

OUR FOREST



VOL. 61 NO. 2

forestsontario.ca

SPRING 2021

Strong Survivors

Study shows success of
50 Million Tree Program

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Spring Ephemerals

PAGE 14



A Message from our CEO, Rob Keen

No different than our fellow Ontarians, Forests Ontario rose to the challenges of 2020 head on. The momentum of our successes has propelled us into a new year. Though only a handful of months into 2021, Forests Ontario has a long list of exciting updates and initiatives to share.

First, Forests Ontario's 2021 Annual Conference was a great success! It was groundbreaking as both our first virtual and multi-day conference and highest attended conference yet, with over 500 participants and more than 30 speakers. Presentations by world leaders in the forest sector, freestyle audience-driven raps, and online competitions ensured that we maintained, if not elevated, the level of attendee engagement that we've all enjoyed in the past. Bookended by a keynote presentation by world leader in tree planting, Dirk Brinkman, and a 'rap up' by his son, Canadian hip hop science communicator Baba Brinkman, the conference brimmed with educational and inspirational messages about how we can move forward together, towards Growing our Future. We are already planning 2022's event!

So far this year, we have witnessed marked progress by the federal government towards its commitment to plant two billion trees across Canada this decade. By contributing \$3.16 billion to the two billion tree initiative, the federal government is creating a unique opportunity which allows everyone to get involved in greening the province and country. From corporations, to rural landowners, to individual donors, to city dwellers – we can all play a meaningful role in growing our forests and our future.

Working with a government that is so clearly committed to positive environmental change is incredibly heartening. Forests Ontario looks forward to continuing our discussions with Natural Resources Canada and Environment and Climate Change Canada on how we can keep driving towards our shared goal of increasing forest cover to mitigate climate change and biodiversity loss.

This year also marks the launch of the United Nations Decade on Ecosystem Restoration. Forests Ontario has been selected as one of only four North American Restoration Implementers, and the only Canadian partner to date. As an implementation partner, Forests Ontario will help to promote the Decade, strengthen restoration capacities, and lead restoration efforts. And what better way to kick off our role than with spring tree planting?

This season, our planting partners are working hard to meet a record demand for tree planting, all the while keeping health and safety in mind by adhering to strict COVID-19 protocols. Our 'boots on the ground' partners, responsible for planting and monitoring tree survival, are an integral part of the infrastructure we have built over nearly two decades to ensure successful afforestation. Other key components include our seed and cone collectors and our tree nurseries. These steps ensure that, in the phrase coined by our President, Steve Hounsell, "the right tree is planted in the right place for the right reason." And the right time? Right now!

Of course, these processes rely upon the dedication of our partners and landowners as well as the generosity of our sponsors and members. Thank you all so much.

For as long as humans have walked the earth, our forests have supported our existence. Now it is time for us to support theirs. We invite you to join us on our mission to increase forest cover. Whether you're able to offer financial support, provide planting sites, or simply lend your voice to that of our forests, we'd be thrilled to have you on board. So would our forests.

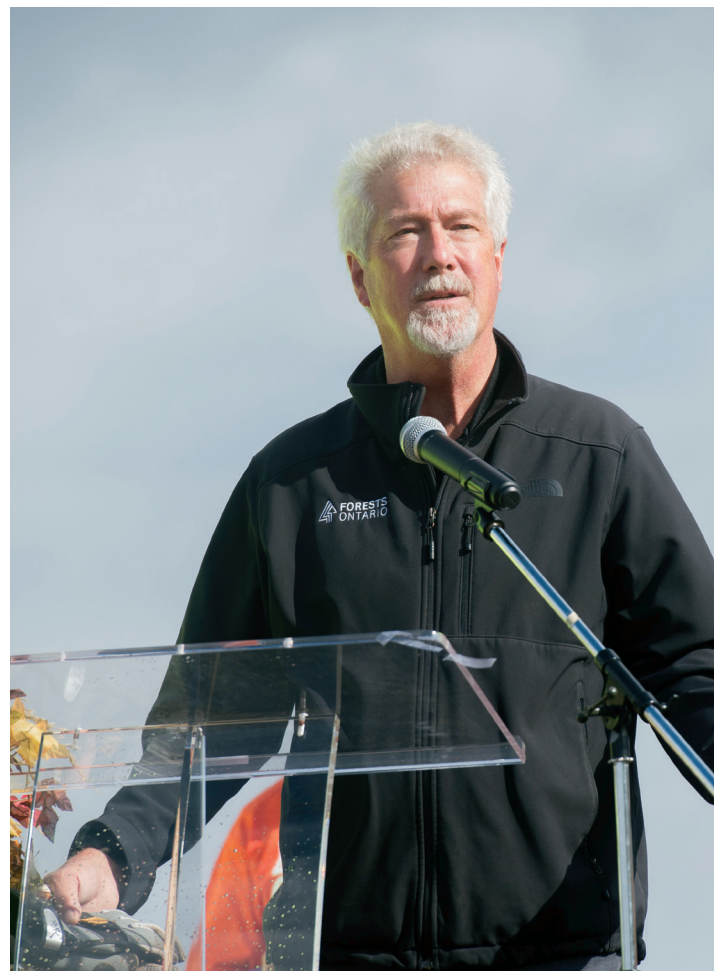
Thank you for your continued support as we work together towards a greener tomorrow.

All the best,



Rob Keen, RPF

CEO of Forests Ontario and Forest Recovery Canada



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OUR FOREST

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On the cover: Photographer Chelsea Marcantonio captured this image of Dutchman's Breeches on April 13, 2020 at the Niagara Glen Nature Reserve. More photos by Marcantonio appear on p. 14. Follow Chelsea Marcantonio on Instagram: @ms.chels



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Rap Artist Informs and Entertains at Conference

“Leave no patch of land unseeded/If it’s barren then seed it”

BY COLLEEN MAHAFFIE

Forests Ontario’s 2021 Annual Conference featured some unique entertainment. Baba Brinkman (rap artist, science communicator, and son of keynote speaker Dirk Brinkman) joined virtually from New York to perform free style rap songs based on conference themes. His improvised ‘rap-up’ of day one included information from our presenters: *“Leave no chance for reconciliation unheeded, no patch of land unseeded, if it’s barren then seed it, don’t let anyone say we’re anything less than Rob Keeners!”* On day three, Brinkman shared the song he created for the Growing Our Future conference, entitled “Green Is Good”: *“Make green, make a range of good products, reforestation and sustainable harvest, plus climate change is upon us, and every tree regrowing is retaining some carbon.”* Brinkman folded staff comments into his spoken poetry, leaving us with lines such as: *“True Ruth Hall, there is strength in diversity”* and *“This is straight up hip hop, Augusta Lipscombe, we gotta get those green jobs, yeah!”*



Baba Brinkman performs via Zoom for Forests Ontario’s Annual Conference, February 3, 2021.

Forests Ontario Partners with United Nations on Decade of Restoration

Ambitious effort to protect, conserve, and revitalize ecosystems

BY MADELEINE BRAY



To build a healthier planet where forests soar and wildlife thrive, the United Nations is partnering with organizations across the globe - including Forests Ontario.

The United Nations Decade on Ecosystem Restoration, running from 2021-2030, is dedicated to the protection, conservation, and revitalization of ecosystems worldwide. As a Restoration Implementer, Forests Ontario will leverage our existing education, tree planting, and ecological restoration programs to promote the Decade, decrease biodiversity loss, and contribute to broader global restoration efforts.

Forests Ontario is proud to take part in the United Nations Decade on Ecosystem Restoration. We hope you’ll follow along!



Envirothon Adapts to Pandemic

Nature-based solutions to climate change meet virtual solutions to distance learning

BY MADELEINE BRAY



With the exceptional times we find ourselves in, education programs have had to adapt to accommodate learning from a distance. No exception, the 2021 Ontario Envirothon program is raring to go with a new program format focused on virtual skill-building challenges and a competitive team presentation. The theme this year is nature-based solutions to climate change, and program components include webinars, a current issue guide, and more.

Check out the Ontario Envirothon Facebook page for the latest updates and go to Forests Ontario's Envirothon webpage for more information on how student teams can get involved in our exciting new virtual program.

Regional envirothon competitor gets a closer look at wildlife in 2016. Photo by Allison Hands.

GrandTrees raises \$1,000,000 and plants 200,000 trees

BY NICOLE BALDWIN

What better legacy to leave future generations than a thriving forest, contributing to both environmental and human health? This is the mission of GrandTrees Climate Solutions.

In 2020, GrandTrees raised \$1 million and planted 200,000 native trees throughout the GTA, including trees planted in partnership with Forests Ontario. Last spring, GrandTrees contributed to the planting of over 59,000 trees through the 50 Million Tree Program, as well as nearly 41,500 trees deferred to spring 2021 due to COVID-19.

