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The Birds, the Bees and the Trees

Lessons about Electrosmog

By Marg Friesen, Safer Wireless Radiation Manitoba

PHOTOS: DRIES DESENDER

THE TERM "learning about the birds and the bees" usually refers to a sit down chat between parents and their children about sex. Well, it looks as though there is even more we can learn from the birds and the bees - and the trees. Evidence is growing that these living organisms are affected by electromagnetic radiation (EMR), also called electrosmog, at current every-day exposure levels. The impact on the environment is something that needs to be examined on a broad scale.

Electrosmog is the "acid rain of today" according to Dr. Magda Havas. Dr. Havas' peer-reviewed research on acid rain helped bring about the "acid rain accord" signed into International law in 1991. Acid rain had been threatening the health of many lakes and forests in North America in the 1980s and was a highly controversial environmental issue before legislation was enacted which led to the reversal of much of the harm.

Dr. Havas' interests have now turned to another controversial issue, namely that of electrosmog. The word electrosmog is often used to describe electromagnetic radiation at frequencies on the electromagnetic spectrum that range from those emitted from high tension power lines and household electricity to radiofrequency/microwave radiation emitted from wireless devices such as cell tower antennae (masts), cell phones, Wi-Fi routers, telecommunications broadcast towers and satellites. There is concern that the tolerance of all manner of biota has been reached for exposure to current EMR levels, now millions of times above historic, natural levels.

This concern is grounded in scientific evidence. Dr. Devra Davis, a lead author of the section on assessment of climate mitigation

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Executive Director's Message

By Duncan M. Stokes

> "I really believe in the environment movement right now - it only takes a little effort to make a big difference.

PHOTO: SUSAN LINDSAY

I FOUND THIS QUOTE, looking for something profound that would introduce me with a bang! But the quote I selected…I think the beauty is in its simplicity.

My name is Duncan Stokes. Recently, I was fortunate enough to be selected as the Executive Director of the Manitoba-Eco Network. The journey that led me to MEN? While I have always appreciated the natural wonders of the world, my larger awakening has come in recent years. And it comes from my love and respect for the animals with whom we share our land, our water and our air.

I'm a Winnipegger…I was born and have spent most of my life in Winnipeg. I did spend nearly 10 years living in both Northern Manitoba (Thompson) and Northwestern Ontario (Dryden) as a news director at radio stations. I learned about the harvesting practices of our natural resources from the mining, forest products and paper companies located there in the 1990s. While many of those mines and mills are no longer in operation, I came away believing, and still feel, there were sincere efforts in sustainable development and as well as commitments to best practices.

Returning home to Winnipeg in 2000, most of my professional time has been spent working for non-profits in both managerial and communications/marketing capacities. I am eager to bring my skills and my experiences into helping build the capacity and the knowledge of the Manitoba Eco-Network. I'm hoping to see MEN continue to accomplish wonderful things as part of our community's effort to make home a great place to live, work and play. I'd welcome calls or emails from you as I find my footing.

The quote? It didn't come from Al Gore. Nor was it said by Leonardo DiCaprio. It wasn't even from the late Ralph Nader. It wasn't from anyone known for a deep commitment to environmental causes. Brooke Burke, former Co-Host of Dancing with the Stars.

The point being, that doing a little helps a lot. One doesn't need to donate thousands of dollars, thousands of hours or be an environmental warrior. We all walk at our own pace…and those steps while quiet by themselves are loud when we all take them together.

eco events in Manitoba

For more environmental event listings see our website calendar at www.mbeconetwork.org.

SEPTEMBER

30 Willow Planting for Healthy Shorelines

FortWhyte Alive

Learn how willows can be a secret weapon in the fight against erosion. Help FortWhyte Alive protect our shorelines as we plant rooted willow plugs and maple trees along our lakeshore.

OCTOBER

26 Frightening Fiver

5-10k run @ *FortWhyte Alive*

Join us for a 5/10k run through the woods of FortWhyte by night, guided by nothing but sheer terror (and a headlamp!). Survive this spooky sprint and be rewarded with free smokies and s'mores by a bonfire.
Cash bar. Costumes are encouraged!

7-9 Thanksgiving Birdseed Sale

Oak Hammock Marsh

Thanksgiving is the best weekend of the year to watch the migration of thousands of waterfowl at the marsh. It is also a great time of the year to stock up on birdseeds for our feeders!

