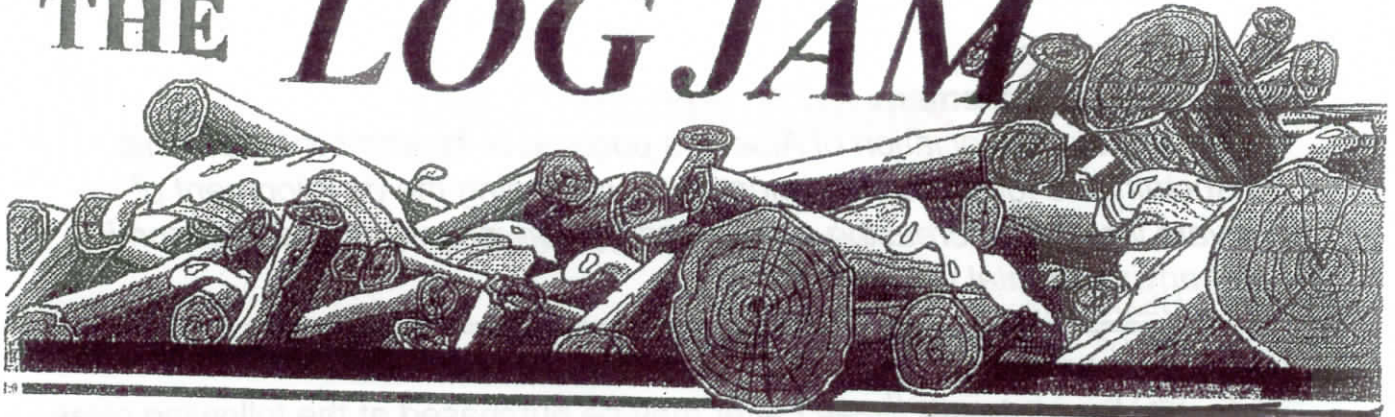


THE LOG JAM



Published by the Woodlot Association of Alberta (WAA)

March, 2020



Spruce (hen) Grouse

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."

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Up Coming Events

Board of Directors - Teleconference

April	27, 2020
May	25, 2020
July	27, 2020

Call at 7pm

Face to Face Board Meeting on April 3, 2020 in Whitecourt

24th - ANNUAL GENERAL MEETING

When : June 20, 2020

Where: In Whitecourt, Alberta

Time : Registration 10.30, Call to order 11.00 to 5.00 pm

Fee : Per person is — \$ 25.00

Location : The Forest Interpretive Centre

The location is : on the south end of Whitecourt , take the last exit from Hwy. 43 turn left follow the road to the gate for the centre.

This being the 25th anniversary of the our association, there will be some review of the past, with many of our early board members present. Followed by our future direction, financial report, a guest speaker, elections, and general discussion

LUNCH WILL BE SERVED ON SITE

My Last Issue

For some 13 years that I have been the editor of this News Letter, which adds up to some 52 issues, and this one will be my last issue. For it is time to let someone else become the editor, who would no-doubt make the Log Jam even better.

Therefore the position is now open for anyone that wants to be editor, send a message to Laval the president, that you would like to be the editor. It is the board of directors who appoints the editor.

I have a few words that I would like to impart that you should consider if you are thinking of becoming the editor which are:

- *This is a voluntary position no payment other than reimbursement of expenses;
- *Become a member on the Board of Directors;
- *Have spare time to do the Log Jam it took me about 35 hours to do each issue spread over a period of there months;
- *The name must stay "The Log Jam", as it can only be change by resolution at a General Meeting.
- *You will be working in a vacuum all alone with little or no feed back or comments there are times you will feel all alone and if what you are doing is good or not.
- * Always remember that the Log Jam News Letter is a corner stone of the Woodlot Association and has been over the years a vehicle to keep a membership that is scattered over a large area up to date on any new issues that will effect woodlot owners.
- * The most important thing is to be timely that is every three months namely March , June , September , December as members are use to the routine.
- * Furthermore I have always stayed away form any political comments as this is not a vehicle for politics.

* **GOOD LUCK**

Jurgen

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• **Researchers study how urban forests protect our health**

Alain Paquette is passionate about his research on urban forests — trees that grow in cities — and their potential to improve human health and protect us from the ravages of climate change.

This week, Paquette, a biology professor at the Université du Québec à Montréal, was awarded a \$540,000 grant from the Natural Sciences and Engineering Research Council of Canada for a project that will involve researchers at several universities in various disciplines examining the resilience and benefits of Canada's urban forests in the context of climate change.

"We want to gain a better understanding of urban forests because they provide important ecosystem services — such as the reduction of heat, better air quality — which favours environmental and human health," said Paquette, who is working with colleagues at UQAM, Université de Montréal, Carleton University and the University of British Columbia.

The project has three goals: to better understand how trees grow in the urban milieu, the way climate change affects them, and how that affects the health of people in cities.

And knowing about trees in our local environment is proving more important than ever. Not only do trees sequester carbon, which helps in the struggle against global warming, they provide a number of more immediate benefits to humans.

"There are more and more studies today showing a direct link between the canopy — the quantity of trees — and the physical and mental health of human beings, and also human development. Studies (show that) things like satisfaction, happiness, academic success, etc., are linked to the presence and quantity of trees."

