THE LOG JAM

Published by the Woodlot Association of Alberta (WAA)

March, 2016

Our Gardens are not only food for the body, but for the soul too

Our Mission Statement - "The Woodlot Association of Alberta's purpose is to promote leadership in sustainable forest management by encouraging the development of private forest by increasing awareness of their inherent social, economic and environmental values."

Advertisements - in the Log Jam may be purchased at the following rates
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Membership expires on October 31 if purchased before June 30 and if purchased after June 30 not till October 30 of the following year.

Contact - E-Mail, Address's and Phone

Woodlot Association Office
Box 303
Beaverlodge, AB
T0H - 0C0

E - Mail - rjolson@telus.net

Website-----www.woodlot.org

Phone ---- 1 - 800 - 871 - 5680

News Letter Editor of "The Log Jam"

E-Mail---jurgen.moll@xplornet.com

Phone------1-780-778-4272

Box 84 , Whitecourt , AB , T7S-1N3

Board of Directors

Laval Bergeron, *President*
St. Isidore (780) 618 - 6014
lavalb@pensee.ca

Jurgen Moll, *Vice President*
Whitecourt (780) 778 - 4272
jurgen.moll@xplornet.com

Louise Horstman, *Secretary*
Morinville (780) 939 - 5858
pecaninc@interbaum.com

Elton Kauffman, *Treasurer*
Bluesky (780) 596-3845
eelk@telusplanet.net

Larry Nofziger, *Director*
Elmworth (780) 354-2710
larrynofziger@gmail.com

Harry Krawchuk, *Director*
Nampa (780) 322 - 3822
greenfields3822@hotmail.com

Herb Cerezke, *Membership Chair*
Edmonton (780) 435 - 6007
cere@telusplanet.net

Harry J. White, *Director*
Spruce Grove (780) 962-2049
harryj_white@outlook.com

Pete Mills, *Past President*
Beaverlodge (780) 354-8226
pssbd@telus.net

WAA Annual General Meeting (AGM)

When: June 17 & 18, 2016

Where: St. Albert/Morinville Area
Meeting hall- Royal Canadian Legion (upstairs) 10120 -101 Ave., Morinville

Time: 10 am Friday June 17 ending at 3 pm Saturday June 18

Cost: $50 (includes 2 lunches and banquet Friday)
$20 – banquet only

Tentative Agenda:

Friday June 17

9:30-10:00 Registration, Coffee

10:00 – 12:00 AGM business

12:00 - Lunch with guest speaker

1:00 – 2:30 AGM ctd

2:30 – 3:30 Coffee break & equipment demos

3:30 – 5:00 AGM ctd; meeting adjournment

6:00 - banquet followed by guest speaker

Saturday June 18

9:00 Meet at Legion parking lot, Morinville for tours of woodlots and woodlot-related projects in the area

Lunch provided.

Campgrounds, Hotels and Motels

Morinville RV Park and Campground
Reservations recommended. morinvillervpark.com or ph 780-6040
(on small Heritage Lake, which is stocked with trout)

Morinville Plaza and Suites
10219 100 Ave., Morinvile
ph: 780- 572-5521

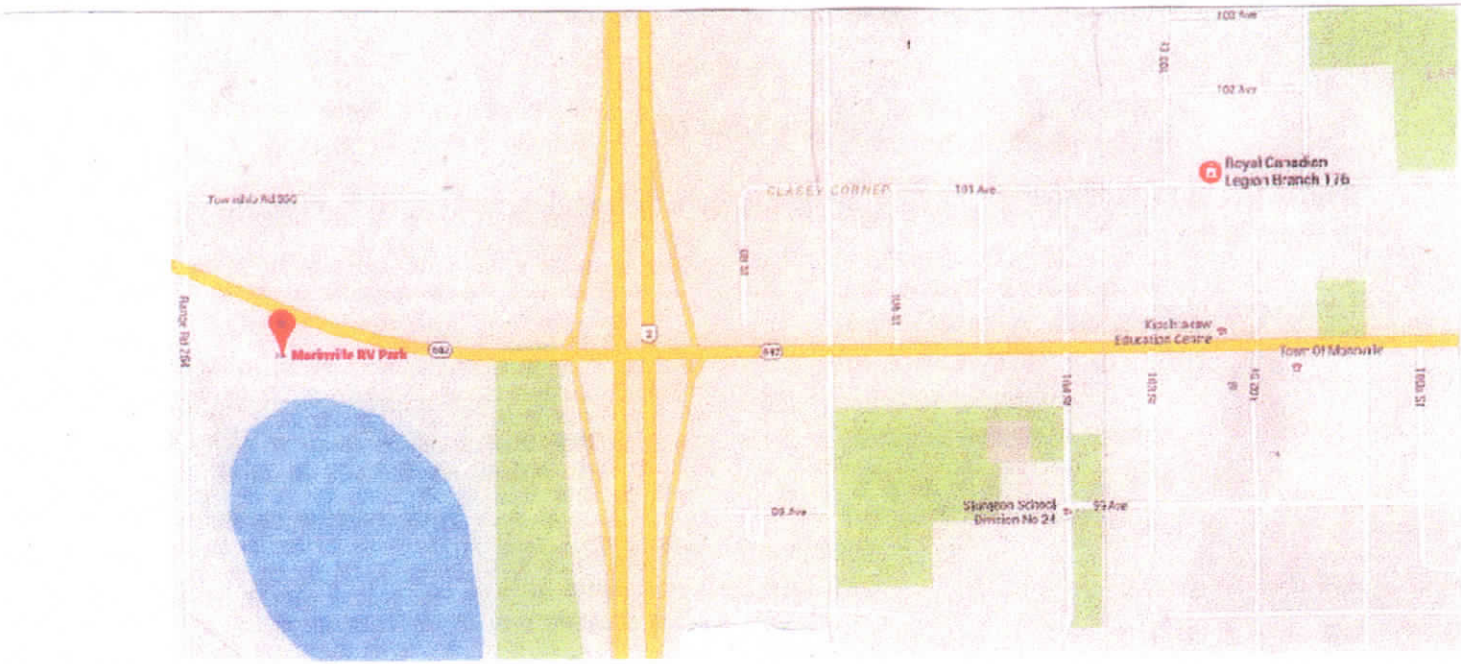
St. Albert Motels (20 min. south of Morinville on Highway 2)
Listed in order from N to S (although these addresses sound different, they are all on Highway 2)