NOVEMBER

29-30 Wester Canada Cleantech Innovation Forum

MEIA

The inaugural Western Canada Cleanteach Innovation Forum will feature keynote speakers, plenary sessions, technical concurrent sessions, and a special edition of the Green Dragon's Lair.

18 Winnipeg Santa Claus Parade

5:00pm

The Winnipeg Santa Claus Parade attracts over 60,000 people to downtown Winnipeg to watch the parade and participate in the affiliated events.

OCTOBER 6
NOVEMBER 3
DECEMBER 1

First Fridays in the Exchange

It's full-on creativity where Galleries, artists and shops welcome your visit on the 1st Friday of each month.

The Canadian Network for Human Health and the Environment (CNHHE)

By Jane Percy

WOULD YOU LIKE TO KNOW MORE about the chemicals you encounter every day and have a say in their assessment and regulation? Join the Canadian Network for Human Health and the Environment (CNHHE)!

What is the CNHHE?

The CNHHE is concerned with human health-related environmental issues regarding air, water, soil, food, climate change, and consumer products. Membership is free, and is open to non-governmental, research, and healthcare professionals, government policy-makers and individuals who are interested in the connections between human health and environmental exposures.

The primary focus of the CNHHE is to engage members in the Chemicals Management Plan (CMP) run jointly by Health Canada and Environment and Climate Change Canada by:

- Informing members about substances being assessed by the CMP via e-mail, the website, and social media.
- Engaging members in the CMP's public comment periods about draft screening assessment and proposed risk management documents.
- Selecting delegates to attend CMP stakeholder consultations.
- Educating and engaging the broader public about environmental health issues by collaborating with other interested networks and organizations.

Get Involved!

Engagement in the CMP's public comment periods (PCPs) is achieved through free online webinars about a particular substance. Participants learn about the substance from those with expert knowledge. Comments and questions are then summarized and sent to the Chemicals Management Plan.

Free online webinars are also provided about CMP-related subjects in collaboration with Health Canada and Environment Canada.

If you would like to get involved in learning more about and engaging in the chemicals management process, please join the CNHHE.

<< *continued from page 1*

Birds, Bees, Trees cont'd...

policies (1999-2005) for the Intergovernmental Panel on Climate Change (IPCC) of the United Nations Climate Convention and one of the scientists who was a co-recipient, with former US Vice-President Al Gore, of the Nobel Peace Prize in 2007, stated during Canadian Parliamentary health hearings in 2015: "... the evidence on the damaging effects of cell phone and other wireless radiation is as strong, if not stronger than the evidence on climate change, which I've reviewed as a member of the IPCC."

In December, 2016, Dr. Havas, as well as four other individuals and groups, submitted briefs to the Parliamentary Committee on Environment and Sustainable Development, as part of its public consultation on improving the Canadian Environmental Protection Act (1999). The briefs described scientific studies which show harm of electrosmog, at common exposure levels, to a wide range of biota, including birds, bees and trees.

PHOTOS: DRIES DESENDER

The briefs submitted to the Parliamentary Environment Committee list many more studies reporting the findings of adverse effects on animals, including frogs, and plant life and can be found on the website:

http://www.publications.gc.ca/site/eng/9.838357/publication.html

In addition, the book, "The Invisible Rainbow. A History of Electricity and Life", reviewed elsewhere in this issue, describes these and other adverse effects worldwide.

The Parliamentary Environment Committee released its report this past June titled "Healthy Environment, Healthy Canadians, and Healthy Economy: Strengthening the Canadian Environmental Protection Act, 1999." Recommendation 62, based on the information in the submitted briefs, states: "The Committee recommends that Health Canada and Environment and Climate Change Canada conduct studies on the effects of electromagnetic radiation on biota, review the adequacy of the current guidelines provided in Safety Code 6 and report their findings back to the committee."

Safety Code 6, Health Canada's guidelines for safe exposure to wireless radiation in the radiofrequency/microwave range applies only to humans and only uses calculations based on heating (thermal) to set guidelines for the frequencies used for common telecommunications purposes. There are no Canadian guidelines for wildlife.

