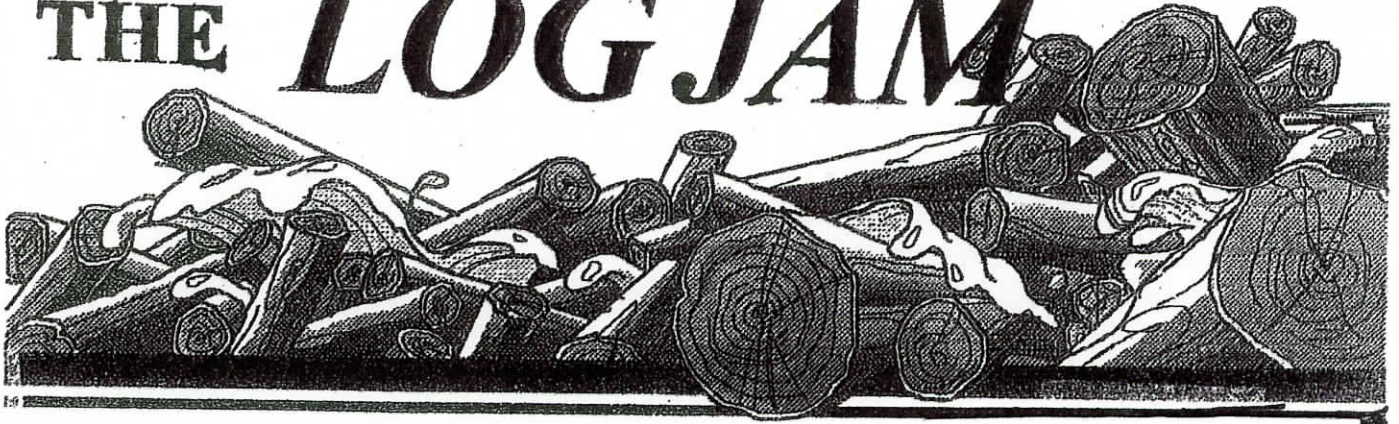


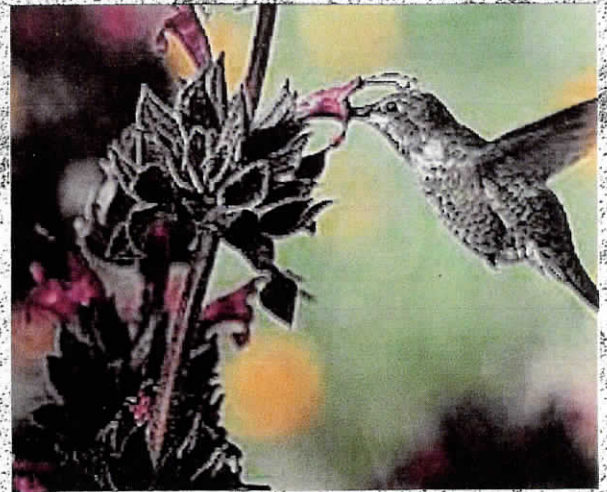
THE LOG JAM



Published by the Woodlot Association of Alberta (WAA)

June, 2017

The Hummingbirds



There are some 300 different species of hummingbirds, here in Alberta there are three species, the Ruby-throated, the Calliope and the Rufous hummingbirds commonly found. Also Anna's, the Black-chinned and the Costa's hummingbirds have been sighted in southern Alberta.

Put the feeder out by the first of May and leave it out till September

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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Thank you to those in attendance.

Already another year gone by and a few things have happened. The most important being the passing of Louise Horstman-Code. Still difficult to believe.

We have met with **minister Oneil Carlier**, Agriculture and Forestry, twice and it has been fruitful to a certain point. It has brought meetings with different levels of gov't the last one being a conference call with Graham Legaarden, RPF, Forest Tenure System Specialist and company, which gave us an overview of where they are at with the question of **extending your woodlot on crown land.., funding for a few years** which was number one of things to do if we want this association to live. We also sent a letter to most mills in the province asking for help and two have responded, Miller Western and Alberta Newsprint Timber in the amount of \$900. Thank you to both of them. Another responded by saying that they do not fund financial activities to associations.

The group email started over a year ago and seems to work well. We get response from members that we normally don't hear from. So I take that as positive.

The past 3 **logjams** has had a **Classified Ad** section. It's free and there has been a few posted. Don't know if it has been successful for anyone.

And now to get on a **thank you** mode, to Herman Steigehuis for the initiative to plant Maple trees for **the celebration of Canada's 150**, I think we are close to 1000, not all maples but. Herman will let us know what the exact # is, to Jurgen Moll for all the time he put's into this organization, the phone calls to the gov't urging them to move along, the calls to me.. the awesome work with the Logjam, to Herb Cerzke for looking after the membership list and for taking Karen's place as secretary and to the Board members for still being there. We have held all our scheduled meetings this year, again.

Thank you to our sponsors, the town of Whitecourt for two meals, for the door prizes; Timberland Edmonton, St. Isidore Coop, Miller Western, the Lutheran Church for the space and the people of this church for preparing the meals.

And last but not least, to everyone involved in preparing the AGM, to everyone who participated, without you, these events would not happen.

To the very talented, knowledgeable, all young 😊, good speakers. I could go on but will stop here.

SUMMARY OF THE 22ND ANNUAL GENERAL MEETING OF THE WOODLOT ASSOCIATION OF ALBERTA

Our AGM this year was held at the Lutheran Church in Whitecourt on June 16 and 17. The business session was conducted on the first day, interspersed by guest speaker presentations. A field tour focussing on wetland retention and function was conducted on the second day.

