



Sustainable Building Cuts Energy Use

By Dave Elmore



ILLUSTRATION: TERRY CORRIGAN

THE LOCAL FAMILY behind a newly formed energy efficient building co-op believes that they have finally arrived at a cost-effective way to drastically reduce energy consumption in our climate. They have been inspired by the Passive House concept, a universal building standard developed in Europe that works in either cold or hot climates.

The October 2011 edition of *Eco-Journal* contained an article called "Green Home Building: An R-2000 rating reduces energy usage and costs." The article featured Evan Proven's R-2000 home in Winnipeg's West End neighbourhood. While this home achieved an impressive Energuide rating of 86 and has since proven to be highly energy efficient, now his family is taking it a step further. After 30 years of construction experience, the Provens have created Sun Certi-

“From the consumer's standpoint, Passive House offers the most comfortable house possible at a price point only 8-10 percent higher than an average new home.

fied Builders Cooperative Ltd. in order to apply their methods to other new home construction.

Over the past 18 years the Passive House Institute, a group of dedicated scientists and engineers, has developed the Passive House Planning Package (PHPP). The PHPP is the design tool used to effectively model building performance

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using specific local climate data. Information on building products used, site orientation, insulation levels and building size are entered into an Excel-based spreadsheet to calculate energy requirements as the building is designed. Energy reductions of up to 90 per cent over standard code-based house construction can be achieved using the Passive House method. From a technical standpoint, Passive House has rigorous standards that must be achieved before construction can even begin. From the consumer's standpoint, Passive House offers the most comfortable house possible at a price point only 8-10 percent higher than an average new home. The difference is that a 90 per cent reduction in energy requirements creates a yearly dividend to the homeowner in the form of drastically reduced energy bills.

The basic concept of the Passive House is based on an energy breakthrough point, where insulation levels are increased to an extent that the need for a furnace or air conditioner is reduced significantly, or in most cases removed all together. The money saved by removing expensive mechanical heating and cooling systems offsets the cost of additional insulation. The removal or reduced use of mechanical systems also lowers annual maintenance and replacement costs for even greater savings. This effect can be multiplied when implemented in larger buildings, where maintenance and replacement of mechanical systems requires a larger amount of capital.

Another emerging technology that can reduce energy consumption is LED lighting. LEDs use significantly less power than incan-

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Members Wanted

New structure to renew Canadian Environmental Network

By Josh Brandon, Chair, Canadian Environmental Network

THE CANADIAN ENVIRONMENTAL Network (RCEN), and the environmental movement across the country, suffered a severe setback in October 2011 when the federal government unilaterally cancelled its longstanding funding agreement with the organization. For three decades, the RCEN provided the federal government with world-recognized consultation services. The agreement also provided funding to help sustain regional affiliates, including the Manitoba Eco-Network. The loss of funding was catastrophic: RCEN was forced to lay off all its staff, and has survived over the past year thanks to the hard work of its volunteer Board of Directors and members.

Despite challenges, the need for a national network is greater than ever. We are at the threshold of a planetary emergency which scientists tell us, if crossed, could send our global ecosystem and civilization into a tailspin from which recovery would be improbable. Meanwhile, governments at all levels continue to pursue economic policies derived from the unlimited growth paradigms of the 20th century. The losses of important science-based environmental institutions such as the Experimental Lakes Area and the curtailment of federal environmental assessment legislation have put the environment at even greater risk.

It is in this context that the Canadian Environmental Network held its AGM in Toronto March 2 and 3. Environmentalists from across the country gathered with renewed optimism in the state of the environmental movement, and affirmed the importance of a national network for connecting our grassroots and for working collaboratively across Canada's diverse regions.

Significantly for member groups, the AGM voted to accept a new set of bylaws that will help us rebuild and become stronger within our current framework in which we have no staff, minimal funding and a challenging political environment.

The new bylaws will mean a more direct relationship with our member organizations. Up until now, the RCEN has had a complex federated governance structure, based on a symbiotic relationship with our regional affiliates. The RCEN provided a conduit for funding and consultations opportunities to the regions from the federal government, while relying on affiliates for member recruitment. This relationship broke down when the federal government cut off funding to RCEN in 2011.