There is much excitement about the proposed 5G technology and how it will bring to us increased connectivity with the Internet of Things, driverless cars and virtual streaming. However, this will add another layer to the EMR to which we are already exposed - and even more intensely with small antennae (microcells) being required every 300 m or so for adequate coverage. This could mean a microcell, possibly on light and other utility poles, every 3 to 10 homes in residential areas where we and many of our beloved birds, bees and trees live. Of concern is that there are few studies of the effects of exposure of these previously unused frequencies on humans or laboratory animals, and apparently none on wildlife. We simply do not have adequate information to assess the full impacts on human health and the environment.

Why are we not looking to the birds, the bees and the trees to see what lessons can be learned before leaping to increase the levels of electrosmog all around us? Let us hope that the Parliamentary Environment Committee's recommendation 62 is fully followed before the leap to 5G is taken. Perhaps we also have some important lessons to be learned from lemmings...

The effect of EMR on biota:

BIRDS - A fully double-blinded study published in Nature in 2014 conducted by researchers from the University of Oldenburg, Germany and University of Oxford, UK detected navigation problems in the European robin at ambient levels of EMR at radiofrequency wavelengths. The abstract states: "Here we show that migratory birds are unable to use their magnetic compass in the presence of urban electromagnetic noise."

BEES - Evidence has also been published that bees and other pollinators have been adversely affected by telecommunications antennae. Dr. Amparo Lazaro, University of Aegean, Greece, et al. found decreased abundance of all pollinators, except butterflies, on islands in the eastern Mediterranean that correlated to EMR levels. The abstract states: "As EMR affected the abundance of several insect guilds negatively, and changed the composition of wild pollinators in natural habitats, it might also have additional ecological and economic impacts on the maintenance of wild plant diversity, crop production and human welfare."

TREES - A study published in 2016 by Dr. Cornelia Waldman-Selsam et al. in "Science of the Total Environment", describes the monitoring from 2006 to 2015 of tree damage and EMR levels in two German cities. The abstract states: "Statistical analysis demonstrated that electromagnetic radiation from mobile phone masts is harmful to trees."

Willow Trees

Great Shoreline Soil Stabilizers

By Katrina Froese, Education Coordinator, FortWhyte Alive

FORTWHYTE ALIVE, in the southwest corner of Winnipeg, is home to five clay pit "ponds," remnants from excavation by Canada Cement that began in 1911. These lakes are significant features on the landscape, measuring up to half a kilometre long and with depths of 6 to 8 metres. FortWhyte's lakes provide a haven within city limits – drawing waterfowl, wildlife and humans for almost a century. Although the steep banks of the lakes have experienced erosion over the years, the uplands are now growing with waving grasses, dense growths of willows and tall trees such as cottonwood and trembling aspen.

FortWhyte Alive's programming revolves around the water as a setting for recreation such as paddling and sailing, and as a teaching tool for school groups and the public about topics ranging from the importance of freshwater to environmental sustainability.

Over the past 15-20 years, FortWhyte's lakes have been experiencing a decline in water quality, mirroring the issues faced by Lake Winnipeg. Summer algae blooms have become larger and more numerous, as well as evidence of new blooms in fall and spring. Though we have yet to confirm the cause of our lakes' decline, we are suspicious of the impact of increasing numbers of migratory waterfowl that land on the lakes each spring and fall. Studies have shown that a well-fed, healthy adult Canada goose can produce up to 1.5 pounds of fecal matter per day, contributing high levels of phosphorus, a main nutrient contributing to algae blooms.

With the many challenges that Manitoba is facing regarding water quality, from increasing flow of phosphorus to Lake Winnipeg from sources including urban wastewater, fertilizers, livestock manure, and overland flooding, fueling massive algal blooms, to zebra mussel invasion, and the continuing loss of wetlands due to drainage, FortWhyte has recognized the need to broaden the public's awareness. Thanks to a successful series of funding requests, we will be increasing our efforts towards improving water quality in our lakes, while promoting education and action through partnerships within the Lake Winnipeg Watershed.

Want to get involved?