AGM Business

A motion was passed to approve and ratify the actions taken by the Board Members in carrying out the functions of the WAA during the 2016-17 fiscal year. Special thanks are extended to the following:

Laval Bergeron – for serving as President and chairing our monthly and AGM meetings and as an effective communicator of WAA business.

Jurgen Moll – for compiling, editing and distributing the Log Jam; for pursuing grant application and other organization functions, and for organizing this years AGM.

Elton Kauffman – for his role as Treasurer.

Karen Visser – for serving as Secretary and AWES representative.

Christine Nofziger and Sue Mills – for reviewing this year-end financials.

Pete Mills – for maintaining the WAA web site and communicating various sources of information.

Herb Cerezke – for maintaining the membership list and assisting as Secretary and representative for AWES.

Larry Nofziger, Harry Krawchuk, Harry White, Gordon Kerr and Warren Stewart – for fulfilling their role as Board Members.

We also wish to thank **Herman Stegehuis** for initiating and promoting “Canada-150” celebration by the planting of tree seedlings on private woodlots.

WAA Accomplishments and Work in Progress

Meetings have been held with the Minister of Agriculture and Forestry and other Provincial staff to discuss funding sources and other issues of concern to WAA members. The status of the extension of woodlots onto crown land was discussed but no timeline for changes or implementation have been established. Work has been in progress to update the Municipal Government Act with Municipal Affairs Department, which will provide changes in how private woodlots will be assessed for provincial taxation. Changes are currently under review and may be finalized later this year. A grant application to seek funding for the WAA was submitted to Forest Resource Improvement Association of Alberta (FRIAA). A recent communication indicated that the FRIAA application had been approved and that funding has been secured of

the amount of \$15,000 for each of the next three years, for which we are most appreciative. Another possible source of funding currently being explored is a Casino in the Grande Prairie region. Information is being gathered on the process for a "check-off system" that could apply to wood products being sold from private woodlots. This system may have the potential to provide additional revenue to the WAA.

This year being the "Canada-150" celebration prompted an initiative by one of our members, Herman Stegehuis, to encourage woodlot owners to plant trees as a way of celebrating the event as well as a means to increase carbon sequestration. A number of members have complied.

Membership representation was provided to our partner organization, the Agroforestry and Woodlot Extension Society or AWES during their scheduled meetings. Information on a number of their projects can benefit the WAA such as in the following initiatives: general extension and educational woodlot workshops and tours, planting programs for riparian restoration, shelterbelt plantings and maintenance and wetland restoration. One new publication available through AWES is the manual titled: "Manual for Riparian Buffer Establishment in Alberta".

Guest Speakers

The following guest speakers provided presentations as part of the AGM sessions:

Fauve Blanchard – reviewed the current "chronic wasting disease" situation in the province, provided background biology of the disease and its transmission to mainly mule and whitetail deer and elk, and reviewed its distribution, surveillance and management.

Siobhan Shears – provided an overview of the Legislative Framework in forming a Commission in Alberta for a "check-off system". The information covered roles and responsibilities and their potential benefits.

Curtis Stambaugh was our banquet guest speaker and described a study he had undertaken to compare the bird species and populations and their habitat characteristic in recent fire-killed timber, in fire-salvaged areas and in undisturbed timber sites.

Marsha Trites-Russel – a wetlands specialist, accompanied us on a field tour at Jurgen Moll's woodlot area and pointed out the characteristics of muskegs, bogs and fens. The importance of wetland protection was emphasized as well as riparian protection and maintenance.

Special thanks are extended to ladies of the Lutheran Church who provided coffee and lunch and a catered barbeque at Jurgen Moll's place. Our banquet was held at the Road House Motel.

--- *Herb Cerezke*

Up Coming Events

Board of Directors - Teleconference July 31, 2017
August 28, 2017
Sept. 25, 2017
All calls are at 7pm

There will be a face to face **Board Meeting** on July 15 in Whitecourt, AB. in the Lutheran Church basement.

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.

Hard Luck Creek - Canyon Tour



This sandstone canyon is some 20km south of Whitecourt, it is a very unique geological feature, and contains a small water fall. The county has installed well gravelled trails and a set of stairs to the bottom of the canyon. We toured it because a tour that was planed for the am on Saturday of the counties woodlot was cancelled by them.

Human brain hard-wired for rural tranquillity

Study of brain activity shows it struggling to process complex urban landscapes

Humans may be hard-wired to feel at peace in the countryside and confused in cities – even if they were born and raised in an urban area.

According to preliminary results of a study by scientists at Exeter University, an area of the brain associated with being in a calm, meditative state lit up when people were shown pictures of rural settings. But images of urban environments resulted in a significant delay in reaction, before a part of the brain involved in processing visual complexity swung into action as the viewer tried to work out what they were seeing.

The study, which used an MRI scanner to monitor brain activity, adds to a growing body of evidence that natural environments are good for humans, affecting mental and physical health and even levels of aggression.

Dr Ian Frampton, an Exeter University psychologist, stressed the researchers still had more work to do, but said they may have hit upon something significant.

“When looking at urban environments the brain is doing a lot of processing because it doesn’t know what this environment is,” he said. “The brain doesn’t have an immediate natural response to it, so it has to get busy. Part of the brain that deals with visual complexity lights up: ‘What is this that I’m looking at?’ Even if you have lived in a city all your life, it seems your brain doesn’t quite know what to do with this information and has to do visual processing,” he said.