GrandTrees has also supported community planting initiatives, including the recent Sunnybrook Health Sciences Centre Arboretum planting. During this event, the hospital planted a Vimy Oak on its grounds. This tree is a descendent of the original acorns brought to Canada from an oak in Vimy, France, after the Battle of Vimy Ridge, a defining Canadian victory in World War I. The soldier who collected the acorns, Leslie Miller, spent his final days at Sunnybrook. This Vimy Oak represents the mission of GrandTrees perfectly – a gift from generations past and a symbol of hope for generations to come.

For more information, visit www.grandtrees.org.

In September, 2020 Sunnybrook Health Sciences Centre began planting the Sunnybrook Memorial Arboretum, an addition to Canada's largest veteran care facility. Among 500 new trees and shrubs now growing at the site is a very special Vimy Oak, a direct descendent of acorns brought back from the Battle of Vimy Ridge in France in 1917.



Resilient Forests Ontario Overcomes Challenges of COVID-19

Webinars allow planting partners to virtually showcase expertise

BY NICOLE BALDWIN

Planting the right tree in the right location is no small undertaking. Forests Ontario relies on our network of forestry professionals to ensure that the highest quality, source identified, native seed becomes a healthy and resilient forest. From seed to forest, every step along the way requires technical training and experience that is constantly evolving with the latest science.

In a typical year, Forests Ontario meets with 50 Million Tree Program planting and nursery partners at various times to ensure that information is being exchanged. These events include:

- A Post-Plant Meeting, where all partners are able to share the planting season's challenges, triumphs, and lessons learned,
- Fall Field Tours, where planting partners can share technical knowledge and give advice based on their experiences, and
- Stock Viewing Days, where our nursery partners can provide information about tree planting and stock available for the upcoming season to planting partners and Forests Ontario staff.

Paul Hazlett, Forests Soils Scientist at Natural Resources Canada



AGE OF RAGNAROK

BOOK 1

MONSTERS AND GIANTS



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Left: Alastair Bisacaia,
Forestry Technician at Credit
Valley Conservation



Jeff Sharp, Conservation Services Specialist at
St. Clair Region Conservation Authority



Eleanor Reed, Forests
Ontario Field Advisor



Mark McDermid, Forests
Ontario Seed and Stock
Coordinator

This year looks a little bit different.

Forests Ontario and our partners have worked hard to ensure that effective technical training and information transfer can continue as the world becomes increasingly virtual during the pandemic. In 2020 and into 2021, Forests Ontario launched a series of technical webinars aimed at keeping our network of planting partners and restoration professionals connected. These webinars allow partners to come together and learn remotely, and cover various topics including tree planting, site assessments,

site plan mapping, site preparation, soils, and stock selection.

Held in December, planting partners tuned in to learn about Soils and Stock Selection. Looking ahead to 2021, Forests Ontario will host another webinar prior to the spring planting season that will focus on methods of site preparation and tending. Armed with the knowledge presented, as well as vast personal experience in the field, Forests Ontario and our planting partners are looking forward to a successful 2021 spring planting season, and many more to come!

Presenters included Paul Hazlett, Forests Soils Scientist from Natural Resources Canada, Eleanor Reed, Forests Ontario Field Advisor, and Mark McDermid, Forests Ontario's Seed and Stock Coordinator. Also joining to present were Jeff Sharp, Conservation Services Specialist at St. Clair Region Conservation Authority and Alastair Bisacaia, Forestry Technician at Credit Valley Conservation.

Highway of Heroes Brings Much-Needed Forest to Chatham-Kent

The tree-planting program is a fitting tribute to the heroism of Chief Tecumseh

BY JOHN BACHER

The effort by the Highway of Heroes Tree Campaign to plant trees with Forests Ontario along Highway 401 to commemorate those who have fought for Canada seems particularly fitting for Chatham-Kent in southwestern Ontario. Historic deforestation has left this county with under four per cent tree cover, an exposure that leaves Canada's busiest highway vulnerable to burial by snow and sand during storms. More trees in the area will help. In addition, the tree planting offers poetic justice for the sacrifice made by Tecumseh, the Shawnee chief and warrior who fought for Canada in the War of 1812.

Tecumseh, who died in 1813 in the Battle of Moraviantown in Chatham-Kent, had famously bemoaned

the desertification left by unsustainable logging. The great warrior proclaimed that, "We gave them forest-clad mountains and valleys full of game," getting nothing in return but "rum, trinkets and a grave." Now, finally, it appears the Highway of Heroes tree-planting effort has begun to address Tecumseh's concerns.

The name "Highway of Heroes" designates the 170-kilometre stretch of Highway 401 from Trenton to Toronto, the route taken by hearses that transported the repatriated bodies of Canadian soldiers killed in Afghanistan, from the Trenton Air Base to the Ontario Coroner's office in Toronto. The Highway of Heroes Tree Campaign later expanded the project's scope to support plantings on the entire length of Highway 401, from Ottawa to Windsor. Its goal is to plant a tree for every man and woman who has served Canada throughout the nation's history, or about two million trees in all. In Chatham-Kent, the campaign plants trees through its partnership with Forests Ontario's 50 Million Tree Program on privately owned land within 30 kilometres on either side of Highway 401.

The Highway of Heroes tree funding in Chatham-Kent complements the municipality's strategy to expand forest cover. In 2010, Chatham-Kent and the Ministry of Transportation launched a pilot project which would see 10,000 trees planted on the north side of the 401 from Clachan Road to Queen's Line. Since then, Lower Thames Conservation has planted another 30,000 to 40,000 trees on Ontario government land along Highway 401 and on the farms of adjacent landowners, said Randall Van Wagner, the Lower Thames Manager of Conservation Lands. "Forests Ontario's programs have been a big help," added Van Wagner.

For windbreaks, Lower Thames plants cedar and White Spruce. The Conservation Authority also plants Carolinian species, including American Sycamore, oak, maple, hickory and Kentucky Coffee Tree.

More trees will honour the memory of Tecumseh. One of the important reasons the leader fought the Americans was his grasp of the ecological consequences of deforestation. He feared that stripping away trees would fill streams with silt.

What little forest cover the county holds sits largely in Rondeau and Wheatley Provincial Parks on Lake Erie, and on the land of the Delaware at Moravian First Nation. Chief Greg Peters has stated that deforestation in rural Kent, resulting in river sedimentation and erosion, has negatively impacted his community's right to hunt and fish.

Water quality and quantity impacts due to the loss of forest cover have been felt for some time. In 1868, a Thames flood put much of Chatham under several feet



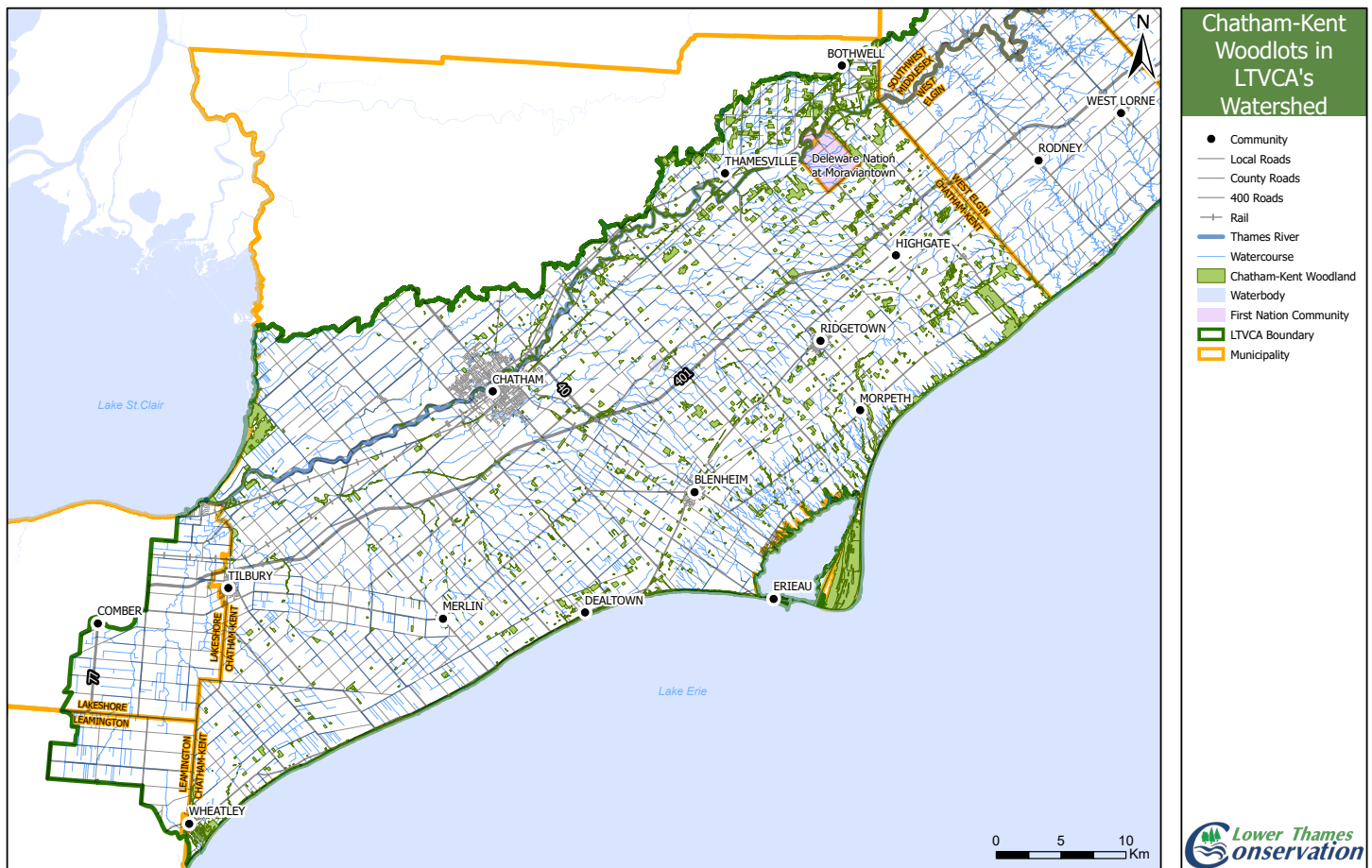
Etching of Tecumseh: Pictorial Field Book of the War of 1812, by Benson Lossing.