Issue caucuses like water, toxics, biodiversity and agriculture, and regional affiliate organizations will continue to play an important role in the RCEN. However, the need for streamlined governance means that we are asking environmental non-governmental organizations to sign up directly as member groups of the RCEN in addition to their membership in their local affiliates.

Member groups will have the opportunity to join caucuses, participate in RCEN governance and will receive regular e-newsletter updates. As well, RCEN continues to have a strong global reputation and receives accreditation to send delegates for international, UN-level conferences on climate change, biodiversity and other environmental issues.

We are looking for member organizations that are interested in collaborating, networking and sharing resources with others at a national level. If you are part of an environmental NGO, please contact us to find out how you can participate.

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April

20 Lennard Taylor Fashion Show

The lights are low as you enter the large lofty room, and wood beams from a time long ago hang overhead. The steady beat of the music sends shivers of anticipation for the beginning of the show. You cannot but help notice the six white boxes circling around a central pillar; it reminds you of an ancient ceremony of years past. A bell rings and the lights flare up: the fashion show is about to begin. A portion of the ticket sales will be supporting Climate Change Connection's FRESH stories. 612 Valour Road. Doors open at 7:00 p.m. Show starts at 9:00 p.m. Tickets are \$25 each and available online, by calling 204.791.4547, and at Sew Dandee or 307-333a Garry Street. www.lennardtaylor.com.



Spring in the Whiteshell means emerging green moss.

PHOTO: JOEL TREMANAN

21 Seventh Generation Walk for Mother Earth

The walk this year is in support of the voices of indigenous women, and in solidarity with Idle No More. There will be speakers at Central Park at 12:30 and the walk starts at 2:15. Activities run until 9:30 p.m. Find the event on Facebook for more details.

21 EcoAdventure Race

Paddle, run, orienteer and cycle 35 km through FortWhyte Alive and Assiniboine Park. Demonstrate zero emission transportation in a unique, exciting outdoor sport adventure. Visit fortwhyte.org/specialevents to register and to learn about FortWhyte's other Earth Day activities.

21 Oak Hammock Marsh Earth Day Celebration

Learn about composting, homemade cleaners, green building and the marsh. Oakhammockmarsh.ca.

22 Earth Day

26 Art Fundraiser for Manitoba Environmental Youth Network

EcoPIA presents their annual fundraiser — EcoEklektica — a fusion of local music, art, food, beer and prizes, all with a sustainable spin. Proceeds support the Manitoba Environmental Youth Network. 7 to 11 p.m., Edge Gallery (611 Main Street), \$10. Tickets available at the U of W Infobooth, Manitoba Eco-Network and at the door.

30 Radical Reels Tour

The best high-adrenaline films from the Banff Mountain Film Festival are coming to Winnipeg. Gas Station Theatre, 7:00 p.m. Alpine-club.mb.ca.

May

3 Green Drinks

An informal, monthly get-together of individuals working for the environment, be that in government, consulting, nonprofit, or in your spare time. 4:30 p.m. 'til whenever at King's Head pub. RSVP on Facebook and invite friends and colleagues. Organized by Manitoba Eco-Network.

4 Nature Manitoba's GIANT Garage Sale

Holy Cross School, 300 Dubuc in St. Boniface (new venue) www.holycross-school.mb.ca. As ever, we need help on May 3 and 4 to make this event successful. Email info@naturemanitoba.ca or give us a call at 204-943-9029.

9 Invitation to Simplicity

An evening of storytelling and information sharing about a better way of life in challenging times; one that is simpler, mindful and filled with gratitude and appreciation. 7:00 p.m. Please email VoluntarySimplicity@shaw.ca to reserve your seat.

22 International Biodiversity Day

26 FortWhyte Farms Open House and Plant Sale

Visit FortWhyte Farms' bee hives, learn about our pasture-raised chickens and pigs, tour our passive solar greenhouse and vegetable market gardens. Vegetable and herb seedlings available for sale. Free admission to FortWhyte Farms. Fortwhyte.org.

29 Windows into the Soul: 4th Annual Art Auction

Manitoba Hydro Place, 7:30 p.m. \$10 suggested donation. Artsjunktion.mb.ca.

June

2 - 8 Commuter Challenge

Walk, run, cycle, skate, paddle, bus, carpool or telecommute to work, for environmental and community health. Compete against other Canadian cities and win great prizes, including a \$500 travel voucher for VIA Rail and much more. Register your workplace and yourself at Greenactioncentre.ca/commuterchallenge.