Best Western Plus The Inn At St. Albert
460 St. Albert Trail
780-470-3800
www.bestwestern.com/ca/TheInnAtStAlbert

Horizon Motel
440 St. Albert Rd
780-459-2965
horizoninstalbert@gmail.com

Sleep Inn Motel
208 St. Albert Rd
780-459-5311
www.sleepinnmotel.ca

St. Albert Inn
156 St. Albert Rd
780- 459-5551;
www.stalbertinn.com



Presidents Report

Hello everyone,

« Climate change » is definitely the most popular expression used this past season.
Started out with the Paris meeting, Fed gov't policies, Provincial gov't grants, conferences, workshops, first minister's meeting news and more news... All this in possibly the warmest winter on record.
Is climate change real? Well, it's warmer and I'm not complaining, at least not yet... It's dryer, I've never seen the creek go totally dry for the winter and it seems that the sunny days are fewer and far apart.
Specially noticeable on solar panels!
Real or not, the forest plays a big role in the matter and I think WAA has opportunities to get involved, to help give woodlots their fair share of recognition.
Right now there is an urge to think this out, from gov'ts, industries, communities...
At our last face to face meeting of the board of directors, Rory Thompson « RPF, Section Head, Competitiveness, Innovation& Market Diversification Forest Industry Development Branch », special guest, talked in a very possitive way about the work he is taking on with both big and small operators of forest management in alberta. I want to thank Mr. Thompson for taking the time to come and meet with us. As you just saw he has a big title so please do not hesitate to contact him.
I want to thank Karen Visser, member, for representing WAA at AWES meetings, Herb Cerezke, Harry Stelfox, Jurgen Moll for their presence and the work they have done this past season for the association also the Lutheran Church in Whitecourt for the space and great food they provide us for our meetings. Awesome.
Do not forget our big event of the year, « the AGM » yes the agm, accompanied with a tour which will be held on june 17-18th. Again we hope to see you there and bring your latest idea with you for tomorrow's woodlot...

See you soon,
Laval Bergeron

REPORT ON ATTENDANCE OF THE CLIMATE CHANGE ADAPTATION FORUM FOR LEADERS

This forum was held January 20, 2016 at the Matrix Hotel in Edmonton, and was sponsored by the "Climate Change and Emissions Management Corporation" (CCEMC). The CCEMC is an Alberta-based not-for-profit organization created in 2009 to help facilitate and support Alberta's Climate Change Strategy. The CCEMC has a mandate to participate in funding initiatives aimed at reducing greenhouse gas (GHG) emissions and to improve our ability to adapt to climate change. The CCEMC, as defined in 2008, organizes funding for projects to support climate change strategies in three priority areas: (1) conserving and using energy efficiently; (2) implementing carbon capture and storage; and (3) greening energy projects. Its mission is to achieve sustainable GHG emissions reductions while facilitating climate change adaptation.

The province of Alberta collects funds from industry under the "Climate Change and Emissions Management Fund", which have then been redirected through the CCEMC into projects that will have an actual and sustainable impact on reducing GHG emissions. The funds have been invested in a wide spectrum of projects, a description of which can be accessed on line. To date, over $349 million has been invested in projects, especially at the demonstration and implementation phase of climate change technologies.

The forum held on January 20 was attended by a large number (est. 100+) of participants representing a wide spectrum of interests. Laval Bergeron, Harry Stelfox and I attended, representing interests on behalf of the Woodlot Association of Alberta. The morning session was devoted to five guest speakers, the first of which was the keynote speaker and facilitator, Dr. Blair Feltmate, Head Intact Centre On Climate Change, University of Waterloo. The title of his presentation was "Weather Gone Wild, Not Adapting is NOT an Option". The second speaker was the Mayor of High River, Alberta, Craig Snodgrass, who spoke about the experiences of the 2013 spring flood; "Flood Mitigation – Anticipating Climate Change". A third presentation was given jointly by Dr. Patricia Makokis, MD, and her son, Dr. James Makokis, Saddle Lake Cree Nation. Their talk focussed on "The Natural Laws of First Nations". Additional presentations were given by Emerson Csorba, Co-founder and Director of Gen Y Inc. and Robin Esrock, author and tourism expert on global travelling. The keynote presentations can be viewed and downloaded by visiting: http://ccemc.ca/about/events/.

The afternoon session was organized into seven facilitated round-table working discussion groups, of which we were allowed to choose which discussion theme to participate in. The seven topical themes were: (A) Extreme weather events - drought, floods, heatwaves and fire; (B) Infrastructure, transportation and land-use planning; (C) Bio-economy (agriculture, biodiversity and aquatic health); (D) Economics, finance and insurance; (E) Energy and natural resource management; (F) Health and social protection; and (G) Institutional requirements and capacity building. A moderator was designated for each discussion group, who provided at the end, a quick summary of main conclusions. All of the conclusion summaries were to be submitted to CCEMC for formatting into a final report for submission to the Government of Alberta. The final report, though not yet completed, should eventually be available on line at http://ccemc.ca/about/events/. It is anticipated that the results of the forum will help identify ways to prepare for and manage some of the risks associated with the changing climate and help to address climate change adaptation in the province.