of water. The Thames became “a muddy yellow colour.” The great Thames Flood of 1937, which launched the movement to create Conservation Authorities, put all of Thamesville under water and cut off road access.

In Chatham-Kent, the Highway of Heroes Tree Campaign and Forests Ontario work to heal some of the scars that deforestation have left on Canada’s landscape while paying to tribute to Canada’s soldiers. It could also be said that the tree planting honours a hero of the War of 1812, Chief Tecumseh, who was motivated to protect what was then the predominately forested landscape of eastern North America, while at the same time acting as a step towards reconciliation with the area’s Indigenous peoples through the promise of ecological restoration.



Tecumseh, the Shawnee chief, fought with the British in the War of 1812. In a letter to Prime Minister Lord Liverpool, British General Isaac Brock wrote of Tecumseh: “A more sagacious or more gallant warrior does not, I believe, exist.” Image courtesy Canada Post. Stamp issued in 2012.



Where once grew forests now spreads farmland. This map shows forest cover in the watershed of the Lower Thames Valley Conservation Authority (LTVCA), currently among the lowest levels of canopy cover in Ontario at about four per cent. Funding from Forests Ontario and the Highway of Heroes Tree Campaign helps to lower tree planting costs for landowners in this region. Map courtesy LTVCA.

Over-the-Counter Program Set to Boost Tree Cover in Prince Edward County

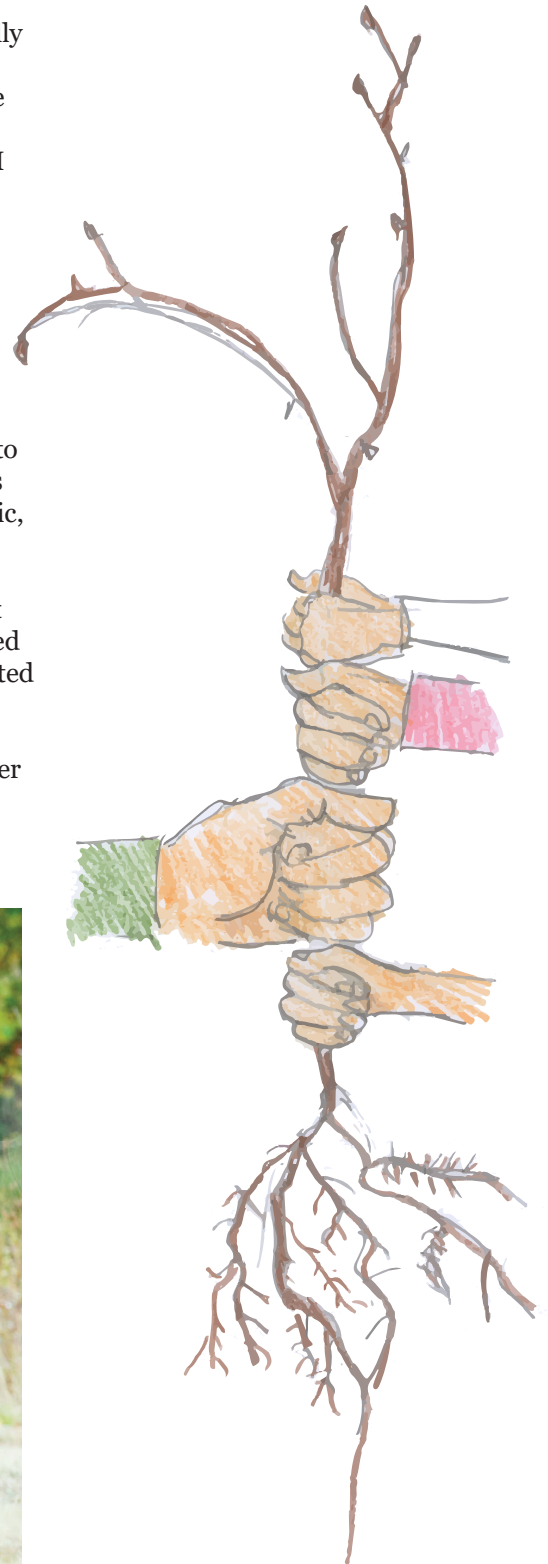
BY HAYLEY MURRAY

To be eligible for Forests Ontario's 50 Million Tree Program, applicants need enough open land to plant at least 500 seedlings. This typically averages out to about half an acre. Landowners who may not meet the minimum planting requirement but still want to plant native trees on their land can do so through Forests Ontario's Over-the-Counter (OTC) program. Successful applicants to the OTC program are able to purchase native seedlings from Forests Ontario's partner nurseries, receiving a reimbursement of 25¢ per tree.

Lynn Ward, a 4-H Ambassador in Prince Edward County, said that a stewardship group used to give trees away to county residents at no charge. When funding and volunteers for the stewardship group dried up, the local 4-H club stepped in to rescue the initiative. In 2019, when the 4-H Club hosted a tree sale, people began to line up an hour before the sale began. The club sold 1,450 seedlings in an hour. They kept hearing the same story: local landowners with smaller properties

wanted to plant trees themselves.

In 2020, the 4-H Club successfully applied for the OTC program. This reduced the club's cost to purchase trees for its seedling sale. Sadly, the COVID-19 pandemic caused the 4-H Club to cancel the fundraiser event. Forests Ontario has approved 4-H Club's application for the spring 2021 OTC program; the club hopes to run its seedling fundraiser again. "Depending on the situation and the province's orders, our tree sale will look a little different," Ward says, "but we are determined to provide seedlings for the county this year." Notwithstanding the pandemic, some residents in Prince Edward County did use the OTC program to purchase discounted trees and plant them. The local Lions Club purchased trees through the program and planted them in memory of a member's wife at a Conservation Area in Picton. The Lions Club plans to plant another 100 trees this year.



Left: A volunteer transports saplings at a tree planting event co-sponsored by Forests Ontario at Six Nations of the Grand River, fall 2020. Above: Sketch by Peter Kuitenbrouwer.

