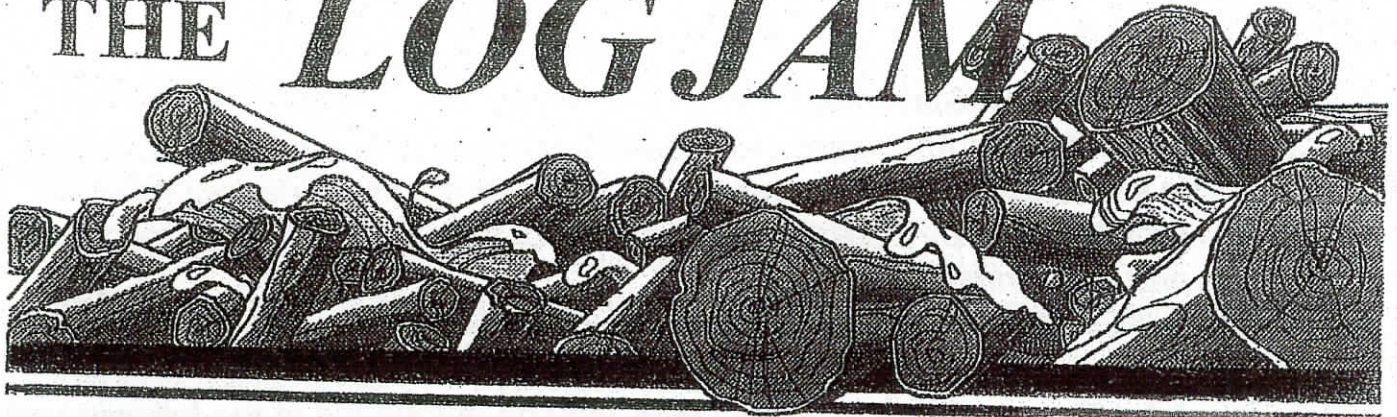


THE LOG JAM



Published by the Woodlot Association of Alberta (WAA)

September, 2017



Woodland Caribou (*Rangifer tarandus*)

Woodland caribou in Alberta exist as two eco-types. The mountain eco-type often spends the summer at or above the treeline in the mountains but winters in the forests at lower altitude. The boreal eco-type (seen here) is found in the largely flat, boreal regions of the province. In winter, both eco-types show a strong preference for mature to old forest, where lichen is the primary food source. Predation by wolves is the most significant limiting factor for the species.

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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President's report

Laval Bergeron

The board of directors had two face to face meeting this last quarter, like always they are held in Whitecourt. Accounts for a lot of travel and thank you to the board for doing so. The last meeting was to discuss a response to the proposal put forward by the Gov't of Alberta concerning Woodlots to be classified as farm land. Still no decision and waiting.

I sit on the Public Advisory Committee for DMI here in Peace River and from that a trip was organized to visit the EMEND (Ecosystem-based Management Emulating Natural Disturbance) centre no further away than an hour or so from home. Here we have a massive research committed to understanding the impacts of variable retention harvesting over the course of a full harvest rotation.

It was founded some twenty years ago by DMI, Canfor. and the Gov't of Alberta, U of A and is set to last 90 years and covers the size of a township, 23,000 ac +/-, some of that land had been harvested before the project started and so it is very interesting. I encourage everyone to Google it and if you the opportunity to visit, even better.

There was fifty or so people in attendance and five of us were WAA members, which made me feel right at home, made me realize even more at how much WAA members are involved at keeping Mother Nature stay the course.

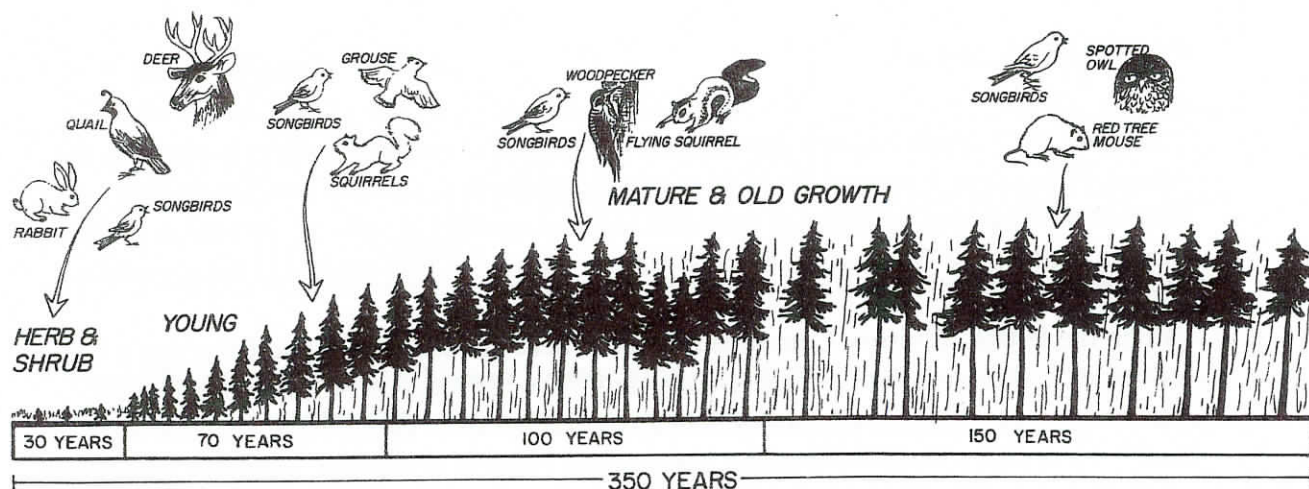
Speaking of Mother Nature the next day, here at home, St. Isidore Three-Creeks were hit by a colossal wind accompanied by rain and hail. crops were not damaged much but our Woodlot, disaster. Looks like the trees were in a great dispute, many many of them fell to the ground pointing in all directions, in shock.., and that was my exact feeling when I saw what had happen, The storm left us with two and a half inches of water which was greatly needed and a whole lot of firewood 😊

Apart from that, weather permits, we will start harvest this week which is the last week of August and on that note I wish you all a happy end of summer.

