

OUR FOREST



forestsontario.ca

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SUMMER 2022

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Your Voice Counts

Inspiring real change for Canada's threatened ecosystems

While I cherish the beauty of each of our four seasons, I especially enjoy spending the days of summer outdoors with family and friends. It is also a time for us at Forests Ontario to reflect on another successful year for our many planting programs, education initiatives and community outreach.

We know our efforts to increase, conserve and maintain forests and grasslands make our urban and rural communities healthier and more sustainable. From helping to clean the air we breathe and filter the water we drink, to improving the biodiversity of our ecosystems and nurturing pollinator health, our forests and grasslands inspire positive change.

We also understand that working together to mitigate the harmful effects of climate change, not just in our own backyards, but across the country and around the world, requires a concerted effort. The incredible destruction caused by extreme weather events, and the decline of biodiversity in our once thriving natural landscapes are, unfortunately, becoming all too familiar with each passing year. While human activity has contributed to the greatest environmental challenges we have ever faced, there is still time to do something about it, and we all have a role to play but we have to act now.

For decades, Forests Ontario has developed and managed programs that have now planted almost 42 million trees, creating more than 20,500 hectares of new forests across over 8,000 project sites. This year, together with our network of 50 Million Tree Program partners across the province, we planted 2.5 million trees that will grow and thrive into healthy new forests for generations to come. At the root of everything we do is the knowledge and expertise to ensure the right tree is planted in the right place and for the right reason, and that starts with native source-identified seed.

Our expanding Seed Diversity Program is the direct result of working closely with our network of certified seed collectors and nursery partners to forecast and collect source-identified seeds, as well as track and monitor seed progress. This essential resource ensures we have the expertise and capacity to track the health of the trees we plant. At any given time, Forests Ontario has more than 200 million seeds in storage to support future planting projects. We are well poised to share this expertise with planting organizations across Canada to assist with developing overall seed capacity and are doing so in partnership with the Forest Gene Conservation Association of Ontario, and with assistance from the National Tree Seed Centre.

We are also thrilled to report that our Grasslands Ontario division has now created, enhanced, or maintained over 1,000 hectares of grasslands across the province, with demand for our Grasslands Stewardship Initiative continuing to grow each day.

In this issue, you will read about some of our tree planting and grasslands restoration projects from this year, learn more about our many community events that helped to enhance urban greenspaces across the province, and get to know some of our members, sponsors, and donors.

With world-wide focus on sustainable solutions to climate change, Forests Ontario is well positioned to continue its role as the voice for our forests and grasslands, and we thank you for joining us in our efforts to not only inspire a healthy tomorrow for communities around the globe but also to contribute to real change now.



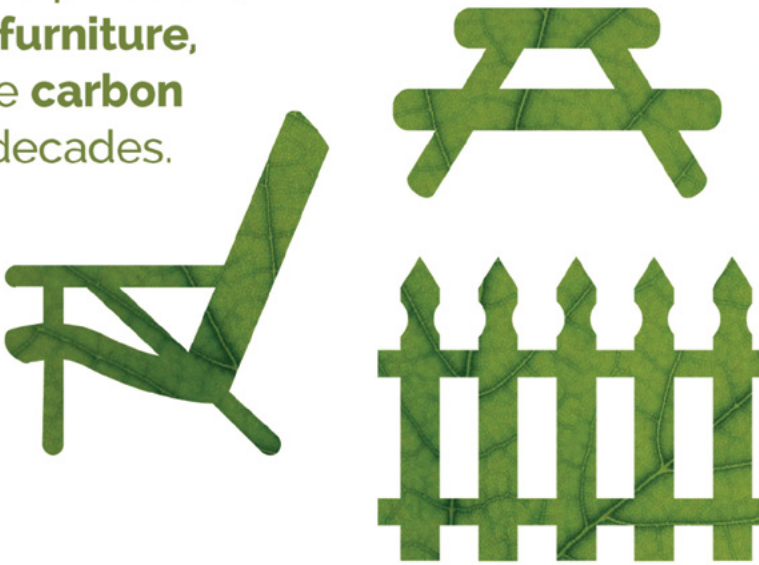
All the best,
Rob Keen, RPF
CEO of Forests Ontario and Forest Recovery Canada



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OUR FOREST

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On the cover: At Camp Tawingo near Huntsville, in August 2018, a counsellor and one of her campers examine insects and amphibians in a duck pond, a wetland near the centre of the camp surrounded by reeds, meadow grass and pine, poplar, birch, and cedar trees. Photo courtesy Camp Tawingo.