Rural images produced a “much quieter” response in a “completely different part of the brain”, he added. “There’s much less activity. It seems to be in the limbic system, a much older, evolutionarily, part of the brain that we share with monkeys and primates.”

The effect does not appear to be aesthetic as it was found even when beautiful urban and “very dull” pictures of the countryside were used.

Professor Michael Depledge of Exeter University, a former Environment Agency chief scientist, said urban dwellers could be suffering in the same way as animals kept in captivity. He said the move to the cities had been accompanied by an “incredible rise in depression and behavioural abnormalities”.

“I think we have neglected the relationship that human beings have with their environment and we are strongly connected to it,” he said. “If you don’t get the conditions right in zoos, the animals start behaving in a wacky way. There have been studies done with laboratory animals showing their feeding is abnormal. Sometimes they stop eating and sometimes they eat excessively. How far we can draw that parallel, I don’t know.”

The study was part-funded by the European Regional Development Fund Programme and European Social Fund Convergence Programme for Cornwall and the Isles of Scilly. Dr Frampton was one of the coordinators of the research, which was carried out by Marie-Claire Reville and Shanker Venkatasubramanian, of the European Centre for Environment and Human Health at Exeter University.

Editors Note : *There are Doctors in California the are prescribing to some of their patients to “take walks in a nature park” for those that are combating high stress and other related ailments, with better results than a drug regime.*

Urban jungle: saving city wildlife with trees, green roofs and pools

From brush turkeys to powerful owls, Australia's rarest wildlife lives in cities -protectin benefits for humans too

The federal government recently released the Threatened Species Prospectus, showcasing the numerous opportunities for businesses to be involved in conservation. This is great for the bush, but what about the wildlife that calls the city home?

With more than 80% of Australia's population living in cities, it might not feel like there's much room for nature. Yet scientists in the field of urban ecology and conservation, such as myself, aim to shine a light on our city-dwelling fauna, and develop new ways for people and wildlife to live side by side.

A stroll through any Australian city proves there's no need to go bush to get in touch with native animals. From the brush turkeys of Brisbane to the powerful owls of Sydney, many species find ways to survive in the urban jungle.

In fact, many of our rarest animals live in urban environments. Research under way at the National Environmental Science Program reveals that just over 100 of Australia's federally listed endangered animals live in cities or towns. For example, Canberra hosts the grassland earless dragon, striped legless lizard and painted honeyeater, while Melbourne is home to southern brown bandicoots, growling grass frogs and visiting swift parrots. Of the 70 species prioritised in the recent prospectus, around 25 have been recorded in or around urban areas.

This means that not only are urban areas great places to engage with native wildlife but they can play an important role in the fight against the extinction of these species. And increasingly, scientists and conservationists are working with city planners, architects and even artists to develop creative solutions to sharing urban areas with wildlife.

The first step is to realize that spaces for urban conservation don't have to be large. Even a solitary gum tree can be a lifeline for native wildlife. Researchers from the Australian National University in Canberra found that large old trees are critical feeding and nesting sites for a huge range of animals in urban areas. Once lost, these trees take hundreds of years to replace, so it's vital to protect those that are left.

Sydney's habitat trees are a great example of this. Sometimes large gum trees can drop branches, posing a safety risk to those using the space underneath. Instead of removing the whole tree, many councils now choose to prune the dangerous branches and retain the rest for wildlife. Artificial hollows can be cut in, and nesting boxes added to recreate nesting spaces for native birds and mammals. Creative solutions like this help to balance conservation goals with the local community concerns.

Individuals can help wildlife by creating new habitats and resources in their local communities. When the natural nesting hollows formed in old trees are scarce, urban nest box programs are a salvation for parrots in Perth, squirrel gliders in Albury and microbats in Moreton Bay. The Hume city council is encouraging bee hotels to provide havens for native stingless bees, while Ku-ring-gai council has a pool to pond program, to help residents convert unused swimming pools into homes for native fish, frogs and turtles. Urban ponds and water

sources provide much-needed water for other animals during droughts and heatwaves.

Councils and business can also help by making the most of urban spaces for wildlife. Research shows that urban animals are resourceful, and often not too discerning. They can be found along roadsides, rubbish tips, abandoned lots and cemeteries, even nesting in skyscrapers. For example the Werribee sewerage treatment plant outside Melbourne is a hotspot for birdwatchers, who have recorded more than 270 species of native birds visiting the waters. Managing these spaces to protect species will be a big part of helping urban wildlife survive.

The recent revolution in green roofs and green walls opens up even more avenues for wildlife in the city. They can provide habitat for bees, butterflies, beetles and birds and are becoming more common in buildings across the world. These features are not just fantastic for wildlife but serve as green oases for humans too, breathing new life into built environments.

City living can be dangerous for wildlife; cars, windows, pets, powerlines and pesticides can take their toll. But new structures and innovations can help curb the carnage. Road-crossing structures such as wildlife bridges or underpasses are a good way to help animals cross roads safely. Crossings are built at sites where wildlife naturally try to cross the road, along with fences to help animals find the structure's entrance.

Perhaps the most impressive structure in Australia is Brisbane's forested overpass, which allows birds, mammals and reptiles to cross between two urban parklands without tangling with peak-hour traffic. Councils and road agencies are increasingly recognising the benefits of these structures, both for wildlife conservation and human safety.