Herbert Cerezke
Prepared February 19, 2016

ARMILLARIA ROOT DISEASE OF TREES IN ALBERTA

Armillaria root disease (ARM) is caused by a fungal pathogen that infects both conifer and hardwood tree species. Two species of *Armillaria* have been collected in Alberta, *Armillaria sinapina* and *A. ostoyae*. Only *A. ostoyae* is considered here since it accounts for most recorded tree damages in the province. *A. sinapina* is considered a weaker pathogen and is most commonly found on hardwood tree species such as aspen and poplar.

The Armillaria fungus inhabits the soil and is parasitic on the subterranean parts of trees such as roots and base of the stem. A saprophytic phase of the fungus thrives on cut stumps and other dead woody materials in the soil as its food base, and this provides the source of inoculum for spread of the fungus. The ARM fungus can survive on this dead woody material for decades. Brown to black shoestring-like structures called rhizomorphs grow out in the soil from the colonized stump wood, and as they grow they may come in contact with the live healthy roots of neighbor trees. Once contact is made, the fungus may then penetrate the bark. If penetration is successful, the fungus colonizes the root and initiates infection by forming a white fungal mycelium (referred to as a mycelial fan) under the bark. This infection disrupts water and nutrien absorption by the tree, and in turn directly affects the health of the tree. As the pathogen develops further it causes decay and death of roots, and may eventually invade into the base of tree stem. Advanced decay development results in a yellow stringly rot in the roots and lower stem, and the tree is then killed or weakened and made prone to windthrow as well as susceptable to other fungal pathogens and insect damages.

Trees of all ages are susceptable, but there is wide variation in successful pathogen infection that varies from year to year, with various site and soil conditions, with tree species and tree age. For example, conifers such as Douglas-fir and balsam fir appear to be most susceptible, lodgepole, jack pine and spruces somewhat less suceptable and aspen and poplar are least susceptable. However, the conifer species are most susceptable as young regeneration trees up to about age 25, while aspen and poplar become more susceptable after about age 40 years. The pathogenicity may also vary since young conifer trees may be killed within a few months whereas conifers older than 30 years may be infected over a long period and eventually die after several decades. Trees under stress such as during drought conditions may be more vulnerable to ARD infection since they have less resistance.

A number of visible symptoms can be used to identify ARD-infected trees. First signs may include thin and fading foliage (dull green on spruce, yellow to rust color on pines and Douglas-fir), resin bleeding around the tree base, reduced stem and height growth and a stress crop of cones on conifer trees. Dying and dead trees will have a white mycelial fan under the bark at tree base and roots. In late August and early September, brown-colored fruiting bodies (mushrooms) may form around the base of infected trees (see photo). Infected

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dead and dying trees can occur as single trees distributed throughout a stand. In young regeneration as well as in older stands "disease centers" (see photo) may develop in which groups of trees are killed, resulting in stand openings. This mortality may result from a single source of inoculum such as a cut stump or other dead wood. Disease centers of dead and dying trees may also occur in aspen and poplar clones where the disease can spread from interconnected roots.

In young regeneration conifer stands following harvesting for example, ARD-caused mortality begins when young trees are 5-7 years old, reaches a peak at about age 12 years, then declines to about age 25-30 years. During this period cumulative mortality often exceeds 20-25% of trees. Mature stands that harbour ARD-infected trees and are subsequently clearcut or selectively harvested, will promote increased incidence of infections in the young regeneration trees because of the residual food base left as dead cut stumps and roots. Similarly, thinning and pre-commercial thinning treatments may also promote increased diseased trees and mortality because of build up and spread of the disease in the residual cut stumps and roots. Delaying these treatments may reduce infections in some situations. There are no known pesticides available or effective for control of ARD. On high-value sites, stumps and large roots may be mechanically removed from the soil to reduce potential sources of inoculum. Another control strategy is to select tree species of a lower susceptibility to ARD killing, or to use a mixture of high-medium susceptible and low susceptible tree species when planting or regenerating a site. Another option would be to plan for and accept the risk of anticipated tree losses.

H. Cerezke

Up Coming Events

Board of Directors - Teleconference **March 28, 2016**
April 25, 2016
May 30, 2016
All calls are at 7 pm

The next **Annual General Meeting** will be held in Morinville on June 17 and 18 *(See enclosed meeting outline)*

We will be sending you a reminder via our group e-mail

There are also some events that are hoisted by other organizations that are posted on our web - site, so maybe check it periodically, as you may find a course that could be a benefit to your operation.

THE ANVIL - GODS WORD

Last eve I passed beside a blacksmith's door,
And heard the anvil ring the vesper chime;
Then, looking in, I saw upon the floor
Old hammers, worn with beating years of time.

"How many anvils have you had" said I,
"To wear and batter all these hammers so?"
"Just one," said he, and then, with twinkling eye,
"The anvil wears the hammer out you know."

And so thought I, the anvil of God's Word,
For ages skeptic blows have beat upon ;
Yet, though the noise of falling blows was heard,
The anvil is unharmed -the hammers gone.

