volunteer for a local non-profit organization

Get to know your neighbours
Let your opinions be heard
at www.forumns.ca

Take your municipal councillor or MLA out to lunch



able to visit the woodlot. These are just a few examples of the benefits of shortening the value chain.

Across the province, small co-operative transit operations are beginning to flourish. The town of Tatamagouche boasts a 75-member-strong local currency, where skills and materials are openly traded. Farmers markets exist at least seasonally in almost every small town. Nova Scotia's own Community Economic Development Investment Funds (CEDIFs) are one step towards stemming the tide of some 600 million dollars that leaves the province every year in retirement investments. We seem to have the pieces to start making real change.

In Nova Scotia, the new economy, much of it reminiscent of the economy that used to exist in rural communities, one of resource sharing, community support and collaboration, is finding roots. But it means doing business differently. The government trend has been to bail out large companies, rather than use public funds to transition resource based industries. New economies mean spending less, living within our means – getting back to balance – but with the balance not only being fiscal well being, but social and environmental as well.

Inverness municipal Councillor Jim Mustard is blatantly asking for change so that his community can start to flourish. “We need a governance model that is different than what we have; we need to engage people in the solutions and elevate the dialogue at the community level. We need to start first in developing a more integrated strategy for supporting families with young children,

and this includes starting before child-care, before schools. We need to look at how we are using resources in rural Nova Scotia, and start being truly innovative. People need to be involved in making this change. As a tangible example, imagine if we gathered the data on home heating costs and then looked at developing a truly sustainable municipal energy policy that relied on small-scale renewables? Then we keep that heating money in the community, and it starts to make a real difference. But we need the tools and the open dialogue with the province in order to do this.”

The testimony of Lee Brian, a 26-year-old whose father made a living in the oil industry, addressed the assessment panel for the west coast Enbridge pipeline hearings, ending by suggesting that there are two paths that we can follow. He asked, “If on one hand, you had an unpredictable path that leads into a new dream, a new way of life for all of mankind, and on the other hand, you had a predictable path that leads to the slow, inevitable decline of a civilization, which path would you choose?”

From the global Occupy movement to Inverness County, there are requests for change and ideas for solutions that will bring us that change. The ultimate question to ask is whether or not Nova Scotia and the provincial government are up to the task.

Susanna Fuller grew up in rural Cape Breton, and thinks that Nova Scotia can in fact engage its citizens in thinking a bit differently and start tackling global problems at the local level.



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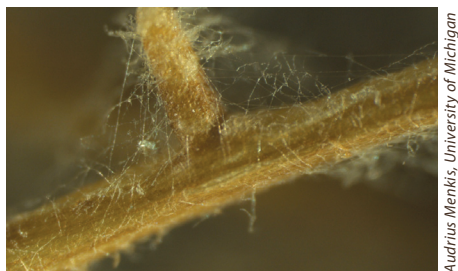
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Compost's Micro Universe

By Carlos Garduño



Audrius Menkis, University of Michigan

As temperatures rise and the sun thaws the ground, the soil and its plethora of micro-organisms come out of their winter-dormant state to begin their fascinating activity. You may never have thought of soil as an ecosystem, but it is – and it's one of the most important on earth! Without a healthy soil ecosystem, plants cannot grow. Micro-organisms – yes, they're too small to see without a microscope – play a huge role in soil ecosystems. One tablespoon of healthy soil contains billions of micro-organisms, including bacteria, fungi, and algae, which break down organic matter and help to build soil structure.

Healthy soil typically consists of a balanced ratio of organic matter, minerals (sand, silt and clay), water, and air. Generally, the organic (non-mineral) part of soil is made up of 85 percent humus and decaying matter and 10 percent living plant roots, with the remaining 5 percent made up of micro-organisms. The organic portion of soil comes from the decomposition of carbon-based matter that was once living. This decomposition process can be thought of as having three phases:

1. Bacteria and fungi quickly decompose the simple sugars and proteins in plant and animal remains. Soil-dwelling insects, like mites, also help break down organic matter into smaller pieces that bacteria and fungi can then further decompose.

2. Over longer time periods, other types of bacteria and fungi break down more complex compounds like cellulose and lignin (substances that give wood and plant stems their strength and rigidity).

3. The most complex organic compounds can take tens or hundreds of years to decompose. Fungi create com-

plicated matrices by combining these compounds with the inorganic materials in soil. These networks are called humus, and help to give soil its nutrient richness and structure.