2 - 8 Canadian Environment Week

5 Clean Air Day

Encourage students to walk, bike, or skate to school. Register your school at Greenactioncentre.ca/content/clean-air-day.

Please email your event notices to info@mbeconetwork.org.



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Sustainable building cont'd...

descent and even compact fluorescent bulbs. This reduction in power also allows them to operate on low-voltage wiring systems. Replacing heavier gauge wire used for conventional 120-volt lighting systems with less expensive low-voltage wiring results in even more savings. LEDs have a longer lifespan, which reduces the need for replacement. Once again, all these benefits can be multiplied for larger buildings.

Passive House technology has the potential to drastically change the way homeowners look at new homes. It can also change the quality of life for homeowners due to significantly reduced energy bills. What would you do if you had 90 per cent of your energy bill back this year? Just as importantly, a Passive House is designed to be the most comfortable house on the market, and it is hard to put a price on that. 🌱

For more information on Passive House check out the PassivHaus Institut website at www.passive.de/en.

Sun Certified Builders Cooperative is currently working in the Winnipeg area. If you'd like more information on the co-op or the homes they are currently building, contact them at info@suncertifiedcoop.com.



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OF SPECIAL NOTE

Climate Change Connection is excited to announce their new partnership with Lennard Taylor Design Studio Inc. Lennard Taylor is a Winnipeg designer with a green conscience. He has made the environment a priority in his business and fashion decisions. On April 20, he will be celebrating his new fall designs — with an environmental twist. A portion of event ticket sales will go directly to Climate Change Connection's FRESH story project. For more information, check the Events section and visit www.lennardtaylor.com.

The Eco-Network's Reel Green Film Festival and Anne Lindsey Protecting Our Earth Awards will occur in October this year. Stay tuned for more details. If you have a campaign or service you wish to publicize, contact us for sponsorship opportunities.



We imagine a Winnipeg where **food**, **herbs** and **native** plants grow here, there and everywhere, leaving those carpets of non-local grasses to where we actually make use of them - athletic fields.

If you can relate, but lack a bit of time or know-how, give us a call to see how we can help. We've worked with residents to establish new culinary and herb gardens, and always love working with youth and community groups. If you'd like a salvaged-wood **compost bin**, we build those too.

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Atmospheric Alert

Meteorology at the world's northernmost inhabited place

By Jhonnathan Menjivar



The famous Alert, NU sign.

BACK IN APRIL OF 2012, a previous employer approached me and asked if I wanted to work in Alert, Nunavut as an Upper Air Technician with Environment Canada. My response "This sounds interesting, but where in the world is Alert, Nunavut?"

Alert is located approximately 817 km from the geographic North Pole, and is known as the northernmost permanently inhabited place in the world. When I heard this I was shocked and confused. I thought to myself, "how could I survive up there? The furthest north I've been is Saskatoon, Saskatchewan!"

It was explained to me that Alert is a Canadian Forces Station, better known as CFS Alert. The station consists of everything you need to survive in the Arctic, including daily all-you-can-eat buffets, a workout facility, an entire gym, a bar, a movie theater and even a bowling alley. The station serves many purposes: it hosts a military intelligence facility, a weather station, a Global Atmosphere Watch laboratory and its own airport. After hearing this, I decided that it would be possible for me to survive in the Arctic for five months.

The purpose of my stay was to work at the weather station as an Upper Air Technician. As a technician, my main responsibility was to monitor the upper atmosphere located above Alert. This was done using what are known as



The author with an ozonesonde (the large box-like instrument) with the attached radiosonde (the small box-like instrument) and a weather balloon.

radiosondes. A radiosonde is a meteorological instrument capable of measuring temperature, humidity, barometric pressure, wind direction and wind speed. The instrument is fairly small, being about the size of your hand and weighing less than one pound. It is attached to a buoyant weather balloon, which is released into the atmosphere. As it ascends, it collects meteorological data while simultaneously transmitting the data to the weather station by radio frequency.

Alert is one of the 31 upper air stations located across Canada. These stations are important since they give a glimpse into how the entire atmosphere is behaving. For instance, across

Canada radiosondes are released simultaneously from all the upper air stations, twice per day at prearranged times. When the data from the stations are combined, they provide a vertical cross section — a photographic picture of the state of the entire atmosphere.