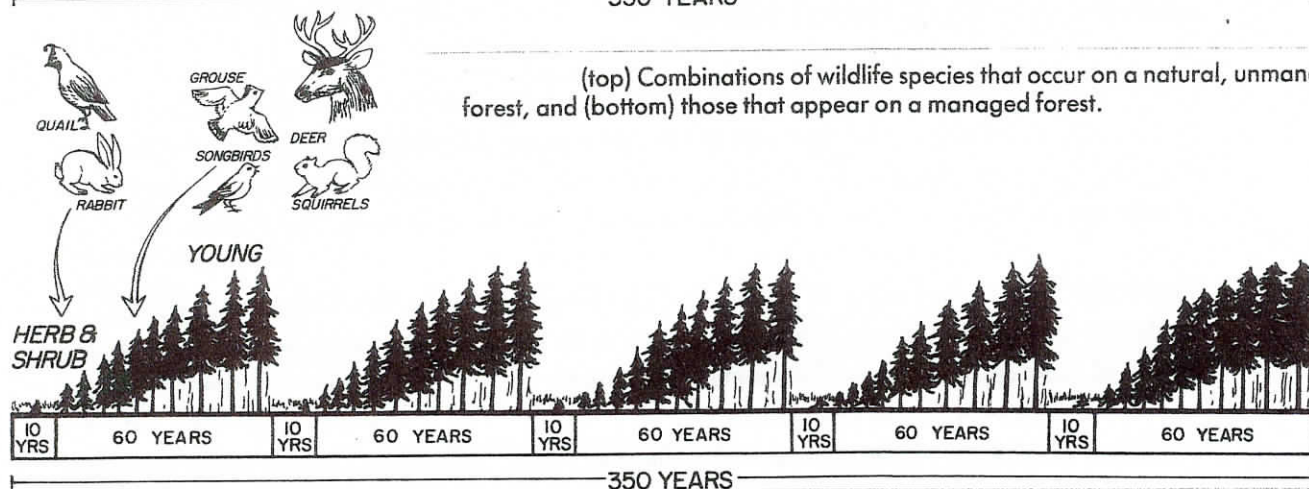
Eventually you will reach a point when you stop lying about your age and start bragging about it.

Will Rogers

Enhancing Wildlife on Private Woodlots



(top) Combinations of wildlife species that occur on a natural, unmanaged forest, and (bottom) those that appear on a managed forest.



Habitat diversity. Vegetation (trees, shrubs, grasses) provides wildlife habitat. Different species live in different places within this structure. Various birds, like some warblers live only in the tops of conifer trees. Here they find food (insects), build nests, and take shelter from weather and predators. Other species, like pocket gophers, live underground in grassy meadows.

Some species, like certain frogs and salamanders, have a special requirement for the riparian zone, the moist forested area along stream sides. Most species, however, like deer, grouse and chipping sparrows, require combinations of habitat - meadows and other forest openings to feed in, and timber for breeding sites and protection from weather and predators.

Habitat variety occurs naturally when events like fire, windthrow, insect and disease attacks open portions of the forested area. These areas usually are revegetated in stages, beginning with grasses, progressing to shrubs, then seedling trees, saplings and mature trees, and finally old growth trees.

With each successive stage, different combinations of wildlife species likewise appear, persist awhile and then decline. The diversity of wildlife species present depends on habitat diversity associated with these stages. Providing a diversity of habitat (and thus a diversity of wildlife species) requires a diversity of areas in different stages of vegetative development.

Clear-cut logging works like nature in opening forest lands and beginning the progression of vegetative stages, starting with grassy meadows. The practices of reforestation (planting conifer seedlings) and brush control provide other vegetative stages, but the time sequence is shortened. The last stage, old growth, usually is not attained.

—Habitat requirements of representative wildlife species

Wildlife group	Representative species	Required habitats and acreages	Special habitat requirements
Meadow wildlife	California quail, brush rabbit, meadowlark	Open areas with grasses and forbs; some shrubs (15 acres)	Brush piles essential (1 per 2 acres)
Meadow/forest wildlife	deer, elk	Openings (50 acres); closed canopy (15-year-old +); conifers (150 acres)	Migration corridors between seasonal ranges
	chipmunk	Opening (15 acres); second-growth timber (15 acres)	
	junco, bluebird	Opening (5 acres); second growth (5 acres)	Snags with nest cavities
Young forest wildlife	red squirrel	Mixture of 15- to 75-year-old conifer trees; understory of grasses, forbs (100 acres)	Cone-bearing trees for food
	ruffed grouse	50-50 mixture of conifers and alder (15 acres)	Moist streamside
	MacGillivray's warbler	Mixture of 15- to 75-year-old conifers (15 acres)	
Mature forest wildlife	flying squirrel	75+ year-old conifers (100 acres); understory with forbs, small shrubs	Nest cavities in older (100+ year-old trees)
	spotted owl	100+ year-old conifers (400 acres)	
	pileated woodpecker	100+ year-old conifers (100 acres)	Conifer snags; minimum 20" d.b.h. for nest trees
Riparian wildlife	salamanders, frogs, snakes	Moist, streamside vegetation with closed canopy (¼ to 2 acres); flowing streams	
Large predators	bobcat, bear, coyote, goshawk	Mixtures of closed canopy with openings (300 to 1,500 acres)	Large (> 15" d.b.h.) trees for nesting/denning

—Habitat enhancement plan

Wildlife species	Habitat enhancement and acreages	Provision for special requirements
Deer, elk	Provide openings in forest (20- to 50-acres each); harvest standing timber; suppress tree and shrub regeneration.	Seed to grass-legume mix—5-to 10-acre patches in meadows.
Rabbits, quail	Provide permanent openings (15 acres) and brushpiles (1 to 2/acre).	
Songbirds	Maintain a good mixture of meadows, second growth, and old growth (5 to 10 acres for each habitat).	Establish nest boxes; establish system of trails through all habitats for bird watching.

Editorial

Jurgen Moll

In the last issue of the Log Jam Gerald Gustavson asked the question that has been asked many times by woodlot owners in the past. That being *"But we do have a concern how can it (the woodlot) be preserved if the farm had to be sold"*

There is no pat- answer to this concern, but my way of looking at this universal problem that all woodlot owners will eventually face. Is to recall what Winston Churchill once said *"It is always wise to look ahead, but difficult to look further than you can see"*

When one thinks about this statement, for me it means that "as long as I own my woodlot I can preserve it." The question still remains how can it be preserved after my time, the answer is in laying out your vision of the future of the woodlot for the decades yet to come.

The how to do this is to prepare a management plan of your woodlot which would contain your vision for the future of the woodlot. Further more emphasize all the benefits that retaining the woodlot will give the owner well into the future. Such as, environmental biodiversity, value of the forest production, health benefits both mental and physical, wildlife, water, etc. Plus the management plan will enable your woodlot to be classified as farmland.