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“Every Tree that Stores Carbon Helps”

Forests Ontario Member began expanding forest in Simcoe County in the 1970s

BY BROOKE MCCLELLAND

Back in the 1970s, the Boy Scouts planted 5,000 trees on Bill Farrington’s 250-acre property in Simcoe County. Ten years ago, Farrington chose to expand his forest: he planted more than 19,000 trees through the 50 Million Tree Program. The following year, he became a Forests Ontario member, thanks to a referral by Eleanor Reed, a Field Advisor in Simcoe County. Farrington, a retired doctor whose wife Pat is a figure skating coach, is a father of five and grandfather of 14. He joined Forests Ontario to learn more about tree planting and to support increased forest cover in Ontario. “Climate change is really scary... and every tree that stores carbon helps from a climate change perspective,” Farrington says. He appreciates that his forest also supports the wildlife on his property, including bears, deer, rabbits, and fishers. As a member of Forests Ontario, Farrington has opportunities throughout the year to connect with other members and learn more about how healthy forests contribute to healthy communities, and so much more. “What resonates with me is the feeling that you can support forest management and creation, and educate people on the importance and significance of all aspects of forestry, and contribute to climate control.”



Forests Ontario would like to thank Bill Farrington and all our members for their valued support. Your contribution continues to make our urban and rural communities healthier through the creation, preservation and maintenance of new forests and grasslands. Forests Ontario will be highlighting our members in each issue of Our Forest magazine. If you are a Forests Ontario member and would like to share your story in our magazine, please contact bmcclelland@forestsontario.ca.

Envirothon Winners Head to Ohio

Victors hail from St. Elizabeth Catholic School in York Region

BY JOANA CARREIRA



A team from St. Elizabeth Catholic School in York Region emerged victorious in Ontario Envirothon 2022.

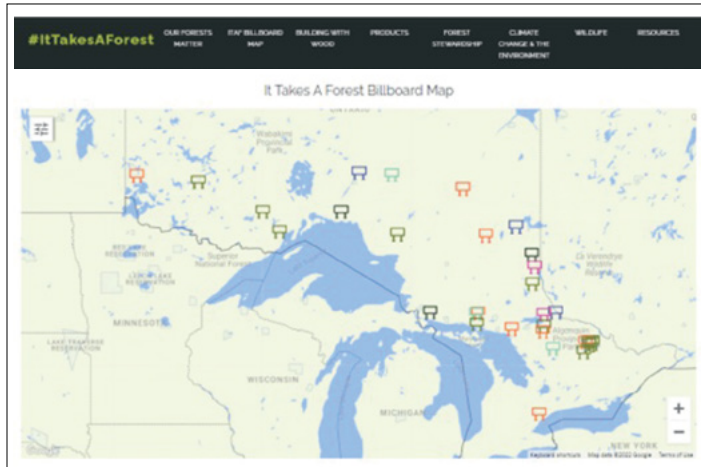
That’s a wrap on the 2022 Ontario Envirothon! This year’s inspiring virtual competition featured 19 student teams, from eight regions, competing for the top spot. From March to April, each team completed a series of iNaturalist Challenges, increasing their awareness of local ecosystems and species. Those that excelled advanced to the provincial competition and put their presentation and problem-solving skills to the test! Within 48 hours, teams researched, prepared, and delivered a presentation about the current issue topic of Ecosystem Restoration.

The winners of this year’s Ontario Envirothon competition are the “Saxophones” from St. Elizabeth Catholic School in York Region. University of Toronto Schools in Toronto took second and third place. The winning teams will receive prize money thanks to a generous donation from Maple Leaves Forever. The Saxophones qualified for the 2022 NCF-Envirothon Competition and will take the road trip in late July to Ohio. We wish them all the best!

It Takes a Forest Campaign Continues to Grow

Interactive map locates the spreading network of billboards across Ontario

BY TERI HOANG



Forests Ontario is thrilled to announce our It Takes a Forest (ITAF) interactive billboard map has launched.

Showcasing ITAF's growing network across Ontario, each billboard celebrates a benefit of healthy managed forests, such as stable employment, improved water quality, wildlife conservation, and the carbon benefits associated with wood products. In addition, the map highlights the location, forestry message, and local sponsors affiliated with each billboard.