The large collection of meteorological data also plays a significant role in forecasting Canada's weather. For instance, after the meteorological data has been received at the weather station, it is immediately coded and transmitted to Environment Canada's national monitoring service desk in Stony Plain, Alberta. From there, the data is relayed to Environment Canada's Canadian Meteorological Center (CMC) in Dorval, Quebec. The CMC's supercomputer is programmed with a fully automated forecast production system. The system ingests a large number of meteorological observations obtained from radiosondes, ships, aircrafts, buoys and satellites. Using complex mathematical equations, the system predicts the future state of the atmosphere on a regional, national and global scale. Charts and numerical data are then produced and relayed to the regional Environment Canada weather offices. Meteorologists interpret the charts and numerical data to produce local forecasts. The forecasts are then sent out to radio, television and newspapers for public use.

As a technician, my other responsibility included monitoring ozone levels in the upper atmosphere. This was done using an ozonesonde. This large box-like instrument is attached to a radiosonde, and as it ascends it measures ozone concentrations along with meteorological data. It is only released once per week, and its information is used for air quality models.

Aside from my responsibilities as a technician, Alert offered a lot of great activities and experiences. In order to keep the morale of the station high, activities included the Alert Silly Summer Olympics, the Arctic Ocean Polar Dip and the Canada Day Barbecue. However, the memories that have stuck with me most are the experiences that occurred while hiking. For instance, walking into a massive ice cave while being visited by a random wolf, and getting our truck stuck in thick mud about five kilometers from the station before needing to radio for help!

Overall Alert, Nunavut was a great experience and I'd love to go back.



Field of Nightmares

Government protects glyphosate industry despite scientific concerns

By Larry Powell



PHOTO: HONEYHUYUE, WIKIPEDIA COMMONS

Canola Flower.

IN ITS QUEST TO DOMINATE the planet's agricultural biotechnology sector, Monsanto's business model has produced significant collateral damage.

Generations of farming families in South America, India and other robustly developing regions have been devastated by the US-based multinational's product line, namely its flagship herbicide Roundup and the patented seeds that go with it. In the 1970s, the company began genetically modifying canola, and they've since created their own patented versions of soybeans, corn, cotton and a range of other crops. The havoc wreaked by Monsanto's remarkable growth in the interim includes widespread claims of pollution, illegal activity and damage to health and livelihoods, as well as a systematic effort to crush detractors and monopolize new markets with its financial heft.

While debate about the value and dangers of genetic engineering has intensified, Canada's government has followed many other Western counterparts by embracing Roundup. Up against the

overwhelming din of product promotion, citizens' and critics' concerns remain understated. Yet with the health and wellbeing of crops, wildlife, livestock and people at stake, and a festering body of evidence pointing to the pitfalls of allowing Monsanto greater market share, an important question begs a response: Why is Ottawa allowing corporate seduction to trump scientific evidence?

Clearly Monsanto's marketing strategy has been effective. Newspapers, radio, TV and online ads have long trumpeted Roundup's ability to help farmers produce more food and make more money. Monsanto has successfully positioned itself as a "partner" in helping farmers to achieve truly "sustainable agriculture" by using less fuel and water, and significantly reducing their greenhouse gas emissions. "By 2050, the population is expected to reach nine billion," one online ad proclaims, so "farmers will need to produce more food in the next 40 years than they have in the past 10,000 years combined."

In tandem with this heady positioning, Roundup's growth prospects seem unstoppable. Take canola, for example. The popular oilseed crop is used widely in such products as margarine, and is by far the largest genetically modified crop in Canada, surpassing wheat in dollar value last year. (Only Prince Edward Island grows non-GMO canola for niche markets in Japan.) The Canola Council of Canada, which represents producers, researchers and marketers, unveiled ambitious plans a few years ago to boost annual canola production by a whopping 65 per cent by 2015.

Consequently, organic canola has effectively disappeared on the prairies. According to the Saskatchewan Organic Directorate, this was due to rampant contamination of seed stock and organic fields by unwanted GMO plants, otherwise known as pollen drift.