There are literally thousands of species of bacteria and fungi involved in decomposing organic matter. No one species of bacteria or fungi can do all of the work necessary to turn organic matter into nutrients and humus. That's why the biodiversity of micro-organisms in soil is essential for a balanced soil ecosystem.

The micro-organisms that decompose organic matter depend on the right balance of key environmental conditions: moisture, temperature and aeration (the amount of air circulating in soil). These conditions in turn depend on soil structure. Healthy soils have aggregates (clumps of soil particles) held together by organic matter and clay that help provide the small spaces for water and air to flow through the soil. In soil without good water and air flow, micro-organisms have trouble breaking down the organic material that provides the basis for future soil fertility. Temperature is also important, as warmer soil temperatures increase the activity levels of soil micro-organisms.

Years of tilling in industrial farming have caused most of the soil aggregates to break apart, collapsing the proper passageways for air and water. Industrial farming practices also cause soil erosion and compaction, poor nutrient retention, and increases in bad (disease-causing) micro-organisms and insect pests. This has resulted in the need to add increasing amounts of fertilizers and pesticides to counter the effects of farming with poor soils. But it's a catch-22 for farmers, because the more soil fertility decreases due to damage to the entire microbial ecosystem caused by the use of fertilizers and pesticides, the more fertilizers and pesticides are needed to keep plants growing.

Composts can restore damaged or poor soils by providing both the necessary organic matter that living organisms need to survive and maintain a healthy soil ecosystem, and the humus and aggregates necessary to rebuild soil structure. You might conclude that maintaining

healthy soil is a hard task, but I would suggest it is more of an art form.

There are several ways to make compost. The key is to choose a method that serves your needs and that enhances the efficiency of the productivity and health of your garden. Here are a few pointers.

Air: Keep in mind that you want to make sure that lots of oxygen can circulate in your compost to promote the growth of the right balance of micro-organisms. This can be achieved by turning compost regularly, installing air vents (such as a perforated center pipe extending the depth of the compost pile), and layering (for every few inches of organic matter, add an inch or two of healthy aggregated soil or mulch).

Moisture: Proper decomposition requires enough moisture; however, too much moisture can hinder the process. Therefore, compost should be moist to the touch, but should not drip water when squeezed.

Ingredients: When deciding what to add to your compost as 'food' for your micro-organisms, consider that the right balance of desirable bacteria and fungi (and the use you will make of your compost) depend on what is put in the compost. Organic matter such as garden refuse, manure, tea and coffee grounds, feathers, hair and food scraps are high in nitrogen, and are considered 'green.' Woody materials that are high in carbon, such as autumn leaves, paper, peat moss, sawdust, hay, and corn husks, are considered 'brown.' Green matter typically feeds bacteria, whereas brown matter typically feeds fungi. As a general guideline, there should be equal amounts of brown and green ingredients in your compost.

When earthworms are visible in your compost and the organic matter no longer resembles its original form, this indicates a healthy environment where proper air, water and micronutrient exchanges are in place. When you get to that point you know that you, and your microbes, have created wonderful artistic collaboration.

Carlos is a self-proclaimed musician with a background in science and a love of all living things.

Dude, Where's My Bus?

By Jonathan Arnold



Jonathan Arnold

Waking up to the sound of pouring rain is enough to make any public transit user cringe and stay in bed. January 24, 2012, it was one of those mornings: rain, ice, wind, and the snooze button. While I consider myself lucky for having a short commute to work I knew taking the bus was not going to be pleasant. Geared up to face the elements, I ventured off to the bus stop at Young and Robie Street in Halifax. Standing in the miserable weather with nine other people and no bus shelter, I felt time pass slowly waiting for the late bus. Ten minutes passed, then 15, then 20 minutes without a single bus going by. I made the call into work that I'd be late. The 80 finally arrived, only to follow a crawling lineup of (mostly) single passenger vehicles on Robie Street. By the time I arrived at work, I was twenty minutes late and in all, it took over 45 minutes, and one pair of soaked jeans, to move less than four kilometers.

My transit experience is not unique and doesn't come close to expressing the scope of inconveniences with public transit in Nova Scotia. Predicting whether a bus will be late or early, lack of proper bus shelters, complicated maps, infrequent or inaccessible routes, and violence at bus terminals – these problems affect transit users and are disincentives for using public transit.