Virus Can Cause Collapse of Gypsy Moth Population

“We want them spending Christmas together,” says provincial researcher

BY PETER KUITENBROUWER



Gypsy moth egg mass survey results

Defoliation forecast 2021

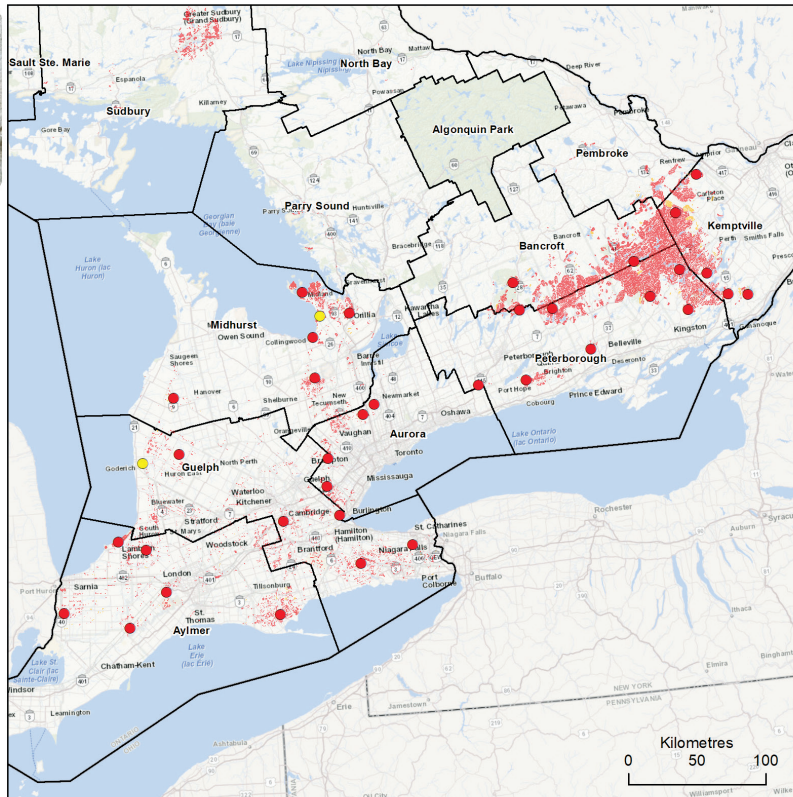
- Severe
- Moderate

Gypsy moth damage 2020

- Area of moderate to severe damage
- Area of light damage



Disclaimer:
This map is illustrative only. Do not rely on this map as being a precise indicator of routes, locations of features, nor as a guide to navigation. This map was produced for the Ministry of Natural Resources and Forestry.



Red dots indicate areas of predicted severe defoliation by the Gypsy Moth in spring 2021, based on egg mass surveys conducted by provincial researchers in the fall of 2020. Map courtesy of Ontario Ministry of Natural Resources and Forestry.

The Gypsy Moth, which defoliated trees in large parts of Ontario in 2020, may return this spring to cause more damage, warns a scientist with the Ontario Ministry of Natural Resources and Forestry (MNR).

“The Gypsy Moth is seemingly naturalized in southern Ontario,” Dan Rowlinson, who works in the biodiversity and monitoring section at OMNRF, said during the Forest Health Review session at Forests Ontario’s annual conference in February. “Gypsy moth population took a really big spike in 2020.” Forests Ontario organized the forest health session jointly with Natural Resources Canada.

The Gypsy Moth, in its caterpillar stage, defoliated about 45,000 hectares in 2019, according to Rowlinson. In 2020, Gypsy Moths defoliated a whopping 600,000 hectares across the province — an increase of over one thousand per cent from last year. “It likes to get its foothold on the hilltops,” he added, noting that the caterpillars prefer oak, birch, and aspen leaves in the north, and oak, Sugar Maple, and beech leaves in the south.

Rowlinson, who is based in Sault Ste Marie, said that based on egg mass surveys his team has carried out with the Canadian Food Inspection Agency, he believes Ontario could get hit with another Gypsy Moth feeding frenzy this spring. But he predicted that the population will collapse through transmission of a fungus or a virus, as has happened before.

Canadians know all about viruses given the COVID-19 pandemic, Rowlinson noted. Indeed, Forests Ontario held its conference virtually for the first time to avoid physical contact between participants and avoid the spread of the coronavirus.

“If you look at us humans, we want people social distancing because of COVID,” he said. “We know the impact a virus can have on a population. In the case of the Gypsy Moth, we want them climbing all over each other, spending Christmas together, because that’s what’s going to cause a collapse in the population.” Nuclear polyhedrosis is the virus that kills the moths, he said.

In Ontario, previous Gypsy Moth outbreaks peaked in 1985, 1991, and 2002, though the highest peak (350,000 hectares defoliated in 1991), harmed far fewer trees than in 2020.

“There are going to be a large number of private control programs for Gypsy Moth this season,” Rowlinson said.

“Gypsy Moth egg masses on Colorado Spruce doesn’t mean it’s going to be defoliated,” he added. “Their preferred species is oak. Once they have eaten themselves out of house and home on the oak, they will move on to ornamental spruce. They’ll eat flagging tape, they’ll eat anything. The population is so intense that it is a perfect storm for a virus to spread over the landscape.”

Talk to your municipality or cottagers’ association about Gypsy Moth control. The MNR’s Forest Health Report for 2020 is available at www.ontario.ca.



Satellite image taken in January, 2018 shows, in the area outlined in yellow, a mix of White Pine, Red Pine and White Spruce trees planted in 2010 in Dufferin County, northwest of Toronto, under Forests Ontario's 50 Million Tree Program (50 MTP). Natural Resources Canada used this kind of imagery to measure the success of the 50 MTP for a study to be published this year in the peer-reviewed journal *The Forestry Chronicle*. Photo by GeoEye.

Healthy Young Forests Work Hard to Sequester Carbon

Canadian Forest Service study validates Forests Ontario's 50 Million Tree Program

BY PETER KUITENBROUWER

Over 83 per cent of the trees planted under Forests Ontario's 50 Million Tree Program (50 MTP) are thriving on the landscape and, over time, will sequester significant amounts of carbon, says a new study set for publication in the *Forestry Chronicle*.

These young forests across Ontario are proof that carefully-planned and well-executed tree planting programs, like those of Forests Ontario, offer long-term help to fight climate change, the authors conclude.

The Canadian Forest Service sector of Natural Resources Canada conducted a study, *Growing Our Future: Assessing the Outcome of Afforestation Programs in Ontario, Canada*, to assess the success of Forests Ontario's tree planting efforts. Using satellite imagery and remote sensing tools, in conjunction with Forests Ontario data, the study investigated how many trees survived on about 12,500 hectares planted through Forests Ontario's 50 MTP from 2007 to 2016. Elizabeth Celanowicz, Forests Ontario's Chief Operating Officer, co-authored the paper.

The study concludes that, provided these forests grow undisturbed, the forests will remove about 2.24 megatons of carbon dioxide from the atmosphere over a half century period. Essentially, the trees will sequester roughly as much carbon as a million cars would produce by driving from Montreal to Vancouver — and back.

The study also validates Forests Ontario's data collection methods. "Forests Ontario's tree planting database is a reliable baseline for afforestation tracking," reads the report. Indeed, the study confirms the planting success rates

observed during Forests Ontario's own field audits of its planting sites.

"Trees planted today," write the authors, "will not result in a carbon sink immediately, but the sink strength will increase over time. Tree planting in Canada is not an immediate solution, but a proactive one; if we hope to see benefits in the long-term, we must start to plant trees today."

But one can't just plant trees, walk away, and expect to see new forests. The study authors draw from their analysis of Forests Ontario data to make recommendations to the Government of Canada on how to implement a pledge to plant two billion trees over the next decade.

Those suggestions include educating landowners on how to look after and monitor new forests, once planted. Here, too, Forests Ontario does good work; for example, the organization hosts tree planting and forest management workshops for landowners.

To make sure young forests succeed, the authors write, the forests must be monitored and managed. Quality control of planting should check that trees are properly spaced, roots are covered, and trees go in at the correct depth.

"Newly planted trees are most vulnerable during the first couple of years of establishment and should be assessed to determine survival, growth, and if refill or tending is required," reads the study. The assessment should check for weed competition, browsing by deer or other wildlife, and pest or rodent damage. If needed, landowners could mow, apply herbicide to control competition, plant refill trees where trees failed, and later thin the stand. These

activities “can improve an afforested site’s ability to reach free-growing status,” the authors note.

Financial incentives, long-term funding, and landowner outreach are key components that will allow afforestation projects to succeed, the report says.

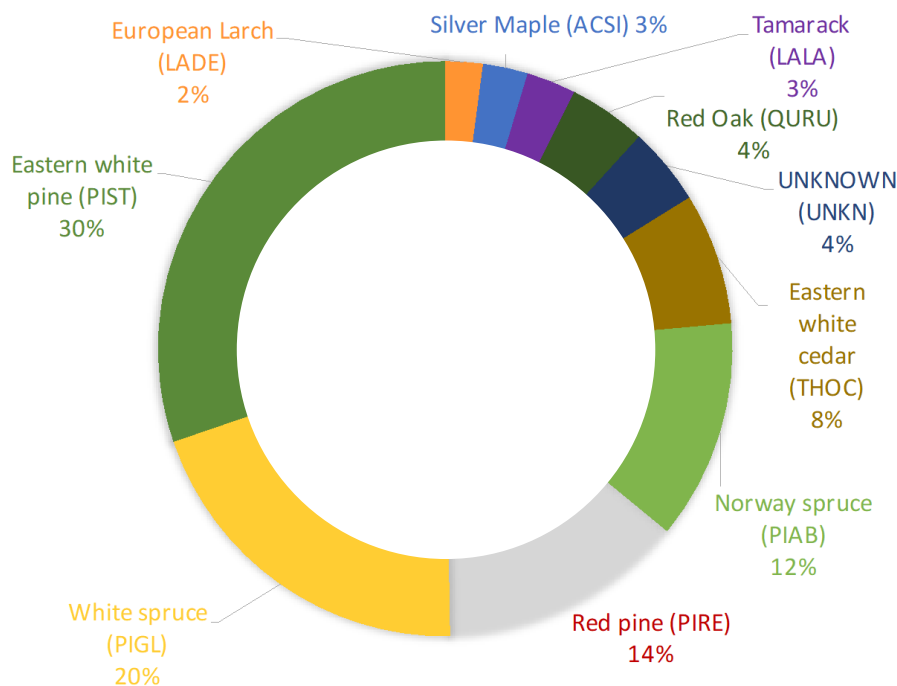
The study also notes the importance of the Ontario government’s Managed Forest Tax Incentive Program (MFTIP) in enhancing forest cover. MFTIP encourages landowners to maintain and manage existing woodlots, as well as plant more trees, in order to qualify for a property tax reduction.