As many responsible agriculture advocates have feared, Canada may also soon approve

Roundup Ready alfalfa. (Canadian regulators have declared it safe, although the seed cannot be sold here — yet.) Advocates warn that this would be a huge mistake. They say farmers are happy with the value and performance of their existing crop, which is used as a high-protein feed for livestock and a soil-enriching tool for growers. They're afraid of facing the same fate as organic canola growers.

Roundup's pervasiveness relies on skillfully crafted strategies to build goodwill at the community level, especially in schools. Since 1991, the Monsanto Fund Opportunity Scholarship program has awarded more than \$1-million to thousands of grade 12 graduates from Canadian farm families. The money helps pay for their post-secondary education in agriculture or a related field. Likewise, the corporation is a high-profile supporter of the Made in Manitoba Breakfast Program, organized by a non-profit charity that travels around the province, feeding students hot breakfasts and helping them "explore the agriculture industry and learn where their food comes from."

Monsanto also has the ready ear of federal lawmakers. Leading up to Parliament's February 2011 defeat of Bill C-474 (which called for more scrutiny of GMO crops for foreign export), government officials held 50 private meetings with biotech industry executives. Monsanto took a lead role in those discussions.

Meanwhile, there has been a gradual accumulation of scientific research that undercuts the safety of glyphosate — the common, active ingredient in Roundup, and the 200 similar formulations that are sold under different brand names.

Many authors have reported significant declines in amphibian populations in several areas during the past 30 years. In 2005, University of Pittsburgh researcher Rick Relyea blamed Roundup directly, concluding that it "can cause extremely high rates of mortality to amphibians that could lead to population declines."

The Ontario Farm Family Health Study had previously surveyed nearly 4,000 pregnant women exposed to a variety of farm chemicals (including glyphosate) while milking cows, cultivating or seeding fields, and in some cases helping their partners mix and apply pesticides. The study noted that, "among older women (over 34) ex-

“Generations of farming families in South America, India and other robustly developing regions have been devastated by the US-based multinational's product line, namely its flagship herbicide Roundup and the patented seeds that go with it. In the 1970s, the company began genetically modifying canola, and they've since created their own patented versions of soybeans, corn, cotton and a range of other crops.

posed to glyphosate, the risk [of miscarriage] was three times that for women of the same age who were not exposed to this active ingredient.”

Extensive research by Agriculture Canada, published in 2009, showed that glyphosate was also the most significant agronomic factor in incidences of Fusarium head blight (FHB) and Common root rot (CRR) in wheat and barley crops. Both FHB and CRR are considered serious cereal crop diseases in places like eastern Saskatchewan (where the trials were conducted).

Curiously, none of this evidence seems to disturb Canada's policy makers. Health Canada, which regulates pesticide management through its Pest Management Regulatory Agency (PMRA), has confirmed its awareness of the research summarized by this article, but a government official reported (via emails to the author) that "It did not raise immediate risk concerns that would have triggered regulatory action."

For some, a PMRA decision in December 2011 must have only added insult to injury. The Agency approved Roundup for yet another use — on mustard seed crops. The ruling states, "The evaluation of this glyphosate application indicated that the end-use product has merit and value and the human health and environmental risks associated with the new uses are acceptable."

Meanwhile, even the Federal Court of Canada felt it necessary to ask the federal government to justify its position on glyphosate. In 2009, Minister of Health Leona Aglukkaq refused a request by a BC-based environmental activist named Josette Wier for a "special review" into the safety of glyphosate. Wier had become concerned that glyphosate-based herbicides — which logging companies spray on forests near her home before replanting — were harmful to human health and the environment. Instead, the minister opted for a routine, longer-range re-evaluation, which began two years later and won't be completed for about another year.

Last November, the Federal Court sided with Wier and ruled that more research was needed, specifically to determine whether herbicides were harming frogs and salamanders. The court ordered Minister Aglukkaq to "reconsider" her refusal. Despite this, Aglukkaq has declined to give the court a definitive response.

Wier calls the court's request a "small victory, but a victory, nevertheless," and refuses to accept a tepid response as defeat. "I truly feel that I am doing the job of government, and that government has become the enemy," she said. "Scientific facts mean nothing, as [government is] so embedded with industry. Monsanto, Dow Chemicals ... are so powerful. What is left is this awful job [of] going through the court and wasting enormous amounts of time and money ... what counts is to keep the flow going."