Fact-based messaging builds awareness for sustainably managed forests and directly addresses misconceptions of the forestry sector. Thanks to the support and collaboration of local sponsors, organizations, municipalities and partners, ITAF billboards now cover an expansive area of the province, with a network that continues to grow with new communities being added year-round.

Visit the It Takes a Forest interactive billboard map to see if there's one near you at <https://ittakesaforest.ca/billboard-map/>.

At top: A map on the Forests Ontario website indicates the locations of It Takes a Forest billboards. Below: Posing by the It Takes a Forest billboard in Kapuskasing are, from left to right: Joshua Breau, R.P.F. Management Forester, Gordon Cosens Forest and Hearst Forest, Ministry of Northern Development, Mines, Natural Resources and Forestry and member of the Kap Local Citizens' Committee; Bruce Newton, Councilor, Town of Kapuskasing and member of the Kap Local Citizens' Committee; Ken Munnoch, Councilor, Town of Kapuskasing and member of the Kap Local Citizens' Committee; Kevin Del Guidice, R.P.F. Planning Superintendent, GreenFirst Forest Products.

ASK AN EXPERT

Do you have a question about wildlife, forest restoration, grasslands, or tree ID?

Send us your question with "Ask An Expert" as the subject line, and it may be answered in an upcoming issue of Our Forest magazine. Please write to info@forestsontario.ca.



Strength and Resilience

Reconciliation Community Tree Plant event at Mohawk Village Memorial Park

BY EMILY HART

Forests Ontario joined Six Nations community members in late May for a symbolic reconciliation tree planting of ten apple trees at the site of a former residential school in Brantford, Ontario. Kayanase, an ecological restoration and native plant and seed business at the Six Nations reserve, collaborated on the event with The Survivors' Secretariat, an organization dedicated to supporting the discovery and sharing of 136 years during which the Mohawk Institute school operated.

Mohawk Village Memorial Park is being developed to honour the children who attended the Mohawk Institute Indian Residential School (also known as the Mush Hole), which operated from 1834 to 1970.

At a press conference on May 24, survivors shared stories about the hunger and hardships experienced by so many at the Mohawk Institute. This Reconciliation Community Tree Plant event served as a reminder of the strength and resilience of children. This was the first of two plantings that will recreate an orchard at the site. Organizers plan a second event this fall, again including Forests Ontario, the Mohawk Village Memorial Park Committee, Kayanase and The Survivors' Secretariat.

To learn more about one of the survivors, Roberta Hill, and the significance of the apple trees, please see pages 14 and 15 of the Winter 2021/2022 Edition of Our Forest magazine, also available online at forestsontario.ca.



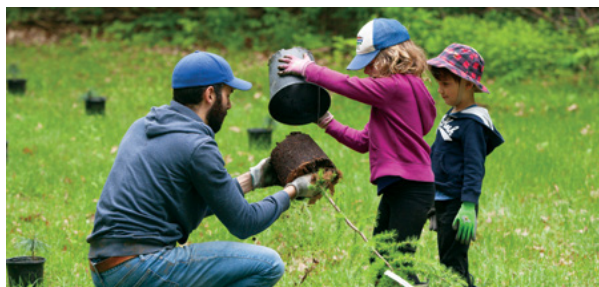
Above: Event participants included a teacher and student from Everlasting Tree School. Photo: Forests Ontario

At left: Forests Ontario's COO Elizabeth Celanowicz with Kayanase Administrative Team Lead Carole Smith. Photo: Emily Hart, Forests Ontario

Enhancing Greenery in the Nation's Capital

Rideau Valley Conservation Authority finds home for new trees and shrubs

BY EMILY HART



Participants planting tamarack trees at Forests Ontario's Community Tree Plant event in Ottawa's community of Kars. Photo: Forests Ontario



Federal MP for Ottawa Centre, Yasir Naqvi, with Forests Ontario CEO and RPF, Rob Keen. Photo: Forests Ontario

To wrap up the beautiful month of May, Forests Ontario made our way to the Ottawa area of Kars, Ontario, to host our Community Tree Plant (CTP) in partnership with Rideau Valley Conservation Authority (RVCA). One of Ontario's 36 Conservation Authorities, Rideau Valley is a long-time tree planting partner of Forests Ontario, and features 10 conservation areas, offering a variety of opportunities to learn about and get involved in the outdoors.