One of Paquette's current projects is an inventory of all the trees planted on a plot of land surrounding UQAM's sciences complex on President Kennedy Ave., bordered by Milton, Clark, Aylmer and Ste-Catherine Sts.

Paquette's main concern is the lack of diversity in the urban forest. Most cities tend to plant too many of the same kinds of trees. In Montreal, three species dominate: Norway maple, silver maple and red ash make up about 50 per cent of municipally planted trees.

Montreal's ash trees, ironically, were mostly planted to replace American elm trees that were decimated several decades ago by Dutch elm disease. Paquette, referring to the emerald ash borer beetle infestation (<https://montrealgazette.com/news/local-news/montreal-offers-to-protect-your-trees-against-emerald-ash-borer>) that is ravaging ash trees across North America.

Ottawa funding two projects to improve bioplastics comparability

July 18, 2019 – The federal government is handing out \$300,000 to two small businesses for projects that will see the creation of compostable bioplastics made from forest-based residue.

The investment is the first phase of a Bioplastics Challenge, a collaboration between Natural Resources Canada and Agriculture and Agri-Food Canada, which aims to provide up to \$1 million for recipients to develop a working prototype of their bioplastic, which must achieve similar biodegradation during composting to other known composting materials.

The \$300,000 first-phase funding is being split between Quebec City-based Bosk Bioproducts Inc., and Vancouver's GCUP — Technology Corp.

Bosk Bioproducts is developing an inexpensive bioplastic made from paper mill sludge and wood fibre residue that is compatible with plastic manufacturers' existing equipment. (Read about Bosk Bioproducts' process and products.)

GCUP — Technology is developing an entirely plant-based, compostable single-use coffee pod from bioplastic and wood fibre.

"This Bioplastics Challenge is one great example of the transformation that is underway in Canada's forest sector," Canada's Minister of Natural Resources Amarjeet Sohi says in a news release. "The bioeconomy is developing new products, adopting greener business models and making the best use of our resources. Our government is proud to see Canadian small businesses at the forefront of finding solutions to environmental challenges that affect Canada and our planet as a whole."

Editorial

Jurgen

When I look at the picture of the Spruce (hen) Grouse, I think of the little Spruce Hen that lives in my wood lot, on the very northwest corner and when ever I did a little bit of work there I would hear footsteps coming towards me through trees. Of course I wonder what was coming as normally one does not hear wildlife walking in the forest, but low - and - behold it was the little Spruce Hen. It (*I don't know the difference between the male or female*) came to within about five feet from me and made it's whispery mermers as it circled around me and would stay in the area until I left. But the last time that I was up there this past fall no Spruce Hen, so I presumed that something unpleasant happened to it. I missed it as I always looked for it when I was up there as it was such a gentile being.

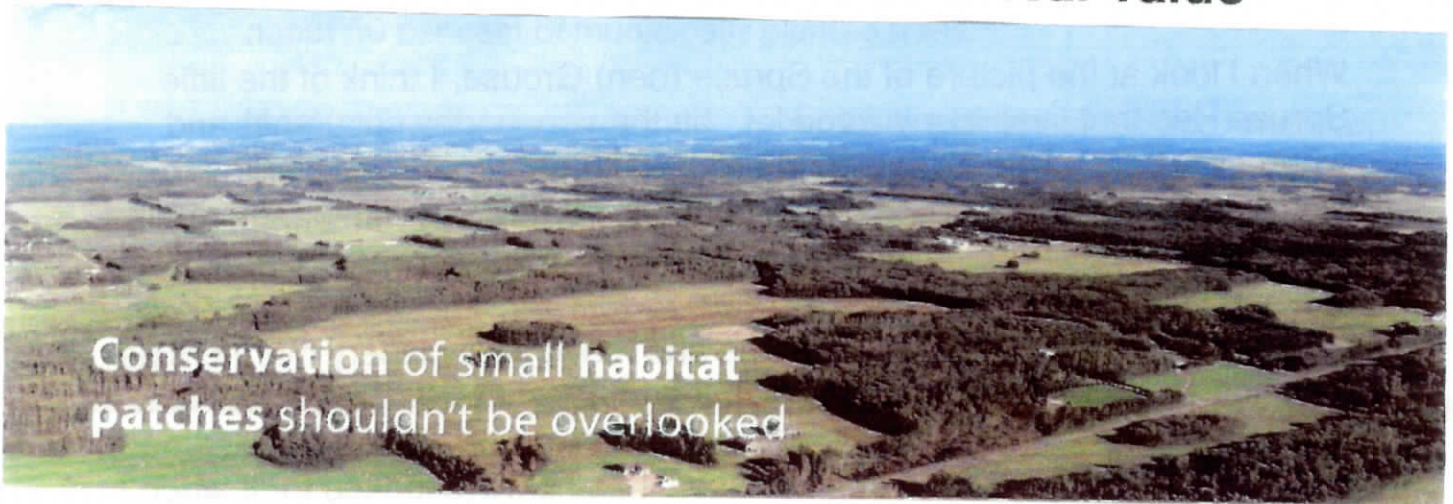
What I am really going to tell you is what you already know, that being the horrible spring, summer and fall weather we had in central Alberta in 2019 This kind of weather has been hard on many, famers - 20% to 50% of the crops under snow, gardens - very muddy and poor growth, the population - generally depressed, the roads in the back country - are almost impassable so industry is slowed.