Unknown

Editorial

Jurgen

I guess what hit the Alberta economy could be called a perfect storm, in that the price of oil went south, which resulted in some 10's of thousands of job losses; the dollar is at an all-time low, has driven up the cost of everything purchased out of country; EI payment are less in Alberta than in other parts of our country; and for those who managed to save some money bank interest are edging ever closer to 0% which means that you lose about 2% of your horde due to inflation each year.

All of these happenings will effect everyone differently, but what hurts everyone is the increase in the cost of food, which is about 25% over the past year. Namely beef which is out of site, and produce from the USA such as a head of cauliflower at $6. The results are that the food banks are over taxed by people who just cant a make both ends meet.

For us the woodlot owners who all own land we are in a position to circumvent some of the food costs by growing ones own garden. We have had a garden for years and it certainly helps to keep the food costs down, in particular if you preserve some for the winter months. What you need before you start is, good well worked soil, a root cellar or cold room and a freezer in which to store the winter supplies. Oh ay I nearly forgot you will need, a rake, hoe, spade, a strong back and an abundance of elbow grease. What you will receive will beside good wholesome food is a great feeling of satisfaction and achievement every time you eat the product of your labour and the money you are saving.

So now is the time to start making your plans for a garden, for you will find it very rewarding and exciting when you serve your first salads of the early greens, or eat a freshly shelled pea right in the garden or a young juicy carrot.

I think I better stop as I'm making myself hungry, just thinking of my garden.

Happy Gardening

Glyphosate-resistant weed

continued from page 9

Blackshaw and fellow AAFC weed researcher Hugh Beckie completed tests on seed samples collected from the fields to validate their findings, testing the survival of the kochia plants at increasing rates of glyphosate, as per standard practice to confirm herbicide resistance, Monsanto said.

PHOTO: DOW AGROSCIENCES

Kochia plants have been confirmed as glyphosate-resistant in three southern Alberta fields.

"DIFFERENT"

"What makes this particular case different from some of the previous situations where glyphosate resistance has been confirmed, is that it does not appear to have developed in a Roundup Ready cropping system," Monsanto said.

The suspected weed species, the company said, was found in fields where the "typical crop rotation... does not appear to have included regular use of Roundup Ready crops."

Kochia becomes the third weed species in which populations of plants in Canada have been confirmed as glyphosate-resistant. Giant ragweed was confirmed in 2009 and Canada fleabane was confirmed in 2011, both in southwestern Ontario.

Further south, glyphosate-resistant kochia has previously been confirmed in Colorado, Kansas and Nebraska, with suspected cases in South Dakota and the border states of North Dakota and Montana, Monsanto said Wednesday.

AAFC's weed scientists are "continuing their work" on this particular site, the company said. For its part, Winnipeg-based Monsanto Canada said it's also "supporting the AAFC research effort, which includes providing recommendations to help farmers manage glyphosate-resistant weeds once they are identified and confirmed."

"IF IT SPREADS"

"We have been fortunate in Canada in that this is not a large-scale weed management issue," Sean Dilk, technology development manager in Monsanto Canada's crop protection division, said in the company's release. "But we have increased communication around this topic and we speak to farmers about this more often to lessen the likelihood of resistant weeds developing."

Resistance evolves after a weed population has been subjected to intense selection pressure in the form of a repeated use of a single herbicide, without adequate incorporation of "cultural weed management options," Monsanto said. The herbicide in question then controls all the susceptible weeds, leaving only resistant weeds to reproduce.

"Our history tells us that farmers can, and are, effectively managing the situation with good agronomic practices such as using tank mixes and/or cultural weed control methods," Dilk said.

However, he warned, this particular finding "could present new challenges if it spreads because of the prevalence of Roundup Ready canola and Roundup Ready sugarbeets in this region."

Roundup herbicides and Roundup Ready crops have continued to be used in areas where glyphosate resistance has occurred in the past, he noted, "and we have some very knowledgeable people looking into this issue. I am confident in our ability to present good options to the growers in the region."

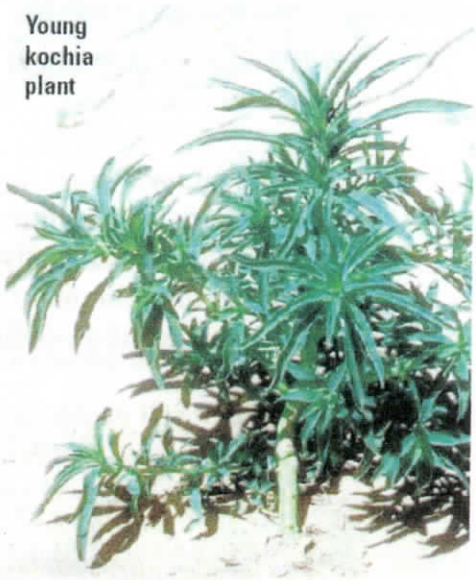


PHOTO: forestryimages.org

PHOTO: luirig.altervista.org

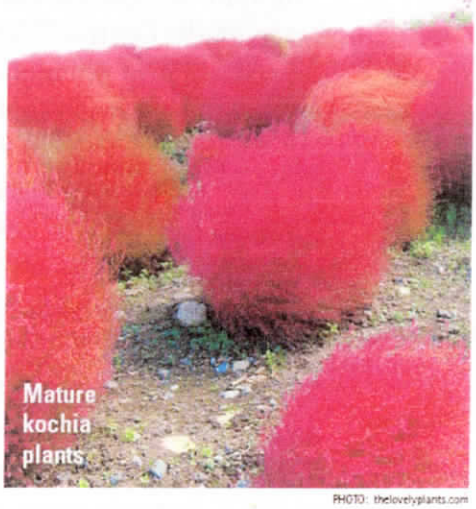


PHOTO: thelovelyplants.com

Forest-Mapping Instrument for Space Station Passes Major Milestone

A laser-based instrument for mapping the 3-D structure of Earth's forests has passed a major milestone toward deployment on the International Space Station (ISS).

