

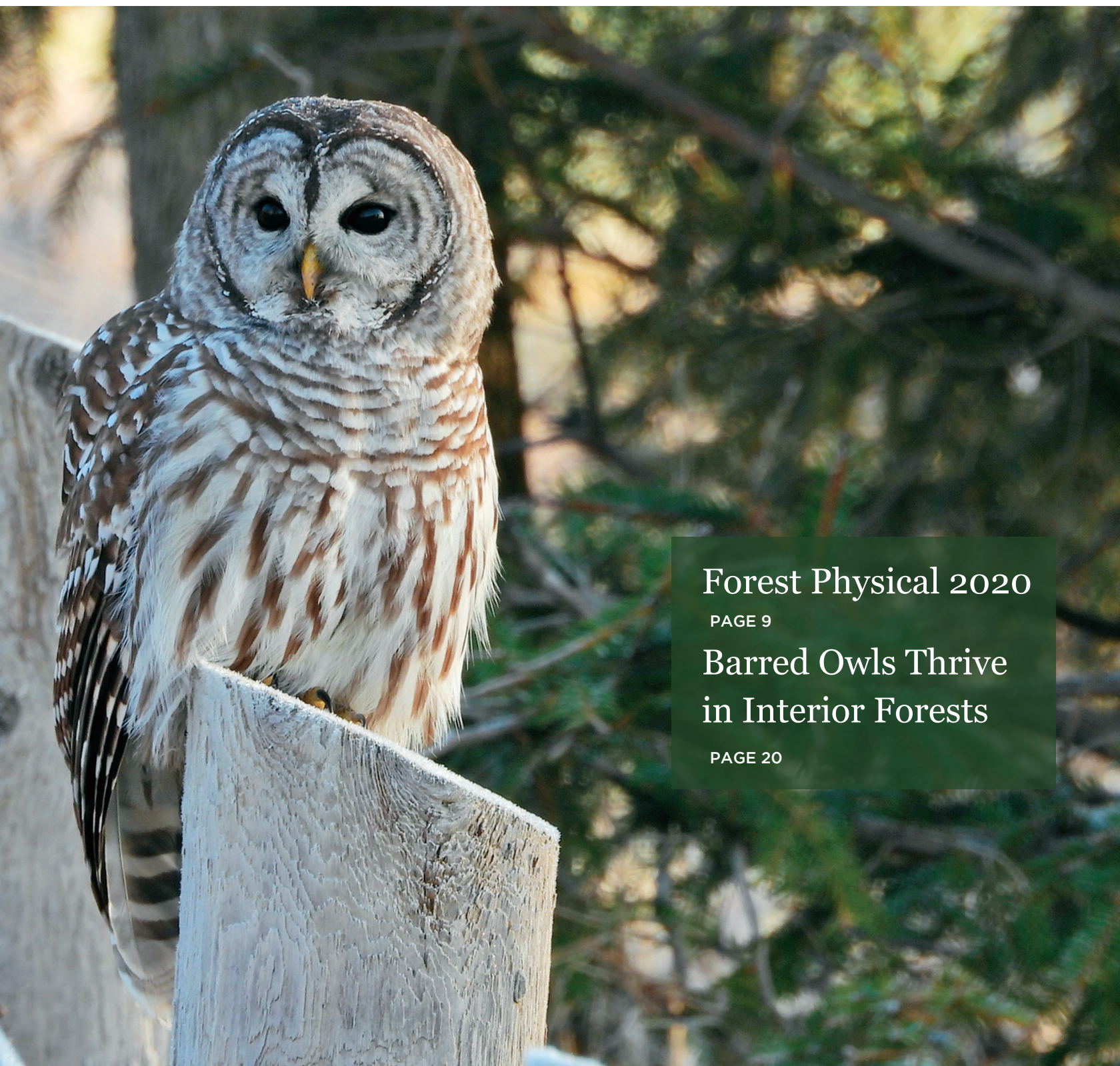
# OUR FOREST



VOL. 60 NO. 2

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SPRING 2020



Forest Physical 2020

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Barred Owls Thrive  
in Interior Forests

PAGE 20



# A Message from our CEO, Rob Keen

We face a global challenge with the spread of the new coronavirus, COVID-19. The COVID-19 threat changes daily, almost hourly, and what today is policy might be different tomorrow. Some things may have changed by the time you read this message.

I want to acknowledge and deeply thank the frontline workers: those in hospitals and public health units, and those that service our retail stores and home delivery services. Most of these individuals have families and no doubt would prefer to be home safe with them. Regardless, they are putting themselves in harm's way to help to flatline the spread of this virus. We all need to work together. Let's do our part by just staying home.

The health and safety of the Forests Ontario staff, our partners, our members, and our community at large is my top priority. At Forests Ontario, we have followed the advice of Canada's health care professionals, to do what we can to reduce the spread of the virus. Our staff are now working from home, and holding all meetings virtually. We are also working with all of our partners and nurseries towards safely delivering our tree planting programs this spring, albeit likely with a longer season given operational constraints to ensure physical distancing. Our spring community events have been postponed until the fall. We will deliver our education programs, such as Ontario Envirothon, through virtual means. Despite these challenging times, our staff continue to look for new and innovative ways to perform, to make sure that Forests Ontario fulfills its mandate of nurturing healthy forests for our future.

I am extremely proud of my fellow Canadians for the way that we have all pulled together during this trying time. This gives me hope that we can continue to work collectively in the fight against other global threats: climate change and biodiversity loss. Some have said that this pandemic is a symptom of our planet's need for healing. Last year and early this year, the world recognized the importance of addressing climate change. World leaders have advocated that nature-based climate solutions, such as increasing natural landscapes, forests, grasslands and

wetlands, are key mitigation measures. As climate change progresses, it will continue to impact our health, our safety and the resilience of our natural environments. We must find ways to enhance the health of planet Earth through strengthening our natural systems. It speaks to the axiom: healthy ecosystems sustain healthy people and a healthy economy. It is not the other way around.

Prior to the COVID-19 pandemic, the Forests Ontario team had a busy and successful winter. In this issue of Our Forest, we share stories about our newest planting initiatives, including an expanded partnership with the Highway of Heroes Campaign. You'll read about our annual conference, held this year in Alliston, Ontario, and attended by more than 400 guests. And while we may be self-isolating inside, that doesn't mean we can't start thinking about spring tree care – and we offer plenty of resources in this issue to help you manage your trees and forests.

Even with our staff all working remotely, FO continues to be fully functional. We are available to communicate with you through email, texting, video conferencing, etc. We encourage all to stay connected and to virtually socialize.

Thank you for your continued support to ensure a healthy future for us all. Please feel free to reach out to us if you have any questions about our programs or events.

We will get through this. Adaptation, vigilance and a positive attitude will be essential.

Stay safe, stay healthy,



**Rob Keen, RPF**  
CEO of Forests Ontario  
and Forest Recovery Canada  
March 27, 2020



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Cover photo of a Barred Owl by Peter Waycik, Frontenac County, Ont., Dec. 1, 2018



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## Plant trees with the 50 Million Tree Program

Support is available!



[www.forestsontario.ca](http://www.forestsontario.ca)



[info@forestsontario.ca](mailto:info@forestsontario.ca)



1.877.646.1193

### Envirothon Alumna Tess Ward Would Rather Be Outside

BY AUGUSTA LIPSCOMBE

The Ontario Envirothon fuels a passion for the environment and sparks friendships. Tess Ward was an Envirothon competitor in 2012 and 2013, representing East Elgin Secondary School in Aylmer. After completing a biology degree at Trent University, Tess is now working on a postgraduate certificate in Ecosystem Restoration from Niagara College. She has worked as a Stewardship Youth Ranger Team Lead for four summers with the Province of Ontario.