This is the best way that I can think of to demonstrate to a potential new owner the benefits of retaining the land in forest. As most people when they see forests believe them to^{be} of little value, unless they can be logged at a profit. But it is the multitude of benefits to our society where the real value lies.

Should you decide to develop a management plan, we have drafted a *"Template for a Farm Woodlot Management Plan"* which explains step by steps on how to write your plan. If you want a copy of the Template contact me and I will send a copy to you.

As trees age, their climate benefits grows

Trees play an important role in the fight against climate change. They capture and store carbon in their biomass - their roots, stumps and branches.

According to new European research, when it comes to a tree's climate benefit, as a tree get older it also stores more carbon.

What does this new study suggest about older trees and climate change?

The University of Hamburg study suggests that old trees know best. Researchers studied unmanaged tropical forests in Suriname, on the northeastern Atlantic coast of South America, and looked at three different species of trees that ranged in age from 84 to 255 years old. They aren't the oldest trees on the planet, but they make up a complete wilderness of unmanaged forests.

The study found that the older a tree is, the better it absorbs carbon from the atmosphere. In fact, the research suggests that almost 70 per cent of all the carbon stored in trees is accumulated in the last half of their lives.

Why do old trees store more carbon than younger trees?

The researchers aren't sure yet, but the best hypothesis is that old trees store more carbon because they are taller and form the upper crown canopy of these rain forests. Old trees aren't storing more carbon because they are bigger. They store more carbon in proportion to their size.

The key seems to be that older trees can reach the top of the canopy and have consistent access to the sun. Because trees store carbon by photosynthesis, they take in the energy from the sun as well as carbon dioxide from the atmosphere and convert it into carbon-based sugars to fuel their tissues.

Younger trees are more sensitive to the changing conditions of rainfall and sunlight than older trees. And the tree ring data that the scientists studied reflects that. The group found that in the three species studied, the trees accumulated more than 40 per cent of their lifetime's worth of carbon in just the last quarter of their lives. This points to a real benefit of old age trees in our battle against climate change.

How much carbon are we talking about?

There are some impressive numbers. Ninety per cent of the biomass on the Earth's surface is stored in the forests (that doesn't include the oceans: another important carbon storage area). Tropical forests in particular remove 0.5 gigatonnes of carbon globally every year.

Plants generally take up about half of the annual carbon release, so our forests are really crucial in the battle to curb global release of carbon dioxide into the atmosphere. Plants do an incredible job sucking out carbon dioxide from the atmosphere and converting it into a form that is hard to release back. But here's the big problem: deforestation and forest damage removes about a gigatonne of capacity each and every year.

What do these findings suggest about forest management and climate change?

Unfortunately, this study shows it's not just a matter of planting many more trees to make up for deforestation. Previous studies done on managed forests — places where trees have been planted at about the same time and are all similar species — show that managed forests take up a lot less carbon than unmanaged forests of the same age. This poses a problem. It could be that it's part of natural selection in unmanaged forests with competition, that creates the best carbon sinks. We can't replace century old trees in a biosphere and expect the same results that nature has evolved.

The best option, as this paper and its authors suggest, is recognizing the importance of old growth forests in their carbon storage capacity as efficient and important parts of our battle against climate change.

Of course the solution could always be limiting carbon release, but we're past the point of solving climate change being as simple as ceasing to drive cars and eat beef. It also requires methods to remove the pre-existing carbon from our atmosphere and nothing is better at it than trees.

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World Environment Day Reminds Us To Reconnect With Nature

The notion that we must conquer or dominate nature has governed human behaviour for a relatively short period of our 450,000-year history on this 4.5-billion-year-old planet. It's an understandable impulse. Our intelligence and foresight allowed us to develop complex societies, and gave us a sense of control over our existence in the face of powerful, often threatening natural forces.

Unfortunately, our lack of attention to the intricate and interconnected ways of nature has led to widespread devastation that now threatens the very systems that support human health and survival. We have become disconnected from our own true nature.

The more science reveals about the natural world, the more we learn what many indigenous peoples have long known: that everything is interconnected and interdependent -- from the tiniest microbes to the largest carnivores, from plants that sequester carbon, prevent flooding and feed us to the carbon, hydrologic and other large cycles that keep the planet in balance.

There's no going back to simpler times, but our survival does depend on respecting our place in this miraculous world. To heal the disconnection, we must reconnect. It's fitting, then, that the theme of this year's World Environment Day on June 5 is "Connecting People to Nature."

Renowned American ecologist Edward O. Wilson used the term "biophilia" to describe the innate kinship people share with all other life forms. Because we are more likely to care for the things we love and see as important, we must rekindle this biological imperative if we are to protect the biosphere that keeps us healthy and alive.

How do we accomplish that when many of us are moving further from our natural connections daily -- when the average North American child spends less than 30 minutes a day playing outside, but more than seven hours in front of a TV, computer or smartphone screen, and when many adults spend their days driving to and from work where they sit in front of computers for hours on end?

Understanding the benefits of time in nature is a start. Studies show time outdoors can reduce stress and attention deficit disorder; boost immunity, energy levels and creativity; increase curiosity and problem-solving ability; improve physical fitness and coordination; and even reduce the likelihood of developing near-sightedness!

It also builds memories. I was fortunate in many ways to have grown up before televisions, computers, smartphones and other electronic distractions. My greatest memories are of fishing with my dad, exploring swamps and bogs to collect bugs, frogs and salamander eggs, and hiking in the mountains. Even the time my family spent in an internment camp in the British Columbia wilderness during the Second World War holds fond memories of playing by rivers filled with fish and exploring forests where wolves, bears and deer roamed.

In Japan, the term shūrin-yoku -- "forest bathing" or "taking in forest air" -- describes the beneficial effects of connecting with the natural world. Japanese researchers have found people who breathe forest air lower their risk for diabetes and experience improved mood and lower stress hormone production compared to people exercising on indoor treadmills.

Even getting dirty is good. In their upcoming book The Secret Life of Your Microbiome, Alan C. Logan and Sasan L. Prescott explore the importance of microbes and microbiomes -- the microbial communities on and in our bodies and all around us. Microbes break down food and produce vitamins in our guts. They coat our skin, protecting us from attacks by harmful microbes. The air we breathe, the soil we dig and the outdoor plants we come into contact with include a variety of microbes -- many of them beneficial -- that may be absent in indoor and built environments.