RVCA leads a variety of watershed support activities. This year, they dug 207,715 holes for new trees on 119 private properties, and planted an additional 34,600 trees to fill gaps in previous projects. The trees planted in Kars will increase biodiversity and canopy cover and reduce surface runoff. In addition, a plan to allow the planted area to naturalize will reduce emissions because it will no longer be mowed each year.

Participants in Forests Ontario's CTP planted 300 trees and shrubs including White Pine, tamarack, White Cedar, Red Oak, White Birch, Red Osier Dogwood, and leatherwood throughout two events. With guidance and support from RVCA and Forests Ontario, participants learned about the benefits of trees, shade and urban greenspaces.

Stay tuned for more information on Forests Ontario's next community tree plant event. In the meantime, we encourage everyone to get outside and plant. Please consult a forest professional to make sure you choose the right trees that will thrive at your site.

Shovels in the Ground

Imperial employees plant hundreds of trees benefiting their local communities

BY AMY HOWITT

This past spring, staff of Imperial in Mississauga and Sarnia participated in Employee Engagement Tree Plants in their communities. Participants contributed directly to the growth and expansion of their local neighbourhood greenspaces, and learned first-hand about the multiple benefits our trees provide, such as enhancing wildlife habitat, and improving the health of our local environments by purifying water and cleaning our air.

In collaboration with Forests Ontario and our local partners, a total of 150 trees were planted at Birchwood Park, on May 4, together with Credit Valley Conservation. Imperial employees also planted 125 trees at St. Clair Region Conservation in the City of Sarnia on May 18, an event that also recognized the 125th Anniversary of Imperial's presence in the Sarnia area.

Forests Ontario would like to thank our local partners and all Imperial employees who took part in the event to



From left to right: Kim Sellers (Forests Ontario), Hallie MacCuaig (Imperial), Emily Hart and Natalie Heyblom (Forests Ontario) at May 4 Birchwood Park Imperial Tree Plant. Photo: Forests Ontario

help increase the tree canopy in their local communities, enhancing the natural environment for residents and visitors alike for generations to come. We look forward to partnering with Imperial on future Employee Engagement Tree Plants, including one this fall with their staff in Nanticoke, Ontario.

To learn more about how you can support tree planting in your local community with Forests Ontario, please visit forestsontario.ca.

New Forests Take Root

Forests Ontario planted 2.5 million trees in Ontario this season – bringing the provincial total to more than 36 million

BY MATTHEW BROWN

Forests Ontario and our partners planted 2.5 million native tree seedlings across the province this season as part of its 50 Million Tree Program. This brings the program total to 36.7 million trees planted, creating more than 18,000 hectares of new forest on nearly 7,000 project sites.

“The help of our planting partners was key to Forests Ontario achieving this planting milestone,” says Rob Keen, Chief Executive Officer of Forests Ontario, and Registered Professional Forester. “The generous support of individual donors, corporate sponsors, and the Government of Canada has been critical to our success this year and will remain essential as we work with our provincial and national partners to plant more and more trees each year.”

Forests Ontario, and its province-wide network of planting partners, work closely with landowners to develop site-specific plans and plant the right trees in the right places for the right reasons. Over time, these newly planted trees will help fight the impacts of climate change, provide flood protection, purify water systems, and improve wildlife habitat and biodiversity.

“Eighty-three per cent of the total hectares planted under the 50 Million Tree Program are thriving and will sequester significant amounts of carbon,” says Elizabeth Celanowicz, Chief Operating Officer of Forests Ontario. “Creating healthy, new forests is one of the most effective, nature-based solutions in combating climate change impacts.”

Landowners who want to learn more about the 50 Million Tree Program, and sign up for the 2023 planting season, should visit forestsontario.ca.







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Prescribed burn in prairie in Baltimore, Ont.
Photos: Chelsea Marcantonio

Fire Is an Effective Tool to Protect and Enhance Tallgrass Prairie

Grasslands Ontario and partners successful in spring prescribed burns

BY REBECCA PEARCE-CAMERON

Anyone who has spent time in prairie or savanna in Ontario will tell you of the cheerful metallic warble of the Bobolink, the hum of native species of bees pollinating flowers like Wild Bergamot or Butterfly Milkweed, surprising encounters with small mammals making their way through the grasses, or of the extensive colour palette that changes throughout the seasons.