Did you know that willows, a common shrub in wet areas, are great shoreline soil stabilizers? On September 30, we're calling all green thumbs to FortWhyte Alive for assistance in planting willows and Manitoba Maples along our shorelines, with the goal of enriching biodiversity and reducing shoreline erosion. Contribute to a community project while learning how you can use this same technique on riverbank property or at the cottage. Event page: https://www.fortwhyte.org/event/willowplanting/?instance_id=13224

Collaborating with Lake Winnipeg Foundation's Community Based Monitoring Network, FortWhyte Alive has begun to offer water monitoring teacher workshops and outreach to schools. This gives young people the experience of testing water quality in their own community, and to use sampling protocol that allows schools to contribute to scientific data regarding the level of phosphorus in Winnipeg's waterways. Members of the public can also take part in phosphorus sampling as citizen scientists. Please visit www.fortwhyte.org/watermonitoring and www.lakewinnipegfoundation.org/monitoring-our-waterways for more information.

Learn how willows can be a secret weapon in the fight against erosion. Help FortWhyte Alive protect our shorelines as we plant rooted willow plugs and maple trees along our lakeshore.

SATURDAY, SEPTEMBER 30 10 AM - 1 PM

At 1:30 pm, join us for a special presentation featuring Johanna Théroux of the Lake Winnipeg Indigenous Collective, who will join us to share stories of First Nations initiatives around Lake Winnipeg.

For more info and to register, visit:
>> fortwhyte.org/willowplanting

This activity is not recommended for those with a previously determined high sensitivity to poison ivy.

HONDA

FortWhyte Alive to house Winnipeg's first ground mount solar panel

By Jackie Avent

BETWEEN THE BEEHIVES and the bison prairie, FortWhyte Alive will house the first ground mount solar panel instillation in Winnipeg.

Located on the main entryway into FortWhyte Alive, this project will be viewed by every visitor accessing the site off of McCreary Road. It will even be visible by air passengers flying over FortWhyte as they take off and land along the south approach into JA Richardson International airport.

> "This project will save an estimated $356,000 in electricity expenses over its 30-year life span...

The $180,000 project is funded, in part, through a grant from Bullfrog Power and the Manitoba Hydro Solar Energy Program. The rest will be drawn from FortWhyte Alive's capital fund, realizing a key objective from the 2015 Sustainability Plan – to incorporate renewable power sources at FWA by 2020.

This project will save an estimated $356,000 in electricity expenses over its 30-year life span, and will replace half of all energy used at FortWhyte Farms every year.

Solar Manitoba has been contracted to do the instillation and is ready to hit the ground running; however, the project awaits permit approvals from the City of Winnipeg before the work can get started. Once the instillation begins, the panels will be up and operational within a couple of weeks.

Stay tuned to FortWhyte's social media feeds @fortwhytealive, and the online programming calendar for information and details about when this power-full project will be operational.

Reversing the Long-term Degradation of Lake Winnipeg

There are options

By Glen Koroluk

PHOTO: JENNIFER ENGBRECHT

AS A CHILD I WOULD SPEND MY SUMMER holidays at my grand-parents farm, in southeastern Manitoba. They were peasant farmers, living off the land, and their only source of income until they retired was from the milk and cream they sold from their half dozen or so dairy cows. Horse power was their machinery and used for swathing fields, making haystacks, and moving manure from the barn to the long windrows of compost, which they spread onto the fields and gardens every year. Food was harvested from these gardens and canned, pickled, dried, frozen or stored in the root cellar. Chickens and eggs were in constant supply and a piglet or two would be fattened every year with the abundant slops (or food waste). Food was also harvested and hunted from the wild: mushrooms, berries, plums, and wild game birds.

When I tell this story to farmers today, they look at me with disdain and lecture me that we cannot turn back the clock. I agree and respond by saying it is time to get a new clock.

This summer, the Government of Canada issued another five-year commitment of $26 million to further research and the implement best management practices (BMPs) to help improve the ecosystem health of Lake Winnipeg. This is on top of the $36 million spent 10 years prior. While the federal government provides little evidence that the last batch of money spent improved the health of Lake Winnipeg or reduced nutrients that cause cyanobacteria (blue-green algae) outbreaks, a plethora of research that collaborates research and evidence from other parts of the world was carried out in the basin. The industrialization and globalization of the world's agriculture and food system imperils the ecosystem integrity of the natural world, as well as endangers our human health.