In response to these challenges, transit users in other communities have united and taken action. Cities such as Toronto, Hamilton, Los Angeles, Vancouver, and Victoria (Australia) have formed

Public Transit User Groups (PTUG) to provide independent and grassroots advocacy. The scope and names of PTUGs differs from city to city, but the mission of each group is shared: to give transit users a collective voice for making their transit system more accessible, efficient, effective, and inclusive. Each PTUG mobilizes transit users, builds coalitions with other community groups, conducts research, produces newsletters, and lobbies government. Not only have PTUGs been successful in pushing public transit into the policy spotlight, but measurable progress has been made.

One of the first PTUGs to form in North America was the Bus Riders Union of Los Angeles in 1991. As a response to increasing fares, deteriorating transit infrastructure and worsening service, the Bus Riders Union empowered transit users of Los Angeles to unite and demand better. They argued that their decaying mass transit system was an issue predominantly affecting lower-class and minority groups. In a landmark lawsuit in 1994, the Bus Riders Union (along with two other groups) successfully sued the L.A. Metropolitan Transit Authority for distributing Federal funds in a “racially discriminatory manner.” Since their victory in the courts, over \$2.5 billion of transit funds have been redistributed to areas of L.A. that previously had been ignored. With a membership of over 3,200 citizens, the Bus Riders Union has also been successful in achieving a 9-year fare freeze, increasing the fleet of environmentally friendly

buses, creating a 32 km bus-only lane, and increasing the frequency of routes to low-income areas.

Perhaps a more comparable example is the PTUG established in Hamilton – a city with a population similar to Halifax. The Hamilton Transit Users Group takes a well-balanced approach to advocacy, voicing not only the social and equity arguments of the L.A. Union, but the economic and environmental benefits of quality mass transit. They recognize that public transit plays an integral role in connecting communities, businesses, and schools, while at the same time reducing air pollution and greenhouse gases. Similar to the public transit systems in Nova Scotia, the Hamilton transit system is in need of improvement, not only to make the experience better for long-time users, but to also attract new riders. In response to stagnant transportation policy, the Hamilton Transit User Group refused to wait for government and transit management to deliver. The Hamilton group has taken action through designing a detailed transit survey, holding public consultations, and publishing reports.

Taking a quick survey of the various PTUGs established around the world – from Australia to Canada – there is a common theme: ordinary citizens banded together can truly make a difference. Part of the problem in mobilizing transit riders, however, is that mass transit is, on the surface, a service to the individual. On this level, the inconvenience caused by a late bus, lack of a proper bus shelter, or an inaccessible route is marginal for only one person; collectively, however, these inconveniences amount to systemic problems that affect thousands of people. In order to achieve progressive change, public transit needs to be viewed from this holistic perspective – as a service that connects communities and people, and as an option to advance economic growth, environmental conservation, and personal freedom.

PTUGs embrace these values as their core, and they don't wait for government or management to take the initiative.

Public transit in most cities is, after all, run by a single operator with no competition. And just like any other market with an entrenched monopoly, innovation and efficiencies are often in short supply. Dr. James Sawler, Professor of Economics at Mount St. Vincent University, notes that “without competition, the incentive to provide the best possible service is greatly reduced,” which is particularly significant when the service is a necessity, like public transit. “People will still need to use it even if the quality is low.” For these reasons applied pressure from PTUGs is a welcomed addition to a monolithic structure.

Strides have already been taken in Nova Scotia, and it’s evident many groups and individuals support efforts to improve the quality of public transit in our communities. Organizations and institutions such as Fusion Halifax, Halifax Cycling Coalition, Dalhousie University, the Transportation Issues Committee at EAC, and Community Transit Nova Scotia have worked relentlessly to help create effective and comprehensive transportation policy; and the recent ‘It’s More Than Buses’ consultations have added a much needed public dimension to the discussion in Halifax.

Ideas are percolating and the wheels are in motion to establish a permanent PTUG in Halifax. Sparked by the Metro Transit strike, a handful of volunteers at the EAC put the call out to transit riders to start their very own independent transit user group. At its inaugural meeting in February, the Halifax Transit Riders’ Alliance discussed the need for transit users to mobilize, build consensus, and foster collaboration. Through creating synergy with other groups and transit riders, they hope to develop a strong vision of what transit could and should be for the HRM. They have also been demanding an immediate end to the strike. On March 9, the group rented a 7-passenger minivan, labelled ‘Metro’s Free Transit,’ and provided citizens with free rides all day. The one-day free service wasn’t intended to replace public transit (clearly...with only a seven-seater for one day); it was intended to remind both sides of the negotiating table that there are thousands of riders who have been left out of the conversation and alienated.