Now back to my friend the little Spruce Hen this weather I am sure took it's-toll on the avian population as to being constantly wet and cool uses up a lot of energy which can bring on early illness. In particular the ground nesters who's new hatch may well not have survived the weather. Therefore there could well be less grouse in the future. Even our resident Crows look rather down at the mouth (*beaks*) they really don't seem to like the rain either.

Now for us woodlots owners the weather has not been great either, as there where some really terrible storms, that blew down some 100 trees in my woodlot ranging from 85 to 180 years. As for the sheep that graze in my Christmas Trees I worried that the wet would cause them to go lame but they came through OK, but my garden was very nearly a total loss. Being an optimist I am sure that this year will be much better and even my friend the little spruce hen may come back .

So hopping for a good year not too wet nor too dry,- but just right.

Small Patches of Forest Have Real Value



Conservation of small habitat patches shouldn't be overlooked

Small habitat patches play a crucial role in maintaining biodiversity and should not be overlooked in conservation planning, according to a study by doctoral student David Deane and Dr. Fangliang He, Professor in the Department of Renewable Resources.

Deane's involvement in the study started with a personal curiosity. In a landscape fragmented by human activity, what role might small islands of habitat play in achieving conservation objectives?

To test the biodiversity value of these small habitat patches, Deane and He gathered 175 datasets of species inventories for discrete "habitat networks" – for example, wetland complexes, archipelagoes, and landscapes fragmented by human activity. They then simulated the effects of removing all the smallest patches of habitat within each network. The results of the analysis were clear.

"Eighty percent of the time, there are species in the small patches that you would lose if you wipe those patches out" explained Deane

Small patches of high-quality habitat were shown to act as lifeboats for species, especially for rare species that were not found in larger patches. Deane suggests land managers need to look beyond simply the size of a conservation area and consider both habitat quality and patch size.

"Don't discount the small patches just because they're small," Deane said.

Deane and He's study has shone light on an age-old debate of whether to conserve many small patches of habitat or a few large patches. But Deane insists it's not an either-or debate. Rather, the important part is to understand what species' needs are, in order to conserve patches that address the conservation objectives of a given landscape.

This study was funded by NSERC.

Editor's Note: This article I believe speaks to many woodlot owners in that many of our woodlots are smaller parts of an agriculture farm. Take my woodlot of the 75 acres I own, about 55 acres are undisturbed woodland, 5 acres are where I live and the grass is mowed regularly the other, 15 acres are fenced and grazed with sheep with they have turned it into a monoculture.

The WAA should encourage land owners to retain the small area of forest because the land needs to keep some native biodiversity to be healthy.

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There are moments in life when you miss someone so much that you just want to pick them from your dreams and hug them for real.

Family forestry in Norway through the eyes of the “Forest queen” – Jannicke Modell Røhmen

Organizing forest owners, especially women in Norway has had great influence in creating a sustainable forest industry. Local forest cooperatives have also led to closer and constructive communication with the government, resulting in positive development of the forest industry throughout the country.

Jannicke has a farm «Skjeggstad» far into the forests of southern Norway. It is 11 km to her mailbox and 25 km to the closest grocery store. She runs the farm and the forest with her husband. They grow grain and grass, raise red deer and sell the meat at the farm. The couple shares a strong interest for the forest and its many possibilities, both at home and at their jobs outside the farm.

In addition to the farm Lars has a 60% position as the head of forestry in two nearby counties, while Jannicke works as the only female instructor at «Aktivt Skogbruk», giving both practical (e.g. for a safety certification course on the use of chainsaws) and theoretical classes on forestry.

Jannicke thinks there are great advantages in having small private owners managing their forests. The owner often takes into consideration long term perspectives and future generations, while a large company might focus on short term profit. She also assumes small private ownership leads to a greater variety of activities and use of the forest, which can support biological diversity.

Forest owner cooperatives and their importance for the family forestry

There are six regional forest owners' cooperatives in Norway with around 36,000 members. The cooperatives are found throughout the country and are based on democratic principles with boards composed of elected employees and forest owners.

Jannicke is a member of the local forest cooperative «AT Skog» which she finds very useful, both as a source of information and as a trustworthy seller for her timber. Furthermore, AT Skog is professional, prices are reliable and problems can be solved should they arise.

Norway's Forestry Owners' Federation is the umbrella organization for the six regional cooperatives located in Oslo. Its board consists of chairmen of the regional boards allowing important communication and cooperation among them. Besides performing various tasks for the cooperatives, the national federation conveys information to the general public and does very important political lobby on behalf of the forest industry and forest owners.

Enabling Norwegian laws for long term forestry planning

Laws and taxation of the Norwegian government particularly adapted to forest owners eases long term planning for forestry. For example, after harvest, owners are obliged to set aside a tax exempt percentage of the profit. This forms the bases of a forest fund called «skogfondsordningen» that can later be reinvested in the forest (education, tree planting, building roads, etc.) and often so with additional funding from government projects. This funding and taxation system is one of the topics Jannicke teaches as it is a very important financial tool. Another thing that is legally mandatory after harvesting is planting trees or securing regrowth. Cooperation between government, forest owners and their partners has also facilitated the development of strict environmental rules for forestry.