The actions we take to encourage wildlife into our towns have benefits for human residents. Increasing nature in cities is good for our own health and wellbeing, can reduce storm water run-off and flash flooding, and even save money on air-conditioning.

Urban conservation represents a great opportunity, both for people and native wildlife. Whether it's installing a nest box in a backyard, a bee hotel in a cafe garden, or a wildlife crossing on a local road, urban conservation empowers people to take positive action in their own homes, workplaces and communities. Taken individually, these actions may all seem small. But the combined effect can make a huge difference to the ability of native animals to survive in cities and towns.

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 signed S. O. S.



EDITORIAL

The other day I was sitting in the kitchen and watched my daughter give the grandchildren a glass of water. To my surprise she did not use water from the tap, rather, bottled water purchased from the local store. Until this time I had not thought much about bottled water other than believing that it was mostly a yuppie health food thing. But this seemed different somehow. After all these were my grandchildren who were being raised on bottled water, and it made me think of the water we used when I was a boy. That water was dipped right out of the creek. Common knowledge being as long as the water was running and cold, it was considered palatable, but - if in doubt - boil it.

Have things really changed so much in just 50 years? Could we have made our water supply unsafe in such a short time span? What has gone wrong? Whom to fault? Of course - big industry immediately comes to mind, with them locating their complexes adjacent to major rivers; land-fill sites located in old gravel pits or on river flats; and raw sewage from cities being flushed into rivers. But it cuts much deeper than that. It starts right here with you and me --country people who locate their barn yard on a creek bank. Farmers, who drain every slough and wet area, in order to get the maximum acreage to cultivate. Ranchers, who allow cattle to water in creeks and rivers. And, every one who is spraying chemicals of one sort or another. Farmers spray to kill weeds and insects. Transmission lines are sprayed to kill trees. Reforestation areas are sprayed to kill everything in order to ease planting of spruce or pine; and on and on it goes.

When one thinks of our water in this light - perhaps the era of bottled water is here and not just a yuppie thing.

Can we repair this aquatic system? Perhaps we could. Will we? That will depend on you and me. Country people are the stewards of most of our water sheds, and, it is our responsibility to maintain that portion which lies on your land.

What we are really looking at is re-establishing wet lands and riparian areas. This will allow run off from fields, pastures and yards, a place to settle out and purify, before it gets to the stream. Leave that last slough undrained; or, keep a patch of muskeg. There may not be a monetary reward in doing this, but, the quality of life for your grandchildren may well exceed it.

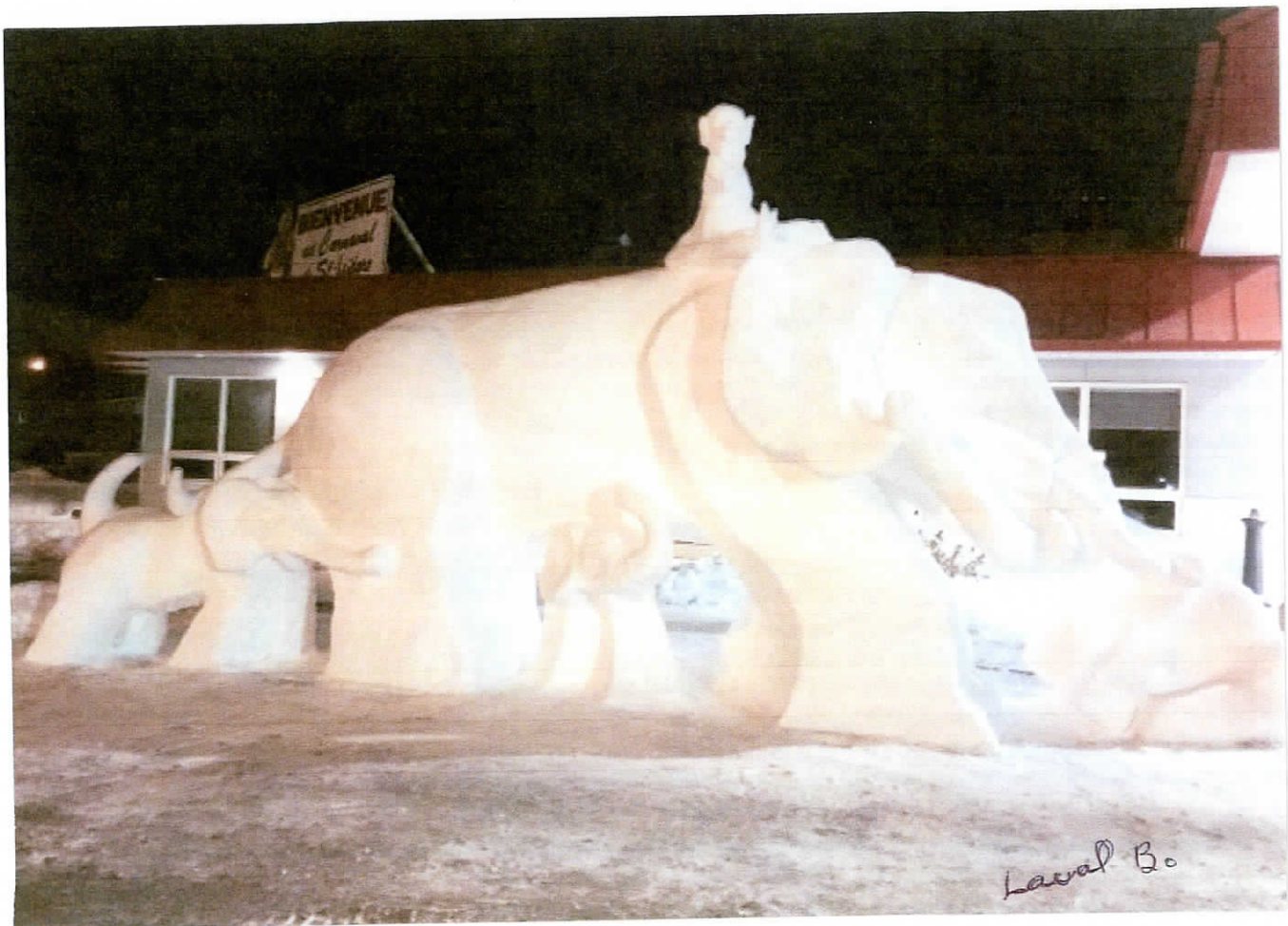
Fortunate indeed, is the farmer who has a muskeg back of his barn yard to act as nature's great filter.