If the new Alliance is successful in Halifax, it will set a positive example for transit users in other counties across NS who are witnessing a decline in public transit service and lack of vision from municipal and provincial government. But it’s up to the riders to take action. If the community of transit riders remains fragmented, so will the service. Improving public transportation serves to benefit a diverse range of interests due to its economic, social, and environmental spin-offs. The challenge is to unite and organize these interests to establish a permanent and loud voice. It’s time for riders to come under the same bus shelter – out of the pouring rain – and demand better.

Jonathan Arnold is a recent graduate of the Public Policy program at Mount St. Vincent University, and was one of the founding members of the Halifax Transit Riders’ Alliance.

Take Action

How to Advocate for Better Public Transit

Get Active: Find a transit group in your community that sparks your interest and run with it! Check out www.transitridersalliance.ca for a list of groups and organizations across NS.

Get organized: Help foster collaboration between groups. If transit riders remain fragmented, so will the system.

Get creative and make connections: It’s amazing how many people in our communities benefit from better public transit. Find out ways to get people and groups talking with one another.

Halcraft Ad

Surging Coasts, Surging Costs

By Emma Boardman



The term “climate change” often brings to mind images of worst case disaster scenarios – floods, droughts, wildfires, sea level rises, species extinction. Sometimes we forget that many of us are already dealing with effects of a warmer climate and more frequent storms. While we may not be living out a Hollywood disaster movie (yet), climate change is already seriously threatening the livelihoods of many Nova Scotians. One industry that is being hit hard is tourism, as many attractions that draw tourists – iconic lobster traps on wharves from a working fishery, stunning natural coastlines, dramatic fall foliage – are being threatened by climate change.

Storm surges and weather changes have already affected many business owners across Nova Scotia. Dave Adler owns East Coast Outfitters in Lower Prospect, which offers sea kayaking tours. It is about as sustainable as a business can be – providing environmental education and outdoor experiences, with care taken to follow low impact guidelines. Part of Adler’s intention in starting the business in Lower Prospect over a decade ago was to revitalize the small fishing community after the collapse of the fisheries. But, while he is still doing good business, East Coast Outfitters has lost a significant amount of income each year from both the cost of repairing storm damage, and closures during severe weather.

The wharf owned by East Coast Outfitters was built in 2001. For the first seven years of operation, the wharf was fine. But in the last three years, it has

consistently been submerged each year during storm surges. September and October are usually the busiest months for the business, and also the months where Nova Scotia has seen the biggest increase in storm surges and strong winds.

At least once a year, there is a storm that requires Adler and his team to dismantle his wharf – a huge operation which takes about four days each time, including preparation, waiting out the storm, then putting everything back together again. He estimates he has spent about \$1,000 in repairs, plus losing about \$1,000 of income for each day he has had to close for storms. On top of that, it is dangerous, exhausting and somewhat demoralizing work: “It’s not like you’re spending those four days building something,” says Adler.

Climate change is affecting or threatening to affect tourism business across the province, and people are recognizing the need to help communities adapt and plan.

Jennifer McKeane of NS Economic and Rural Development and Tourism – Tourism Division observes “With climate change, we are seeing an increase in extreme rainfall and storm weather events, such as tropical storms, which can affect tourism infrastructure inland and on the coast, and which can affect tourist visitation and tourism activities. Storm surges and sea-level rise have the potential to impact coastal infrastructure, including boardwalks and wharves, coastal based provincial parks, beaches and private property of tourism businesses.”

McKeane also recognizes that low impact is key. “The tourism industry, like all other industries must minimize their impact on the environment by embracing sustainable practices, including working on ways to minimize the release of greenhouse gases. This will help to reduce the scale and severity of impacts we are likely to face.... Climate adaptation is about more than just preparing the industry to manage the risks and damages of climate change, it is also about helping the industry find opportunities to

thrive under new climate conditions so it is more resilient and sustainable over the long-term.”