One thing appears clear in the wake of Ms. Wier's experience. If we're ever going to benefit from a Roundup "detox," it certainly won't be our government that leads the way. 🌱

Larry Powell is a journalist specializing in agriculture and the environment. His blog can be found at www.PathsLessTravelled.com. A version of this article first appeared in the journal "Alternatives" in September 2012. www.alternativesjournal.ca/science-and-solutions/field-nightmares



Wireless Warnings

Research reveals radiation health effects

By Marg Friesen

NOT SO LONG AGO, asbestos was found in many everyday wares, some doctors advised pregnant women to keep smoking if they wanted smaller babies and X-ray machines were available to regular businesses to test things like the fit of a pair of shoes. Today, wireless radiation is widespread, but mounting evidence suggests that it belongs on that list of products — once considered safe yet later found to have devastating consequences.

Wireless radiation consists of non-ionizing, invisible electromagnetic waves emitted from devices such as cell phones, computer routers, some baby monitors, DECT cordless phones, Wi-Fi (wireless internet connection), microwave ovens, smart meters and cell towers.

In May 2011, the World Health Organization (WHO) classified radio-frequency radiation as a possible carcinogen. Legal systems are beginning to find in favour of cases claiming adverse effects: Italy's Supreme Court upheld a ruling awarding compensation to an individual claiming a tumour was due to cell phone use. Schools worldwide are becoming more cautious about exposing children to wireless radiation, particularly Wi-Fi and cell (mobile) phones. The British Medical Journal (2011) reported that the Council of Europe has recommended restrictions on cell phone use in all schools to protect children. Oncologist Dr. Devra Davis provides background details in her book *Disconnect: The truth about cell phone radiation, what industry has done to hide it, and how to protect your family*. Electrohypersensitivity, a recognized disability in Canada and Sweden, is a growing concern. Two to three new patients a week are reporting adverse symptoms from wireless radiation to doctors at a specialized Toronto hospital clinic. Symptoms include: "poor sleep, fatigue, headache, nausea, dizziness, heart palpitations, memory impairment and skin rashes."

According to the House of Commons Standing Committee on Health, the Canadian guideline for radiofrequency radiation is estimated by theoretical calculations based on thermal effects (heating). Given the many studies demonstrating adverse biological effects, guidelines need to be revised. The BioInitiative Report 2012 (bioinitiative.org) provides a