Jurgen Moll

This is a reprint of an editorial I had in the Log Jam in October, 1998 the message then was important, but even more so today with the accelerated growth of our towns, cities and agricultural, who's surface run - off enters our creeks, rivers and lakes. Our ground water is also under stress with the introduction of fracking.

Therefore we the woodlot owners of land which contain the head waters of creeks in many cases, must retain wetlands that we have now for the future welfare of all.

La - Carnaval



This picture is what was on the front cover of the March Log-Jam. Unfortunately it did not reproduce due to a glitch in the copy machine.

Normally I would not show a picture that did not turn out properly, but in this case I want to show the talent our president has when it comes to making snow sculptures.

Some talent - eh !

Want to master fungi identification? A good field guide and plenty of patience are required

Let's say you didn't know me. And let's say you were planning a party. So, you ask a friend if you should invite me. And your friend says, "Dave? Hey, he's a bit of a fun guy!" At this point, I may like your friend, or not. Depends on whether or not he's into mycology.

Mycology is the study of fungus or, to use the plural, fungi. Depending on your influences, and experience with Latin, "fungi" could be pronounced "fun-GEE," "fun-JI," or "fun-GUY." Anyway, once you stop laughing uproariously at the opening paragraph (now that you get it), today's topic is mushrooms and all their relations.

No doubt you've heard of mushrooms, toadstools, puffballs, mould and other types of slimy, icky things that grow in the dark. The first part of today's lesson is to realize these names are all for the same thing: fungi. And yes, there are many types of fungi, which makes identifying them a bit of a challenge.

As you've been growing up, perhaps you were taught mushrooms are edible, toadstools are poisonous, and everything else is just fungus. Not quite true, but not entirely wrong, either. There are numerous edible fungi, there are many species of fungi that will indeed poison your bodily systems (from upset stomach to causing death), and then, yes, there's everything else.

To get to know fungi, you must understand how and why they grow. That thing we call a mushroom is but a wee part of the organism, and its only role is to reproduce (much like an apple on an apple tree). The main part of a fungus, called the mycelium, is hidden underground or within the cells of a rotting tree. Mycelia are made up of a web of thread-like structures called hyphae, which are feeding tubes that supply themselves with nutrients from the soil, tree cells, or rotting carcass upon which it lives.

A mycelium may be several metres long, or a few metres in diameter, completely hidden to our naked eyes. When the fungus is ready to reproduce, one of the leading ends of a hyphae breaks to the surface and begins to form a structure we call a mushroom. The rest of the mycelium stays underground and continues feeding as long as nutrients are available.

The mushroom begins to drop microscopic spores, like pixie dust, which may drop straight down, be caught by a gust of wind or be carried by raindrops to new places. Once a spore settles into a new home, it creates two hyphae, each of which in turn divides into two more hyphae, and each of these four divides into two more hyphae, which turn into eight, which turn into 16, which turn into 32, which turn into 64, which turn into 128, which turn into 256, ad infinitum. Soon the woodlot, or your lawn, is a huge net of interconnected fungus hyphae, collectively called a mycelium, with the occasional mushroom popping up here and there. Neat, eh?

A species of fungus can only grow in a substrate it is designed to grow in. A hardwood log species cannot grow on a rotting conifer log, and vice versa. A soil-based species cannot grow on a dead tree. Their spore must land on just the right substrate and, preferably, where no other one of its kind is already growing. Millions of spores go out; only a very few survive.

A number of fungus species are parasitic, meaning they will attack and kill their host — nasty examples being white pine blister rust, beech bark disease, Dutch elm disease, and butternut canker. By the time the host tree dies, the spores have been released to drift onto the next available healthy tree.

Most fungi are saprophytic, meaning they live on dead material. Rotting logs, dead trees, soil rich with humus — these are the places where fungi thrive. Some species will grow only on rotting meat or bones.

And a few species are symbiotic, which means they give as good as they take. Many of these are closely associated with certain tree species, especially a group of mushrooms known as boletes. The fungus breaks down the soil nutrients so the tree's rootlets can absorb them, and the fungus takes back sugar-rich sap from the roots in exchange. There are white pine boletes, ash boletes and oak boletes.

Trying to identify and name fungi species is difficult, partially so as there are few field guides available to assist the beginning mycologist. *Mushrooms of Ontario and Eastern Canada*, by George Barron, published by Lone Pine Press, is the accepted guide these days. But even flipping through the well-illustrated pages of this guide takes some getting used to.