Traditional climate change adaptation – such as building sea walls to protect community infrastructure – won’t work for communities dependent on income from tourists who come to see their natural features. “People aren’t coming to Nova Scotia to see big sea walls. They’re coming to see working fisheries and beaches,” one observer points out. This is the main reason for the EAC’s Climate Change Adaptation Project in Cheticamp, which will assess “climate change risks and opportunities” specific to the tourism and fishery industries and develop a toolkit to help operators adapt. Cheticamp was chosen for this project because its main activities are fishing and tourism, and it is a very cohesive community with a strong history of collective action. “We want to explore the risks and opportunities and use the knowledge generated in Cheticamp to share with the sector,” says Jen Graham, EAC’s Coastal Coordinator. While it won’t solve the problem of climate change, it will help some business owners thrive and work sustainably in a new reality.

Emma Boardman is the EAC’s Web Manager and a dedicated writer for BTI.

Take Action

Support a Nova Scotia Coastal Act. Join “Act for our Coasts Now” at <http://on.fb.me/zdhPzz>

Consider staying in the province for your next vacation, and enjoy some of the wonderful natural and cultural features we have right here. You’ll save carbon emissions and support local tourism operators.

Learn about the EAC’s Climate Change Adaptation project in Cheticamp <http://bit.ly/ACsJqz>

beinggreen

Horse Collars and Spare Tires: Bill and Alice Bezanson

By David Greenberg



Jen Greenberg

Bill and Alice Bezanson live and farm in the North Mountain community of Garland, NS. I first met them several years ago when I helped a friend build a straw bale house nearby. Bill took an interest in the project and offered to give my friend straw for his house in exchange for help bringing it in from the fields. We expected to work all day hauling Bill's straw, but once we had enough for the house, Bill stopped the work and delivered the bales to the construction site. Apparently Bill was more interested in helping my young friend get a roof over his head than he was in getting his straw in the barn.

As a child on the Bezanson family farm, all work was done with horses. When Bill's father returned from WWII in 1946, he bought a tractor, one of the first in the neighborhood. That first tractor was only used for heavy work: ploughing and discing the fields and hauling big loads. Logging and light field work was still done with horses. Bill said that it would never have occurred to his father to bring a tractor in the woods.

Alice has worked for many years in the office of Rhodenizer's Salvage just down the road from the farm. I've seen her there many times because Rhodenizer's is my very favourite source of treasures rescued from the industrial waste stream of the Valley. After my foray in the junk yard, I make my way to the office to pay for the goodies, say hello and hear a story if Alice has a moment

between phone calls and customers. My favourite is about Bill and Alice's honeymoon. They had just bought the farm from Bill's parents and were ready to start farming for themselves, so instead of going on a trip, they transplanted nine acres of cabbage by hand in one week. Alice always tells this story with a big smile, adding that she knew Bill would be a hard working farmer and that's what she wanted, since she liked to work and loved the farming life.

The cabbage was sold to a processing plant that operated in Berwick until 2003. The cabbages were the first of many crops the Bezansons grew for the plant. At the height of their production, over one hundred acres of beets, carrots, winter squash, beans, peas and other vegetables were planted every year. They also raised hay and grain for a herd of beef cattle and the draft horses that Bill continues to breed and train.

This year, Bill is training a young pair of horses, which he is quite sure will be the last team he will work with. Every time I visit, he tells me about the new team. The horse update usually leads into stories about farming in the old days mingled with his views about the current state of farming and the world in general.

Most of his recollections revolve around a single point. If he had to start farming all over again with the knowledge he has now, he would have continued using horses for most of the farm work. He reckons that he could have

made as much or probably more net profit on a third of the land with horses than he did with tractors and enjoyed farming a lot more. He explained that the purchase price was only the beginning of the unending cash investment that machines demand. Bill said that it seems he spent most of his time farming in order to pay for his gear, while his father's generation hardly spent money on anything. They did not produce as much, but food was always on the table in a house that was paid for.

On my last visit with Bill, I stood with my partner Jen in the driveway listening to him as he sat on his tractor. Behind him were the open doors to a large machine shed. Long workshop benches laden with a rich jumble of horse and tractor farming accessories lined both sides of the building. Cans of motor oil sat on a shelf side by side with jars of harness oil. Horse collars hung on the wall next to spare tires.

The knowledge and experience that Bill and his generation of farmers carries is vast but not easily accessed. Since Jen and I are learning everything we can about grain growing, we asked him about his many years of experience growing oats, corn and rye.

Our questions are general. We don't have a specific problem to ask about. I want Bill to pass on what he knows in conversation but know this is not realistic. How could he teach me with words what he learned through a lifetime of observing, doing, and doing again?

To absorb a fraction of his knowledge, I would have to work side by side with him, day in day out, for a long time. At this point in my life, this is not possible. So I am content to take what he gives me on our short visits, his reflections on staying small, using simple technology, and never giving up.