Lake Winnipeg boasts a drainage area of over one million square kilometers that stretches to the Rockies and receives on average of 7,655 tonnes of phosphorus per year from its watersheds. 68% of this phosphorus originates from one watershed, the Red River Basin. Scientists are also confident that at least 75% of the nutrients are derived from the agricultural sector. It seems that every spring when the snow melts or


PHOTO: SHAWNA CULLETON

anytime it rains, the nitrogen and phosphorus from chemical fertilizers and animal manure are carried off the fields and make their way into our aquatic ecosystem. Another challenge is that over the last couple of generations, the land use and cover of the basin has drastically changed from perennial grasses, shrubs, wetlands, marshes, prairie potholes, creeks and streams, to monoculture cropping systems, drainage ditches and tiling to remove excessive moisture after heavy rainfall events. Our dairy and hog sectors have moved to liquid slurry systems to manage the waste urine and feces, and large groups of animals are confined in small spaces, creating excess manure at any particular location. Concentrating so much manure with feedlots, chicken factories and hog confinement systems creates an imbalance between the manure produced and the amount that can be used locally by crops as a fertilizer.

Manitoba's solution

So how does the new provincial government respond to all this? Their plan is to lift the "hog moratorium" enacted by the previous government and to amend the regulation that governs manure and livestock mortalities. Manitoba Sustainable Development states in their recent consultation document that "the changes are expected to help facilitate growth of the livestock industry and its contribution to economic growth and employment opportunities in Manitoba." At 8 million hogs marketed annually, Manitoba is already the largest swine-producing province in the county with about a third of the nation's production capacity. Industry rumors suggest that Maple Leaf Foods and HyLife, the largest and third largest pork packers in the country, want another 2 million hogs produced in Manitoba to fuel their slaughterhouses in Brandon and Neepawa. Over 95% of this pork leaves the province and 60% is exported outside of the country, mostly to Japan and the United States.

Costs to Fix Lake Winnipeg

All said and done, saving Lake Winnipeg will have a price tag.

- 200 impoundments for the Red River basin: $4 billion.
- Small scale reservoirs with tiling on 5% of Manitoba's cropland: $0.65 billion.
- Setting aside 10% of Manitoba's land in farms (mostly non-productive land, at $25 per acre): $48 million per year.
- Remove combined sewer overflows in the City of Winnipeg and have complete sewer separation, thus eliminating raw sewage flowing into the Red River on average 23 times a year: $4.1 billion.
- Upgrade City of Winnipeg wastewater treatment facilities to remove more nutrients: $1 billion.
- Other municipal wastewater treatment plant upgrades within the Red River Basin $0.5 billion.
- While $10 billion plus, seems daunting, Canada spends $20 billion a year on the military/defence, with plans to increase to $32 billion per year in the next 10 years.

Bill 24, The Red Tape Reduction and Government Efficiency Act, was introduced into the Manitoba Legislature earlier this year. This omnibus bill intends to amend 15 pieces of legislation at one time, ranging from requiring less reporting under the Public Drinking Water Act, to repealing the Public-Private Partnerships and Accountability Act.

Bill 24 has been held over by the official opposition for second reading in October, when legislature resumes. Citizens will have an opportunity to voice their concerns at the legislative hearings. One component of the bill will repeal sections under the Environment Act that stipulates the requirement for anaerobic digestion or any other environmentally equivalent sound treatment technology for new or expanding hog operations. The additional costs to adequately treat swine manure in effect became the moratorium, as producers were reluctant to outlay additional capital costs to treat their waste.

Proposals to reduce nutrients

The current thinking is that we can reduce chemicals and manure from escaping our fields by changing our landscape more to what it originally was. Paying farmers to set aside land and/or create vegetated buffers along riparian zones and surface water features is one example. The alternative land use services project (ALUS) in the Little Saskatchewan River watershed was successful in voluntarily enrolling 70% of the farmers in the RM of Blanchard who set aside

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Converting to Clover for Lucky Lawns

By Ellen Cobb-Friesen

IT'S AN ALL TOO FAMILIAR STORY. A gorgeous green lawn, beautifully manicured, with nary a dandelion. A lawn that is the envy of the neighbourhood. A lawn you have spent many hours working on, watering, mowing, performing periodic edging and pruning, weeding, raking and bagging, along with regular applications of herbicides, pesticides, and artificial fertilizers. It takes a lot of work to make your lawn look as good as it does, and you take pride in your lawn.

Then you find yourself at the Farmers' Market one day and you meet the friendly staff of the Manitoba Eco-Network's Organic Lawn Care program. You have a nice chat about how to lessen the work required maintaining your lawn and they suggest you explore alternatives, like a clover lawn.