Tallgrass prairie, a diverse community of grasses and wildflowers, is globally endangered. In Ontario, land conversion to cropland, expansion of urban areas, encroachment of woody and invasive species and habitat fragmentation all pose significant threats to tallgrass prairie. It is estimated that less than one per cent of the original tallgrass prairie remains globally and less than three per cent within Ontario, highlighting the critical importance of the conservation of remnants and the restoration and careful creation of new prairie in the right location.

The growing interest from landowners in these extraordinary environments and existing knowledge and expertise across Ontario have been supported by organizations like Grasslands Ontario and the Grassland Stewardship Initiative funding opportunities. Grasslands Ontario, a division of Forests Ontario, administers the Grassland Stewardship Initiative, a large-scale restoration program supporting partners in the creation, enhancement, and maintenance of high-quality grassland habitat. Rich in biodiversity, resilient in the face of climate change, and productive within the agricultural landscape, grasslands in Ontario are important places to conserve and restore.

Fire is an important factor in the survival of these habitats. Tallgrass prairie species are adapted to infrequent fire disturbance. Ontario's grasslands have seen fire long before Europeans colonized this landscape, with Indigenous peoples having stewarded prairie and savanna



Top image: Prairie in Baltimore, Ontario, with regeneration of Milkweed, Wild Lupine and Hairy Beardtongue, among other species, within six weeks following the prescribed burn. Lower images, from left to right: Pre prescribed burn; during burn; immediately following prescribed burn 2022.



habitat with the intentional use of fire. Historically, large areas in southern Ontario, tallgrass prairie and savanna habitat, were dependent on fire to keep at bay woody and fire intolerant species. A burn in tallgrass prairie generally functions with the above-ground previous year's growth carrying a fuel load sufficient to support fire, while the growing stems of fire tolerant species survive below ground. Quick moving fires across this kind of habitat are an effective way to maintain prairie and savanna.

We had the pleasure of catching up with Val Deziel, Conservation Biology Coordinator at Nature Conservancy of Canada Central Ontario-East, and Jesse Henrich, RPF and owner/operator of Lands & Forests Consulting, on two of the Grassland Stewardship Initiative-funding supported projects they manage with the use of prescribed fire.

As one of the tallgrass prairie remnants in Ontario, NCC Central Ontario-East's site sits within an Area of Natural and Scientific Interest (ANSI), known as Harwood. The property itself provides key habitat for grassland bird species at risk as well as plays host to an important group of rare plants. In order to bring the cool season grasses and encroaching woody stems under control, a prescribed burn

was implemented and additional native species seeded on site shortly afterward.

"These remnants are so rare and valuable, that they must be maintained and protected," Deziel says.

Wild Lupine (*Lupinus perennis*) is native in the area and one of the rare species in Ontario that Deziel expects will greatly benefit from prescribed fire and the enhancement seeding of the site. "This is huge," Deziel says. She explains that Wild Lupine has seen significant declines in the area, and projects like this will provide habitat for this species to thrive in its native range once again.

Jesse Henrich, of Lands & Forests Consulting, explains that safety is of the utmost importance when planning for and conducting a prescribed burn. Comprehensive planning often takes eight to twelve months before the burn. The planning includes site assessments, modelling fire behaviour and consultations with all involved stakeholders including fire departments and local municipalities. Having completed over 500 burns in 22 years, the Lands & Forests Consulting staff are highly trained and experienced in all components of prescribed burn planning and implementation.

This spring, another Grassland Stewardship Initiative-funded prescribed burn was implemented in Grey County on a prairie established five years ago.

“It really is cost-effective on size basis,” Henrich explained. “To do mechanically by hand what the fire is doing would be many times more expensive.”

Shortly after the burn took place, the team seeded additional native species on site including tallgrass species such as Showy Tick-Trefoil, Big Bluestem, and Switchgrass amongst other plants to aid in increasing vegetation cover, improve the quantity and quality of pollinator species, and adapt more readily to the impacts of climate change.

Grasslands Ontario and its dedicated partners ensure that important habitat is conserved and created.

Since 2018, the Grasslands Stewardship Initiative has created, enhanced, or maintained more than 1,000 hectares of grasslands, to the benefit of the incredible diversity of plants and animals that call these habitats home. To learn more about the program and supports available, contact Rebecca Pearce-Cameron, Grasslands Restoration Coordinator, at rpearce-cameron@forestsontario.ca.



Wild Lupine on site in Baltimore, Ontario post prescribed burn.





Top: Installing plastic mulch. Below left: Prepping the land for planting; right: Trees planted will create two new windbreaks on the property.