Women, forests and environment

Under the cooperative «AT Skog», Jannicke is currently teaching local forest owners a class on PEFC Standard. These are guidelines developed by forest owners and forest industry to secure environmental protection. The standard is also used as a market differentiation criterion for selling timber.

In her class only 2 of 42 participants are women despite the fact that every fourth forest owner in Norway is a woman. This imbalanced attendance of her class illustrates the need for another organization, Kvinner i Skogbruket (Women in Forestry in English) that Jannicke used to manage and is still involved in.

This is a non-profit organization with the goal to motivate women at all levels within the forest industry to become more engaged and good forest representatives. Jannicke thinks it is important more women engage in forestry thereby helping renew a somewhat old fashioned industry in Norway. She says every forest owner is an important ambassador, and by involving more women, it would be easier to reach out to a wider public to better promote the forest industry. While the local forest cooperatives provide a professional environment, they also lobby local politicians. The influence could probably be even greater with more women involved. In addition, today an industry's image is very important. The fact that forestry seems to be run by men Jannicke thinks it might be considered old fashioned and visibility of women foresters might make it more attractive.

Forests means a lot to people for various reasons

Jannicke does not use her forest only for production of timber. She is also a keen hunter and loves hiking. In general Norwegians enjoy using the forest for outdoor recreation which has great influence on public health. Not many people visit the remote forests nearby Jannicke but in areas closer to cities access is facilitated by forest owners and by a law called «friluftsløven», ("Public right of access law") securing use of land for recreational matters to everyone even if it is private property.

Jannicke believes organizing forestry in Norway through family forestry has had great influence in creating a sustainable forest industry. Private ownership through local forest cooperatives has also led to closer and constructive communication with the government, resulting in positive development of the forest industry throughout the country.



Science of Winter: Why trees don't freeze when it's freezing

coldest season tick. It's a series we call The Science of Winter (<https://ottawacitizen.com/tag/science-of-winter>), and today we look at why many of our local trees can survive past -70 C.

It's a puzzle of sorts: How can a tree drop its temperature down and down without freezing completely and, in the process, killing all of its cells?

We found Sally Aitken teaching the answer to her second-year forestry students at the University of British Columbia. But she also has a warning — that as climate changes, the temperature is not as reliable about giving trees an early-warning signal that winter is coming. And this can harm the tree's ability to prepare itself.

First, the basics of trees in winter.

"They don't freeze up solid, so to speak," she said.

"They have to control where ice forms. Ice forms within the tree, but if it forms within a cell it will destroy the cell, kill the cell."

In places with mild winters, some trees will isolate their most vulnerable cells from ice "nucleators." Ice has to form around something, and these molecules or even bacteria are called nucleators.

The cells can produce antifreeze proteins, and also sugars that make the cell's liquids freeze at a lower point. The stuff in your car radiator works this way.

All this works for temperatures into the minus 20s, but it isn't enough for regions such as ours, which can have deeper freezes.

For those climes, there's a second form of defence, suited to extreme cold.

"This mechanism can protect trees down to minus 70 (C), minus 80 even, so this is much more common," said Aitken. "It's called intercellular freezing."

The tree produces protein molecules — those nucleators again — that will cause ice to crystallize around them.

And it produces these in the spaces between cells, not inside the cells.

"And so you get ice nucleating in those intercellular spaces. And frozen water attracts liquid water," she said.

That attraction is the same effect you see when frost forms on a window or inside a freezer: A small patch of frost attracts moisture from the air, and the frost grows and spreads.

In the tree, the ice between the cells attracts moisture from inside the cells. The material left inside the cells is nearly dried out, "and you get to a state where it's like molasses: It's not frozen and it can't freeze any more. It's just this really dense, concentrated solution.

"At that stage, when (trees) are fully cold-acclimated, you can put them into liquid nitrogen and they would survive."

Before reaching this nearly bulletproof state, the trees need to prepare. They can't go straight from hot to cold conditions. And in most species, the trigger for this preparation happens in two stages: First, the longer fall nights tell trees it's time to become dormant, to shut down the summer activities of growth and cell division, and drop leaves.

The tree is not quite becoming inactive; rather it is "remodelling" (Aitken's word) for winter. In studying gene activity, her group found "as many genes get turned on as turned off" at this period. "So it's a very complicated process."

Stage 2 happens when the temperature drops a little below freezing. "That kicks the tree into the second phase of cold-hardiness ... so that they can withstand very low temperatures."