David Greenberg has been a market gardener for 16 years and is also HelioTrust's Farm Efficiency Project Technical Manager. He and his wife Jen Greenberg live and work at Red Fox Farm in Hants County.



Lindsay Hunt

Christmas Trees may be out of season but good forestry and fun times are never out of style!

For 20 years EAC has sold chemical-free or organic Christmas trees. We drew our motivation from the lack of regulation of pesticides in the industry at the time. Check out the 1991 Winter Solstice Edition of this publication for more!

This past December we sold 430 trees and they all started out on Kevin Veinotte’s tree farm in LaHave. Kevin’s dad began harvesting Christmas trees from this land in 1952. Kevin grew these trees with 0 chemicals and 160,000 ladybugs to eat the aphids! For a virtual visit to Kevin’s woodlot check out this video: <http://bit.ly/wAWT3h>

At the enchantingly early hour of 6am, all the trees were unloaded in the Bloomfield Centre parking lot and the neighbourhood began to smell like balsam fir. A smorgasbord of wreaths was brought over from the EAC where they’d been decorated. In total we sold 175 wreaths! Our devoted team of early-rising volunteers unfurled the trees and got them ready for the influx of shoppers. All the trees and wreaths are pre-purchased but still there’s a real race to get there early to get the absolute best selection. Folks have a delightful time selecting their favourite tree and there are usually a few heated debates about which tree is the best...

Every year we marvel at the variety of ways the trees travel home. Maybe there should be prizes next year for the most creative tree transportation method!

Staff Snippets

EAC is never shy to recycle so we’re thrilled to welcome back some great staff. Returning to her role as Atlantic Canada Sustainable Energy Coalition Coordinator is Cat Abreu. Making the move from projects to operations are Steph Hughes – once the Healthy Lawns Coordinator, now cultivating successful EAC fundraisers – and Laena Garrison – former Transportation Coordinator, now making the volunteer experience a smooth ride!

We also welcome David Greenberg to the team as the Technical Manager for the Farm Efficiency Project, joining his wife and fellow farmer, Jen Greenberg. We also welcome another talented mermaid to our team: Heather Grant, Marine Intern.

A few of our splendid colleagues have gone on to new adventures. Energy & Climate Change Coordinator Brennan Vogel, Volunteer Coordinator Lindsay Hunt, and Coastal Adaptation Researcher Scott Aucoin are all off to new and sensational projects. For the time being, our marine team is swimming along without two of its key fish: Marine Coordinator Shannon Arnold is in the Philippines doing a coastal livelihoods project and SeaChoice Coordinator Rob Johnson is busy cosseting his new baby girl.

Our winter canvass team has braved the worst months of the year and come up trumps! Much praise and admiration goes out to Ryan O’Quinn, Susan Johnstone, Scott Biggar, John Ridgeway, Gillian MacDonald, Miranda McQuade, and Sylvia Dove, and to Jean Snow on the phones. Thanks to their work we’re at an amazing 1,461 members!

Starting mid-April Maggy Burns, our Internal Director, will be taking a year-long leave of absence from the Centre. She will be working with Phoenix Youth Programs as their Director of Labour Market Programs. We will miss Maggy’s energy, wisdom and passion for EAC (not to mention her awesome sense of style) but we are excited to see her in a year and hear about all the new things she’s learned!

Special recognition to our amazing Off the Hook team for winning runner up in the National Geographic’s global Solution Search. And to you for voting for us!

Special thanks to our superbly generous friends at Ascenta Health, the Black Market, and Moksha Yoga for their generous support of our work this year!



Lindsay Hunt & Maggy Burns

seasonalgourmet

By Anne Pryde, RHN

Delicious Delectable Dandelions

Dandelion greens are one of the most nutritious leafy vegetables available locally in the early spring. Often maligned as a “weed”, one cup of greens can supply you with 54% of the recommended daily allowance of vitamin A, 188% for vitamin K, 10% for calcium, and 9% for daily iron.

A relative of the sunflower, dandelion greens have potent medicinal properties, with claims to aid digestion, reduce swelling and inflammation, support liver function, and boost immunity.

The greens have a slightly bitter flavor, and are best picked before the plant flowers. The flowers can be used to make wine or vinegars, so if your little patch blossoms, all is not lost. Lovely in mixed green salads, dandelions can also be added to soups and stir-fries. When foraging for these nutrition-packed freebies, avoid any grown in areas potentially contaminated with pesticides or growing along roadways.