A clover lawn. What?!??

That has been the response we have received from many Manitobans over the years – it definitely didn't seem right to them that someone would actually want their yard covered in clover.

Clover is typically thought of as a weed, something that homeowners work to rid themselves of. However, once someone puts a little thought into it, it makes perfect sense. Clover works wonderfully blending into grass lawns, potentially replacing them completely and outcompeting weeds like dandelions. Clover is nitrogen-fixing, meaning that it can get this out of the air and doesn't need fertilizer; it will stay nice and green on its own. It tolerates drought well, and doesn't need to be cut as often like a traditional Kentucky Bluegrass lawn. Once people wrap their heads around the perks, they are often left wondering why clover isn't a part of their lawn already.

> "Clover tolerates drought well, and doesn't need to be cut as often like a traditional Kentucky Bluegrass lawn. Once people wrap their heads around the perks, they are often left wondering why clover isn't a part of their lawn already.

We have been excited about the potential for clover lawns here in Winnipeg for quite some time now, and are pleased to see that interest from Manitobans has been increasing over the last few years. However, many Manitobans are reluctant to convert to alternative lawns, unsure of the outcome.

For the last two years we have worked with the West Broadway Community Organization to promote organic lawn care principles in their community, but realized we needed a living example to demonstrate the effectiveness of clover lawns. In partnership, we applied for funding from TD Friends of the Environment Foundation for a clover lawn demonstration project.

The central focus of the project was a clover lawn conversion at Spirit Park in Winnipeg's West Broadway Community. Spirit Park is a shared community space that has both garden plots, and an area of turf grass. There were many other plants growing there that "aren't supposed to be there," such as dandelions and thistles. Still, it's not hard to make the case that grasses like Kentucky Bluegrass are not meant to be growing there either. These grasses have shallow roots requiring regular watering, are prone to weed infestations, require regular mowing, are easily damaged by foot traffic, and often require fertilizers because they don't use nutrients in the soil efficiently and use up what is available.

This spring our Green Team Staff worked on converting the lawn to clover, and was able to distill the work into three easy steps:

1. Cut your lawn low. Then spread a 1:4 ratio of clover seed to soil.
2. Water, for 7-10 days.
3. Grow 5-7 inches before cutting.

As more Manitobans get on board with lawn alternatives, we hope that this demonstration project will serve as an inspiration.

Let's get composting!

How to bring composting to your condo or apartment building

By Elizabeth Shearer and Teresa Looy

COMPOSTING HAS BEEN PRACTICED for millennia by cultures all over the world. Communities disposed of food, yard, human, and animal waste in ways that returned nutrients to the soil. As synthetic and chemical fertilizers were developed and used throughout this past century, composting has become less common. There has been a resurgence over the years to return to agriculture and horticulture methods that use more natural processes to nourish plants and soils. Top soil preservation and water conservation are achieved through more natural nutrient cycling and we welcome the triumphant return of composting!

Green Action Centre is happy to be able to support Manitobans who turn their food waste into nutritious soil through our On-Site project. The On-Site project is unique in that we provide you with everything you need to get your building set up to compost and then you maintain the bins and show them love!

With the support of Environment Canada's EcoAction grant and other funders, we are now able to build off of our successful On-Site pilot project. Launched last year, the On-Site pilot project allowed 4 buildings to develop composting facilities for its residents! With our new funding for two years, the On-Site composting project aims to onboard 12 new buildings into the composting community over the next year. We are putting out the call for you to consider joining the compost bandwagon and putting an end to food waste at your building!

PHOTOS: BO VAN DER MIDDERN

Resources we provide:

- compost bins from Urban Eatin' Landscapes
- a compost aerator to maintain airflow in your bin
- a backyard composting presentation for you and your neighbours
- fridge magnets to remind you what can go in your bin
- print materials with tips for maintaining a healthy compost bin
- ongoing support through our ON SITE staff and Compost Info Line

Interested participants should contact us as soon as possible: there's only space for up to 12 buildings so be sure to contact us ASAP!