**Q** Where did your interest in working in the environmental sector come from?

**A** I've always liked nature and being outdoors. I grew up camping, hiking and canoeing with my family. Participating in Envirothon cemented for me that I wanted to work in the environmental sector. I've never wanted a 9 to 5 job. I'd rather be outside!

**Q** Can you tell me about your Envirothon experience?

**A** In 2012, I formed a team with my friends from our high school's Environmental Club; we did really well and ended up going to the Provincial Envirothon. The topic was 'nonpoint source pollution,' and we got fifth place overall in the presentation competition. I learned things that they don't cover in high school. We got to meet local farmers and talk to them about their sustainability practices.



**Q** What kind of skills did Envirothon help you to develop?

**A** Envirothon gives you a really good base knowledge of the four foundational topics: soils, aquatics, wildlife, and forests. You don't really learn about soils that in-depth in any other classes. The hands-on experience, like taking soil samples and measuring trees, set me up for success in university.

**Q** What are your career goals?

**A** I'm passionate about ecological restoration and would like to find work at an environmental consulting firm, a conservation authority, or with the government.

### Snakes Charm Competitors at Tree Bee Competition

BY DIANA CORONA-CASTRO



For more than 60 years, grade school students in Ontario have faced-off in Forests Ontario's tree identification competition, Tree Bee.

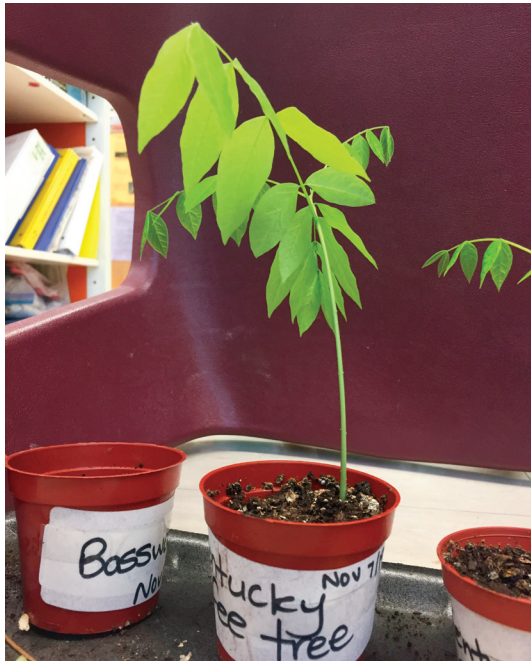
In November, the Regional Municipality of York and Forests Ontario partnered to deliver the fifth York Region Tree Bee. Eager students gathered at the Richmond Hill Centre for Performing Arts. Volunteers and staff distributed the tests. The room fell silent with only a few hush-hush whispers as students completed the multiple-choice portion of the test.

Now came the moment the students had been nervously anticipating – the tree identification challenge. Students were shown 20 photographs of trees and given just 30 seconds to name each one using identifying characteristics.

For mid-show entertainment, ambassadors from Speaking of Wildlife arrived. Students cheered as the wildlife ambassadors introduced a raccoon, snake, hawk, turtle, opossum and skunk. Some might say the furry and cold-blooded friends were the highlight of the night, but then came time to announce the winners. Teams, parents and volunteers crowded together and fell silent as the MC announced: "The first place winner for the 2019 Tree Bee goes to Elder Mills Public School!" The audience applauded in unison as the team got up for prizes and publicity shots. Many cheerful parents and teachers congratulated the students for their hard work as the event wrapped up.



## Grade-School Students Study Trees Up Close



Grade schoolers planted a Kentucky Coffeetree after Forests Ontario outing.

A surprise early snowfall blanketed North York in white. Luckily, all but one of Elisa Bisgould-Menendian's grade 4 and 5 students came prepared with winter boots. A procession of excited children exited Ancaster Public School and walked across the street to Ancaster Park. Natalie Heyblom, a Master of Forest Conservation candidate at the University of Toronto, and Peter Kuitenbrouwer, a consultant with Forests Ontario, joined them. Winter tree identification, once all leaves have fallen, can be tough. Luckily, some leaves still clung to the trees. The students stopped at a Tulip Tree and every student took a leaf.

Each student looked closely at their leaf. The Tulip tree leaves had turned yellow or orange with brown spots. One child asked about the spots. Another asked about the veins. How often, in this busy world full of video games and smart phones, do children stop to just stare carefully at little objects in the natural world? That morning, we learned that when children are invited to do so, they become very quiet, still, fascinated, and grateful for the opportunity.

On the walk back, students stopped by a tree, fascinated by big pods hanging from its branches. We helped them identify the Kentucky Coffeetree, and a student picked up a pod from the snow. Back in their classroom, each child got out a scrap book and sketched their tree leaves.

A few weeks later the teacher sent a photo to Forests Ontario. "Look!!" she wrote. "Our Kentucky Coffee tree seeds are growing!! The students (and teachers) are so excited!!"

## Knowledge and Generosity from our Youth

Not long ago, a seven-year-old boy visited our office with his mother. In his hand, he clutched a small mason jar. The jar was crammed full of bills, loonies and toonies.

"This is my birthday money," the boy said. "I want to donate it to Forests Ontario. I have \$80 here. I want to give you this money so that you can plant trees."

Even at his age, our young donor knows that climate change threatens our way of life, but he is also hopeful. He knows that Forests Ontario can help our planet by planting trees to remove carbon dioxide from the air. Nature is a tool that we can use to repair our broken climate.

Forests Ontario knows how to plant trees. In 11 years, our team has planted more than 33 million trees across Canada. We have big plans to reach our target of 50 million trees in Ontario, and to step up planting across Canada through our national division, Forest Recovery Canada.

Just like our seven-year-old donor, you can help. You can tell others about how forests heal the earth. You can spread the word about Forests Ontario. You can send us a donation. With your support, we'll continue to plant even more trees, cooling our planet and strengthening our ecosystem.

This young donor gave \$80 in birthday money to Forests Ontario. Here, Chantal Cory, former Director of Marketing and Business Development, accepts the donation.



### HOW TO DONATE

**Online:** [forestsontario.ca](https://forestsontario.ca)

**By cheque:** 144 Front Street West, Suite 700  
Toronto, Ont. M5J 2L7

**Stop by with a jar full of cash** (no questions asked)!



# New Ways to Plant Trees

50 Million Tree Program expands eligibility criteria and establishes new partnerships to increase forest cover across Ontario

BY PETER KUITENBROUWER & NOAH PAGE

Hundreds of landowners across Ontario have signed up this year to plant trees with Forests Ontario, supported by the Government of Canada.

New rules make Forests Ontario's 50 Million Tree Program (50 MTP) easier to access. To participate in the past, landowners needed to commit to planting on 2.5 acres of land. Now anyone with room to plant at least 500 trees may apply. Though planting sites vary, 500 trees can occupy less than one acre.

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

The 50 MTP is a large-scale tree planting program for property owners with the goal of increasing forest cover in Ontario. In 2019, the Government of Canada committed up to \$15 million over four years to support the initiative. Funding also comes from corporate sponsors and donors.

To plant even more trees, Forests Ontario has teamed up with Grand Trees, founded by grandparents who want to

do something about the climate crisis, and with Highway of Heroes (see p. 7). Grand Trees will put more than 62,000 trees in the ground in greater Toronto in 2020; HOH will plant 773,183 trees.