What's in Season?

Spinach, arugula, Asian greens, asparagus, mushrooms, radish, rhubarb. And on the wild side: fiddleheads, nettles and dandelion greens.

Dandelion Surprise Green Smoothie

Serves 2

Try this surprise smoothie for an on-the-go breakfast that's packed with nutrients but tastes like a perfect blend of fruit.

Ingredients

- 1 1/2 cups unsweetened dairy substitute, such as almond, rice or soy milk
- 2 dried apricots or 4 pitted dates
- 1 banana
- 1 cup chopped young dandelion leaves
- 1 cup spinach leaves
- 1/2 cup fresh or frozen berries

Directions

Combine all ingredients in a blender and blend until smooth. (If the dandelions are nearing flowering stage, add 1 tsp of honey).

Nutrition

Per serving: 160 calories (30 from fat), 3.5 g total fat, 0 g saturated fat, 0 mg cholesterol, 115 mg sodium, 30 g total carbohydrate (4 g dietary fiber, 10 g sugar), 8 g protein.

Anne Pryde is a volunteer member of the Board of Directors and owner of the Clean Temple Wellness Studio - www.cleantemple.ca.

Ecology Action Centre

garden party

& eco-auction

Our 14th Annual Fundraiser
Sunday, June 10th St. Mary's Boat Club
1641 Fairfield Road, Halifax

Viewing 12 pm Live Auction 1 pm Silent Auction 2 pm

AUCTIONEER
Cathy Jones

EMCEE
Olga Milosevich, host of CBC Radio

MUSIC
Jeff Torbert

tickets: \$7 adults \$5 seniors & students
available at www.ecologyaction.ca

40 years of
environmental
change

EAC Annual General Meeting July 4th, 7-9 pm

Bloomfield Centre, Multi-Purpose Room

add your
voice

action
is our
middle
name

all
members
welcome



Dear Ecohead,

I've been hearing a lot of bad things about parabens in my personal care products lately. Apparently they're in everything from makeup to soap to face cream, and I've heard that they're toxic. Can you help me figure out what parabens are, and why I should avoid them?

Sincerely,

-Perplexed About Parabens

Dear Perplexed,

Parabens are used as a preservative in a wide range of products, including shampoo, deodorant, and makeup. Scientists used to believe they were safe – after all, they occur naturally at low levels in some very healthy foods, like blueberries, carrots and cinnamon. But parabens in food are broken down through the digestive system. When they're applied to the skin as in creams and deodorant, parabens are absorbed, whole, directly into the bloodstream. Because of research showing that parabens are endocrine disruptors – meaning that they interfere with hormone function in women and men – their use in personal care products is strictly regulated in Europe. (Parabens are not currently regulated in Canada or the US.) Parabens have also been found in breast cancer tumours.

Then, there are the environmental risks. Parabens are found in so many products, and when they're washed off they have to go somewhere. Some studies have linked parabens in lakes and ponds with sex changes and extra limbs on frogs. Parabens and other toxins found in sunscreen have also been linked to the harmful bleaching of coral reefs.

What can we do about it? Commercial products made from natural ingredients are becoming more readily available. The Environmental Health Association of Nova Scotia has an extensive list of "less toxic" products at www.lesstoxicguide.ca – where you can also find more information about other scary stuff you might find in similar products.

It can be fun and cheaper to make your own, using ingredients you can find at the grocery store! Make lip gloss from beet juice and beeswax, and hair conditioner from avocados and olive oil. My personal favourite new recipe is a deodorant made from coconut oil, cornstarch and baking soda, which I found at <http://bit.ly/wqrcWk>

There are lots of recipes online, and in books and magazines. And once you know a few of the basic ingredients, you can experiment with your own. There's great potential for a product-making or exchange party with friends here, too.

And, perhaps we don't even need some of the products we think we need. Julia – an EAC staffer with enviably long, shiny, luscious locks – tells me, "I haven't washed my hair in over a month!" She tells me that she rinsed it with apple cider vinegar when she was first weaning it off shampoo, and now simply rinses her hair out with water when she is in the shower.

Best of luck with your paraben-free adventures,

-Ecohead



CELEBRATES AND APPRECIATES THE ESSENTIAL SUPPORT OF OUR SUSTAINABILITY ALLIES

Bonnyman's Wild Blueberries

Halifax Seaport Farmers Market

Laughing Whale Coffee Roasters

CarShare Halifax

Mountain Equipment Co-op

YOUR SUPPORT MAKES OUR WORK POSSIBLE.