Fungi have been divided into 23 groups, each with a certain set of shared characteristics. It is possible to learn the easily identified ones (such as morels and puffballs), but you will have to dedicate some time to really get proficient at fungal identification. Which may mean you don't get invited to many parties. I'm just saying.

Move over carbon fibre, here comes, Cellulose Nanofiber

Competition is heating up among researchers working to develop products using cellulose nanofiber, or CNF, a strong, lightweight material derived from plants.

Since 2015, a number of products made with CNF have appeared on the market, including disposable diapers and ball point pens. This has moved out of the lab as many companies, especially in the paper industry, began installing CNF production equipment.

Nature's way CNF is made off microscopic plant fiber from wood products using machines and chemicals. It weighs only one-fifth as much as steel but is three to five times stronger. In contrast to carbon fibre which is produced by baking acrylic fiber derived from petroleum, CNF comes from a renewable resource.

The research is on going into nano - microscopic - technology, and has great potential for light weight strong products.

A dairy-for-lumber deal? Think-tank paper proposes Canada-U.S. swap for NAFTA

A free-market think-tank suggests offering American negotiators in upcoming NAFTA talks more open trade in dairy, in exchange for more predictable trade in softwood lumber to secure long-term peace in that perennially problematic file.

WASHINGTON — The most common uses of Canadian dairy normally include milk, cream, yogurt, butter and cheese. But a new report suggests an altogether different application: use it as a bargaining chip.

A free-market think tank suggests offering American negotiators in upcoming NAFTA talks more open trade in dairy, in exchange for more stable trade in softwood lumber to secure long-term peace on that perennially problematic file.

Squeezing some protectionism out of both industries would be good for consumers, spur economic productivity, and ultimately result in more successful businesses in both countries, says the report from the Montreal Economic Institute.

"Trade barriers have never made more than a small minority of people richer, at the expense of the vast majority," says the paper, released Thursday.

"Eliminating those that persist in the agricultural sectors under supply management and in the softwood lumber sector ... would be good both for consumers and for producers....

"That opportunity should be seized without hesitation."

Both industries face a critical moment. For dairy, the Trump administration is being pressed to include the issue in NAFTA talks by U.S. lawmakers, just as softwood lumber experiences its latest round of once-a-decade lawsuits and tariff threats.

The industries share similarities.

Both are shielded from open trade in the old NAFTA, employ more than 200,000 people in Canada, and claim a similar economic value of \$14-15 billion to Canada's GDP. The paper suggests achieving freer trade in both industries by giving up supply management in dairy.

The current system limits the amount of dairy and poultry Canada can import before a tariff kicks in. Dismantling it would mean lower prices at the supermarket, and a more internationally competitive industry, says the paper.

It points to New Zealand's experience: dairy production nearly tripled after liberalization, and the country became a global player.

But Canada's dairy lobby vigorously disputes the promised benefits.

Dairy Farmers of Canada says supply management's critics get several things wrong — starting with the price of milk. It cites statistics showing Canada in the middle of the international price range on milk, lower than New Zealand and France and higher than the U.S. and Germany.

The system also keeps prices stable, the group notes.

It also says free trade in agriculture would cease to exist if Canada ended supply management. In the U.S. alone, research by the Congressional Budget Office has calculated that country will provide tens of billions in federal support for farm programs over the coming decade.

But the Montreal Economic Institute's paper says the industry could use a jolt.

It says dairy production levels compare to those of the 1960s; that the industry is slow to innovate, and failing to tap the growing international demand for dairy; and that it's being propped up by inflated prices that cost Canadian households \$258 a year.

There are two major obstacles to this idea ever happening.

One is that all major Canadian political parties support supply management, which has vocal backing in rural areas, especially in Ontario and Quebec. There was noisy opposition when Canada agreed to merely open the system up a bit in trade deals with Europe and Asia.

The second obstacle: there's no guarantee U.S. negotiators would go for a logs-for-cheese deal.

The idea has old roots.

A senior negotiator from the original 1987 Canada-U.S. free-trade agreement said he would have loved to trade away supply management.

In his memoir on the negotiations, Gordon Ritchie said the dairy system hurts Canadians at grocery stores, protects inefficient producers, and keeps the industry from becoming an international player — like Canada's vineyards did, after liquor trade liberalized.

So what happened?

The Americans never made a big offer, Ritchie says, and Canada held on to its cheese chit.

"We were, regrettably, successful in protecting those (dairy and poultry) restrictions," he wrote in his memoir, "Wrestling With The Elephant."

"I for one would welcome the removal of these restrictions," he wrote. "As a negotiator, however, I did not feel the Americans had paid us enough to be entitled to their removal."

Why are these the best jobs in Canada?

These jobs were also the top job in 2015. They have a median wage of \$104,000 with wage growth of 19 per cent and five-year employee growth of 44 per cent. They also have an estimated demand of more than one job per seeker by 2021.

But what is it like to actually be a forestry or mining manager and what makes these jobs so great beyond their prospects and median salary?

Seeing the Forest for the Trees

At its core, being a forestry manager is about seeing the bigger picture of a logging operation by balancing various competing interests and trying to satisfy all parties. Mauro Calabrese has worked in forestry for 20 years and as the planning superintendent for West Fraser Timber in Williams Lake, B.C., he does this juggling act every day.

"My job is to find areas we're going to harvest for timber in consideration of other values such as wildlife, water quality, scenic or visual quality and first nations use. Your trying to keep first nations' interests in mind, while trying to extract timber and minimize the impact to these other values."