We Were Tree Planters Way Before We Were Organic

Conservation has been part of the conversation for generations on this farm

BY HAYLEY MURRAY

For generations, the Irwin family has been practicing stewardship on their farm in southern Ontario. Conservation, erosion prevention, and wildlife habitat all naturally make their way into the conversation with ease. Bill and Carrie Irwin are third-generation farmers of their 130-acre property outside the hamlet of Mossley, Ontario. The Irwins have worked hard to have a minimal impact on the environment while running their operation. As conventional farmers, for more than 20 years they ran a no-till system, a technique for growing crops or pasture without tilling the soil.

Bill thinks they made the decision to certify the farm as organic 10 years ago, but Carrie confidently corrects Bill's memory saying, "it's now been 14 years." They run a cash crop system rotating between corn, soybeans, barley, and hay. Organic cash crop operations do exist in this part of southern Ontario, halfway between London and Woodstock, but make up a small percentage on this landscape, where agriculture dominates. The Irwins say that when they switched to an organic farm, neighbours started paying more attention to what was happening on their property.

Bill takes this opportunity to tell a story. "At the time, we still had dairy cattle and had gone away on vacation. The cows ended up getting out while we were away, and the neighbours took this opportunity to peek at what was happening on our organic farm." According to Carrie and Bill, one neighbour later commented: "Hey, those soybeans actually don't look too bad!"

Bill did not have to warm up to the idea of planting trees on the property, which happened to be the same case for his parents and grandparents before him. As a graduate of Ridgetown Agricultural College, Bill remembers his professors explaining how trees work for a farming operation. Research work on field windbreaks done in the early 1980s by Dr. Charlie Baldwin, at Ridgetown Agricultural College, demonstrated that windbreaks will increase crop yields out 10 times the height on the leeward side and protect soil from erosion out 15 times the windbreaks' height.

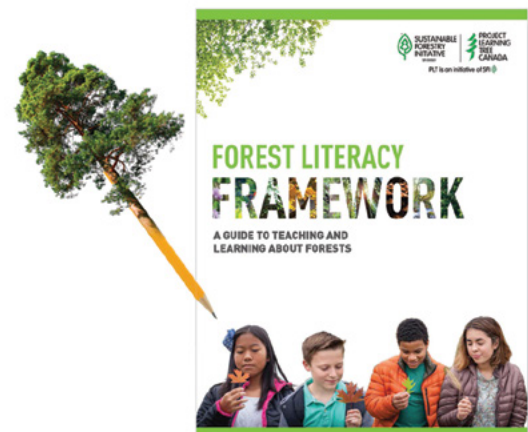
Bill's grandparents bought the farm in 1929. A year later, his grandmother planted two sections of windbreak on both sides of the homestead. Bill recalls only seeing one picture of the property without the windbreaks. The tradition for tree planting continued as Bill's parents planted a five-acre parcel of land with trees in the 1970s. In the 1980s, just one year after Bill and Carrie married and were running the farm, they planted windbreaks running the length of the property. Through a local community program in the early 2000s, they planted 100 maple trees along the roadside that stand strong today.

In spring 2022, the Irwins are proud to say they are completing the fifth major planting project on the property. Through Forests Ontario's 50 Million Tree Program, Upper

Thames River Conservation Authority (UTRCA) planted 720 trees, using a mixture of Eastern White Cedar and Norway Spruce. The trees span the length of the property creating two new windbreaks.

John Enright, the forester at UTRCA, led the planting. Enright emphasizes that weed control is critical for the establishment of these young trees for the first five years of their life. As an alternative to chemical control, the Irwins used a black plastic mulch installed with machinery prior to planting. The Irwins considered a biodegradable mulch; however, they were concerned that mulch might prove less effective in controlling weeds since it starts to break down two years after install. Bill describes the decision-making process between the two products as a "moral quandary" weighing the pros and cons. After seeing photos of the results from the plastic mulch and speaking to another organic farmer who had great results with their windbreak, they decided to make the same choice. One can later dispose of the plastic in an environmentally responsible manner. Bill and Carrie hope that the technology of the biodegradable material will continue to improve in the future. For now, they are excited to see how well the trees grow.

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An Outdoor Classroom for Children and Their Parents

Camp Tawingo takes advantage of the Managed Forest Tax Incentive Program

BY NATALIE HEYBLOM, RPF

For 59 years, Camp Tawingo has operated in Huntsville, Ontario, on 270 acres of classic Muskoka forest. This camp has been a special place for children and families visiting from across the country and internationally.