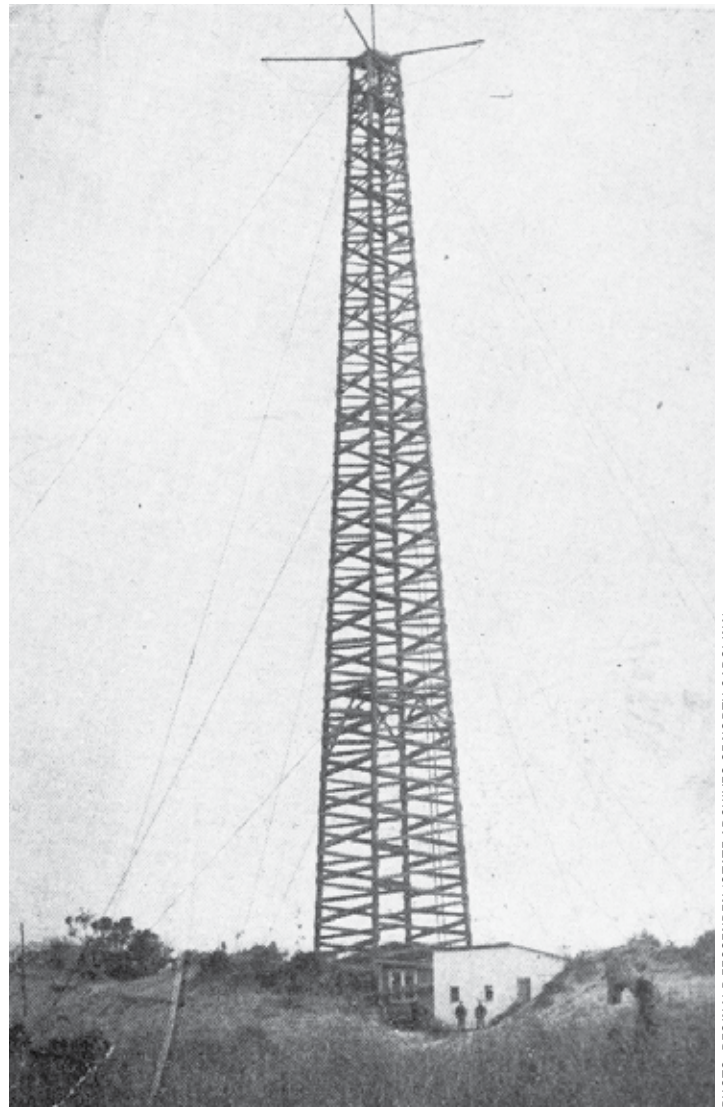


PHOTO: REGINALD FESSENDEN (STATE ARCHIVES OF NORTH CAROLINA)

Wireless station at Cape Hatteras, North Carolina, c.1900-1902.

good summary and rationale as to why public exposure standards are not adequate, and includes most of the latest scientific papers. Dr. Herbert, a Harvard Medical School pediatric neurologist who reviewed thousands of papers for her section on Autism Spectrum Disorder, clearly recommends opting for wired technologies over wireless in classrooms. In a recent letter to a Los Angeles school district, she writes that exposure to Wi-Fi can have "a disorganizing effect on the ability to learn and remember, and can also be destabilizing to immune and metabolic function."

Frank Clegg, former president of Microsoft Canada and current Chief Executive Officer of Citizens for Safe Technology (C4ST) sums up the issue well: "I have concluded that Health Canada's methods are out of date and safety limits are too weak to protect Canadians. China has limits that are 100 times stricter than ours. I worry we have a situation comparable to tobacco where Health Canada will be many years too late to take the appropriate action."

In Canada, asbestos products are no longer manufactured; X-ray machines must be used with proper shielding and although cigarettes are still available, so is the information needed to make an informed choice. Governments, corporations and individuals need to take responsibility to become better informed about the risks of wireless technology so our children and grandchildren are not asking a few years from now, "why did our parents and grandparents not know, and do, better?" 🌱

Marg Friesen is a member of Electrosmog Manitoba.

Looking For Love

Active 50ish female physician looking for a fellow who might enjoy canoeing the Thelon River, cycling in Iceland, exploring Turkey and further. He would be fit, smart, grounded, open minded with a genuine interest in people and cultures. She is a fit, socially responsible environmentalist who enjoys learning, earning, and volunteering. She is down to earth and easy going.

Reply to fitdoc@mymts.net

Natural Accounting

Mars Hill WMA restoration study continues

By Peggy Kasuba

IN 2012, the Mars Hill Forest Alliance and the Mixedwood Forest Society partnered with the University of Manitoba Biological Sciences Department and Manitoba Conservation's Wildlife and Ecosystem Protection Branch. The goal is to conduct a study to provide reliable scientific data to influence policy for protection and awareness of the 3,715-hectare Mars Hill Wildlife Management Area (WMA). Field studies will continue this summer.

We are conducting an assessment of the Mars Hill WMA because of severe forest fragmentation and habitat damage caused by motorized recreational pursuits. Our goals are the reduction of forest fragmentation and habitat restoration. Our study has already influenced a trail placement for motorized users that is best suited to reduce environmental damage. This in turn will protect tree roots and trailside vegetation.

Under the supervision of University of Manitoba Professor Lastra and environmental studies student Heather Miltenberg, our field technician from May 1 to August 31, we set up 84 plot sites, an equal number in

“ We are conducting an assessment of the Mars Hill WMA because of severe forest fragmentation and habitat damage caused by motorized recreational pursuits.

jack pine forest, aspen forest and meadows, and inventoried all plant life, including trees. We also inventoried plants of interest, orchids, ferns, prairie plants, grasses, sedges and rushes outside of plot sites along the way. Our student Heather was an incredibly dedicated technician. She photographed, recorded, used GPS, collected plant specimens and entered endless data. Species information was reported to the Manitoba Conservation Data Centre, Bird Studies Canada and Breeding Bird Atlas, NatureNorth Herps Atlas, Native Orchid Conservation Inc., Manitoba Museum botany, universities of Manitoba and Brandon herbariums, and the Environment Canada Citizen Science project.