At the same time, he has to fulfill the quota for the amount of wood West Fraser Timber needs per year and stay within the government environmental objectives. Plus, while some forestry managers operate within an area model — where what they say goes — Calabrese operates within a volume model, where he's not the only one making decisions, but shares oversight with other forestry managers.

"There's a lot of balancing that goes on with weighing of values and coming up with compromises that are going work for the company, the people you're dealing with and the people in general," says Calabrese.

Though he works to balance many competing interests at once, that's half of what makes the job exciting for him.

"It can be challenging trying to balance all of these interests, but it can also be very rewarding when those things work out and you do have people who are satisfied with what you're doing. You also get to spend time outdoors – usually less as your career goes on – but that's still a very rewarding part of the job."

Mine Control

A mining manager also has to balance a lot of different parts as the person who oversees the safety, operations and every employee on the mining site. Operations includes every aspect of getting the raw ore out of the ground and processing it into its final form, such as extracting the 175 million-year-old rock from the earth and overseeing the plant where the ore is crushed, washed and re-crushed to extract the valuables inside. There are also responsibilities the average person would probably not account for.

"The ordering and coordination of the delivery of supplies, food and other day-to-day needs at our fly-in/fly-out remote camp mine site, which is supported by daily employee charter flights and a 400km seasonal ice road we build and use for six weeks during the winter – we're basically running a small town that has 550 people throughout the year," says James Kirby, general manager of De Beers Victor Diamond Mine in Northern Ontario for the last four years.

Plus, similar to Calabrese's account of his role as a forestry manager, Kirby must also account for community interests by visiting community leaders regularly, discussing the mine's business outlook, and discussing ways that community members themselves can participate in the success of the mine.

"The variety of duties are diverse and the ability to achieve success from what is very specialist and focused work offers great fulfillment," says Kirby.

So You Want This Job

Though these jobs can take you away from your families for long periods of time, depending on the site you're working on. It pays very well and provides excellent benefits by all accounts. Plus, if you have a strong sense of adventure, are highly organized and have a number of leadership qualities, these management positions may be for you.

For forestry, Calabrese enrolled in UBC's Forestry Program, but also finds he has that extra edge with a biology degree as well. "I really find that biology gives me that extra knowledge when I'm evaluating and weighing all of our various environmental considerations. It gives me that extra sensitivity that another forestry manager may not have," he says.

When it comes to mining manager, Kirby recommends a degree in Mining Engineering and a strong technical background, along with extensive experience in all different parts of the mine to really get to know the process start to finish. He also believes there's a particular quality that gives his particular brand of mining management something special.

"I must admit there is something extra special about seeing beautiful natural rough diamonds as they emerge at the of our mining process. There's nothing else like it – especially when you know each and every one will be part of someone's personal story in the coming weeks and months somewhere in Canada or around the world."

Growing an interest in urban forestry for Toronto women

LEAF, a Toronto non-profit dedicated to the city's trees, runs an annual summer mentorship program aimed at exposing young women to the field of urban forestry.

Kat Berton can deal with the heavy lifting involved in her dream job of urban forestry. What she can't deal with is the misogyny.

The 25-year-old says she's heard "some nasty opinions" while out in the field and sometimes feels underestimated when it comes to the physical labour of tree planting.

"Women and people who present in more feminine ways tend to get a lot of backlash," she said, pointing to an incident training a group of volunteers at a corporate-sponsored planting day.

"There was just a general tone of: you're a little girl ... We know better," she said.

It's attitudes like that she was happy to escape when she took part in the [Young Urban Forest Leader program](#) run by [LEAF](#), a non-profit dedicated to nurturing Toronto's trees.

The summer-long mentorship program primes young women for a career in the field, whether in academia, as arborists, or working with municipalities or agencies.

According to Statistics Canada, 82 per cent of forestry and logging workers were men in 2016, with 39,600 men compared to just over 8,500 women. That's three per cent fewer men than in 2012, when 43,200 worked in forestry compared with 7,400 women.

As part of LEAF's five-month program, participants are paired with park-based community groups to map and inventory trees and start adopt-a-tree programs.

Danijela Puric-Mladenovic, an assistant professor at the University of Toronto's [forestry school](#), started her 30-year career in her native Serbia. When she arrived in Canada in 1994 she found forestry was a fledgling field, mostly dominated by men, especially in leadership roles.

Canadians thought of forestry as primarily "timber and chopping the trees," she said. Now she still spends a lot of her time explaining forestry, but says more and more women, and young people in general, are taking interest.

LEAF executive director Janet McKay agrees the push to get more women involved comes as the industry is branching out in general. The program would be equally suited to men, and she'd like to expand it in the future.

But for now, she said, "there's something about the momentum behind women getting interested in this sector that we want to help keep this moving, and help this expand."

Canadian-raised wasps wage war on invasive beetle

A group of Canadian researchers say that for the first time they have successfully raised wasps that could help save some forests from an invasive beetle.

Natural Resources Canada is rearing their own wasp warriors to fight the battle against the spread of the emerald ash borer beetle population.

The ash borer beetle is native to China and was detected for the first time in North America in 2001.

"It's an extremely destructive, invasive beetle. It basically kills all ash trees that it encounters as it continues to spread across North America," Krista Ryall, a forest ecological entomologist with Natural Resources Canada, told CBC Manitoba's *Radio Noon* on Tuesday.

"They estimate 99 or more per cent of ash trees are killed within the first few years of this beetle arriving in an area."