Tucked into a forest oasis, the camp offers a charming recreational and educational experience for children and adults alike. The forested land needs careful management, and that is what it gets: for nearly 20 years, Camp Tawingo has been classified as a Managed Forest under the Managed Forest Tax Incentive Program (MFTIP). Through this program, the camp has initiated various sustainable forest management practices involving timber harvesting, outdoor nature education, trail maintenance for recreation, and more. Camp Tawingo has remained a gold standard for stewards of the land, and Mike Pearce, Managing Director of the camp, took full advantage of the program.

Open to landowners in Ontario with at least four hectares of forest (about 10 acres) that wish to enrol their property as a Managed Forest, the MFTIP can reduce property taxes by 75 per cent on the forested portion of their land. Pearce first learned about the program approximately 20 years ago. Since then, the camp has been able to fully utilize the program by working on a Managed Forest Plan.

A major component of a Managed Forest Plan is setting tangible management objectives for a 10-year term. Education and recreation are vital forest uses for Pearce and the team at Camp Tawingo. Pearce says that “the camp philosophy is to help campers learn to live in harmony with one another and the land.” He adds, “part of every camper’s Tawingo experience includes ‘plant walks’ on our land and into our forest to learn about the different trees that populate it. We have signs on our trails that make a bit of a game out of tree identification. Campers also learn about succession (by seeing evidence of it around camp) as well as the life cycle of trees and life cycle of forests. Another part of every Tawingo camper’s experience is to spend a night (or two or three) on an out-trip. Some of these involve hiking our trails and staying in treehouses in the woods. Students who come to the Tawingo Outdoor Centre also use the Managed Forest as an educational tool on nature hikes.”

Trail maintenance is a major on-going task to continue to manage the forest for recreation, Pearce noted. In addition, the camp maintains signage that encourages being active outdoors and in the forest. These signs promote hiking, cross-country skiing, and snowshoeing. The Camp also plants seedlings in the spring to replace lost or damaged trees.

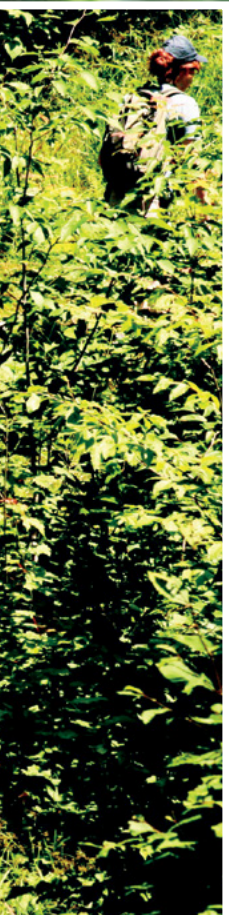
In addition to education and recreation, Mike Pearce reports that sustainable harvesting has occurred on the property. A combination harvest, with some trees logged with horses and some logged with machinery, took place

in 2004. The harvested Managed Forest has since been used as a learning tool for students and campers alike, teaching them about how a forest can grow back after a sustainable harvest.

The camp also taps its Sugar Maple trees to produce maple syrup, having started in the 1970s and rekindled the effort in the 2000s. Since then, Tawingo has produced syrup for over 15 years. This spring, with the help of students, Camp Tawingo tapped over 150 sugar maple trees. They then boiled the sap over a hearth to create the syrup. Sustainable harvesting and tapping for maple syrup are two examples of acceptable management activities under the Managed Forest Tax Incentive Program.

The camp plans to continue its legacy as forest managers, forest educators, and responsible forest users for generations to come. A voluntary program, the MFTIP can help landowners save on property taxes while ensuring the long-term health of privately owned forests in Ontario. Find out more at forestsontario.ca.







Weak branch union caused White Cedar tree to crack in half during Ottawa's windstorm in May. Photos: Astrid Nielsen

We Never Know Which Way the Wind Will Blow

What can the May windstorm that hit Ontario teach us about how to care for our trees?

BY ASTRID NIELSEN, RPF

On May 21, a powerful storm tore through much of southern and eastern Ontario and Quebec, packing winds of up to 190 km/hr. Some residents lost power for a week or more. Hydro Ottawa told CTV News the damage from the storm to the hydro grid is “simply beyond comprehension,” and “significantly worse” than the 1998 ice storm and the tornadoes that hit Ottawa in September 2018.