The Global Ecosystem Dynamics Investigation (GEDI), led by the University of Maryland, College Park, and built by NASA's Goddard Space Flight Center in Greenbelt, Maryland, successfully transitioned to "Phase B," moving from requirements development and mission definition to preliminary design. GEDI will provide the first comprehensive, high-resolution measurements of the vertical canopy structure of Earth's temperate and tropical forests.

These data will enable scientists to better address key questions about Earth's carbon cycle and biodiversity. NASA selected the GEDI proposal in July 2014 to join a growing suite of technologies deployed on the ISS providing key observations about Earth's environment.

"The largest uncertainties in the global carbon cycle concern the net impact of forest disturbance and subsequent regrowth on the amount of carbon stored in forest biomass and its impact on atmospheric CO2," said Ralph Dubayah, GEDI's principal investigator and a professor and assistant chair of the University of Maryland's Department of Geographical Sciences. "With these data from GEDI, we will advance our ability to model the role of forests in the carbon cycle and to evaluate the impact of potential policy actions to mitigate CO2 emissions, such as planting trees or reducing deforestation."

Forest degradation and loss is also negatively impacting habitat quality and putting increasing pressure on already fragile biological resources. By making detailed maps of forest vertical structure, the GEDI science team members, working together with forest managers and those who make environmental policy, will help protect ecosystems and the vital services they provide.

GEDI will use a system of laser beams to map the forest 3-D structureincluding canopy height of Earth's forests. The instrument is scheduled for launch to the ISS in 2018.

"The time is right for this mission," said Jim Garvin, chief scientist of NASA's Goddard Space Flight Center. "The technology and the algorithms are doable, the team is ready, and the science is of the highest importance. The International Space Station will give us an opportunity to make this approach work very well."

On Aug. 26, NASA's Science Mission Directorate Program Management Council granted approval for GEDI to continue to Phase B and praised the mission for its technical maturity, and the competency of its engineering and management teams. Michael Freilich, NASA's Earth Science Division director, lauded the mission's "peerless science."

"Our success in passing this milestone is the result of the dedicated effort of the entire GEDI team," said Dubayah. "I could not be happier with the collaboration between the University of Maryland and Goddard, which is building the GEDI instrument. The compelling science of GEDI depends upon an instrument whose lasers are capable of providing billions of highly accurate measurements of the Earth's forests and topography from space. This is a remarkably challenging engineering endeavor, but one that is uniquely suited to NASA, given its strong heritage in the deployment of space-based lidar technology."

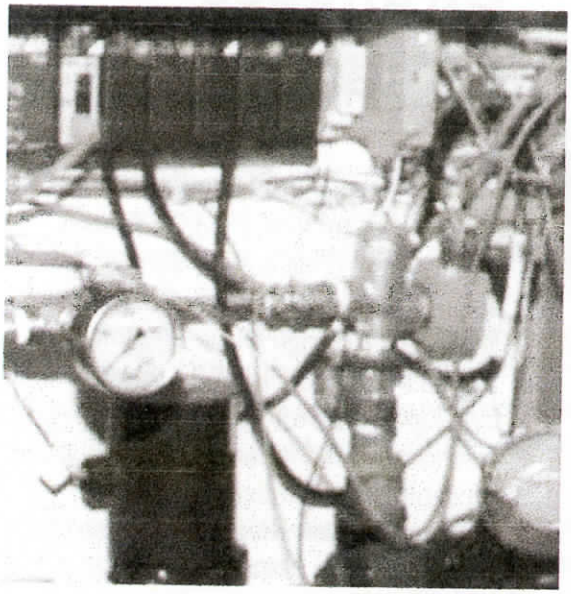
Honda Birdhouse Project

In 2012, Ryuichiro Sakino, Producer of the Hello Woods Forest nature experience center, and Yoshikazu Kigoshi, General Manager of Design Division, at Honda's Automobile R&D Center, developed a plan to build creative birdhouses for the forest out of reusable scrap timber. Located outside the Twin Ring Motegi race track in Motegi, Japan, the Hello Woods Forest is designed as a satoyama, a place of balance where nature meets human activities. Now in its third year, the Honda Birdhouse Project provides beautiful and environmentally safe accommodations for the forest's many species of birds without disrupting the more than 1,000 plant and animal species that call the forest home. The project also gives the Automobile R&D Center's staff of designers an artistic outlet, boosting creativity and reenergizing their passion for design.

www.world.honda.com/design/birdhouseproject

Green concrete stores carbon

A Canadian company is hoping to make the concrete industry greener with new technology that allows the product to store carbon dioxide (CO_2). Nova Scotia-based CarbonCure, after success with CO_2 infused concrete masonry blocks and poured concrete, has developed a method to introduce CO_2 into the mix during production via a retrofit at plants.