The results of the research proves the usefulness of Forests Ontario’s database in estimating changes in carbon stocks. Forest carbon stock refers to the total carbon

sequestered from the atmosphere and stored in the forest ecosystem in trees, soil, dead wood and litter on the forest floor. Canada can use this data, the authors write, to compile annual carbon inventory reports, which the country has committed to report each year under the United Nations Framework Convention on Climate Change.

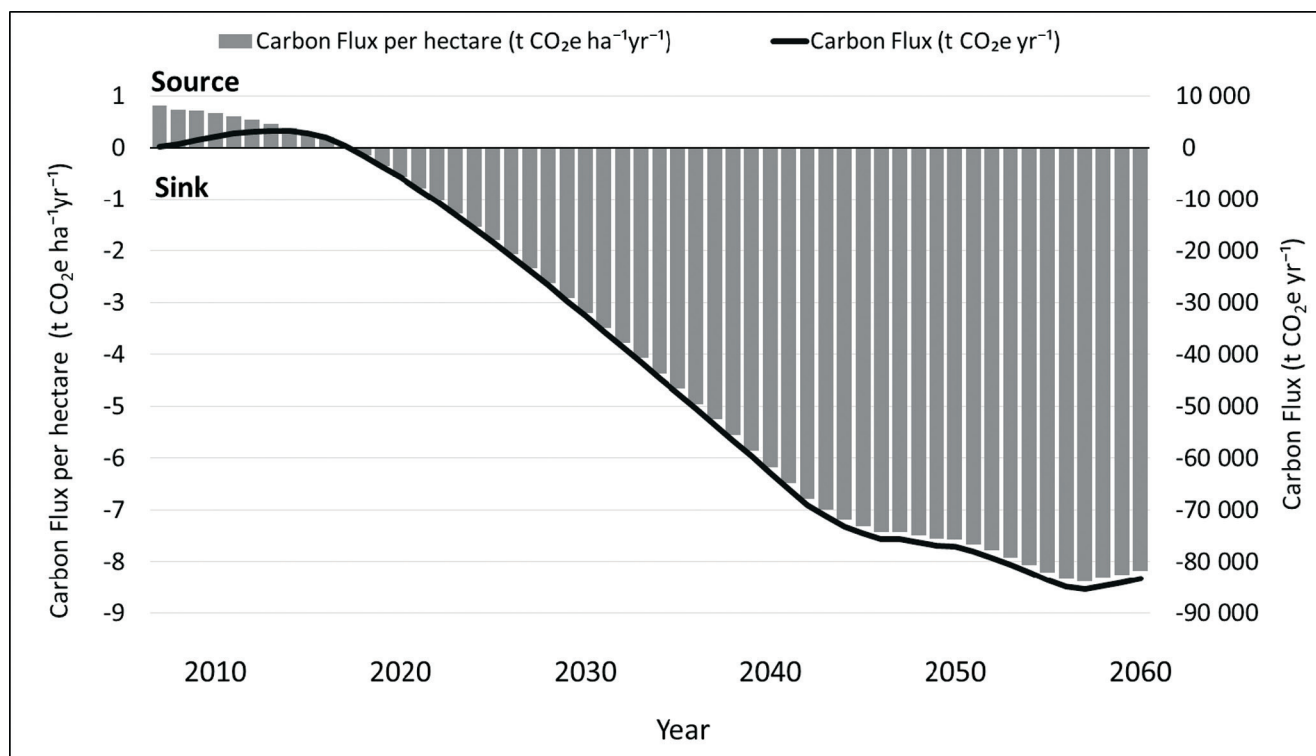
“Afforestation in Canada (slow growing trees) is always a long-term strategy, the benefits of which will increase substantially over time,” the authors write. “Therefore, if Canada wants afforested areas to contribute to net zero emission targets by 2050, additional tree planting initiatives have to start as soon as possible.”

The bottom line: carefully planted forests become carbon sinks that will help Canada hit emissions targets.



Left: Eastern White Pine was the most common tree species planted in the area of study. Chart courtesy Canadian Forest Service.

Below: The Greenhouse Gas removals (sink is negative) and emissions (source is positive), displayed as the carbon flux per hectare and the total annual carbon flux within the 10 390 hectares of the confirmed afforested area. The individual bars represent the carbon flux averaged over all sites planted up to the respective year. Chart courtesy Canadian Forest Service.





Spring Heroes Breathe Life Into the Forest

Ephemeral plants act fast to grab sunlight before trees leaf out

BY MADELEINE BRAY

Understory plants have interesting lifestyles; they can thrive in the shade of a forest's canopy, such as woodland ferns, or bide their time, such as oaks and maples, and grow until they, too, can block out the sun. But none are as dramatic as those of the fleeting spring ephemerals and their annual race against time.

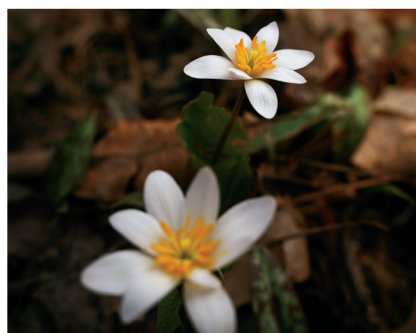
Spring ephemerals appear in the first few weeks of spring in deciduous and mixed-wood forests. These plants complete their entire lifecycle in the small window of sunshine between snow melt and leaf out, when deciduous trees blanket the canopy with leaves. Their presence in the forest is deceptively short, as they have a great impact on the ecosystem as a whole.

As the first green plants in the forest each spring, ephemerals have no easy task. Growing with limited available water in cool temperatures and cold soil is a slow process due to the stress imposed by poor nutrient uptake and photosynthesizing in suboptimal conditions. Many ephemerals are only found in well-established forests in the later stages of succession and are highly sensitive to disturbances. The Trillium, Ontario's provincial flower, must toil for about seven years to grow from a seed to a flowering plant. Their distinctive flowers are energetically costly to produce. Deer grazing or humans picking these plants may prevent them from flowering in upcoming years or, in extreme cases, kill them, as they may have exhausted themselves in growing the plucked petals.

Ephemerals' hard work pays off for the forest. With little to no competition, these plants provide food for early pollinators without the need to attract attention by being showy or scented. Trout Lilies, so named for the Brook Trout-like mottling on their leaves, provide pollen and nectar to bumblebees and other insects such as bee flies and beetles. These flowers can reproduce with the assistance of pollinators but can also grow vegetatively; colonies of Trout Lilies can thrive even if eager insects eat all their pollen. This early food source gets the forest buzzing and promotes an early insect presence that will pollinate subsequent forest flowers and provide food for larger critters.

These first bits of green on the forest floor serve a deeper, lasting purpose. Their established roots and underground structures can stabilize forest soils for hundreds of years if left undisturbed, storing energy to ensure their continued health and growth with each successive spring. Sharp-lobed Hepatica is a plant that establishes its flowers first, using stored energy from the previous spring before growing new leaves to replenish and prepare for the next year.

As short as their time in the sun may be, these harbingers of spring breathe life into our forests, indicate a healthy ecosystem, and, above all else, bring promises of warmer months ahead. Take a glance into your local woods this spring to discover your local ephemerals – and treat them with the respect these tenacious, hard-working plants deserve.



Above: Trillium.
From left: Round-lobed Hepatica; Yellow Trout Lily; Bloodroot.
All photos by Chelsea Marcantonio.

Find Right Time to Thin Pine

My plantation looks crowded. Should I take action?

Dear Silvie



Forests Ontario's experts, known collectively as "Silvie" (short for silviculture), answer your forestry questions.