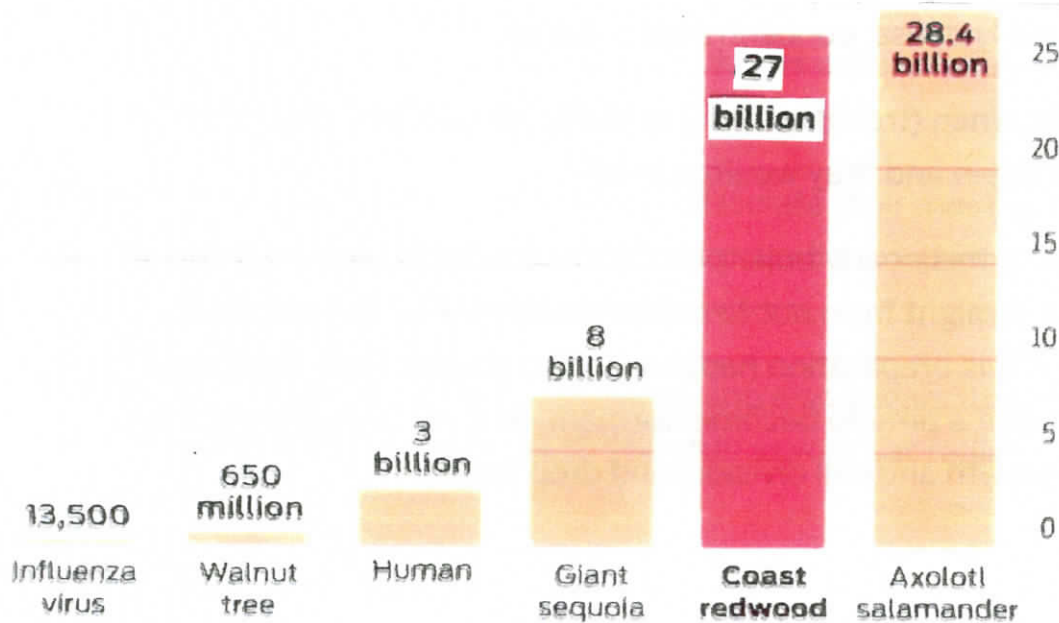
The bad news: Aitken is finding that our changing climate is giving a "less reliable" signal when winter approaches. The danger is that trees can enter a deep freeze unprepared, and be damaged or killed.

California Scientists Unravel Genetics

After five years of work and \$2.6 million scientists have unlocked the genetic codes of California's most distinguished longest - lasting resident the coastal - redwood and giant sequoia.

The sequencing of the towering confiners genomes is discovering the genetic basis, how trees are adapted to their environment and how they might adapt to a changing environment.

The plan now is to analyze the genes in multiple trees, identify their genetic traits and determine why some thrive and others don't. they want to know which genes are influential for drought tolerance and fire resistance. It's the road map for how we are going to conserve the species in the future.



Ontario's - 50 Million Tree Program Alive and Kicking

TORONTO, Dec. 4, 2019 /CNW/ - Forests Ontario announced new support for its 50 Million Tree Program (50 MTP) today. The 50 MTP is a large-scale tree planting program for property owners with the goal of increasing forest cover in Ontario.

"The 50 MTP is better and more accessible than ever," said Rob Keen, CEO of non-profit charity, Forests Ontario. "The new, expanded criteria opens the program up to more land and property owners, meaning more trees in the ground. It's a win-win for landowners, who save on tree planting costs, and for the environment."

Under the new criteria, property owners with room to plant a minimum of 500 trees can apply. The revised program creates more opportunity for urban and suburban tree planting, as well as rural planting.

Since 2008, Forests Ontario has facilitated the planting of more than 29 million trees through the 50 MTP. This achievement has been made possible by the hard work of over 80 dedicated partners, such as conservation authorities, stewardship groups and First Nations. More than 5,000 landowners have planted trees, yielding 16,000 hectares of new forest and sequestering more than 22,000 tonnes of carbon per year. The 50 MTP also supports 300 full-time, seasonal forest jobs.

The Government of Ontario cancelled funding for the 50 MTP in April of 2019. In response, public support for tree planting came quickly: the media wrote hundreds of articles about the 50 MTP cancellation and 100,000 people signed a petition in support of the program.

In June, the Government of Canada committed up to \$15M over four years to support the program. Funding also comes from corporate sponsors and donors.

About Forests Ontario

Forests Ontario is a not-for-profit charity dedicated to re-greening the province through the support of forest restoration, stewardship, education and awareness. We promote Canada's greatest natural resource - our forests - because healthy forests sustain healthy communities and healthy economies. Forests Ontario is the voice of our forests. Visit www.forest-ontario.ca or follow us @Forests_Ontario to find out more.

Forest Companies Pledge \$5 Million for Caribou Research

Alberta forest companies have pledged to donate \$5 million over a period of five years. This is for research of Caribou which is classified as a threatened species .

This research will be administered through the Alberta Regional Caribou Knowledge Network a consortium of academia, government and industry.

The Alberta Government remains committed to Caribou recovery.

Transparent wood: the building material of the future?

When Timothée Boitouzet studied architecture in Japan, where buildings need to survive earthquakes, he realised the next smart material might be one that humans have used for thousands of years—wood.

"In France, we build more with concrete and stone than wood," he said. "When I was exposed to Japanese building culture, I realised how you could build fantastic structures with wood. This material that we considered an old material, without innovation, was actually super smart. This got me excited about wood."

In 2016, Boitouzet founded [material science company Woodoo](#) in Paris, France, which retrofits timber to give it new properties. His focus is on transforming the construction industry through replacing steel with wood, for example. Unlike other construction materials, such as stone or concrete which [contains sand](#), wood is a renewable resource, making it an attractive sustainable building material, Boitouzet said.

Building more with trees could also help curb the construction industry's large carbon footprint, which is accelerating climate change. [A recent report by the World Green Building Council](#) estimates that 11% of global carbon emissions come from materials and construction processes throughout the building lifecycle. As trees contain carbon, using wood in buildings is a way of storing carbon.