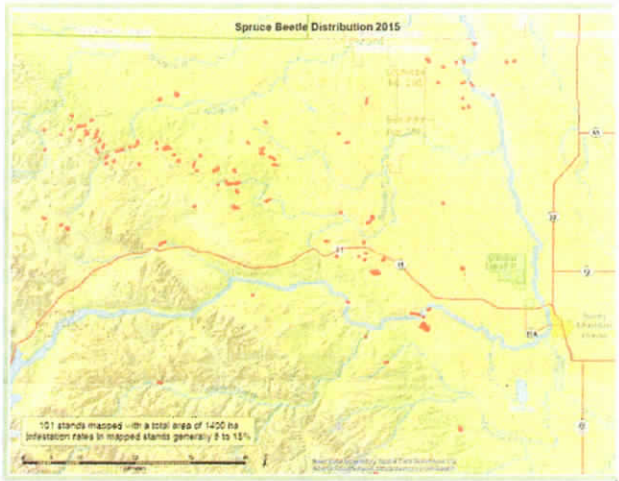
The CO_2 gas is sourced from the smokestacks of industrial emitters. Then it is chemically converted into solid calcium carbonate, essentially limestone, which is permanently embedded within the concrete. When the concrete structure is demolished and pulverized, the gas won't escape – because it no longer exists. According to the company, a typical building project made with CarbonCure concrete products may reduce as much CO_2 as an acre of forest will sequester over the course of a year. Already some of the giants of the industry are taking notice. Vulcan, America's largest producer of construction aggregates announced the industry's first ready mixed license with CarbonCure. The installation of the CarbonCure technology in Vulcan's ready mixed concrete facility in Virginia means that Washington, D.C. will be the world's first metropolitan market with access to the sustainable concrete.

The product is also starting to be used in Canada. A Halifax building site where the new Ambassatours corporate and bus service centre is under construction is one of the first projects to use it. Scott Biggar, sustainability manager for CarbonCure, said there are a number of forces in the construction industry that could make green products like CarbonCure more desirable in the coming years. New Prime Minister Justin Trudeau has made it clear at the Paris climate change summit this month that he intends to make Canada a leader in carbon capture and sequestration technology to reduce the country's impact on the environment. And various provinces, like B.C. and Alberta are in the process of releasing or implementing climate plans. And LEED v4, which is expected to start in a year or so, will bring a lot of changes, including an emphasis on building materials.

"There's really going to be focusing on carbon footprint of materials, life cycle assessment of every little thing that goes into the building," Biggar said. However, Biggar noted that there's no silver bullet when it comes to dealing with climate change. Addressing it will be the result of focusing on lots and lots of little things and sequestering CO_2 in concrete is just one of them. "You need to address every little pocket to make it better," he said. The company has retrofitted about 21 concrete block/masonry plants in North America and has begun doing retrofits for the ready-mix industry.

Spruce Beetle Update in the Rocky Mountain House Area

This summer in the Rocky Mountain House area we mapped 1400 hectares with spruce beetle (*Dendroctonus rufipennis*) infestations. Currently 950 hectares have low infestation rates less than 15% with the remaining 450 hectares have around 25%. Approximately 80% of these infestations are in creek bottoms, mainly in the Baptiste, Nordegg and Wawa.



After chasing this beetle around for the past two years trying to accurately map and predict population expansion it appears that the spruce beetle in this area has a two year life cycle which can make mapping quite difficult.

Second spring after attack showing reddish appearance with new beetle brood overwintering as adults.

The first year the tree is attacked the spruce beetle brood overwinter as larvae and the tree stays green until the following spring in late April and early June when most of the needles fall off leaving only the fine branch stubs giving the tree an overall reddish appearance. The brood then develop into adults over the summer and in the fall many of the brood move down to the lower bole and duff to overwinter.

Along with this quick needle drop and subtle fade confounding our mapping efforts we have also found that there is an inordinate amount of strip attack over multiple years which can make categorizing infested trees by year of attack virtually impossible.

While 1400 hectares may not seem like an alarming amount of beetle there are significant populations building to the west of us in British Columbia. About 300,000 hectares were mapped in central BC last summer which was a 15% increase over the year before.

There is also a large population building to the south of us in Colorado of 200,000 hectares. The outbreak in Colorado is thought to be the result of drought and warmer than usual winter. The population to the north of us in the Yukon and Alaska appears to be on the decline after reaching 350,000 hectares in the Yukon and around 1.5 million hectares in south central Alaska.

Secon

Pam Melnick - Red Deer/North Saskatchewan Region

SPECIES AT RISK ACT
on private land

Critical Habitat Protection

CRITICAL HABITAT: *The habitat the species needs to recover or survive, as identified in a final recovery strategy or action plan*

- Environment Canada looks to the laws of the provinces and territories to protect critical habitat on non-federal land.
- Environment Canada encourages voluntary stewardship measures on private land to help species recover and survive.
- The goal is to meet the conservation needs of the species while minimizing impacts on and inconvenience to landowners.
- Only if the measures above have not been effective will Environment Canada consider using legislative powers to protect species at risk and their critical habitat.

How Environment Canada can support Landowners to protect Critical Habitat

- Ecological Gifts Program
- Funding programs (e.g., Habitat Stewardship Fund)
- Conservation Agreements
- Information to assist in land use planning

Legal Context for Species at Risk

- The Species at Risk Act applies to all lands and waters in Canada
- How it applies depends on land tenure
- Canada and British Columbia work together through a formal Agreement on Species at Risk
- Provincial and local governments can provide protection for species at risk through existing tools; for example:
    a. Bylaws, zoning, permitting
    b. Water Sustainability Act
    c. Wildlife Act

What it means if Critical Habitat is identified on your land

- It may mean that your current land use is generally compatible with the needs of the species. *Thank you!*
- Local stewardship groups, environmental professionals, and government biologists may be able to provide advice on how to avoid destruction of critical habitat if you are thinking about changing how you use your land.
- Environment Canada will be working with provincial and local governments to assess whether anything more needs to be done to formally protect the habitat.
- If critical habitat is unlikely to be destroyed, more formal protection measures may not be required. If any new bylaws or regulations are being considered, you will be consulted before anything changes.