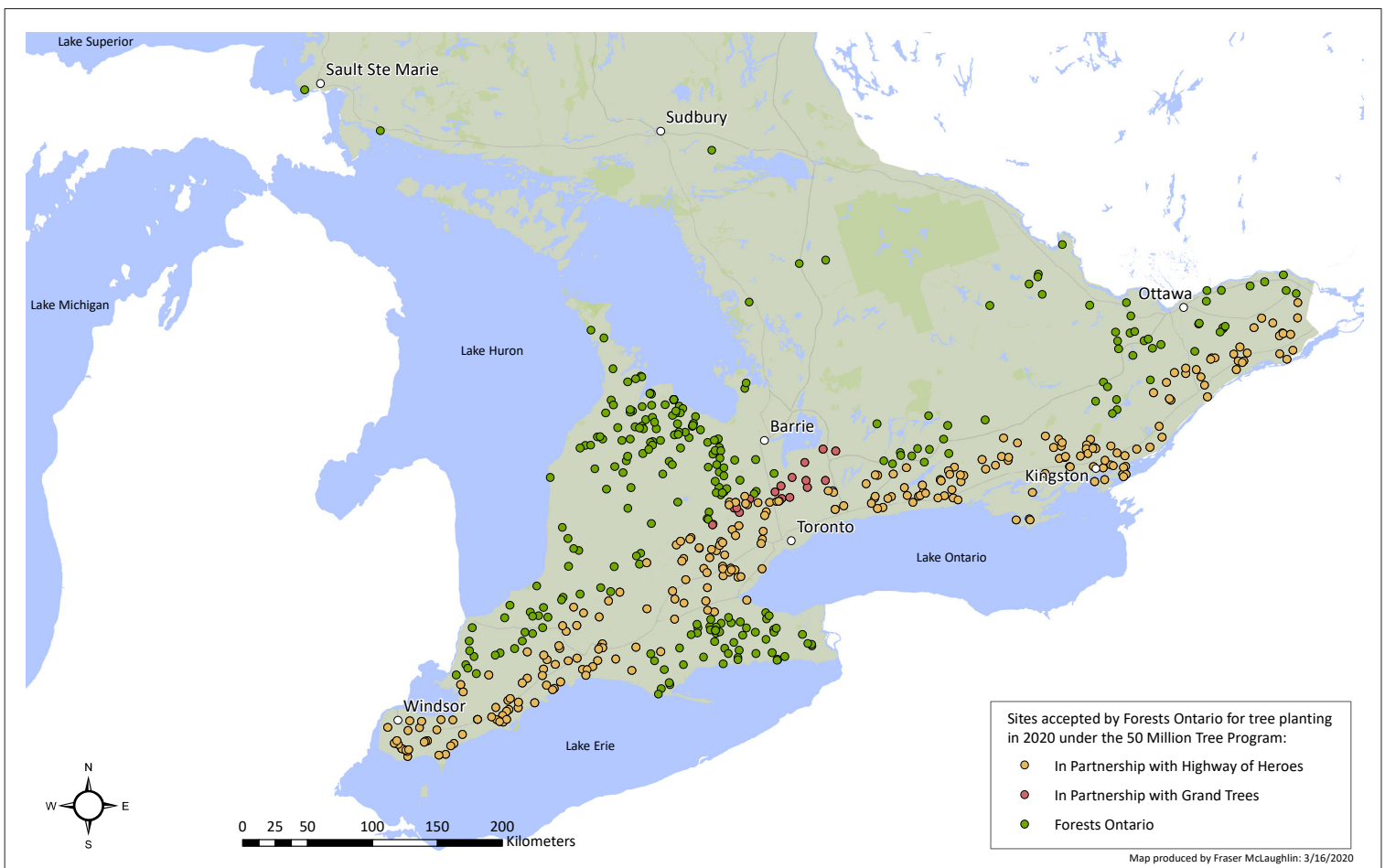
Increasing forest cover helps to promote healthy, natural landscapes; trees help reduce the risk of severe flooding by soaking up water with their roots, leaves, branches and trunks.

This program now does more than create new forests. Farmers and other landowners can now access the 50 MTP for restoration sites, and plant trees for riparian buffers along creeks, treed fencerows, shelterbelts and windbreaks. Trees also have uses for odour control and to shade pasture.

Since 2008 the 50 MTP has helped over 5,000 landowners to plant trees. This adds up to 16,500 hectares of new forest that sequester more than 22,000 tonnes of carbon every year.

"The world recognizes that we need more forests on the earth to help with climate change," said Keen. "This program makes a big difference."

To plant trees on your land, visit [www.forestsontario.ca](http://www.forestsontario.ca).





# Growth of a Green Tribute

Highway of Heroes expands partnership with Forests Ontario along full length of Highway 401

BY MJ KETTLEBOROUGH

A green tribute to Canada's veterans and fallen comrades is set to expand along North America's busiest highway this spring, thanks to a partnership between the Highway of Heroes Tree Campaign (HOH) and Forests Ontario.

Property owners within 30 kilometres of Highway 401, from Windsor to Cornwall, were able to apply for the program if they had room for a minimum of 500 trees. They will receive site preparation, tree seedlings, planting, and survival assessments at significantly reduced costs.

The partnership has expanded HOH's efforts to include private land, and has enlisted planting partners including Conservation Authorities, stewardship groups, municipalities and forestry consultants that provide tree planting within the given corridor. Forests Ontario anticipates more than 770,000 trees will be planted via this initiative in the coming months.

"What better way to commemorate those who served our country than by planting a living green tribute," said Rob Keen, Forests Ontario's CEO. "Our network of nursery and forestry professionals are planting exclusively native seedlings, truly commemorating our Canadian soldiers and ensuring this green monument thrives for generations to come."

Mark Cullen, HOH's Chair and Co-Founder, noted, "We're very proud of this private landowner partnership program expansion. Through this campaign, you can have a piece of the world's largest living tribute while also doing your part to protect our environment, beautify our communities and honour Canadian heroes. The trees planted with Forests Ontario will also help HOH reach its goal of planting 2 million seedlings by 2022."

Forests Ontario has facilitated the planting of more than 33 million trees across Canada since 2008. The Highway of Heroes Tree Campaign has seen over 150,000 trees planted between Trenton and Toronto, mainly on public land, thanks to more than 3,000 individual donors, corporate sponsors and assistance from Veterans Affairs Canada.

Along with enhancing the world's largest living tribute, the new forests will provide wind and snow barriers, stabilize soil and maintain groundwater. Tree planting provides corridors and habitat for wildlife. Planting forests to sequester carbon is one of the most effective methods to cool landscapes and mitigate the effects of climate change.

For information on this program, contact Nicole Baldwin, Restoration Programs Coordinator at Forests Ontario, at 416.646.1193, ext. 227 or [nbaldwin@forestsontario.ca](mailto:nbaldwin@forestsontario.ca).



Officer Cadet Donald Hancock, with the Hastings and Prince Edward Regiment, plants tree during a Highway of Heroes Remembrance Day Event on Nov. 2, 2019 near the Haldimand Memorial Arena in Grafton, Ont. Photo by Bill Hornbostel.



# How to Plant Two Billion Trees

Forests Ontario can help Trudeau reach his goal, Keen tells Ottawa summit

BY PETER KUITENBROUWER

Prime Minister Justin Trudeau has committed to planting 2 billion trees across Canada over the next decade to help mitigate the effects of climate change. But how do we create healthy new forests?