*Send questions to
info@forestsontario.ca, or
c/o Forests Ontario, 144 Front St. West,
Toronto, Ont. M5J 2L7*

Dear Silvie,
I have a red pine woodlot planted 25 years ago. Is it time to thin it?

— Gunter and Elsa Vierich, Madoc

DEAR Gunter and Elsa,
If you closed your eyes and imagined forests, wetlands, and meadows in place of major cities, roads, and agricultural spaces, you'd be picturing what Ontario looked like in the 1700s. Much of southern Ontario was described as "forests" into the early 1800s. However, as settlers started their new lives in Ontario, they began using these once plentiful resources; by the 1860s, there was almost no forest left in southern Ontario.

Over many decades, influential advocates for large scale replanting spurred various government funding programs. In 1966, the Woodlands Improvement Act provided landowners with support for tree planting and stand improvement for existing woodlands. Over the next 30 years, Ontario saw more than 213 million seedlings planted on over 137,000 hectares, including Red Pine, White Pine and White Spruce. Fast-forward to present day, and landowners across the province still require support with forest management activities, such as thinning.

When a plantation is established, the expectation is for those trees to be managed over time to help convert the plantation into a mixed diverse forest. Managing a plantation involves having a forestry professional and/or a certified tree marker assess the woodlot to determine the health and density of the stand as well as what trees to leave and which to remove, if needed. When managing a plantation, foresters call the removal of specific trees thinning. Tim Gray, retired forestry technician with the Ministry of Natural Resources and Forestry, says Red Pine thrives on light. "If you want your Red Pine

to grow strong and healthy, free of disease and pests, thinning the plantation is necessary," explained Gray. Non-thinned and neglected plantations are more prone to storm damage and stunted growth.

More than one thinning must take place for the plantation to transition into what is considered a natural forest. A forestry professional can create a forest management plan which guides thinning operations over the long term. The initial thinning opens space for tree growth and the second thinning removes trees that are unhealthy or poorly formed to improve spacing and provide more growing room for the remaining trees that have the best future potential. As a result, logs thinned later will be larger and more valuable.

Thinning also helps natural regeneration. Removing some pines brings light into the forest. Shade-tolerant tree species, such as maple and oak, can then take root, often through seeds or acorns brought in by wildlife or on the wind. Thinning thus encourages transformation of a pine stand into a diverse mixed forest, welcoming to a wide range of wildlife. The Red Pine that remain have space to grow into valuable timber.

If you are considering thinning or would like more information on forest management, please contact Forests Ontario — we would be happy to connect you with a local forestry professional in your area!

Yours, Silvie

Red Pine Stand in the forest of Gunter and Elsa Vierich in Madoc Township, planted in 1995. Photo by Peter Kuitenbrouwer.

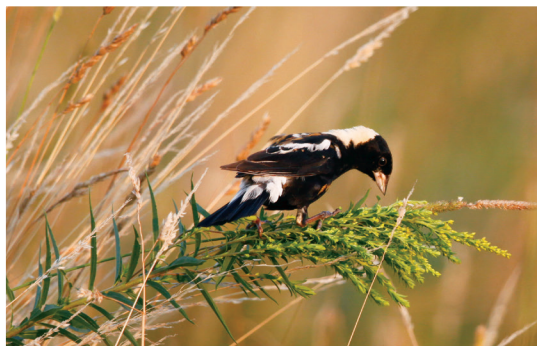


Good News for the Bobolink and Meadowlark

Grasslands Ontario and Government of Ontario announce continued funding for Grassland Stewardship Initiative

BY NICOLE BALDWIN

Below: Eastern Meadowlark, photo via iNaturalist.org, by Peter Waycik.



Above: Hazel Bird Nature Reserve.
Left: Bobolink, photo via iStock.

Grasslands Ontario, a division of Forests Ontario, launched the Grassland Stewardship Initiative (GSI) in 2018 to create, enhance, and maintain high-quality grassland habitat in Ontario through restoration and management activities. However, the future of the GSI was uncertain at the end of the 2019/2020 season, as the previous funding agreement came to an end. Then, Ontario's Ministry of Environment, Conservation and Parks' (MECP) Species at Risk Stewardship Program stepped in. The MECP and Grasslands Ontario have signed an agreement to continue the GSI program over the next three years.

Once common in Southern Ontario, grasslands have been in steady decline for many years, with land use changes and increasing urbanization being common culprits. The GSI strives to bring grasslands back.

Offering wildlife habitat, carbon sequestration, protection from soil erosion, ground water filtration, and benefits to pollinators, grasslands are a critical tool in the fight to decrease biodiversity loss and mitigate climate change. Grassland habitat is of particular importance to numerous species at risk, including the Bobolink and Eastern Meadowlark. These birds use grasslands for breeding, nesting, hunting, and foraging. Active conservation, restoration, and maintenance of these landscapes can help these species to recover. The partnership between Grasslands Ontario and MECP ensures that the great work being done on the landscape by our restoration partners can continue – creating, enhancing, and maintaining grassland habitat for the species that rely on them for years to come.

For more information, contact Nicole Baldwin, Forestry Programs Manager: nbaldwin@forestsontario.ca.

A Tree Planter With a Vision

Restore forests with First Nations to boost ecosystem health, says Dirk Brinkman

BY COLLEEN MAHAFFIE

Nearly 500 people around the world attended Forests Ontario's 2021 online conference – a benefit of the virtual age into which the pandemic has pushed us. Our keynote speaker, Dirk Brinkman, joined us from the Indigenous territories of the Musqueam, Tsleil-Waututh, and Squamish Nations at his office in Vancouver. Brinkman, cofounder and owner of Brinkman and Associates Reforestation Ltd., secured one of British Columbia's first tree planting contracts in 1970. Since then, Brinkman and Associates Reforestation Ltd. has planted over one-and-a-half billion trees worldwide.

Indigenous stewardship is vital to our environmental and community health, said Brinkman in his presentation entitled: *Ecosystem and Human Health: Restoring forests as a path to restoring community wellbeing*. The son of Dutch immigrants, Brinkman noted that we are all “guests of the Indigenous people,” and that “we’ve been welcomed as guests.” Fundamental to the Indigenous culture, Brinkman notes, is an intrinsic sense of gratitude, respect, and acknowledgement of the dependency of human health on that of our lands, water, and air.

Brinkman showed several examples of partnerships between community, government, and Indigenous nations in projects his team helped to facilitate. In 2010, Brinkman became a climate project developer in the Cheakamus Community Forest that surrounds Whistler Blackcomb Ski Resort. The forest, governed jointly by the Municipality of Whistler, the Nation of Squamish and the Nation of Lil'wat, presented a unique Indigenous/civic alignment opportunity for a climate project. “Undertaking a climate project on Crown land, without recognizing that integral relationship between Indigenous rights and title and the biodynamic, is perilous,” explained Brinkman. “Reaching 100 years into the future is reaching into rights and title issues.” Brinkman's team balanced Indigenous and Crown values through the Improved Forest Management Module of B.C.'s Forest Carbon Offset Protocol. Foresters delayed harvests and shifted operations from old growth to second-growth stands to protect old-growth trees and create Cheakamus carbon credits.

These credits, from reducing the operable forestry area, funded more intensive selection harvesting by Indigenous members, met their goals of increasing wildlife habitat and riparian protection, and protected vistas of closed canopy visible to patrons of the ski hill.

When Brinkman first set out to plant trees, he had just graduated with a degree in Philosophy of Religion, and puzzled over one question: “What should I be doing with my life?” Several decades and over one billion trees later, Brinkman continues to look towards future generations' forests, with the ultimate goal of returning Canada to the biodiversity and forest resilience it enjoyed pre-contact. To do this, we need to focus on innovation and partnership with both Indigenous communities and with private landowners, he believes. By thinking beyond ourselves and several generations into the future, through innovative partnerships with Indigenous and civic communities, Brinkman attests, we can use ecological science and traditional knowledge to restore the health of our ecosystems.



Dirk Brinkman swings his hoedad as he plants trees in 1973 at Bloom Creek in the Flathead just above the U.S.- Canada border near Glacier National Park. Canvas buckets wired to his fireman's belt carried the tree seedlings. Photo by Doug Cowell.

The Importance of Canada's Working Forests

Sector plays a key role in the emerging bioeconomy

BY COLLEEN MAHAFFIE

Forests Ontario's Annual Conference, Growing Our Future, kicked off in early February with a session titled *The Working Forest*. Beth MacNeil (Assistant Deputy Minister, Canadian Forest Service, Natural Resources Canada (NRCan)), Kathy Abusow (President & CEO of Sustainable Forestry Initiative Inc. (SFI)), and Derek Nighbor (President & CEO of Forest Products Association of Canada (FPAC)) made up the panel, which was moderated by Christine Leduc (Woodlands Operations Supervisor for EACOM Timber Corporation). All three speakers emphasized the importance of managing Canada's forests sustainably, and of communicating the value of this renewable resource.