Planting pollinator-friendly native plants in your garden, making a mud pie, taking photos of wildlife in the forest or sleeping under the stars are all healthy activities -- and they connect you with the natural world and open your eyes and heart to the amazing, intricately interconnected biosphere of which we are all a part.

Getting outside, especially with the children in your life, is one of the best things you can do for yourself, your family and friends, and the planet. World Environment Day reminds us of the importance of connecting with nature every day!

Written with contributions from David Suzuki Foundation Senior Editor Ian Hanington. David Suzuki's latest book is Just Cool It!: The Climate Crisis and What We Can Do (Greystone Books), co-written with Ian Hanington.

Up Coming Events

Board of Directors - Teleconference September 25, 2017
October 30, 2017
November 27, 2017

All calls are at 7pm

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



Why London claims to be the Forest City

Joe O'Neil can't remember a time when London wasn't nicknamed the Forest City.

O'Neil, the former chair of the city's advisory committee on heritage, said it's not the numbers, but a green history that crowned London as the Forest City.

"London was originally a huge thick forest," he said. "It was the city you came upon out of the forest ... people couldn't believe the trees."

O'Neil said the city's founding families were mesmerized by vast green lands during the late 1700s that were lost to development in 1826 when London was established as a municipality.

He said more trees were cleared during both World Wars to meet construction demands.

Jill-Anne Spence, the city's urban forestry manager, said several neighbourhoods in London were also built from local woodlands.

"When we were looking to build and establish our city, there was a significant amount of vegetation and a lot of trees," she said. "Many that were used to build our communities and homes and we were called the Forest City because of that."

Remnants of London's natural history are preserved in places like the Sifton Bog, Westminster Ponds and Medowlilly Woods.

Can London claim the name

O'Neil said London briefly lost its claim to the Forest City after development projects stripped the land of its green spaces. However, replanting strategies are underway to reconnect the city to its roots.

For every 1,500 trees that are chopped down annually due to poor health, the city replants 5,000.

"We want to ensure that our urban forest is more sustainable for future and current generations," said Spence.

Old-fashioned horsepower: Logger relies on draft horse in the woods

Craig Sabean, the owner of Napadogan Horse Logging, is going back to the way logging used to be

A forestry worker in central New Brunswick is going back to old-fashioned horse power to make a more stable living.

Craig Sabean, the owner of Napadogan Horse Logging, may be new to the horse business, but he has been in the forestry business since 2008.

Sabean said his experience working for a marketing board and for J.D. Irving Ltd. showed him a demand for a different way of harvesting wood.

"I kind of saw there was a niche market for wood that you couldn't really cut with a harvester, and there was people who really didn't want harvester damage," Sabean said.

The solution: going back to a kind of logging used for centuries, before harvesters and skidders hit the scene.

"I liked horses and I like working with them," he said.

"I like animals so I thought it'll be a win-win for me."

Places machines can't get at

Modern equipment can cut more wood, Sabean said, but there's wood that can only be reached using a horse.

"I can do jobs that a machine can't," he said.

"With a machine, you have to keep away from the brooks and things like that. So [it's] kind of an advantage with a horse — you can get in near the brooks."

And a horse operation requires less overhead, he said, listing gas for his pickup, and oats, hay and water for his horse among his regular expenses.

With modern machinery, Sabean said, there are much higher fuel and maintenance costs, meaning that some crews have to work 24 hours straight to remain profitable.

"Basically, they need at least 250 to 300 cord of wood to make it profitable for them," Sabean said.

"Whereas I can go in on two or three acres, and I can work there for two weeks and pay the landowner, pay myself.

"I only have to put out 10 cord a week to make a good decent living, whereas a guy in a machine, he's going through 20, 30 acres in a week."

And if the machinery fails, a new harvester could run to \$500,000, a new horse about \$3,000, he said.

Growing in popularity

Sabean's partner in business is his 14-year-old Percheron mare, Taylor.

"She's in really good shape for her age," he said. "She worked in the woods full time up until she was six-years-old, I believe."

Sabean said he expects this method of harvesting wood to grow in popularity, as has already happened in Europe.

"There's more and more demand for select cutting and smaller areas being harvested," he said.

"The big machines and the big coming in and clearing 300 to 400 acres for somebody is ... starting to go the other way now."

Canadian scientists discover how forests reduce air pollution

OTTAWA, June 14, 2017 /CNW/ - The Government of Canada relies on sound science to provide information needed to take action and protect the air we breathe. Clean air means healthier Canadians, and it contributes to increased economic prosperity through lower health-care costs and less damage to our natural environment.

Ozone in the lower part of the atmosphere is a short-lived climate pollutant linked to respiratory health problems, smog, climate change, and crop damage. The amount of ozone in the atmosphere is also a challenge for experts to predict. Past predictions using air quality and climate models often overestimated amounts of this harmful air pollutant. This problem suggested there may have been missing atmospheric processes in understanding how ozone in the lower part of the atmosphere forms.

A new study recently published in *Nature Communications* by scientists at Environment and Climate Change Canada discovered a missing link in lower-atmosphere ozone formation: our forests. The shaded and relatively stagnant air of the forest ecosystem modifies the chemistry of air pollution, resulting in much less ozone formation than had been previously believed to take place. The study also showed that in the absence of forests, ground-level ozone levels would be as much as 50 percent higher.

Environment and Climate Change Canada scientists reached this conclusion after conducting atmospheric measurements, which showed substantial decreases in ozone under forest canopies. They then carried out high-tech computer modelling, which showed that these air-quality benefits from forests extend far above and downwind of the forests themselves and contribute to improved air quality in our communities.

This scientific discovery reminds Canadians of the importance of protecting our parklands, wooded spaces, and even small urban forests since they help to lower ozone levels. Lower ozone levels mean better air quality and healthier Canadians.

The media, fellow scientists, and interested Canadians are invited to contact lead researcher Paul Makar (paul.makar@canada.ca), for additional information on this study.

Sweet celebration for Canada's 150th year — maple syrup from certified forests hits the shelves

Canadians are celebrating their heritage all year long during a 150th birthday party with tributes to all things quintessentially Canadian. Maple syrup has been part of Canadian cuisine since before Canada was born in 1867. It was valued by Indigenous peoples who taught the first Europeans to tap trees.

In 2017, maple syrup is still helping to define Canada's deep connection to its forests and the generations of families who have relied on them. Stone Maple Farms syrup is the first forest product not made of timber to be certified to the chain-of-custody standard of the independent, non-profit Sustainable Forestry Initiative (SFI).