How we identify Critical Habitat

- *"To the extent possible, based on the best available information"*
- Linked to population & distribution objectives
- Critical Habitat identification is comprised of:
    a. A geographic location or area within which Critical Habitat is found
    b. The particular environmental features (e.g., types of plants, water bodies) the species needs to live and reproduce

Protection & Preventing Destruction

What is "destruction" of Critical Habitat?

- Permanent or temporary degradation of any part of Critical Habitat such that it would not serve its function when the species needs it
- Result of a single action or multiple actions over time (cumulative effects)

Protection of Critical Habitat means preventing activities that could destroy it

Green surprise: Why the world's forests are growing back

If the air feels just a bit fresher, it may be because the trees are making a comeback. Despite a lot of bad news on climate, our planet has become measurably greener, as seen from space. And that points to a way out of the climate crisis.

A group of scholars at Australian, Chinese, Dutch and Saudi Arabian universities recently published, in the journal Nature Climate Change, a 20-year study [http://web.science.unsw.edu.au/~jasone/publications/liuetal2015.pdf] measuring the precise quantity of the Earth's "terrestrial biomass" – that is, the total mass of living organisms, most of which are plants. They used two decades of microwave satellite readings (which are an accurate way to measure biological material) to determine how the world's stock of living things has changed over time.

Because biological matter absorbs and stores carbon, it is crucial to protecting the Earth from climate change: If we diminish the amount of plant matter, then more carbon dioxide, the main greenhouse gas, ends up in the atmosphere.

What the study found was, in the initial years, predictably depressing: Between 1993 and 2002, the world's stock of plants declined – in large part because of large-scale deforestation in the tropical rain forests of Brazil and Indonesia.

But then, between 2003 and 2012 (the last year they analyzed), something surprising happened: The trees started growing back. Their results showed that deforestation in Brazil and Indonesia slowed sharply, while better growing conditions in the savannahs of northern Australia and southern Africa added mass, and – most dramatically – the vast forests of China and Russia grew back at a considerable pace. The last point is especially significant: The boreal forest, which stretches across Northern Canada and Russia, stores almost 60 per cent of the world's carbon (tropical rain forests store about half that much).

The result was, they reported, "an overall gain" in the world's carbon-absorbing green matter – a result that has been reproduced in other recent studies showing an expansion of the global carbon sink. Another study [http://onlinelibrary.wiley.com/doi/10.1111/gcb.12865/abstract], published in July, found that the share of carbon emissions caused by deforestation has declined by a third in the past decade.

What is most significant is not that the world's forests are growing back, but the reasons why. Almost all of the regreening of the post-2003 years was caused, whether through explicit policy or happy accident, by countries increasing their level of urbanization, their proportion of commercial agriculture or their rate of economic growth – all of which created the conditions for a more carbon-friendly ecology.

A lot of the regreening was caused by explicit policies devoted to that task: Starting in the 1990s, both China and the European Union introduced "afforestation" programs to return former croplands to forest – in the case of Europe, which produces far more food than it needs, by paying farmers grants to convert fields to forests – in the process converting at least 6,000 square kilometres of land back to forest.

China's program, popularly known as the "Great Green Wall," is intended to replant almost 400 million hectares of forest in a 4,500-kilometre strip across northern China by 2050, making it the world's largest reforesting program, and it appears to have had dramatic results.

This was only possible because China shifted from being a deeply impoverished, rural economy based on small-hold peasant farming (which tends to denude the land of forests, as well as producing very little food) to one that is urbanized and based on higher-production agriculture – so it both no longer needs all that former forest land, and also has the financial and infrastructural resources to replant forests.

Brazil, likewise, now has the scale of economy and government to end the ruin of the Amazon forest – and, for the past decade, the political will. That ruin was largely based on wasteful large-scale methods of soy and cattle farming that chewed rapidly into virgin forest. Starting in 2004, Brazil launched a Program for the Prevention and Control of Deforestation in the Amazon that, [illegible] Jonah Busch from the Center for Global Development, has included satellite monitoring, law enforcement, new protected areas and indigenous territories, restrictions on rural credit, and moratoriums on unsustainable soy and cattle production. This has caused Amazon deforestation to fall by almost 80 per cent – but has actually increased Brazil's soy and cattle production, because farms were forced to find commercial-agriculture efficiencies rather than simply eating up more land.

Brazil is one of several ex-developing countries that now have the resources and urbanization level to get their forests under control – but even Brazil is getting help from Germany in a program, [illegible], in which Berlin will finance a program, initially costing $830-million, to reduce Amazon deforestation to zero by 2030 – something ecologists say is easily possible.

That's modelled on [illegible] struck between Norway and Indonesia in 2010 in which the Scandinavian country is paying to stop the wasteful cutting of Indonesia's rain forests – a program which, in combination with modernization of Indonesia's economy, is bearing fruit, according to the satellite measures.

The return of the trees teaches us a lesson. To reduce our destructive carbon output, the solution is not to reduce economic activity; rather, it's to combine a booming urban economy with smart policies that make growth and ecology work in harmony.

HE WHO KNOWS

He who knows not, and knows not that he knows is a fool, shun him;
He who knows not, and knows that he knows not, is a child teach him.
He who knows, and knows that he knows, is asleep, wake him.
He who knows, and knows that he knows, is wise, follow him.

Persian Proverb

Anti-anxiety dog meds made from tree bark studied in Ontario

Components of medication include vines from Costa Rica and sycamore bark from Windsor, Ont.

Researchers from the University of Ottawa claim they've found a successful botanical anti-anxiety medication similar to Valium — for dogs.