MacNeil touted the myriad of programming that NRCan offers, from innovation in wildland fire, to forest inventory, to carbon accounting, to bioplastics. She also touched on the term 'bioeconomy.' The bioeconomy, according to the European Commission, refers to the use of "renewable biological resources from land and sea, like crops, forests, fish, animals, and micro-organisms to

produce food, materials, and energy." All three speakers recognized the important role the forest sector can play in building the bioeconomy.

Abusow painted a picture of Canada's forest landscape: Canada has nine per cent of the world's forest cover, 200 million hectares of which are under long term forest management plans. With 168 million hectares of third-party certified forests, Canada is a world leader in forest certification. SFI, an independent non-profit maintaining a certification standard, works to ensure Canada's forest industry maintains its working forests sustainably. Ontario alone is home to 6% of the world's certified forests, 16 million hectares of which are SFI certified forests. Abusow mentioned two new SFI standard objectives: climate smart forestry and fire smart forestry, both of which will help ensure our working forests adapt to a changing climate.

Nighbor spoke of forest products' role in Canada's quest for a low carbon economy. Recently, FPAC and FPInnovations helped to develop the first wood-based, biodegradable mask, a green improvement to essential PPE during a global pandemic. Nighbor also emphasized the importance of communicating fact-based information about the forestry industry with the public, along the lines of Forests Ontario's It Takes A Forest initiative. Of the many ways that the industry is transforming, Nighbor took great pride in noting that "the Canadian forest products industry is pledging to remove 30 megatonnes of CO₂ a year by 2030." To learn more about the sector's drive to net zero by 2050, visit forestryforthefuture.ca.

The panelists agreed that a clean, green, and renewable recovery plan will help Canada build back better post-pandemic. Canada's working forests will be an important part of the bioeconomy, and of the local economy, for hundreds of Canadian communities – now, and in the years to come.



Beth MacNeil has spent more than 25 years working in science-based economic and regulatory departments across the federal government. Beth began her career as a biologist working for Environment Canada's Canadian Wildlife Service. She has held positions of Director General, Policy, at both Fisheries and Oceans Canada and Agriculture and Agri-Food Canada. In January 2018, Beth was appointed Assistant Deputy Minister of Natural Resources Canada's Canadian Forest Service.



Kathy Abusow is President and CEO of the Sustainable Forestry Initiative (SFI), a non-profit sustainability leader dedicated to advancing sustainability through forest-focused collaborations. SFI leverages the scale and diversity of their network, which includes more than 375 million acres of certified forests, to achieve shared goals such as climate smart forestry practices, best management practices for water quality and carbon storage, maintaining and recovering biodiversity, education of future generations and building green career pathways to service the forest and conservation sectors with a diverse and resilient workforce.



Derek Nighbor is the President and CEO of the Forest Products Association of Canada (FPAC), where he proudly represents Canada's forest products sector and the critical role it plays in supporting over 600 Canadian forestry communities. Derek has held senior-level positions with several industry associations as well as with the Government of Ontario. He has an Honours Bachelor of Arts in Political Science with an Option in Business Administration from Wilfrid Laurier University.

Include Everyone in the Forest Sector

Diversity is key to a healthy ecosystem – and to a healthy workforce

Out of recognition of the need for enhanced diversity and inclusivity in the forest sector, Forests Ontario's Annual Conference featured a panel discussion where trailblazers discussed what is being done – and still needs to be done – to affect positive change.

The panel produced several key takeaways, including:

- Representation matters –hire more staff who are Black, Indigenous, and people of colour.
- Youth opportunities should be accessible to all, and as early as possible
- Recognize and acknowledge that we are all on Indigenous land

“The concept of diversity isn't foreign to forestry. As a matter of fact, the very survival of our forests depends on it.” – Demiesha Dennis



Catherine Langille is an indigenous youth from Seine River First Nation pursuing a future in the forestry sector. She is studying environmental science & natural resources at Fleming College and serves as Indigenous Youth Opportunities Intern at Sustainable Forestry Initiative/Project Learning Tree Canada.



Jacqueline L. Scott is a PhD student at the University of Toronto. Her research focuses on the perception of the wilderness in the Black imagination and how outdoor recreation can become a more accessible and inviting space for Black Canadians. She has written for CBC, The Conversation, and the Greenbelt Foundation.

Demiesha Dennis is Founder and CEO of Brown Girl Outdoor World. An outdoor enthusiast passionate about building community and representation in outdoor spaces, she shares her love for the outdoors through various adventures while encouraging others to step out and do the same. She is working to change narratives regarding people of colour and their place in outdoor spaces.



Dr. Brian Tucker is an ecologist specializing in terrestrial ecology and spatial statistics. Tucker has a strong connection to his traditional way of life, as well as experience in commercial fishing, logging, and trapping. He is the Director of Education and Training and the Deputy Chief Captain of the Hunt for the Métis Nation of Ontario.



Janae Grafham is a community member of Fort Alexander First Nation living in Kenora. They are completing an education degree at Lakehead University. Through their involvement as a Coordinating Circle member of the Youth Circle for Mother Earth, Grafham has been able to collaborate with other youth who share their passions.



Linda Norheim is the Director of the Métis Nation of Ontario Lands Resources and Consultations Branch. Norheim facilitates consultations with Métis communities, project proponents, and government representatives in a range of sectors, including forestry.

Growing Your Future Starts With a SEED

Forests Ontario holds its third annual Student-Employer Engagement Day

BY AUGUSTA LIPSCOMBE

Forests Ontario’s Student-Employer Engagement Day (SEED), which ran concurrently to our Annual Conference, brought together more than 150 high school and post-secondary students, recent graduates, and prospective employers from across the province to explore employment opportunities within the forest sector and provide advice and insight to the next generation of forest stewards.

Leading up to SEED, 109 student registrants completed a survey on their experiences, perceptions, and plans regarding working in the forest sector (Figure 1).

More than half of respondents indicated that they will be seeking further professional accreditation, with Registered Professional Forester (49 per cent) and Tree Marker (10 per cent) being the most common answer among those who responded positively. This lines up well with what employers are looking for, as all of the employers we have spoken to stated that an RPF certification increases the value of a potential employee.

“I’ve grown up here and would love to give back to the land and people.”



“I want to contribute to the future. I want to be a part of a profession that recognizes the opportunity for change and innovation.”

Brelynn Howard,
Lakehead University



“I want to work in the forest sector to have a job that nourishes and fulfills me, doing work that I believe to be important for the collective good.”