Rob Keen, CEO at Forests Ontario, says a successful afforestation strategy requires expertise, teamwork, long-term planning and long-term guaranteed sustainable funding.

“In 2004, we worked with the federal government on a program called Forests 2020,” Keen told participants at the February Nature-Based Climate Solutions Summit at the National Arts Centre in Ottawa. “In 2005, we planted over 2 million trees. In 2006, the program was over, and a lot of our partners, nurseries and so on, said ‘Please don’t do that again.’ We exhausted the stock supplies in the nurseries and we exhausted our landowner contacts and stretched our own capacity. Our partners said, ‘We need some long-term commitments to allow us to invest in our own staff and infrastructure. We need some long-term sustainable funding support.’” Forests 2020 did however prove the viability of the newly developed private land tree planting model developed by Forests Ontario and its partners.

Forests Ontario then planted trees for 12 years, from 2007 to 2019, with Government of Ontario funding supporting the 50 Million Tree Program (50 MTP). This long-term funding commitment nurtured the development of a southern Ontario private land tree planting capacity. When Ontario ended its support in 2019, the Government of Canada stepped up with \$15 million to help support the 50 MTP over the next four years. Keen notes that, “this funding saved the southern Ontario tree planting capacity that had been developed over the last decade.” The federal government’s contribution also ensured a home for the 7.5 million seedlings growing in four nurseries across southern Ontario for the 50MTP.

“I was absolutely convinced that if we stopped the program, the infrastructure would fall apart,” Keen said. “It was also about the extensive partnerships created and keeping the professionals, the ‘boots on the ground’ in place. They know the land. They know the landowners. They ensure we grow the right native-seed sourced stock for the right place.”

The summit looked at ways non-profits can work with First Nations, governments, foundations and the corporate sector to implement federal initiatives and further the goals of the United Nations Nature-based Solutions to Climate Coalition. Organizers included the Canadian Parks and Wilderness Society, the David Suzuki Foundation and Nature Conservancy Canada.

“There’s an incredible number of facets to the infrastructure required to have successful tree-planting,” Keen said. “I think that’s something that people aren’t aware of. We are talking about a four or five-year planning period that we need to have in place to ensure we have healthy forests for the future, from large rural landscapes right down to the urban forests.”

Keen said Forest Recovery Canada, Forests Ontario’s national tree planting division, “has taken the Ontario delivery model right across Canada.

“We are ideally positioned to assist with the 2 billion tree program,” Keen said. “We want to help ensure all the systems are in place, so that when people and/or organizations want to plant trees, the infrastructure is in place to ensure success. We have a great opportunity to realize multiple wins for climate, biodiversity and people. We just have to make sure we do it right.”



Forests Ontario’s CEO, Rob Keen, presents at the Nature Based Climate Solutions Summit in Ottawa, February 2020. Photo by Emma Buchanan.





## ***FOREST PHYSICAL 2020***

# **Beech Bark Disease: Haliburton Forest & Wild Life Reserve Takes Action**

BY PETER KUITENBROUWER

Beech Bark Disease is a fungus that enters the tree's sapwood after a tiny crawling insect pierces holes in the tree's bark. Photo courtesy of the Ontario Invasive Species Awareness Program.

Beech Bark Disease is nothing new to North America, Ernie Demuth told a packed room at Forests Ontario's Annual Conference. Demuth, a forester at the Haliburton Forest & Wild Life Reserve, said the disease first struck in Nova Scotia when the beech scale insect was introduced from Europe, in about 1890. This tiny crawling insect bores through the thin bark of Beech trees, riddling the bark with tiny holes. Then a native fungus easily penetrates through the bark and into the sapwood. The fungus feeds on the vascular 'cambium' tissues of the tree, producing a fruiting body of red blisters visible on the trunk, rapidly killing the tree by strangling off vascular flow. There is no control and experts expect most Beech in Ontario to die – except for perhaps the one per cent of Beech that may be resistant to the disease.

"We have a lot of Beech," said Demuth, in reference to the 100,000-acre, mixed hardwood Haliburton Forest. "It is no wonder we are concerned." The disease killed half of the species in the Parry Sound district (immediately to the west of Haliburton Forest) over three years. "Unfortunately, we are the last generation to get to know big, beautiful Beech trees." Bears will also miss the tree, as many biologists refer to beechnuts as a 'superfood' for bears.

Knowing the species is doomed, Haliburton Forest cuts down all affected Beech. "As a landowner, if you want firewood," said Demuth, "don't think twice – take the Beech down if it shows sign of scale or the red fruiting bodies." Doing so leaves other species the room to grow and provide the structure needed to encourage the next generation of trees.

But this does not entirely solve the problem. The tree returns, since Beech stems primarily reproduce through root suckering. These root suckers are essentially a branch of the mother tree and can grow prolifically in a shaded understory. Now the species poses a forest problem and a threat to biodiversity: young Beech grow in dense thickets. Other species of trees cannot grow under a Beech thicket. Further root sprouting occurs before the young Beech eventually succumb and die. "The forest, if left alone, cannot convert into another species," Demuth said.

This past summer, the Haliburton Forest Research Institute (a department of Haliburton Forest) conducted a study in partnership with the University of Toronto. The study applied a specific and selective herbicide through 'cut-stump' and 'stem-injection' applications to control future Beech thickets after sustainable forest operations. Staff applied the herbicide to only the subject tree. Researchers sought to prove that herbicides could control the problem of Beech thicket regeneration, while not affecting other desirable species like Sugar Maple or Yellow Birch. The results so far have been very promising.

"If we learned anything about Beech Bark Disease, it is that invasive species are becoming a reality in how we sustainably manage our forests," Demuth said. "Hemlock Woolly Adelgid and Oak Wilt are now at Ontario's doorstep and have done extensive damage to Hemlock and Oak in the northern United States. In order to create healthy forests for the future, I believe we need to be more proactive with how we approach invasives."



# FOREST PHYSICAL 2020

## Identify and Repel Invasive Species in Your Forest

BY PETER KUITENBROUWER & FRASER SMITH

Spring has sprung. After a long winter – perhaps sitting by a crackling fire fed with logs gathered in your forest – you are ready to venture back out into the woods to see what’s coming up. Maybe with your dog by your side, and with your feet protected by boots against the spring mud, you douse yourself with mosquito repellent and set out to look around.

But what are you looking for? Is everything well with your forest? You might not be a forester, but you don’t need expert training to give your forest a checkup.

### INVASIVE PLANTS

Ontario is under assault from aggressive invaders. These plants, native to other parts of the world, came to Canada for often benign reasons. For example, gardeners or arborists encouraged them as hardy or attractive options for flowerbeds or to enhance tree cover. But *green* does not always equal *good*. While they’re harmless to their native landscapes, foreign plants brought to Canada often lack the predators, pathogens, and parasites here that regulate their population in their native range. Invaders can quickly dominate your woodlot. Regeneration of desirable native plants and key tree species (such as oak and maple) is inhibited or stops, as these native seedlings cannot compete and get the nutrients or the light they require.

#### Garlic Mustard

Settlers introduced Garlic Mustard to Canada in the late 1800s as a foodstuff and to treat gangrene and ulcers. Today, some people love the taste of garlic mustard pesto. However, any woodlot manager will agree that no amount of Garlic Mustard harvested for pesto or green salad can put a dent in a well-established infestation. Garlic Mustard’s attack often starts along trails or wood edges, where seeds are deposited by boots or in the treads of vehicle tires.