For a product to be certified to the SFI Chain of Custody Standard, it must be sourced from a forest that is managed responsibly, meeting strict requirements for water and air quality, biodiversity, preservation of wildlife habitat, and more.

Stone Maple Farms includes a family woodlot in Nackawic, New Brunswick that has had family ties for nearly 80 years. The location is well known in the local community and is currently part of Freehold Land owned by A.V Group NB Ltd. As a result of a partnership between Carter Stone and A.V. Group NB Ltd, Stone began operations of the family-owned business in 2013.

SFI certification in sustainable forestry has been another way Stone has looked to the future. This year, Stone Maple Farms expects to double the number of trees tapped for the sap that goes into maple syrup production. In addition to syrup, Stone Maple Farms also makes maple butter, candy, taffy, maple sugar, and even supplies another local company - The Big Axe Brewery - with pure maple sap that goes into its award-winning **maple ale craft beer.**

Earning third-party SFI chain-of-custody certification means Stone Maple Farms will be able to use the SFI Chain of Custody label on its syrup, so you can identify it as a responsible choice on grocery store shelves.

Sustainable forestry means practicing a land stewardship ethic that meets the needs of the present without compromising the ability of future generations to meet their needs, too.

"When people see the label and ask 'what's SFI?,' it leads to a good conversation about how we source our syrup from a forest that is being well managed so future generations will be able to continue enjoying its benefits," Stone says.

To find out more about SFI and the SFI label as a symbol of responsible forestry, visit sfiprogram.org.

Napanee, Ont., company using corn foam to fight B.C. fires

A Napanee, Ont., company is trying to fight fire using a biodegradable corn-based fire foam, one they hope could reduce the environmental impact of fire suppressants.

When mixed with water, FireRein Inc.'s Eco-Gel extinguishes flames and prevents the fire from re-igniting according to spokesperson Quincy Emmons, a firefighter with 19 years experience.

Firefighters in the town just west of Kingston, Ont., have been testing out the new product on controlled fires.

They used only water to quench one fire, then tried water with the fire foam. The water-only bale went back up in flames seconds later.

"I've never seen anything knock down fire as fast as this stuff does," said Emmons.

FireRein is sending a load to British Columbia to help with the forest fires currently raging there.

Using corn as the main ingredient could lessen the potential environmental damage of using chemical fire foam.

The town of Smiths Falls, Ont. is currently [dealing with poisoned water](#) as a result of fire foam used almost a year ago when a flea market burned down.

The Northern Forestry Centre (NoFC) Tree-Ring Lab

Among the many fields of research pursued by [Canadian Forest Service \(CFS\)](#) scientists at [Northern Forestry Centre \(NoFC\)](#) is the field of dendrochronology. Ted Hogg, a research scientist with the CFS who focuses on the effects of climate change on Canadian forests, is happy to explain, "Dendrochronology, commonly known as tree-ring analysis, is the scientific study of annual growth rings in trees or wood." Wide tree rings are formed in years with good growing conditions, for example, lots of moisture and a long growing season; narrow tree rings are formed in years when the tree is under stress from things like drought or attacks by insects or diseases. This is a fascinating area of study and there are many questions that can be answered in this discipline: How old are our forests? What conditions did they endure during their development and life span, for example, fire, insects, drought? Under a warming climate, are Canada's forests growing faster or slower? CFS researchers have been using tree-ring analysis at the NoFC in Edmonton, Alberta, for several decades. In the past, studies were conducted using microscopes and hand lenses in multiple offices and labs scattered throughout the building. In 2010, under the Accelerated Infrastructure Program, a single modern laboratory was built where all the samples and digital information could be consolidated, housed, and analyzed.

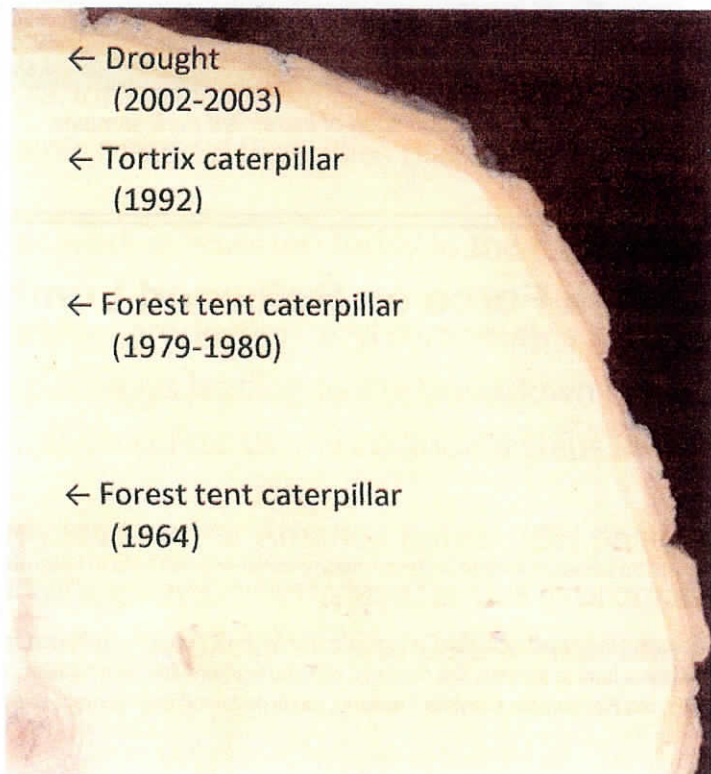


Figure 1: Aspen tree "cookie" sample with annotated growth history (Photo: Ray Darwent)

Today, the NoFC Tree-Ring Lab is a modern facility with 3 high-resolution scanners linked to computers, several dissecting microscopes, and a drying oven. The researchers are able to study an inventory of over 16 000 samples, with close to 1 000 samples, known as cookies (cross sections of tree stems), and more than 15 000 increment core samples, which are samples taken from trees using a metal boring tool that extracts a sample of wood from the bark (outside of the tree) to the centre of the tree or stem. Tree rings vary depending on growing conditions and in some trees the rings are so thin that it is impossible to see with the naked eye where one ring ends and another begins. This often happens in very old trees grown in poor sites, or grown during outbreaks of defoliating insects such as forest tent caterpillar. Using a program called CooRecorder, researchers and technical staff are able to scan a core sample and magnify it as a high-resolution image onto a computer screen so they can more easily count these minute rings, and detect any anomalies in the tree's growth due to natural disturbances such as droughts, insect infestations, or forest fires. All 15 000 increment core samples have been scanned so that they can be studied in greater detail.