Sara Deslauriers,
University of Toronto

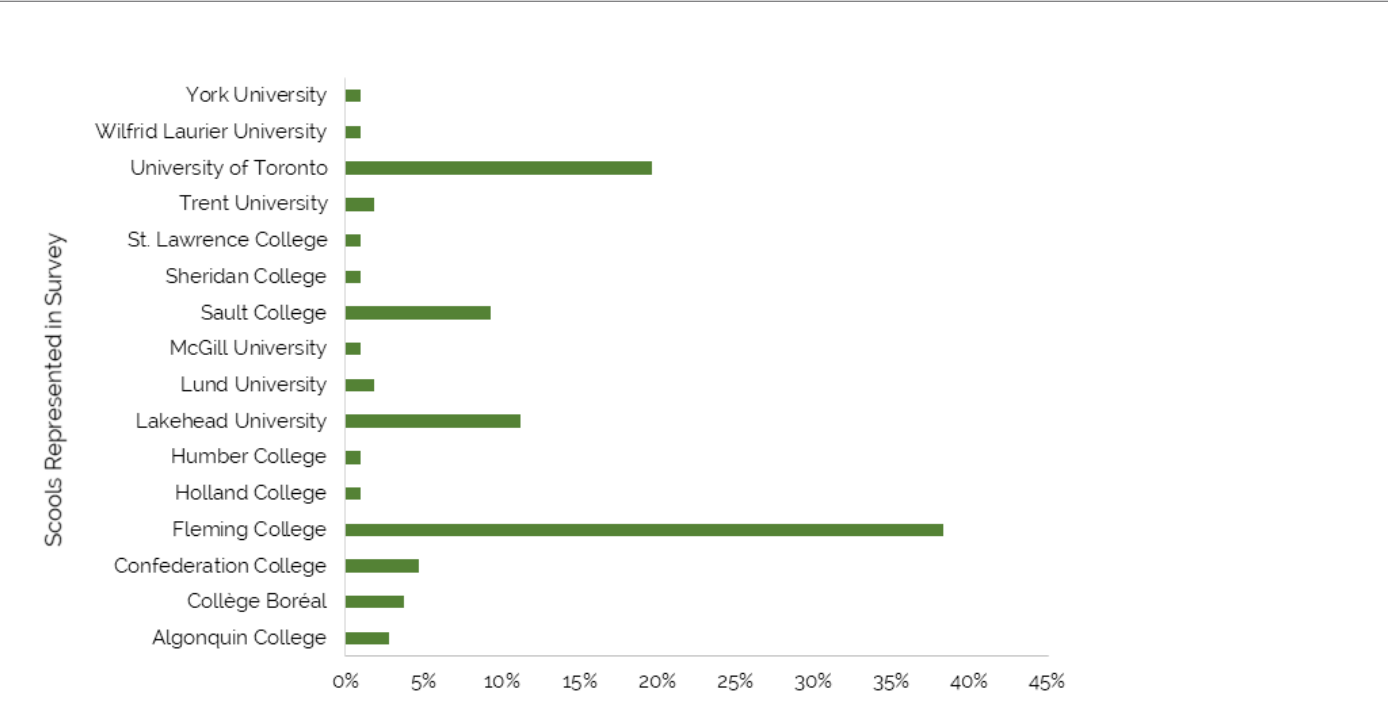


FIGURE 1

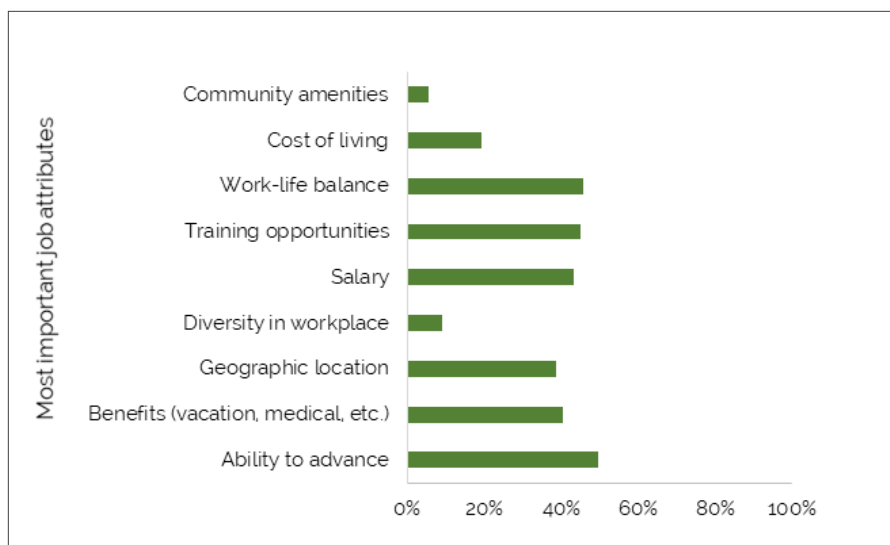


FIGURE 2

88%

of students believe their school program prepares them well for a job in the forest sector.



"I want to give back to the environment, to my community, and to the world through forest stewardship and doing my part to make sure our forest ecosystems are properly planned and maintained."

Ryan Patterson,
Fleming College



"I am passionate about taking care of our environment for future generations. I want to work in a field where I can foster a healthy, responsible, reciprocal, and sustainable relationship with the land. I want to do my part in ensuring wildlife habitat is respected and preserved."

Ashley Agombar,
Confederation College

This cohort proves to be a tenacious bunch: 84 per cent of respondents indicated that they are open to both pursuing further education and relocating to a smaller community in rural and/or northern Ontario to expand their employment opportunities, and 96 per cent are willing to take internship or short-term contract opportunities. A whopping 98 per cent of students indicated that they have an interest in working within Ontario, with many citing the clear opportunity and potential in the forest sector (both in the north and south), proximity to home and family, and their general fondness for the province and its landscape as their main draws. "I love our province," one respondent simply stated. "I've grown up here and would love to give back to the land and people," said another.

Similar to last year's survey, the ability to advance within an organization remains the most important attribute for students when considering a new job, followed by work-life balance, training opportunities, and salary (Figure 2). Students also indicated that they prefer jobs which offer a mix of indoor/outdoor work, with a leaning towards outdoor.

One of the most positive takeaways from the survey was that, when asked, 88 per cent students said they believe their school program prepares them well for a job in the forest sector. This works out well, since the forest sector is eager to hire the next generation. The existing and anticipated labour shortage within the forest sector is well documented, and events such as SEED are important in addressing this concern. The future of forestry sure looks bright!

Forests Ontario thanks SEED's sponsors and presenters who made the event a success, including the Forest Products Association of Canada, Westwind Forest Stewardship, Project Learning Tree Canada, EACOM Timber Corporation, City of Temiskaming Shores, First Resource Management Group, and Domtar. Forests Ontario extends its gratitude to our student liaisons, who helped us moderate the event. Thank you, Sara Deslauriers (University of Toronto), Ryan Patterson (Fleming College), Ashley Agombar (Confederation College), Jake Larochelle (Collège Boréal), Stevie Wielgosch (Sault College), and Breylnn Howard (Lakehead University).

Stumped: *Our Forest Scavenger Hunt*

How many forest products can you find in your home? Some might surprise you!

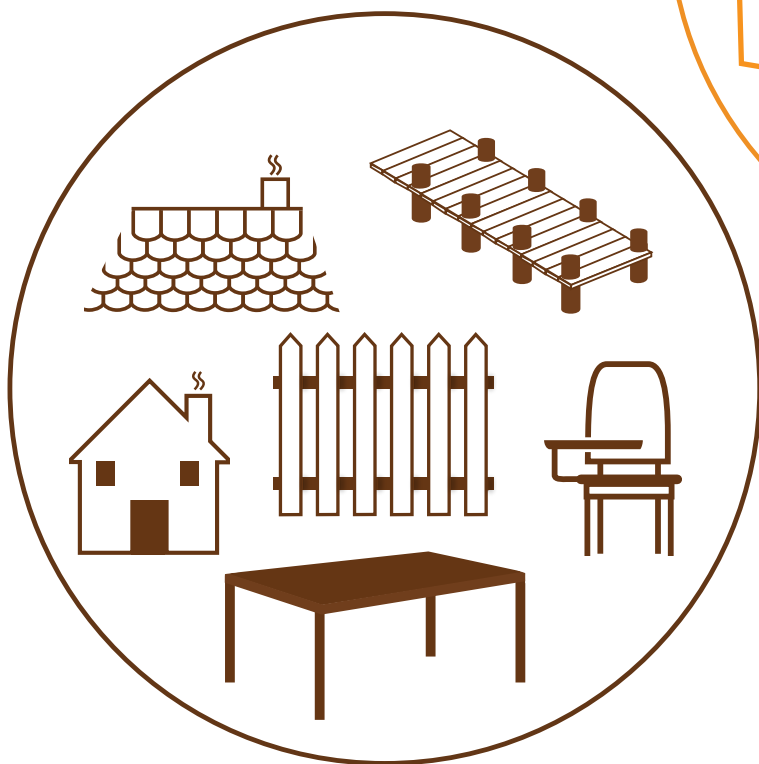
BY AUGUSTA LIPSCOMBE

We rely upon forest products daily. Some of these products are pretty obvious: furniture, heating fuel, maybe even your house is made of wood! However, some forest products may surprise you...

To introduce you to the range of innovative forest products that shape our lives, Forests Ontario's #ItTakesAForest initiative challenges you to a Find-A-Forest-Product Scavenger Hunt!

In this activity, you'll comb through your house for forest products, allowing you to get a better idea of some of the different ways this renewable resource benefits your day-to-day life. Complete this activity alone, or play with someone in your bubble to turn it into a game.

Here's a hint: Not all forest products are wood!



Instructions

Game play:

Once all players are ready with their recording sheets (below), set a timer for 20 minutes and split up.

Moving through the home, each player should add every forest product they identify to the recording sheet, filling out only the first column for now.

Once the 20 minutes is over, gather to go over your findings and award points in the remaining columns of the recording sheet:

- 1 point for every correct forest product found (column 2)
- 1 additional point for every unique forest product found (i.e. only found by one player) (column 3)
- 1 additional point for every surprising forest product (a product that at least 1 player did not realize was a forest product — be honest!) (column 4)
- Sum your total points per product in column 5, and then sum all of the numbers in column 5 to find your overall score.

Working alone:

Scour your home room-by-room for forest products. When you find one, add it to your recording sheet, filling in only the first column.

When you’ve either run out of lines on your recording sheet or rooms in your home, you’re done! Share your results with someone - maybe you can teach them about a surprising forest product.

Forest Product

	Correct?	Unique pts.	Surprising pts.	Total pts.



Donate Today!

When you support our tree planting, education, and awareness initiatives, you're making a vital contribution to greening Ontario's forests.

The time is now to improve our natural environment and leave a healthier world for future generations.

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