Wood, however, can be used for more than support pillars. By selectively extracting wood's lignin—the substance that makes up its cell walls—and replacing it with a specific type of polymer, it becomes a new material. '(This wood) is weather-proof, more fire resistant, three to five times stronger, and transparent,' Boitouzet said.

The optical properties of the polymer are matched that of the wood so that light does not bend when it moves through the augmented wood. Instead, it passes through. This transparency opens up a wide range of possibilities.

Augmented

So far, automotive companies are the ones that have shown the most interest in his augmented wood.

Currently, through a project called [Woodoo Augmented Wood](#), the company is working on integrating electronics into its touch-sensitive wood through collaboration with industry partners. The material, which transmits light, will become wooden panels for 'tactile dashboards' in cars, Boitouzet says.

Woodoo sees the automotive industry as a gateway to get its products to market, while introducing wood products that are lighter and produce fewer emissions than traditional panels.

Boitouzet is not the only one excited by the possibilities that wood offers. Lars Berglund, a professor in wood and wood composites at the KTH Royal Institute of Technology in Sweden, has discovered that there are many uses for transparent, strong wood.

"It's a difficult area to be original in because people have worked on wood technology for hundreds of years," said Prof. Berglund, who heads up the [WoodNanoTech](#) project. While other research has mainly been trying to address its shortcomings, such as its sensitivity to water, he and his team have focused on other characteristics of wood.

"We have been able to free ourselves from that limitation and look at new possibilities that have not been considered so far," he said. Their focus is on using transparent wood for engineering applications.

Prof. Berglund uses wood as a template for nanotechnology by—like Boitouzet—stripping out the lignin, introducing an optically-compatible polymer, and adding other technology to broaden its functionality.

The application that excites Prof. Berglund the most is embedding [quantum dots](#) in wood to create light-emitting diodes (LEDs), because he suspects it could be the application that will allow the team to break into the commercial market. "The idea is that your ceiling would be a wood panel, and the wood panel would have this LED function, so you can have indoor lighting directly from the ceiling," he said.

Unlike a point-source light, the transparent wood's light is diffuse, making it more natural and easy on the eye, Prof. Berglund says. Quantum dots are a collection of semiconductor atoms, a few

nanometres wide, which fluoresce when exposed UV light. These panels are just one of the many applications that WoodNanoTech has devised for their transparent wood.

The wood may also form the basis for electrochromic windows. These 'smart windows,' which are painted with a thin layer of polymer, can block out light when electricity is run through them.

Energy

Prof. Berglund believes that this next-generation wood also has a place in the energy sector. "We can improve the efficiency (of solar cells) because the scattering of the light (inside the wood) means that the path of the (light) is longer, so you can absorb more energy," he said.

And using a phase-change material rather than a polymer to replace the lignin transforms wood into an energy storage device. During the day, this infused wood can absorb heat, but at night, when temperatures cool, the phase-change material crystallises, releasing heat.

"We start with the wood, make it load-bearing, and then integrate (nano) technology with other functions," Prof. Berglund said.

The main challenge for new technologies is scalability, and next-generation wood is no exception. "How do you scale from lab processing, where you have close control over your nanostructure, to something that can be done on an industrial scale?" Prof. Berglund asked, adding that

~~they are looking for commercial partners. This can be difficult for academic research projects.~~

For Woodoo's Boitouzet, the fact that their company already has industry partners allows them to increase production. Currently, they produce 5,000 square metres of augmented wood per year—which is about three-quarters of a football pitch—and are now aiming for 300,000 square metres a year.

Luckily, timber for augmented wood is easy to source.

There are already many places where they can acquire wood, Boitouzet says. Woodoo uses beech, pine, and poplar, among others, while Prof. Berglund's research team retrofits balsa and is turning its attention to birch.

The next step for Prof. Berglund is to make his modified wood more environmentally friendly. One way to do this would be to retain as much of the lignin as possible, instead of discarding it. "If you remove it, you're adding a chemical step which is going to cost energy, require solvents," he said. Using more lignin also means retaining more carbon in buildings.

Right now, his team is focusing on using a greener polymer in the materials. "So far, we have used petroleum-based polymers to impregnate the wood but we're working very intensely now to use a bio-based polymer," he said. That would secure next-generation wood's position as a building material for the future.

In Britain the Elm Tree is making a comeback

The Dutch Elm disease is caused by fungus (*ophiostoma ilmi*) that affects all species of elm trees, this fungus is spread by the Elm bark beetle, very similar to the Mountain Pine beetle. There are hundreds of beetle that attack trees, but not all of them carry a deadly fungus.

In Britain the Dutch Elm disease between 1960 - 1970 an outbreak killed 25 million Elm trees in southern Britain.

The Future Tree Trust of Britain has found mature trees around the country that have successfully resisted the fungus, from these elm saplings have been bred which are not harmed by it. The intent is to plant these in 1000 different school yards, to find out the resistance to the fungus.

The Elms that are showing promise are the hybrids with Asiatic varieties. It is hoped geneticists will analyse the complete DNA sequence of the elm to find exactly what genes are important to resist the disease. These may be crossed with the British elm.

I hope that our Canadian researchers are doing something similar with respect to the Mountain Pine Beetle, that has devastated our pine forests in western Canada.