The data collected from tree-ring samples contribute to several initiatives including the [National Forest Inventory \(NFI\)](#), [Alberta's Biodiversity Monitoring Institute \(ABMI\)](#), and the CFS-led research project called [Climate Change Impacts on Productivity and Health of Aspen](#). The NFI is a collaborative partnership among the federal, provincial, and territorial governments that compiles detailed information and statistically reliable knowledge for tracking changes in Canada's forests.

The NFI has a collection of increment cores from a network of about 1 000 ground plots representing all major forest types across Canada. These cores are sent directly to the NoFC Tree-Ring Lab where they are prepared, measured, and analyzed. The database from this work is being used by a team of CFS scientists to report on how climate change has been affecting the growth and carbon uptake of Canada's forests. All these initiatives contribute knowledge to regional and national reporting. These results are also being used to improve computer models for predicting future changes in Canada's forests.

The research scientist and coordinator of the Tree-Ring Lab, Jagtar Bhatti, explains that "Tree-ring analysis is an important tool that can show how our forests fared in the past during natural disturbances such as insect outbreaks and extreme climate events. Researchers can retrieve this information going back hundreds of years. By knowing how our forests responded during a drought cycle, for example, researchers can anticipate their resiliency in today's changing climate." Forest managers who plan for 60- to 100-year harvesting cycles can use tree-ring analysis data to help determine the best species of trees to plant in an effort to withstand drought or other adverse growing conditions, and thus better plan for future changes. As well as helping forest managers, this work helps scientists conduct national scientific research, and it is also useful in making policy decisions about climate change adaptation.

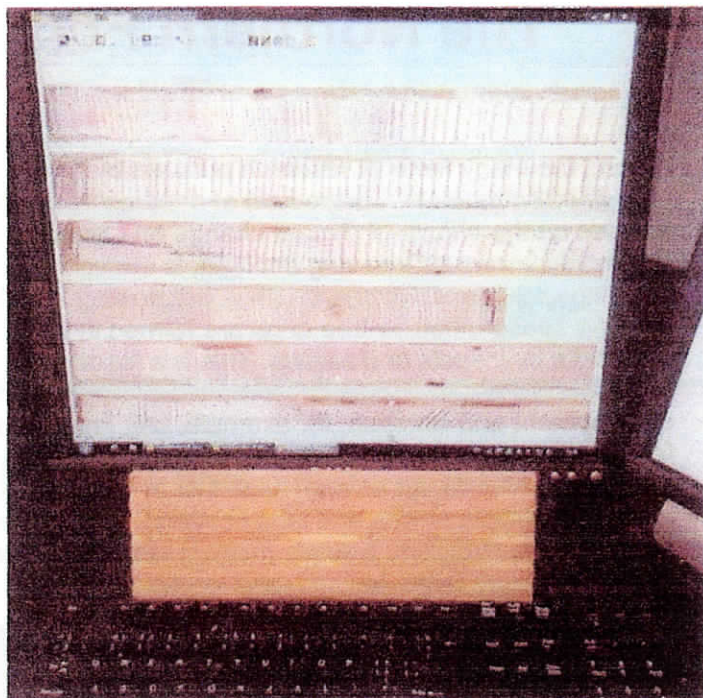


Figure 2: High resolution scan of increment core samples
(Photo: Ray Darwent)

Government of Canada Announces Task Force on Softwood Lumber

News Release

From Natural Resources Canada

Canada's forest sector is vital to a strong Canadian economy. Enhanced collaboration between federal and provincial governments will help to keep our forest sector, and the workers and communities that depend on it, strong and resilient.

Today, Canada's Minister of Natural Resources, the Honourable Jim Carr, announced the creation of the Federal-Provincial Task Force on Softwood Lumber, which will share information and analysis to understand potential impacts and assess how to address the needs of affected workers and communities. Minister Carr will chair the domestic task force, while Canada's Minister of Foreign Affairs, the Honourable Chrystia Freeland, leads softwood engagement with the United States.

There has been ongoing engagement with the provinces, territories and industry over the past two years as the Government of Canada has sought to negotiate a new deal with the U.S. on softwood lumber. This is the next step in our strategic approach to this issue, which strengthens our ongoing efforts on a priority file for the Government. Canada believes that a negotiated agreement that brings predictability and stability to industry on both sides of the border is the best possible outcome. The Government will continue to work closely with provinces, territories and the softwood lumber industry to vigorously defend the interests of the middle-class Canadians who depend on the industry. This work will continue outside of the task force.

The new Federal-Provincial Task Force on Softwood Lumber will assess current federal and provincial programming and ensure coordination of government initiatives to promote innovation, market diversification and transformation of the forest sector.

The forest sector is an important part of Canada's economy. It directly employs more than 200,000 people across Canada. Softwood lumber exports were valued at \$8.6 billion in 2015 — close to 70 percent of which was exported to the U.S.

Could This Enzyme Help Turn Biofuel Waste into Something Useful?

Joint BioEnergy Institute study targets LigM for its role in breaking down aromatic pollutants

A protein used by common soil bacteria is providing new clues in the effort to convert aryl compounds, a common waste product from industrial and agricultural practices, into something of value.

Researchers at the Department of Energy's Lawrence Berkeley National Laboratory (Berkeley Lab) and Sandia National Laboratories working at the Joint BioEnergy Institute (JBEI) have resolved the protein structure of the enzyme LigM, which is utilized by the soil bacterium *Sphingomonas* to metabolize aryl compounds derived from lignin, the stiff, organic material that gives plants their structure.

Their work is reported today in the *Proceedings of the National Academy of Sciences*.

In biofuel production, aryl compounds are a byproduct of the breakdown of lignin. Many of the pathways leading to the breakdown of lignin involve demethylation, which is often a critical precursor to any additional steps in modifying lignin-derived aryl compounds.