Garlic Mustard. Photo by Rueren Martin.



Glossy Buckhorn. Photo by Rueren Martin.

The first-year growth form of the plant appears as a small ‘rosette’ of leaves and persists, still green, under the snow through winter. This allows it a head-start in spring, when it out-competes native spring ephemerals like trilliums and trout lilies. The early year rosette stage allows it to develop a robust root system. In following years, the adult plant can reach 1 metre in height with flowers and over 100,000 seeds per square metre in dense infestations. Garlic Mustard also spreads a chemical into the soil through its roots, inhibiting the growth of native plant and tree species, and stifling beneficial soil fungi.

#### What to Do

Adult Garlic Mustard is one of the only plants in the woodlands that can grow to a metre in May, with white flowers. In a Garlic Mustard patch, you can often smell a pungent cross between garlic and mustard, especially if you crush young leaves. Be certain to immediately clean your boots, clothes, pets and bicycle tires to avoid starting new ‘satellite’ populations as you travel. Seeds can stay healthy and viable for up to 30 years.

If you see a small new patch of Garlic Mustard, pull it all out right away. Wait until June to cut the plant at ground level (with a weed whacker, for example). This inhibits the plant from resprouting after expending the energy for flower production. You can pull Garlic Mustard from sandy soil more easily than from clay, where it may snap off and readily send out new flower stalks. The plant is easiest to pull in wet conditions. Pull after it has flowered but before it has produced seeds. Do not put Garlic Mustard on your compost pile, as it can continue to grow. Put the plant in black garbage bags or yard waste bags and leave in direct sunlight for a week, to cook and kill any seeds. Dispose of these bags in regular landfill or waste disposal, never through green waste – which is often composted centrally and redistributed to other landowners. Large and well-established populations can be treated by a professional licensed in Ontario for the application of herbicides, and who is familiar with clean equipment protocols for invasive plants.





## Buckthorn

Landscapers brought Buckthorn from Europe to Canada to grow hedges and hardy ornamentals. Today, the plant is overtaking forests across Canada as far west as Saskatchewan. Buckthorn can grow to seven metres tall and 25 cm in diameter. By mid to late summer the female stems produce plump black berries, about 5 millimetres in diameter, that often persist into fall and winter.

Buckthorn can thrive almost anywhere. Buckthorn can seize control of large sections of your woodlot. It is often easiest to identify in autumn: Buckthorn leaves persist long after native species have dropped theirs.

## What to Do

If you see young plants early, remove them. If Buckthorn has taken root, target the female (seed-producers) first, as they will spread the Buckthorn. Get friends and family to help, or team up with your neighbour.

You can pull out young Buckthorn, taking care to get all the roots. For larger stems or well-established infestations, enlist the services of a professional licensed in Ontario to apply herbicides. These applications are generally performed to a cut stump or the young 'basal bark' of the target stems, and only applied to the invasive plant without affecting neighbouring, desirable species. If you don't respond quickly to a Buckthorn infestation, you risk the Buckthorn multiplying like the Hydra serpent of Greek myth: cut off one head and multiple heads sprout from the stump.

## Dog-Strangling Vine (DSV)

DSV is native to the Ukraine and Russia, where it is relatively uncommon. Brought to North America over a century ago, DSV is expanding its range at an alarming rate. It is now often cited as the most aggressive invasive vascular plant in Ontario. As the light, air-borne seeds of DSV, which resemble the related milkweed plant, spread with prevailing winds, areas of southern Ontario eastward of the original Toronto population are quickly becoming infested. Grassland birds avoid nesting among DSV. DSV prefers woodlots with younger trees, more available light, and greater winds, which allow seeds to carry deeper into wooded areas. The vine wraps around saplings or shrubs, forming a dense population of pure DSV as it rises to over a metre in height. DSV is a self-pollinator, and the seeds can lie in wait in the forest floor for years for the right conditions to then suddenly take over the site.

## What to Do

Mowing can help to limit the expansion of DSV, but will generally fail to get rid of it. You can pull up DSV by its roots, but make sure you take the roots out of the area completely, or they will resprout. Grazing of cattle, horses and goats is ineffective and can cause damage to nearby vegetation. You can sometimes control small populations of DSV through a combination of digging, mulching, and/or 'solarization' with a dark-coloured tarp to catch sunlight

and cook out the root structure. Be careful: this treatment often opens up bare ground in which new seeds, blown from upwind, find an easy site to re-establish.

Most often, once DSV is well-established, the services of a professional with a herbicide license will be required. Treatment may have to occur multiple times in a given year, and often for several years afterwards to exhaust the seed bank. A professional can provide options that are 'selective,' meaning that they target only certain types of plants, such as those with broad leaves, while leaving desirable vegetation like grasses and sedges intact.

Recently, the University of Toronto led research and field trials on a biocontrol agent for Ontario. A carefully tested and selected moth, native to the original range of DSV, the *Hypena*, feeds on the invasive plant without feeding on or harming other native species. The caterpillar stage of the *Hypena* moth is showing promise in research trials, however these trials are carefully controlled and take many years to conduct. In the meantime, landowners can assist by controlling populations of DSV, and by reporting any sightings of feeding damage from the *Hypena* moth.

## DETECTION CAN BE FUN

For all three of these woodland invaders, early detection and rapid response are the most effective and important steps. Going for a walk through forested areas, starting in spring and at different periods of the year, is a pleasant and important aspect of forest stewardship.

You may run into other invasive plants, including Japanese Knotweed, Amur, Morrow and Tartarian Honeysuckle, Himalayan Balsam, Oriental Bittersweet, Periwinkle and Winged Euonymus. Invasive pests and pathogens include Emerald Ash Borer, Hemlock Woolly Adelgid, Hemlock Looper, Gypsy Moth, Butternut Canker, Black Knot and *Nectria* fungi. If you suspect any of these invaders have arrived in your forest, visit the Invading Species Awareness Program ( [www.invadingspecies.com](http://www.invadingspecies.com) ) and the Ontario Invasive Plant Council ( [www.ontarioinvasiveplants.ca](http://www.ontarioinvasiveplants.ca) ) websites for access to mapping resources, factsheets, and best management practices guidance.

Dog-Strangling Vine. Photo by Rueven Martin.







Chris McGee, a tree seed collector, searches for cones in a Red Pine plantation in Grey County, Ontario. Photo by Peter Kuitenbrouwer.



# FOREST PHYSICAL 2020

## Caring for Your Red Pine Plantation

Careful management to speed the evolution of a mixed forest

BY PETER KUITENBROUWER & FRASER SMITH

Over the past century, foresters have commonly prescribed and planted Red Pine in Ontario. Why? In the late 19th century, settlers cleared southern Ontario for agriculture in areas prone to erosion from shallow, unstable and sandy soils. In many spots, the sandy soil could not support crops for long. Desert conditions spread rapidly in many areas of the province. Foresters said: plant trees to stabilize the soils and thin them regularly to produce wood products while accelerating the shift back to a healthy, mixed forest condition. But what tree species grows in sand? Red Pine. In a massive provincial program known as Agreement Forests, the Government of Ontario established the LaRose Forest near Ottawa, Ganaraska Forest near Port Hope, Simcoe County Forest west of Lake Simcoe, and the Durham and York Regional Forests near Toronto, among other forests. In the 1960s, Ontario passed the Woodlands Improvement Act and shifted the emphasis to planting on private land.