What We're Looking For:

- Buildings located in or near Winnipeg that have a minimum of 4 units
- A minimum of two volunteers to coordinate on behalf of your building
- A majority of residents who have expressed interest in composting
- A manager/owner who is supportive of this project

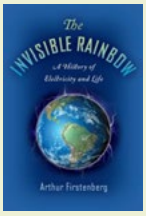
To express interest in composting at your building you can sign up for OnSite online. Please visit: http://greenactioncentre.ca/on-site-expression-of-interest/. For even more information about OnSite Composting visit http://greenactioncentre.ca/on-site-composting/

If you have any additional questions you can contact Green Action Centre's Compost Program Coordinator Teresa Looy directly.

Email: compost@greenactioncentre.ca
Phone: 1-204-925-3777 EXT 106

BOOK REVIEW

The Invisible Rainbow. A History of Electricity and Life



Reviewed by Marg Friesen, Safer Wireless Radiation Manitoba

ANYONE INTERESTED in the topic of electricity will find this book a fascinating read. Arthur Firstenberg takes the reader from the 1700s when electricity was first "captured in a bottle" to modern times when electricity, whether it is the lights in our homes or ubiquitous cell phones, is thoroughly interwoven in our lifestyles. We can't imagine our world without it.

Electricity does not only occur externally, as natural processes like lightning or man-made sources, such as from power generating stations. It is part of us - necessary for the exquisite, infinitesimal communications of every living cell. It is necessary for life - think electroencephalograms (EEGs) and electrocardiograms (ECGs).

The author takes us through an amazing journey of the history of the development of electricity for the enormous benefit of people with parallel descriptions of the negative consequences to human health and the environment. An example is the construction in 1904 by inventor Guglielmo Marconi of a telegraph broadcasting tower on the Isle of Wight in the U.K. This was followed soon after by the disappearance of bees in the area. Also chronicled are the vast increases of modern health conditions such as cancer, cardiovascular diseases and diabetes with the development and distribution of electricity. Both Thomas Alva Edison and Alexander Graham Bell developed diabetes, an extremely rare condition in those times.

The well-referenced events that are documented, such as the Influenza outbreaks related to natural electrical disturbances, or of the damage to whole forests following telecommunications and military radar installations, have troubling implications. The background information and detailed scientific information is presented in a concise straight-forward manner. It is imperative that reputable scientists fully evaluate this information and share their findings.

Many things we love and find useful, have negatives. For example, the gasoline in our cars gives us mobility but also generates carbon dioxide emissions that contribute to climate change. In The Invisible Rainbow , Firstenberg issues an urgent message to examine closely the consequences of electricity to people and the environment, so that our decisions are based on knowledge and awareness rather than current assumptions and convenience.

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<< continued from page 7

Lake Winnipeg cont'd...

21,000 acres of mostly non-productive land. Key environmental benefits of ALUS include clean water, improved flood control, fish and wildlife habitat, endangered species conservation, and carbon sequestration.

Capturing spring runoff through dugouts or creating artificial wetlands to retain water, are other measures that have been utilized in the basin.

The North Ottawa Impoundment, a few miles east of Moorehead, Minnesota, is a 3 square mile wetland than drains approximately 75 square miles of farmland. Primarily built as a mechanism to prevent flooding, the impoundment slows the flow of moving water during the spring runoff and periods of heavy rainfall through a series of dikes and ponds. The extended environmental benefits of the project are nutrient and sediment removal with reports of up to a 40% reduction in phosphorus and 70% reduction in nitrogen. The project cost $20 million and took 12 years to complete. It has been suggested that about 200 of these impoundments can be used in the Red River basin.