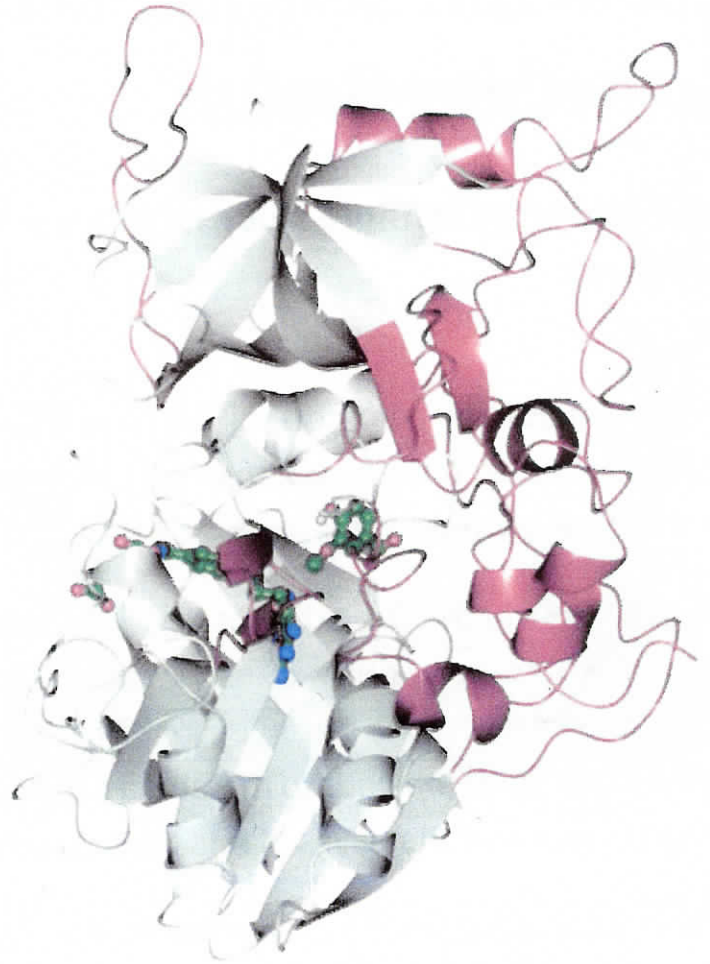
Study lead author Amanda Kohler, JBEI postdoctoral researcher at Sandia, noted that LigM is an attractive demethylase for use in aromatic conversion because it is a simple, single-enzyme system. LigM is also able to maintain its functionality over a broad temperature range.

"When we're trying to build new pathways in synthetic biology, the simpler the system the better," said Kohler.

The researchers found that half of the LigM enzyme was homologous to known structures with a tetrahydrofolate-binding domain that is found in simple and complex organisms alike. The other half of LigM's structure is completely unique, providing a starting point for determining where its aryl substrate-binding site is located. They also figured out that LigM is a tyrosine-dependent demethylase.

"It's the first of its kind to be identified," said Kohler. "This research provides the much-needed groundwork to help in the development of an enzyme-based system for converting aromatic waste products into something useful."

Kohler said they are now working on engineering LigM so that it is able to act on a wider range of aryl substrates in addition to targeting specific aryl waste products.



The protein structure of LigM was determined using X-ray crystallography, revealing novel structural elements that are unique to LigM (red) in addition to a conserved tetrahydrofolate-binding domain (gray) that is found throughout life. LigM binds to its substrates (green) using internal binding cavities. (Credit: Amanda Kohler/JBEI)

Be advis'd;

Heat not a furnace for your foe so hot

That it do singe yourself: we may outrun

By violent swiftnesse, that which we run at,

And lose by over-running — Henry VIII

We understand the words, but not the meaning, so we each give this our own interpretation that fits in our 2017 world, but not the actual meaning of some 500 years ago. And so it is with much ancient writing the Bible is one of the best example of this.

House Works: Building fine furniture with cheap lumber

I'm always surprised and pleased to see how some ordinary people still like to build furniture from wood just for the fun of it. With so many digital distractions in the world these days, I worry that hands-on creativity might die. The fact that it hasn't is a good thing, but there's something even better for us Canadians. We have access to great wood, and one overlooked option is even economically priced. The crazy thing is, not even experienced woodworkers always recognize this particular source of cheap fine furniture wood.

Next time you go to a lumberyard, take a close look at the wide planks meant for framing houses. The piles of 2x8s, 2x10s and 2x12s include some wonderful boards – wood that deserves more than just being hidden inside a house somewhere. The best planks must have come from huge, old trees because the growth rings are tight, the grain is interesting and some 16 foot planks have hardly a knot in them.

I first noticed this kind of amazing lumber in the late 1980s, so I started asking more experienced woodworkers why no one builds fine furniture from framing lumber. "That kind of wood doesn't take a nice finish", some warned. "Framing lumber warps too much", others would tell me. "It's ugly", they'd say, surprised that anyone would even consider using spruce, pine or fir construction lumber for fine woodworking projects. The opinions were always forceful, but never entirely convincing to me.

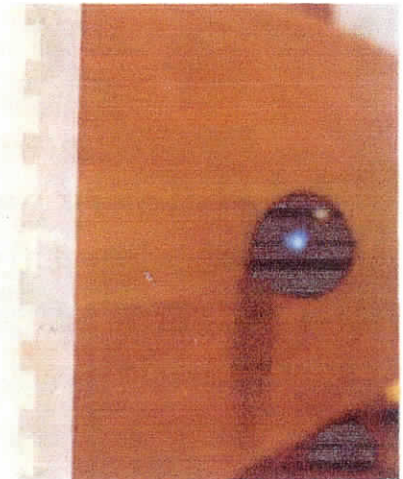
After decades of experience, I can now say for sure that none of the prejudice against building fine furniture from framing lumber is true. If you select boards carefully, then joint and plane the wood the same way you'd work with any kind of expensive, rough hardwood lumber, you can get terrific results. But still, it's surprising how people hang on to

misconceptions. I was reminded of this fact earlier this year because of a YouTube video I made back in 2010.

When I made this video, my cameraman followed me to a lumberyard where I went through the steps I use to select framing lumber for fine furniture projects. For some reason this video didn't get a lot of views until earlier this year when it took off. At the moment it's my most popular video with about 75,000 views per month, but with this traffic came skeptical comments. They reminded me of the words of warning I got when I first began asking experienced woodworkers about using framing lumber for fine furniture. It's one of those situations when opinion deviates significantly from fact.

So what are the facts? Framing lumber can be given an inviting, glass-smooth finish. It doesn't twist or warp if it's chosen well and worked properly. Framing lumber costs a fraction of what furniture-grade hardwoods sell for, too.