President's report

Laval Bergeron

Hello all!

Winter is slowly loosing it's grip and for those that have piles burning out there the time is here to put them out.

We just had a face to face meeting in Whitecourt and again all ten Board Members were present. Communication is very open, educated, amiable and pleasant.

The Federal Gov't has said that they want to have millions if not billions of trees planted in the near futur to offset climate change. To this day there is still no news on their plan of action. To be followed.

We are currently working on getting funding to have a 'Forester' that would be hired by the Ass. to work with us and other woodlot owners to help us at keeping our woodlots viable, affordable and growing.

Our membership is holding it's own and with visits on the website, phone calls, answering emails hopefully will translate in new members.

'AGM' June 20th, at the Forest Interpretive Center in Whitecourt. Come one come all!! It's our 25th Anniversary, how often does that happen?? We promise you good discussions, good food and positively good people to share your thoughts and ideas with.

And last but not least our 'Editor' for the Logjam 'Jurgen Moll' has given us his letter of resignation. After 13 years of doing so, every 3 months, on schedule, the time has come for him to pass on the flame. Someone else will take on the job and that means that the 'Logjam' you are holding in your hands right now is the last of it's kind. I am confident that we will find someone to do the job. In the mean time this puts me in a difficult situation, what I mean is, who's going to remind me, to push me at getting my president's report done and ready!!!

Hope to see you all at AGM. Have a good spring.

My Church

*My Church has but one temple
Wide as the world is wide,
Set with a million stars
Where a million hearts abide.*

*My church has no creed to bar
A single brother man
But says, "Come thou and worship"
To every one who can.*

*My church has no roof nor walls,
Nor floors save the beautiful sod -
For fear, I would seem to limit
The love of the illimitable God.*

(Unknown)

This tech company is aiming to plant 500 billion trees by 2060 – using drones

- UK company Dendra plans to plant 500 billion trees by 2060 – using AI and drones.
- The drones can plant 120 seedpods per minute.
- The WWF estimates we're losing 27 football fields of forest every minute due to deforestation.

A drone can plant two trees per second, according to UK tech company Dendra, which is aiming to "re-green" the planet.

Dendra estimates it would take just 400 teams of two drone operators, with 10 drones per team, to plant 10 billion trees each year – and at a much lower cost than the traditional method of planting by hand.

The target is to plant 500 billion trees by 2060, in often hard-to-reach places.

Susan Graham, CEO of Dendra Systems, says, "The challenge that we're tackling is a complex one and working with a team of passionate engineers, plant scientists, drone operators, we came up with this idea to use automation and digital intelligence to plant billions of trees."

How to plant seeds with drones

So, how does it work?

First, the replanting areas are identified using a combination of satellite images and drone-collected data.

Specialized planting drones take to the skies loaded with seedpods containing a germinated seed and nutrients.

Once in position, the drones use pressurized air to fire the seeds into the ground – at 120 pods per minute. The seedpods penetrate the earth and start to grow once activated by water.

A 'step-change'

Dendra estimates its technology – combining speed and accuracy – would enable governments to restore forests 150 times faster than planting by hand, and up to 10 times cheaper.

Graham says it represents a new "step-change" in how we think about global ecosystem restoration.

"We need to use technology to scale up our restoration efforts, and the scale we're talking about is tens of billions of trees every year.

"We'll be able to see the ecosystems that we've restored from space."

The WWF estimates we're losing more than 75,000 square kilometres of forests a year, or 27 football fields every minute – including the carbon capture potential of those trees.

And people are increasingly aware of deforestation, with almost 80% of those in the UK slightly or very concerned about it.

"There's a saying that goes that the best time to plant a tree was 20 years ago, and the second best time is today," says Graham.

"We have this opportunity now, and we need to act today."

An "Artificial Leaf" That Turns Carbon Into Fuel Has Been Created

Scientists have created an "artificial leaf" to fight climate change by inexpensively converting harmful carbon dioxide (CO₂) into a useful alternative fuel. The new technology was inspired by the way plants use energy from sunlight to turn carbon dioxide into food.

"We call it an artificial leaf because it mimics real leaves and the process of photosynthesis," said Yimin Wu, an engineering professor at the University of Waterloo who led the research. "A leaf produces glucose and oxygen. We produce methanol and oxygen."

Making methanol from carbon dioxide, the primary contributor to global warming, would both reduce greenhouse gas emissions and provide a substitute for the fossil fuels that create them.

The key to the process is a cheap, optimized red powder called cuprous oxide. Engineered to have as many eight-sided particles as possible, the powder is created by a chemical reaction when four substances – glucose, copper acetate, sodium hydroxide and sodium dodecyl sulfate – are added to water that has been heated to a particular temperature.

The powder then serves as the catalyst, or trigger, for another chemical reaction when it is mixed with water into which carbon dioxide is blown and a beam of white light is directed with a solar simulator.

"This is the chemical reaction that we discovered," said Wu, who has worked on the project since 2015. "Nobody has done this before."

The reaction produces oxygen, as in photosynthesis, while also converting carbon dioxide in the water-powder solution into methanol. The methanol is collected as it evaporates when the solution is heated. An hour-long chemical reaction creates the engineered red powder that is the key to new technology to turn carbon dioxide into fuel.