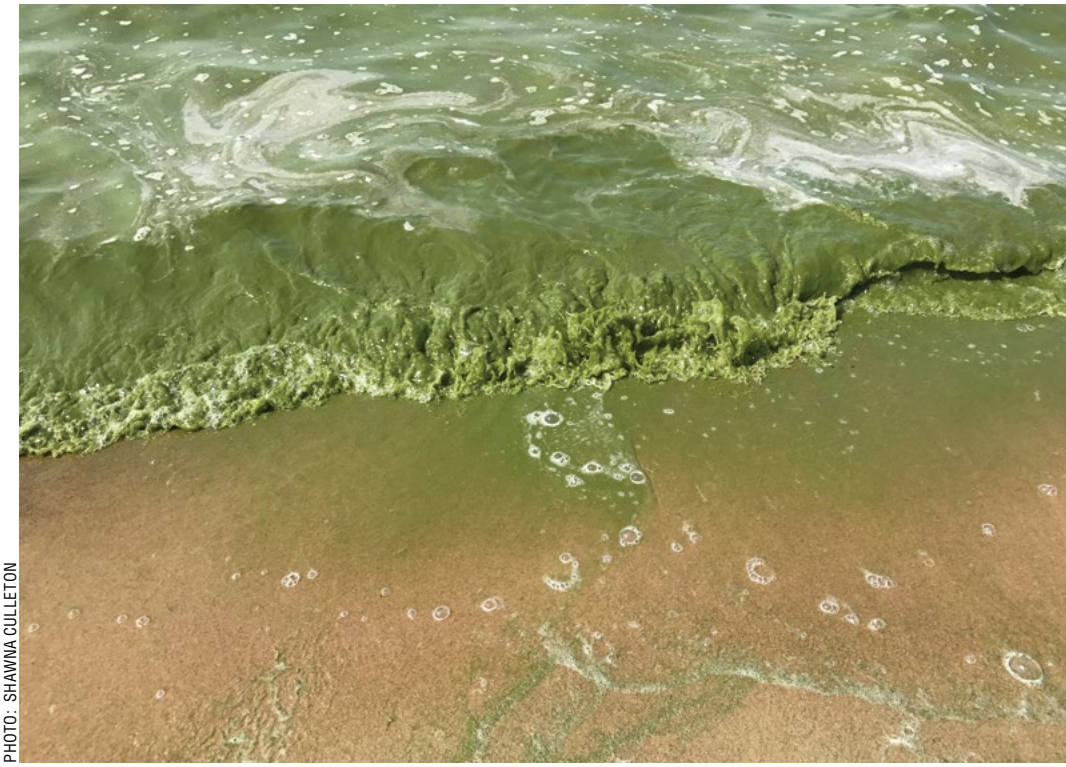

PHOTO: SHAWNA CULLETON

> "We can reduce chemicals and manure from escaping our fields by changing our landscape more to what it originally was, and thereby reverse the long-term degradation of Lake Winnipeg's ecological health.

A smaller version of the North Ottawa project was under investigation in the LaSalle Redboine Conservation District in Manitoba. Tile drainage was installed to collect excess water and then stored on farm in a small 6-acre reservoir. Instead of nutrient rich water running into the public ditches, the water could be further used for irrigation during the summer season. The quarter section project cost $160,000 or about $1,000 per acre.

Of course another way to prevent nutrient loss is to use less fertilizer and apply when required and at a rate based on the crop uptake for that year. Given the high cost of chemical fertilizers, farmers are constantly looking at ways to reduce use. For animal manure however, the challenges are more pressing. The current regulation already allows manure application of phosphorus content at rates up to five times what the crop can remove, resulting in a build-up of phosphorus, year after year. Five years ago, it was determined that the RMs of Hanover and La Broquerie, home of Manitoba's "Hog Alley," have a surplus of phosphorus in their municipalities.

A better investment would be in Agroecology

To counter the modern industrial agricultural model, ecologically based farming practices and food systems offer a much better return for any public investment. Instead of relying on input driven monoculture production through the use of chemical pesticides and fertilizers, further driven by the use of genetically engineered crops, agroecology relies on the use of ecological processes to support production.

Organic production systems can reduce GHG emissions and provide an extra benefit of sequestering carbon. The multiple benefits of feeding livestock less grain, moving to organic and holistic production systems and re-integrating livestock and perennial forages into crop production systems are immense. These small scale, mixed, and diversified at-the-farm level production systems, improve the fertility of the soil and can thus sequester more carbon dioxide, while at the same time preserving and improving genetic biodiversity. They use less non-renewable resources and no synthetic chemicals, which in turn improves water and air quality. An additional strength of these systems is that their high level of diversity significantly enhances farm resilience, making them more adaptive to climate change.

PHOTO: TIM LUTZ

Environmental damage by livestock may also be significantly reduced by lowering excessive consumption of livestock products. This is especially the case for wealthy countries such as Canada and the United States. The World Health Organization and Tufts University have consistently recommended lower intake of animal fat and meat in developed countries. When you purchase meat, eggs and/or dairy products, chose them from non-factory industrial sources and look for 100% grass finished beef, pastured pork, free range chickens, certified organic and humanely certified meat and dairy products.

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