All the researchers need are vines from Costa Rica and sycamore bark harvested from trees in Windsor, Ont.

"We've compared dogs treated for anxiety with Valium and we found our compound acts similarly," Tony Durst, a chemistry professor at the University of Ottawa, said in a phone interview. "It acts almost as well as Valium but it has none of the side-effects [Valium] is known for."

Valium can cause confusion, hallucinations, hyperactivity, agitation, aggression, hostility, drowsiness or muscle weakness in humans.

Durst said dogs experience mental-health issues, the same way humans do.

"Dogs are known to be anxious, among other things," Durst said. "When thunderstorms arrive, when their owners leave them at home all day, they show anxiety."

Dogs, piglets and rats all tested with the compound made from vines and sycamore tree bark showed no harmful side-effects from the medication and appeared much calmer after ingesting the compound, Durst said.

"In most cases, the dog becomes much more calm, doesn't hide under the bed or hide in a closet, but sits comfortably next to you."

Durst is in negotiations with an American distributor to have the medication in veterinarian clinics by next spring.

Kelly French, an animal behaviourist in Windsor, said dogs often express their anxiety in ways that humans interpret as bad behaviour — like ripping up your couch.

"Anxiety plays a big role in dogs. People don't realize that," French said. "They don't think, 'my dog is anxious,' because a dog can't tell you, 'I'm freaking out right now.'

"Most of the behavioural problems I see are related to anxiety and fear. The

dog is usually fearful, nervous, shy, trying to cope with a situation."

French said some dogs are given Prozac

As more sycamore bark is needed to produce the medication, Durst got in touch with Siyaram Pandey, a chemistry professor at the University of Windsor. Sycamore trees are plentiful on the Windsor campus. Pandey and his students collected more than 40 kilograms of bark this week.

"The bark naturally falls off the trees, so there is no danger to the sycamores," Pandey said.

Pandey said the shedded bark is like paper at first, before it becomes powder.

Possible human use

The goal is to get the botanical anti-anxiety medication approved for human tests by Health Canada, Durst said.

He hopes the product can eventually be used to help people experiencing the effects of post-traumatic stress disorder.

"We've made an application to Health Canada for permission to do human safety studies," Durst said. "We fully believe that based on the data we have, a human safety study will be very successful."

Reminder

Just a reminder that the ***fire season*** starts on **MARCH 1 to October 31** when a fire permit is required, continue to use caution when in your woodlot either working or recreating ; by:
*Carrying some fire fighting tools ie, axe, shovel, water bag, etc. * Keep the exhaust clean on quad or other motorized equipment. * Check the spark arrester on power-saw. * Don't smoke , or sit down when having a smoke , make sure the butt is out cold. * Carry a cell phone to ask for help if you have a fire. * Get a fire permit for any burning * **good Luck**

My Woodlot

Michael & Lilianne Leussink

Walking through the forest the wind rustles through the leaves overhead. A squirrel chatters from an overhanging branch as you disturb the dead brush below. In the distance you can hear a grouse pumping it's wings like the stuttering engine of a truck. All the while you are following a well used trail with the tracks of deer and coyotes imprinted in the ground. You hear the call of an elk in the distance and the yips of fox cubs playing in the evening light. The forest floor is scattered with mushrooms and wildflowers, among other plants. Birds tweet and chirp holding conversations about you just above your head. With a jump you are startled out of your reverie when a great horned owl swoops down on silent wings from the branch it was roosting on and floats away into the surrounding trees. Pine, Spruce, Aspen, Poplar, Tamarack, Willow, tower above you some of them hundreds of years old.

Michael and Lilianne Leussinks 160 acre woodlot is home to hundreds of different indigenous species of plant and wildlife. It is an untouched haven of native land. We believe in restricted grazing. By doing this there are different species of plants that are able to grow freely without hindrance, and young trees are shooting up to replace old ones that have fallen. If you were to go walking in the summer you would see tiger lilies sprouting up everywhere in a field of other blossoms. There are mushrooms everywhere many of them edible such as black morel's, or coral mushrooms. This is all a result of restricted grazing, or no grazing at all. As a young boy Mike saw the damage cattle could do to forestland through grazing. Trampling undergrowth, killing young new tress that are sprouting from the ground, and rubbing the bark off of trees. There are times of the year when grazing is not as damaging though like in the late fall when trees and plants have

finished their growth stage and the ground is beginning to freeze.

When the quarter of land next to our home quarter we could not help but buy it and since then we have preserved it as best we can. There is not another piece of land like it for miles. There are pines and spruce so large they have been there for hundreds of years. There are three springs on the property that run all year around. With little human disturbance the land is a haven for all sorts of animals from snowshoe hares, porcupines, squirrels, skunks, owls, pine marten, weasels, lots of coyotes and deer, the occasional wolf, bear, and cougar, to a migratory elk herd.

Being in the firewood and lumber business the Leussink family does selective logging in this quarter and another quarter of bush land we own. Selective logging means we take out trees that are dead or nearing the end of their life cycle making room and allowing light in for younger trees to grow. We also fell trees that show bad genetics and sometimes remove deadfall that are preventing other plants or trees from growing.

Walking in the bush quarter you wouldn't know that you were surrounded by farm land and acreages. It is like stepping in another world. The Leussink family will continue to try and preserve this natural haven for as long as it is in their family, and they hope that other people realize the importance of preserving the trees and keeping the land the way it's supposed to be naturally.

Photo's of Michael and Lilianne Leussink's Woodlot

Family wood splitting bee

Family skidding with the Quad and skidding arch

The Aspen stand

Hugging a 190 year old Pine Tree