Next steps in the research include increasing the methanol yield and commercializing the patented process to convert carbon dioxide collected from major greenhouse gas sources such as power plants, vehicles and oil drilling.

"I'm extremely excited about the potential of this discovery to change the game," said Wu, a professor of mechanical and mechatronics engineering, and a member of the Waterloo Institute for Nanotechnology. "Climate change is an urgent problem and we can help reduce CO₂ emissions while also creating an alternative fuel."

MY WOODLOT

Anchor X Ranch - Jim Burn's Woodlot

(Not your normal Woodlot but a Ranch with a lot of Trees!)

The ranch has been in the family since 1956 and has been operating as Anchor X Ranching Ltd. Presently, it consists of 3300 acres within the Wildcat Hills, about 10 miles northwest of Cochrane. The elevation ranges from 4300 to 4800 feet. The Woodlot portion of the ranch covers about 450 acres. The forest varies from mixed aspen/poplar next to the fields and natural pasture lands to uneven aged lodgepole pine, douglas fir and white spruce stands.

In the early to mid 1990's, we were approached by many "Woodbuyers" during the feeding frenzy of wood going to BC. Having resisted the temptation to liquidate our mature forests, we joined the Woodlot Association of Alberta (WAA) in 1995 because we got a free half day with a consultant. As a result, we had an inventory and harvest plan put in place.

The ranch had seen logging as far back as the early 1900's through to about 1950. Back in those days, there was also a mill set up on the property where much of the lumber was used for ranch buildings that still stand tall today. Forestry activities paused until the late 1990's after the harvest plan was completed and showed that about 20 loads a year could be harvested on a sustainable basis. The first round of logging in the winter of 1997, was a selective cut completed through hand felling and line skidding. 40 loads were cut, half hauled to a local small sawmill and the other half was sent down to Eureka, Montana.

Over the last 20 or so years we have sold about 200 loads of mature spruce, pine and fir. It was not a consistent, yearly harvest as we adjusted our logging with the price of wood, as the commodity prices fluctuated.

With the combination of a lost art and the challenge of meeting the safety requirements / WCB rates for hand felling and line skidding operations, the logging on the ranch has changed from the lower impact harvesting method to a mechanical show, the last couple of years. Some of the challenges that have come with it is larger brush piles to dispose of, bigger equipment and scheduling the equipment to complete the harvesting at the optimal time of year.

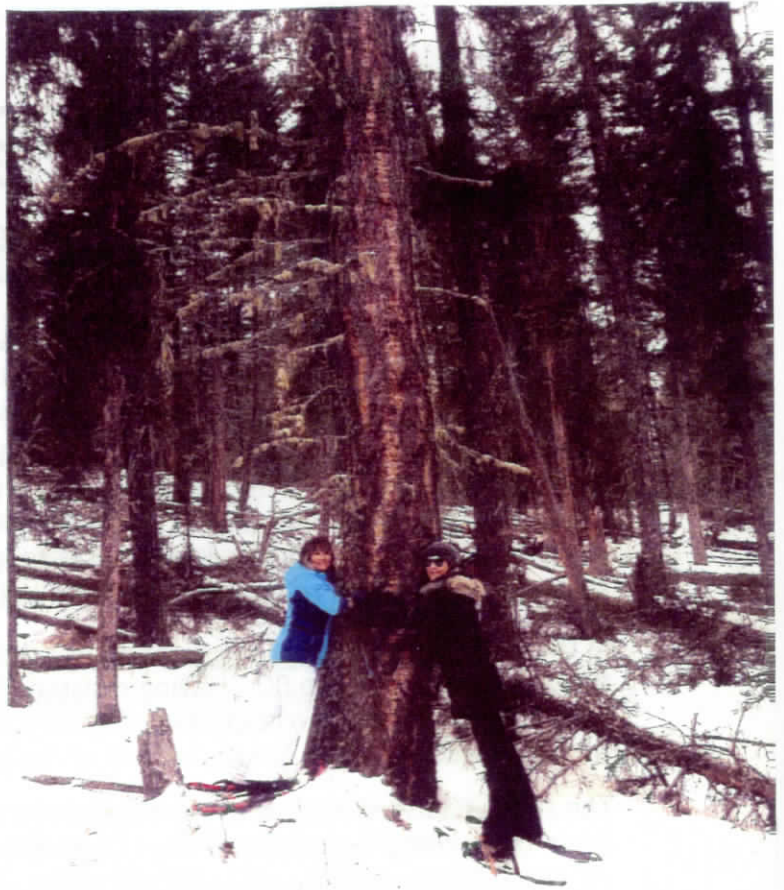
As we have an eye for grass more so than the trees, we are pleased to say that there has been an improvement of the forage for the cattle through our logging efforts. Opening up the tree canopy allows for the snow to accumulate more, melt slower and therefore add moisture in the spring. The results of the seedbed being exposed to the sunlight, better moisture content and partial shading, we are enjoying an increase in our carrying capacity.

Going forward we will be continuing to manage our Woodlot and adjust our activities based on wood prices, available markets, fire, insect and disease risks.

Photo's of Jim Burn's Woodlot



natural white spruce regen after logging in 1990s



a giant Douglas Fir along the snow shoe trail



Logged with mechanical equipment 2019



Skid trail through selective logged area