Remember the EAC in your will.



Plant a seed that will grow and give back.

To discuss your legacy gift to the EAC, please call us at (902) 429-5287 or email centre@ecologyaction.ca

action in verse

Tracks

By Nanci Lee

Snow is a form of
memory. Prints of flight,

feast, forage. Scrums of
struggle. Small

followed by
bigger followed by

bigger still. Soft shoe step of a brittle
leaf. The water cut of

freeze. Every contact leaves a
trace. What's more indelible?

Sixty-million year old dung,
or the simple lines

of lovers' skis
quietly rewriting horizon.

WINDHORSE FARM



UPCOMING PROGRAMS

*Gather. Learn. Inspire. Laugh,
Wander. Reconnect. Relax.*

EARTH STEWARDSHIP SKILLS:

Journey Into Nature w/ Jim and Margaret Drescher – April 13-20

Natural Beekeeping w/ Ross Conrad – May 17-20

Plant Spirit Medicine w/ Eliot Cowan – May 18-20

Forest Quest w/ Jim Marsden and Jade Shearer – July 12-20

PERSONAL DEVELOPMENT & WELLNESS

Social Presencing Theatre with Arawana Hayashi – April 20-22

Writing Life w/ Paul Dodgson – April 26-29

Beyond Belief: The Work of Byron Katie w/ Caitlin Frost – May 4-6

Spring Cleanse w/ Rob Gueli and Anke Kungl – June 14-17

Embodied Listening w/ David Rome and Hope Martin – July 13-15

OTHER EVENTS

Farm Flicks Film Series – *Enjoy outdoor film screenings of farm and food related topics* – Dates TBA (check our website)

WWW.WINDHORSEFARM.ORG | 902-543-6955

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THE SCOTIA BANK BLUE NOSE MARATHON IS HAPPENING **MAY 18-20, 2012**

Run, walk or wheel for the Ecology Action Centre-
working since 1971 to build a healthier,
more sustainable Nova Scotia.

We'll be raising \$10,000 for the planet
this year - you can be part of it!



*There are lots of ways to support - participating, sponsoring, donating or cheering-
contact Stephanie at events@ecologyaction.ca or 902.442.0300 for details.*

ACTION IS OUR MIDDLE NAME!  Ecology Action Centre



1545 = number of EAC members as of March 21, 2012

616 = number of those who are Sustaining Monthly Members

99 = number of new members in February 2012

114 = number of new members in January 2012

21 = number of degrees below zero on the coldest door-to-door canvass day this winter

7 = number of layers worn by EAC's Membership Coordinator that day

26 = number of workshops held by our Native Plant Pollination project on topics ranging from native bee nesting boxes to plant identification.

301 = number of people who have attended these workshops!

Recent EAC Successes:

- The Off the Hook Cooperative was selected by National Geographic and RARE Planet as one of the top three initiatives in the world working to sustain coastal fisheries.
- EAC's Applied Stormwater Management workshops in Halifax, Digby and Saint John were a huge success. They attracted 115 enthusiastic participants with two 'sold out' dates!
- In February, inspired by the transit strike, EAC volunteers inaugurated the Halifax Transit Riders' Alliance.
- Thanks to work by EAC and Save our Seas and Shores, oil drilling in the Gulf of Saint Lawrence is delayed.
- On February 25th we held our 7th successful Musicians For Farmers event with 210 people in attendance.

The Ecology Action Centre Needs Your Help

Please fill out this membership form and return to the EAC.

CONTACT INFO:

Name: _____

Phone: _____

Address: _____

Email (for monthly e-newsletter): _____

Memberships and donations are tax deductible.

Thank you for your support.

TYPE OF MEMBERSHIP:

Monthly Contribution:

\$5 \$10 \$20 Other: \$ _____

Annual Contribution:

\$40 Regular \$60 Contributing/Family

\$120 Supporting/Sustaining

\$20 Student/Senior/Unwaged Other \$ _____

PAYMENT METHOD:

Cash Cheque VISA Mastercard

Name on the card: _____

Card #: _____

Expiry Date: _____

Signature: _____

Date: _____

If sending a void cheque please sign above.

Ecology Action Centre 2705 Fern Lane Halifax, Nova Scotia B3K 4L3 www.ecologyaction.ca