### Nurse Crop

Many landowners see pine as a stage in the restoration of a diverse and healthy mixed wood forest, and pine fills this role admirably. In Ontario, Red Pine plantations are used not as the intended future forest, but as a means to achieve a healthy, mature, mixed forest relatively quickly. They are a 'nurse crop' that addresses poor soil conditions and readily responds to the required thinning treatments that allow just the right amount of light through to facilitate the rapid development of the future, mixed stand of trees. Ideally, planters will establish pine shortly after the snow has melted. Generally, planting Red Pine at about 2.5 metres between rows works best; within rows, plant the trees at the distance of outstretched arms (2.1 metres).

In the first five years, tending is essential, so keep an eye on the trees. Mow or spray competing shrubs, grass and weeds. You can also mulch the trees, and replant where tree saplings die.

### Thinning

Foresters generally prescribe thinning Red Pine stands at between 30 years and 45 years of age, and every 10-18 years thereafter. This begins the transition to a mixed forest by allowing just the right amount of light in for other species to establish and thrive. Foresters will often recommend that you remove about 1/3 of the trees in the first thinning. Typically, this means removing every fourth row and often removing a small portion of trees in remaining rows which are failing to thrive. Subsequent thinning treatments will often remove about 1/3 of the standing volume by focusing on the 'worst first' so that the thriving individuals nurse along the establishing forest of the understory.

### Organics

As the pines grow, they shed needles. This builds a layer of organics. Some pines die and fall; rotting logs become rich compost. Wind disperses a variety of tree seed into the young forest. Maple and other deciduous trees take root in the new organic layer and thrive in spaces created by thinning the pine. Squirrels bury acorns or the cones of other conifers. Oaks, spruce, fir and other species begin to take over. Deer, moose, fox, owls, birds of all sorts, bats, mice and voles move in. A new, healthy and mixed forest is establishing quickly through the initial planting of the Red Pine and subsequent thinning treatments.

### Telephone poles

Many sawmills today buy 35-year old Red Pine logs. Mature Red Pine trees, at 60 to 90 years of age, if regularly thinned, may produce stems of superior quality which can be upgraded to become telephone poles, significantly more valuable than sawlogs sold to mills for lumber. Once loggers remove these pines, other tree species continue to fill in the understory as they receive just the right light levels they need to succeed. One can, of course, choose to leave some Red Pine; the species can sometimes grow to age 200 and beyond, and it provides wildlife habitat.

### Succession

Plantations play a critical role in afforestation efforts, such as the 50 Million Tree Program, and the national '2 Billion Tree Program' currently being developed. These stands provide the means to create healthy, mature, mixed forests within a human lifetime by working with forester's knowledge of natural succession patterns. Leaving fallow ground to its own devices to regenerate would take many centuries to reach the same state.

### Rich mixed forest

Today, many of Ontario's community forests provide living examples of how this system works. More than 90 years ago, foresters planted Red Pine and White Pine trees on degraded sandy sites. Today, on a stroll through lovely forest trails, you must search to find a pine tree. The casual observer would have no idea that this mature forest started as a plantation within their grandparents' lifetime. Over the decades, foresters and loggers have carefully and selectively harvested the pines. A richly mixed forest now grows, filled with majestic maple and oak trees, plus Yellow Birch, hemlock, cedar and a suite of other trees and shrubs. The pines did their job; the forest is as good as new.



# Help Wanted

## Forest sector grapples with worker shortage

BY AUGUSTA LIPSCOMBE

Allan Foley grew up shadowing his forester father through the woods of Parry Sound. His heroes played on the Canadian television series *The Forest Rangers*. Foley and all his friends knew what they wanted to be. “In the ‘60s and ‘70s, Unit Forester with the Ministry of Natural Resources was *the job*,” he said.

In 1983, after three years studying at the University of Toronto and one year as an exchange student at the University of British Columbia, Foley graduated in a forestry class of 53. Across Ontario, about 100 students graduated from the registered professional forester (RPF) program; however, the supply far surpassed the demand. “Two-thirds of my classmates couldn’t get into forestry,” said Foley. He stayed the course.

In the ‘90s, responsibility for forest planning, renewal, and management shifted from the provincial government to industry, with the Ministry of Natural Resources taking on an enforcement role. Foley’s dream government job disappeared. Today, he is President and COO of First

Resource Management Group Inc. (FRMG), whose 32 staff members provide forest management services on over 9 million hectares of Ontario’s public forests.

In 2020, the forest sector faces the opposite problem than in the 1980s: a shortage of trained forest professionals. A healthy forest contains a good distribution of old, middle aged and young trees. Today, Ontario has many aging foresters and some young ones, but few in between, Foley said. FRMG struggles to fill its openings; Foley said it feels like they are constantly recruiting.

One problem is the expectations of young graduates. “They want to live comfortably. They’re empowered by technology, and they have different social values,” observed Foley. “They don’t want to stay overnight in camps, they want live music and air conditioning. But the thing is, we are there and nobody knows it! Young people don’t know how modern we really are in forestry.”

And then there’s that pesky negative perception of the forestry sector.

# MISSING:

## Registered Professional Foresters



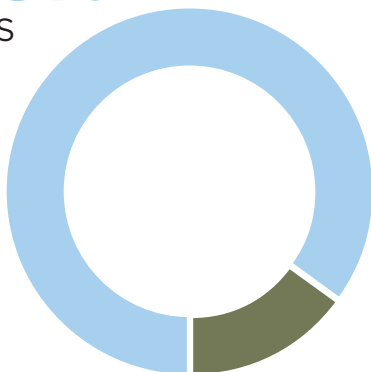
- **Last seen: Northern Ontario**
- **Physical description: Looks just like you!**
- **Often found: Outdoors**
- **REWARD if found: State-of-the-art, well-paying jobs!**
- **Opportunities for career advancement!**



Are you willing to relocate to a smaller community in rural and/or Northern Ontario for a job in forestry?

85%

YES



15%

NO



Students at Forests Ontario's Annual Conference. Photo by CNW.

“foresters are climate change *warriors*”

In response to the growing misconception of foresters as axe-wielding environment destroyers, schools are distancing themselves from the sector by dropping program offerings and changing degree names, effectively ‘greening’ themselves. As a result, training becomes generalized and schools no longer produce experienced foresters with the practical skills and understanding so desperately needed by industry.

One industry quick-fix is to fast track new employees. “What was once a 20-year career journey has become five years,” says Foley. But career maturity is not something which can be fast-tracked. Nonetheless, Foley is hopeful. “I’m beginning to see the pendulum swing back,” he said. For Foley, answers lie in engaging northern Ontario’s First Nations communities and the increasing number of new Canadians relocating to the region.

Forestry needs to work on its messaging too, and emphasize that forestry in Canada is a technologically advanced, environmentally sustainable, and ‘cool’ profession, he adds. “We aren’t wood choppers. We are a modern, state-of-the-art industry,” said Foley. Given that forests fix carbon and cool the planet, he adds, “foresters are climate change warriors.”

### Meet the Next Generation of Foresters

Reacting to the growing labour shortage in Ontario’s forest sector, Forests Ontario held its second annual Student Session on February 13, 2020. The session, scheduled a day before Forest Ontario’s Annual Conference in Alliston, Ont., aimed to connect students with prospective employers, provide insight and direction on how to pursue employment opportunities, and improve employer understanding of what is important to the emerging workforce.

Student participants answered a survey to gauge their views of the forest sector. One-third of respondents lacked any previous sector-related employment experience; still, a clear majority were willing to obtain further education/ accreditation and take short-term and contract opportunities to kickstart their careers. A whopping 85 per cent said they were willing to relocate to rural and/or northern Ontario (even if only temporarily).