We were very excited to confirm the federally and provincially protected, COSEWIC-listed, Eastern Whip-poor-will in this WMA. We are now working toward habitat protection for this bird. Heather found a Botrychium fern that is uncommon, and under recorded in southeast Manitoba. We also found nine species of orchids: Moccasin flower, tall and short yellow Lady's slipper, Early Coral Root, Striped Coral Root, a large mass of Spotted Coral Root, Slender ladies' Tresses, Rattlesnake Orchid, and the Long-bracted Orchid.

We thoroughly enjoyed providing biodiversity field trips for high school students on Wednesdays throughout the field season. These students came to us through the Manitoba Eco-Network Youth Caucus. Our 2013 field season would be a great time for you to come out on a guided field trip through the Mars Hill Wildlife Management Area. Hope to see you in 2013!



Luna moth (*actias luna*).



Fly Agaric Mushroom (*Amanita muscaria* var. *formosa*).



Lady's slipper orchids.

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Mentors Matter

Annual environmental youth program's five powerful outcomes

By Jonathan Ventura, Manitoba Environmental Youth Network Coordinator

THIS YEAR'S PILOT Environmental Youth Mentorship program put the resilience, passion and creativity of Manitoba youth into action. The mentorship program facilitated solutions, education and change in our community through the development of five youth mentors who had the opportunity to work with individual youth groups in the areas of environmental art, wilderness biology, composting and on two water conservation projects. Mentors worked with youth groups to develop their leadership and passion in taking action on the issues that will affect their future most.

Canadians are often overwhelmed with facts about our changing world and climate, finding it difficult to create solutions and unsure of where to start. These challenges also faced the five youth groups. With creativity and guidance from our mentors, youth groups were able to overcome such barriers and successfully implement their projects.

Natalie Baird's passion for the environment lead her to captivate a group of young women in producing visual art that helped educate, and also challenged the ways in which we live. "By being a mentor, I have learned the importance of supporting youth through their goals and aspirations, while exposing them to new people, opportunities, ideas," said Natalie. The environmental art group challenged local businesses to promote sustainability and sustainable practices by distributing their "It's not just romantic, it's sustainable" information graphic packages. Their environmental art will be displayed at the Edge Gallery until May 2. Opening night will be on April 26 and will include music, food, community and art.

Sisler High School took on "protecting our life source, water!" as a topic. Sisler students, with the help of Cristy Smith, initiated a water month, bringing change and awareness to one of Winnipeg's largest high schools. Activities included a blind water taste test that compared tap and bottled water, educational posters, announcements, surveys and an art installation. The installation was created out of 539 disposable water bottles, five days' worth of Sisler's recycled water bottles. Students hope to reduce disposable water bottle use and help educate students on water use.



Sisler students sculpted with 539 disposable water bottles, five days' worth of the school's recycling, to help educate students on water use.

Leader Teagan Markin helped develop and initiate a student water challenge. Approximately 70 students from Edmund Partridge Junior High, Ecole Leila North Community School and Sisler High School recorded their average weekly water consumption, and challenged themselves to lower their water use by changing their daily routines and installing home water conservation kits.

Gimli High School students are always looking for ways to green their community. With mentor Ameena Bajer-Koulack, Gimli students started composting as a great complement for their upcoming school garden and an excellent

“Natalie Baird's passion for the environment lead her to captivate a group of young women in producing visual art that helped educate, and also challenged the ways in which we live.

way to educate their classmates! The student-lead initiation has diverted approximately 100 lbs of waste.

With the help of the Mars Hill Wildlife Management Area and mentor Heather Milteneburg, the wilderness biology mentorship provided an opportunity for three different environmental groups to take part in citizen science. For many of the high school youth participants this was "the first time they were able to learn about and connect with nature," said Megan Cook, Wayfinders coordinator. Heather provided hands-on field research, interactive PowerPoint presentations, and knowledge sharing in a group dynamic. The youth were able to involve themselves with citizen science through surveying the land, providing water tests, and cataloging wilderness.

The Mentorship program will be running once again, starting in September 2013. You can help! Donate to the program, become a leader, sign-up your eco-group or join the environmental art mentorship.

The Mentorship Project is just one way the Manitoba Environmental Youth Network is helping create youth-powered solutions. Contact the Manitoba Eco-Network for more information or visit www.mbecoyouth.org/youth.

Thank you to Environment Canada and their Eco-Action grant for their generous support of the Environmental Mentorship program. 🌱



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