If you'd like to try fine woodworking using inexpensive framing lumber, check out a detailed post I wrote on this subject. It addresses all the unfounded fears that YouTube video reminded me of, and includes information and photos on selecting individual boards, dealing with



The hole in the wood on the face of this drawer came from a 2x12 construction-grade plank. The hole and the grain goes from the wood.

moisture, and milling framing lumber for refined projects. The post also includes free downloadable plans for a bunkbed project I built using framing lumber that was published in Canadian Home Workshop magazine. See the post for free at www.baileylineroad.com/cheap-lumber-makes-fine-furniture/ (<http://www.baileylineroad.com/cheap-lumber-makes-fine-furniture/>)

Leonard Lee, the founder of Lee Valley Tools, once told me that he figured Canada has the highest concentration of skilled woodworkers in the world. I agree. And the fact that the softwood lumber industry still thinks of itself as a bulk producer of low-value commodity wood means that us Canadian woodworkers also have access to some very nice lumber available at attractive prices. All we need is eyes to see it.

The Softwood Lumber Dispute: 455,000 Canadian Woodlot Owners Urgently Seek an Exemption for their Roundwood

Longueuil, July 11th, 2017. – Although a negotiated agreement could bring an end to the softwood lumber dispute in the coming months, the Canadian Federation of Woodlot Owners (CFWO) would like to remind everyone that it is imperative that an exemption for roundwood from private forests be included in any future softwood lumber agreement between Canada and the United States.

According to the CFWO President, Peter deMarsh, "The management of private forests in Canada is absolutely not at issue in the softwood lumber dispute between the U.S. and Canada and should not be the cause of any grumbling. Indeed, our management model is very close to the one in the United States and embodies the very essence of U.S. demands and aspirations, although, paradoxically, Canadian woodlot owners are suffering collateral damage in the conflict in the form of reduced sales and lower prices. Our proposed solution is cogent and coherent: the model that we live by is the same one found in the United States."

Indeed, the situation of the 455,000 private woodlot owners in Canada is similar to that of their 10 million U.S. counterparts. Woodlot owners on both sides of the border have similar motivations, benefit from funding to carry out the special silvicultural work required by their respective societies and work in an analogous commercial environment where they have to negotiate satisfactory terms of sale for their roundwood.

The CFWO has identified 10 arguments supporting its demand for an exemption for wood from U.S. and Canadian private woodlots. One example is the free flow of sawlogs from woodlot owners across the border to sawmills in the US; in case of BC, which is the single exception restricting the export of private owner sawlogs to the US, the Americans, have made their displeasure very clear.

"Canadian softwood lumber produced from roundwood harvested from private woodlots that has demonstrated traceability should be exempt from duties and quotas. The federal government must absolutely defend our business model so that Canadian woodlot owners do not become accidental victims in this dispute by seeing their market for roundwood erode," deMarsh points out.

My Woodlot

Bob Cameron

I purchased my quarter section along Hwy. 43 west of Debolt in the spring of 1976. Rather than locating at the original homesteaders building site out in the open field along the Hwy, I chose to build in the SW corner by a dugout, a small treed muskeg and maturing mixed wood provided cover from cold NW and NE winds of winter. Ground water resources are at a great depth in this area (around 500 feet) so locating by the dugout was a better choice. As a graduate of Renewable Resources Technology, Kelsey Institute in Saskatoon (in 1973).I knew an aerial photograph would be better than the large scale topographic map of my land. I also knew a stereo pair of photos would yield a 3-dimensional view of the trees and small openings in the 110 wooded acres. At the air photo library in Edmonton I ordered two aerial photographs that are about 7 by7 inches and give a 3- dimensional view of my woodlot.

I had done some timber cruising at school and all summer for the Alberta Forest Service, so soon had developed my own map of the timber types by grouping the trees of similar - heights, spacing and species composition.

Everyone with a power-saw who has fallen a lot of trees soon realizes you can make a bigger mess in an hour than you can clean up in a day. Trees are really nice and neat standing up they look straight until they are laying on the ground without their limbs, then the crook and other defects show up. Also when walking over your felled trees packing a saw -oil - gas - wedges - axe etc can easily cause one to trip.

I soon found out that my woodlot was not only a mosaic of tree stands of different ages and species but also a mosaic of soil types from deep organic soils to areas where intense fires had consumed the top soil. Any exposed fine clay soils were slipperier than banana peels when wet and to soft to work on without creating ruts. Roots of any kind of plant and grass helped keep the slippery mud at bay.

As I harvested trees with tractor and skidded the skid trails became covered with spruce seedlings where the duff had been scrape off, to avoid damaging the new trees winter logging is best. Also when the weather is at -20 for a few days the branches will break off like glass, if you can walk a skidder along or over them. If felling in a mixed wood stand where you want to retain the understory in this case it is better to do the falling when it is warmer to avoid damage to the young trees.

Trees grow together and stand against the wind but to suddenly ask them to stand alone in the wind is a big task especially for the shallow rooted spruce. So it is best to remove the poplar overstory over a five to ten year period. My poplar stands are in decline and there is some loss in that period. The trees that fall rot to build soil, the small seed collectors like deer mice and red backed voles use the gaps along and under the fallen trees as highways and protection from predators.

My woodlot is half a mile from a deep creek valley to the east and a quarter mile from a major muskeg to the west. But is surrounded by cultivated land so white tail and mule deer, moose and elk often use it as home along with black bear and coyotes. I had it grazed by cattle with mixed results. Once in a very dry year I saw that very hungry cows will eat spruce trees and burp turpentine you can smell it. Snowshoe hares haven't been in large numbers for a long time, but when they are a horned owl occupies a nest I've been careful to protect. Logging poplar in winter gives the hares some food other than the tips of young spruce poking through the snow. Fishers are still plentiful in the Peace country so the porcupine are not to common and have not damaged any trees.

While my seven acre march was created by a beaver dam, but they have not returned in nearly 40 years. In dry years it will dry up completely but in wet years ducks will nest there successfully (one fall there were 500 ducks parked on an acre and a half of open water) whereas geese have tried but with no beavers the coyotes soon dissuade them. I would like to see beavers in the march again but my neighbours are not in favour.

I'm hoping your grandchildren can help you navigate the digital world , as you can enlarge them in the navigation of the wonders of a forest you care for. It's a thrill to hear the drumming of a ruffled grouse or witness it, But better yet to count as she leads 16 chicks across your driveway.

Photo's of - Bob Camerons - Woodlot



My Portable Mobile Dimensional - One Man Sawmill



Looking North-East from the Sawmill Yard