Among respondents, the most influential attributes when applying for a job were work-centric, with the ability to advance within the organization being the clear determinant.

The survey results paint a positive picture for the future of forestry: an eager and ambitious workforce, like young and healthy trees, are reaching skyward.



# Mass Timber Meets the Knowledge Economy

The Arbour maps out the future of sustainable construction practices

BY NOAH PAGE



Carol Phillips on stage at Forests Ontario's 2020 annual conference. Photo by CNW.

The Arbour, a 10-storey wood building on George Brown College's Waterfront campus, promises advancement in sustainable architecture. Image courtesy of Moriyma & Teshima Architects.

The Arbour, a tall wood building on the George Brown College Waterfront campus, will break new ground for mass timber construction in Ontario, Carol Phillips, a partner at Moriyma & Teshima Architects, told participants at Forests Ontario's Annual Conference.

The 10-storey structure on the shore of Lake Ontario, a collaborative project between Phillips' firm and Acton Ostry Architects, will feature lecture halls, classrooms and community spaces, she said. The building will also house the Tall Wood Research Institute, which is dedicated to studying how wood materials can be used in high-rise and mid-rise construction projects.

"Moriyma & Teshima has always emphasized regeneration, generosity and generative solutions that reflect the needs of the community where their buildings are constructed," said Phillips, the conference's keynote speaker. "The firm believes in the importance of using architecture to connect people to nature, and The Arbour is a perfect example of this ethos put into practice."

Because cement production is responsible for around eight per cent of carbon dioxide emissions, finding alternatives to concrete, such as wood, for large-scale architectural projects is an important goal in the fight against climate change, Phillips said.

Sustainability is at the forefront of the building's design. Solar chimneys grant the building natural light and ventilation which, in turn, reduces the building's energy

consumption for lighting, heating and cooling. Architects have also designed The Arbour to maximize natural light from windows.

As buildings of The Arbour's size and use are generally constructed from noncombustible materials, designing a mass timber structure that meets the necessary fire safety protocols has challenges. Phillips is confident that she and her colleagues can provide the proof that mass timber is even safer than similar noncombustible materials.

The building's structure will be oversized for *char*, meaning that the building's structural components (columns and floor assemblies) and outer layer could burn for two hours before the structural dimensions are compromised. The college building will also include more sprinklers than the average building.

"In the event of a fire, the people inside the building will have time to evacuate," Phillips said. "The fire department will be able to arrive and react before the building incurs major structural damage."

The Arbour offers many new possibilities for the future of sustainable architecture. To encourage more mass timber construction projects, the two architecture firms plan to release some of their teams' new research about mass timber buildings through Natural Resources Canada, once the project is complete.

# WE THE FOREST

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### Student Session Sponsors







André Vashist, of Pillar Nonprofit Network, opens the first morning session, *Collaboration for Conservation*, at Forests Ontario's Annual Conference, Feb. 14, 2020. Photo by CNW.



Fleming College forestry students, Lisa Browning (left) and Allie Hjort Toms, volunteer at the Forests Ontario conference. Photo by CNW.



Forests Ontario's Education Coordinator, Madeleine Bray (right), presents the *White Pine Award* to Natalie Heyblom, Master of Forest Conservation student at University of Toronto. Photo by CNW.



Inspiring Change panel speakers (left to right) — Hannah Freedberg, student, Katrina Van Osch-Saxon, educator, and Hap Wilson, author —share a moment before the session begins. Photo by CNW.

# ‘Thank You’ to our White Pine Silent Auction Donors!

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- Wellington Brewery



Don Huff, president of ECO Strategy and winner of the Latornell 2019 *Lifetime Achievement Award*, provides advice on maximizing media attention in his *Media Relations 101* presentation. Photo by CNW.





## The Monogamous Homebody of the Deep Woods

Barred Owls thrive in interior forest—and mate for life

BY MADELEINE BRAY

In Ontario, highly segmented forested landscapes are quite common. Roads, highways, farms, fields, and urban developments all play a part in divvying up forests into bite-sized pieces that, while still productive and able to support wildlife, are lacking a specialised habitat – the forest interior. Forest interior forms when the canopy closes-in and the well-shaded forest floor opens-up, leaving a stable and secluded environment that is protected from the outside world. The perimeter of the forest interior begins about 100 meters from the forest's edge – anything before that is sunnier, warmer and drier than what lies beyond.

Among the countless animals that claim the forest as home, many birds rely on the stable environment provided by the forest interior. This includes species at risk such as the Hooded Warbler and Wood Thrush, birds that are so well adapted to forest interiors that they cannot live anywhere else. It also includes the most charismatic owl found in Ontario's forests – the Barred Owl.

Found in dense, mature woodlands composed of deciduous and coniferous trees, the Barred Owl is the most commonly observed owl in our forests. They are more active during the day than some other species of owl and are highly vocal, producing a wide

Forested landscapes benefit more than just us humans – they also benefit animals that are uniquely suited to living among the trees. Christian Grenier photographed this Barred Owl in Le Domaine de Maizerets, an urban park in Quebec City.

range of different calls - the most distinctive and easily recognizable of which sounds a bit like the phrase *who cooks for you?*

The presence of Barred Owls can indicate an older, undisturbed forest, since they nest in 'secondary' tree cavities (that other animals had occupied) or abandoned hawk nests. Though they are predators, and ultimately stealthy creatures, they are also curious, territorial and willing to investigate any odd noise that they hear in their territory. And it is truly their territory – Barred Owls will stay roughly in the same 85 to 365 hectares, with the same mates, for their entire lives.

You can occasionally spot these owls prowling in urbanized areas with significant canopy cover and ample prey (primarily squirrels and backyard birds), but their adaptation to human spaces does not mean that they are best-suited to a habitat that includes pesticides, bright lights, and cars. These birds are forest birds and, by planting large tracts of uninterrupted forest, we are slowly but surely building them new homes.

*Madeleine Bray, a trained natural heritage interpreter, is Forests Ontario's Education Outreach Coordinator.*



# Kenneth Armson's Career as the Forestry Sector's Conscience

Into the Woods: My Life in Forestry. Burnstown Publishing House, 181 pages

BOOK REVIEW BY DR. JOHN BACHER, PHD

Much like his earlier book, 'Ontario's Forests,' Ken Armson's 'Into the Woods,' should be compulsory reading for all those who love and care for Ontario's forests. His level of understanding is needed to protect our forest treasures and the water, soil, wildlife and communities they support.

Armson's role as the conscience of the forestry profession was shaped by his meeting at Oxford University with the visionary British forester, Richard St. Barbe Baker. Armson read many of Baker's books "which championed the reforestation of the Sahara Desert." Baker's passion helped inspire the ecological restoration of the Oak Ridges Moraine around Newmarket, where Armson lived before his Oxford studies.

To put 'Into the Woods' in its proper historical perspective, Armson was able to realize what one of his great role models, University of Toronto Professor Dr. James White, was unable to achieve in his lifetime. Armson brought the vast extent of the commercial forest of northern Ontario under well-regulated, transparent and publicly accountable forest management.