- [Forester alarmed after Emerald ash borer beetle found in Thunder Bay](#)
- [In the last year, Hamilton lost nearly 10,000 trees to the emerald ash borer](#)

The beetle has been found throughout Ontario and Quebec and has been confirmed in 21 states in the U.S., according to Natural Resources Canada.

With the devastating spread of the beetle, the United States Forest Service went to China to study what else in the beetles' original environment was killing the species, Ryall said.

That's where *Tetrastichus planipennis*, a parasitic wasp, was found. The wasp species only likes to lay its eggs in the larvae of the emerald ash borer beetles.

"It doesn't even want to attack related insect species," Ryall said.

"There is no human health risk whatsoever. They are not your typical wasp that you think of, they don't bite or sting. They are very tiny and you would never even know that they were there otherwise."

The wasps were brought into the U.S. a few years ago, and research shows they are winning the battle against the beetle.

The U.S. Forest Service began providing the wasp to their Canadian counterparts in 2013. But now a wasp army is being raised through a bio-control program at a laboratory in Sault Ste. Marie, Ont., to fight the destruction of millions of ash trees by the beetle.

"It's a little bit too early to say what kind of impact they may have but what we are hoping is that it becomes part of a long-term program to help reduce the beetle populations to lower levels," Ryall said.

Ryall added there is rigorous testing before any wasps are released to try to ensure they won't negatively impact the environment.

Emerald ash borer beetles are expected to continue spreading in Canada through flight and by the movement of things like firewood and other wood products, according to Natural Resources Canada.

Ryall said it's not known what that will mean for Manitoba's ash trees, but they are looking into a different wasp in case the war moves west.

"There are different species of wasps that we are also studying and one of them is originally from the Russian far east and a very cold tolerant species," she said.

"So we are trying to get permission to import that to Canada ... that may be an option for somewhere that's a bit colder, like Manitoba."

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Frog excretes mucus that fights flu:



A frog in south India excretes a mucus from its skin that could one day help people fight off certain types of flu viruses, researchers say. The colourful, tennis ball-sized frog is known as *Hydrophylax bahuvistara*.

Different frogs make different “peptides” which are a natural innate immune mediator that all living organisms maintain. Humans make a host of defence peptides ourselves.

This particular frog happens to make a peptide that is effective against the H1 influenza type. The researchers named the antiviral peptide “urumin” , which is not toxic to mammals, but appears to only disrupt the integrity of the flu virus, as seen through electron microscopy.

When researchers squeezed some urumin into the nose of lab mice, the peptides protected them against what would have otherwise been a lethal dose of H1 flu virus, the kind responsible for the 2009 swine flu pandemic.

More research is needed to determine if urumin could become a treatment against the flu in humans, and to see if other frog - derived peptides could protect against viruses like dengue and zika.

My Woodlot

Gerald and Elsie Gustavson

My Grandfather settled near Eckville in 1912. Our family has farmers, hunters, fishermen, and trappers since, so this land and its wildlife have supported five generations. And we want to give back. Now the farm is grain only, with no cows for more than 50 years. Because of that the underbrush, the birds and wild animals have been able to flourish. An estimated 30,000 trees have been planted here through the years on any piece of land that was not convenient for our big farm machinery to work.

Woodlots may be many things. Ours is bits and pieces on 5 different quarters. The main lot is about 50 acres on the home quarter, made up of sharp hills, sloughs and peat bogs, aspen, willows, native shrubs and flowers. We planted on the higher ground and put in 16 varieties such as pine, spruce, larch, mountain ash and fruiting shrubs. What was planted is still quite small but growing fast now. In a few years it will be fantastic:

For 25 years I represented the Trappers Association on Forestry Public Advisory Committees for Weyerhaeuser and West Frazer, where I learned some about forestry. To start our tree project 200 pine trees were obtained through Weyerhaeuser, but all but 5 were lost when someone set fire to the plot. Next we purchased 3,000 spruce and they are now 30 feet tall. Then we were fortunate to get 10,000 pine from the Woodlot Association of Alberta. They were planted by professional tree planters, but unfortunately at a very hot time. So we lost about one third.

Pheasants Forever got interested, and for three years in a row they brought out the kids and parents of the Junior Forest Wardens in Red Deer - an enthusiastic and hard working group. They planted approximately 15,000 trees and shrubs with special attention to fruiting species loved by birds.

In the spring we love to see that the rather rare and beautiful "yellow lady's slipper orchid" and other special wild flowers are spreading around the sloughs edge. We have to keep the slough grass mowed later in the summer, otherwise the native willows will choke them out.

We are doing our part in "carbon capture"! As long as the land remains in the family, this special woodlot will be valued and protected. But we do have a

concern, how can it be preserved if the farm had to be sold? If any of you have advise on this we would be glad to hear.

We are both 77 years old now and don't get around well. But we enjoy when we can get into our own private forest to watch our trees, birds, flowers and animals. I remember our granddaughter, about 8 years old, wanting to help Grandpa plant some trees. We dug about a dozen small spruce seedlings from our shelter belt. we dug holes and planted them, took about 2 hours of work. She sat back and looked at our very small plot and groaned, "Boy, Grandpa, it sure takes a lot of work to make a forest." True words Alyssa.



First spruce planting - Good survival rate



Future forest of larch - spruce - shrubs, provided by Pheasants Forever

Photo's of - Gerald and Elsie Gustavson's - Woodlot



Old beaver dam, surrounded by native forest.



By a slough the "Yellow Lady Slippers" - they are spreading