Armson reveals how very little was added to the profession's knowledge of Ontario's forest soils following White's retirement in 1946. As an undergraduate student

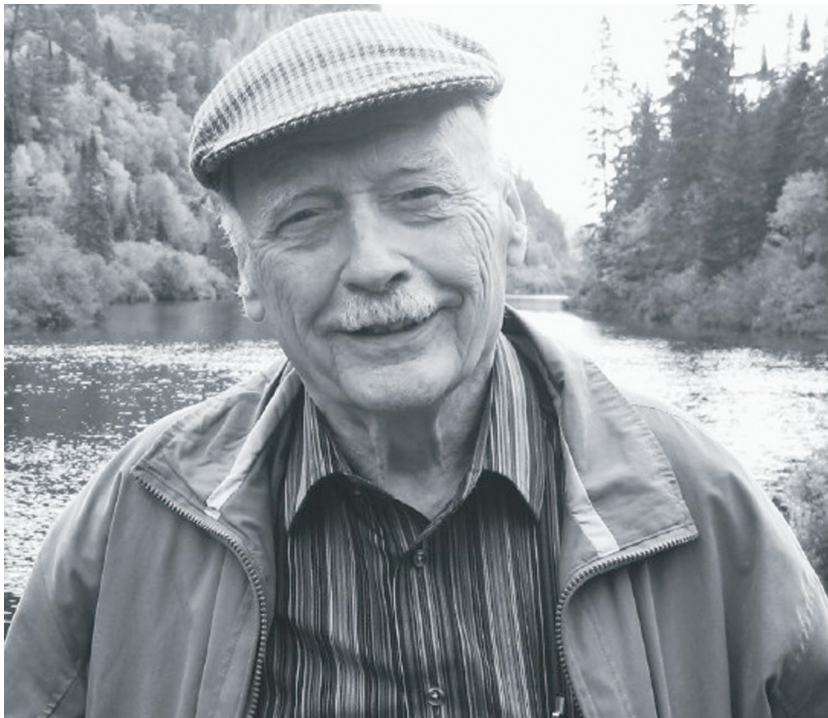
in forestry at the University of Toronto, in 1947, Armson was stunned that the best source of information on forest soils were old "lecture notes prepared by Dr. J. H. White."

Through enormous skill and patience, Armson's work brought better management to what 1849 legislation had termed 'timber berths' (Crown lands leased to corporations). Slowly, this archaic system was replaced by Forest Management Agreements (FMAs), which go through public review and periodic audits.

In 'Into the Woods', Armson describes some of the conflicts he weathered when he sought to have FMAs incorporate the protection of critical wildlife indicator species into their plans. This emerged at a 1984 barbecue at the home of the Minister of Natural Resources, Alan Pope, with foresters involved in the development of the Spanish River FMA.

At the barbecue, Pope expressed concern that he "couldn't see" where moose habitat areas were "marked" on the Spanish River FMA management map. The foresters replied that this was because "the district wildlife biologist hadn't been able to visit the forest to identify them because of lack of resources." When Pope pressed for action, the reply was that the district manager "didn't want to walk around" the MNR office in Gogama "with a map shoved up his arse."

*(continued on page 22)*



Ken Armson in Algoma region of Ontario, Sept. 2014. Photo by Beverley Kent.



A young Ken Armson leads a field trip for the Ontario Forest Association in a woodlot of what was then called the Metropolitan Toronto and Region Conservation Authority. Photo by Jim Coats.



Armson reveals that government opponents, such as the Canadian Environmental Law Association, were poorly prepared for the long Environmental Assessment hearing of Ontario's Crown lands. Had they done their homework, they might have had a greater impact in exposing the mistakes of government, he writes. "As a professional forester, I was aware of the areas where the MNR was vulnerable yet ignored by the opposing parties."

Armson's life has been shaped by a determination to use the best science to guide public policy. In 1984, he spearheaded an effort to provide a published forest inventory of Ontario. None had been published since 1962. Armson had the task of delivering the inventory to Pope for the minister's signature for publication. Pope refused to sign.

According to Armson, Pope said, "If it's public, the opposition will have that information." Armson was "disgusted" by the minister's attitude. Two weeks later, he convinced Pope to release the inventory. Another forest inventory was published in 1996. Still, 24 years later, we lack a revised inventory to document the "simple quantification of Ontario's forest estate."

Armson has revealing views about the future directions that Ontario forest policy should take. They are quite different from the Ford government's

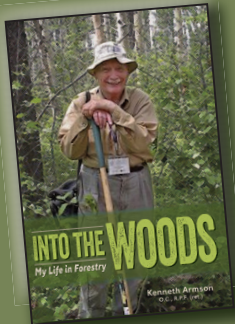
current proposals to expand the annual allowable cut and push northward the limits of the commercial forest. Armson sees the need, with the decline of the paper industry, for "greater productivity and higher quality" forests to produce competitive products for global markets.

Armson's greatest struggles concerned his, ultimately failed, efforts to expand forest cover on private lands (Editor's Note: Currently, Armson is a supporter of Forests Ontario's 50 Million Tree Program - the largest afforestation program in Canada). In these efforts, he was assisted by the late Clarence Coons, who had a strong interest in forest history. Coons promoted tours through one of Edmund Zavitz' earliest reforestation projects, the Rockland plantation. These efforts died due to lack of "political will." Armson concludes that, sadly, development of policies to plant trees in southern Ontario are triggered only by natural disasters, such as desertification and Hurricane Hazel.

Those who seek to protect the ecologically restored landscapes of southern Ontario will find inspiration in Armson's words. Readers of books such as 'Into the Woods' and 'Ontario's Forests' will be well-equipped for action.

Edwards Plantation in Rockland, ON,  
1975. Trees age 61 years.





## INTO THE WOODS

*My Life in Forestry*

An insider's look at the foundations of modern forestry in Canada.

At the age of 17, Ken Armson began his career in forestry, felling trees in a British conifer plantation.

Thus began the remarkable rise of a man who played a seminal role in the development of sustainable forest management in Canada.

He was instrumental in the development of key practices and policies on both public and private forest lands.

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**Into the Woods** (194 pp.),  
Kenneth A. Armson, O.C., R.P.F. (ret.)  
published by Burnstown Publishing House  
and retails for \$25. (\*taxes+shipping additional)  
**www.burnstownpublishing.com • Tel: 1-613-509-1090**

# STUMPED: OUR FOREST'S PUZZLE PAGE

Envirothon: Test Your Smarts Against High School Students

## 1. Organic matter is an important soil constituent because it:

- is a natural source of nitrogen and phosphorus
- acts as a storehouse for essential plant nutrients
- improves the soil's physical condition
- reduces erosion losses
- all of the above

## 2. Match each species to its shade tolerance:

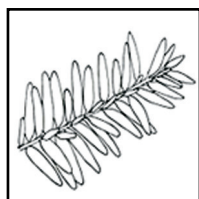
Very Tolerant

Tolerant

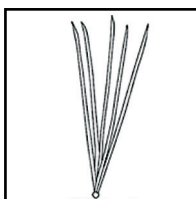
Intermediate

Intolerant

Very Intolerant



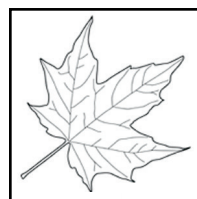
Eastern Hemlock



Eastern White Pine



Largetooth Aspen



Sugar Maple



Red Pine

## 3. Name three introduced or exotic species found in Ontario and explain how they impact natural systems.

- 
- 
- 

4. **True or False:** Cold water is denser than warm water

5. **True or False:** Oxygen gets into water from fish breathing

## WORD JUMBLE

Unscramble these four jumbles, one letter for each square, to form four forest-related words:

R R N E T O I I

R O L E B A

F L W D I E L I

O R D A O H D W

Now arrange the circled letters to form the surprise answer to this riddle: *Which owl of the Strigiformes order is the most musical?*







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