We hear from climate change scientists that storms like this will only increase in both intensity and frequency. Urban foresters will be busy analyzing the data and making recommendations to municipalities on what we can do in the future to reduce the impact of these storms to our infrastructure and our safety.

I spent some time touring the damage to learn what kind of trees failed and why. I also spoke with David Buttivant, Certified Arborist from Eastern Ontario Arborist. There were some consistent observations:

- There was a high number of whole tree failures where the entire tree was uprooted. This can be caused by poor or shallow root growth and is exacerbated when the soil is saturated as it was during the storm. Spruce, hemlock and Balsam Fir fared the worst. Trees with limited rooting space, or that had been recently impacted by construction damage, also failed more than other trees.
- White Pine trees tended to snap from the trunk, typically in areas of decay in upper canopy or failure along the trunk. Their strong rooting system prevents the White Pine from experiencing whole tree failure like other conifer species.
- Soft maples experienced damage in high numbers, especially Norway Maple. Many of the failures noted in these trees were located at weak unions or areas of decay.

Although anecdotal observations are important, we must be careful about drawing too many conclusions without a proper analysis of the storm data. Norway Maples seem to be the most impacted, but perhaps we see more of them toppled because there are just more Norway Maples than other kinds of trees.

Urban foresters and arborists across southern Ontario wonder: was any of this preventable? If so, how can we make our urban forests more resilient to climate change? Based on what I witnessed out in the field, I would conclude that, yes, with proper maintenance and tree establishment, we could have prevented some of this damage.

Building resilient forests begins with the planting of the tree. Is it the right tree for the right location? Will the soil volume be able to sustain the tree when it reaches maturity? Next steps would include structural pruning in the early years to *train* the tree to have good form

and reduce the chance of weak branch attachment from forming. Regular maintenance includes regular pruning and monitoring, which may increase as the tree matures. Many municipalities in Ontario, including Ottawa, have adopted these preventative maintenance programs for the City trees. Without these programs, the damage would likely have been worse in some neighbourhoods. Municipalities need to encourage better tree care on private property, which typically makes up most of the urban forest. In Ottawa, 60 per cent of trees grow on private land.

Unfortunately, some landowners either do not want to, or cannot, make the investment to hire a certified arborist to look after their trees.

Still, as climate change threatens our wellbeing, many have taken up the cause of trees, given the key role that trees play in shading cities and in curbing the urban heat island effect. Some communities have even started collecting their own urban forest inventories through a stewardship program called Neighbourwoods, developed by University of Toronto

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professors Dr. Andy Kenney (emeritus), and Dr. Danijela Puric-Mladenovic. These communities train volunteers to collect the tree information they need to strategically plan and manage their urban forest.

Since Neighbourwoods' inception in 1995, many communities across Ontario and beyond have used this method to learn more about and care for their trees. Neighbourwoods data has been gathered for Ottawa, Beaverbrook in Kanata and Champlain Park. These are positive steps towards creating more resilient urban forests.

Still, predicting nature is a challenge. Even when trained and armed with knowledge, we cannot ever know how the winds will blow. In some neighbourhoods in Ottawa, trees marked with an X for a planned removal did not topple in the storm whereas those around it without Xs did fall down.

After significant storm events, it is common that the fear of living close to large trees increases. Arborists and urban foresters must work with communities and municipalities on managing this risk through proper property management and education. Although proper maintenance can certainly help minimize the risk associated with large trees during storm events, it will not eliminate it. Co-existing with nature will always have challenges, but the risks of living without trees in this warming climate are far greater.

Astrid Nielsen, owner of Dendron Forestry Services, is an urban forestry consultant based in Ottawa.



Astrid Nielsen, RPF, examines storm damage to an Ottawa-area forest. A storm that hit Ottawa on May 20 toppled many trees. Inset: Limited rooting space in paved area left tree vulnerable to wind impact.

Garlic Mustard: An Aggressive Forest Invader

This plant can threaten ecosystems – but you can fight back

BY MADISON STURBA, INVASIVE SPECIES CENTRE



During the second year of its life cycle, Garlic Mustard grows small white flowers in the spring.

Warmer days and nights can bring the unwelcome growth of Ontario's most aggressive forest plant invader: garlic mustard. This herbaceous plant flourishes in the damp, partially shaded understories of southern Ontario's temperate forests and drives out native biodiversity as it grows. If left unmanaged, garlic mustard can dominate the land and threaten forest ecosystems.

Thankfully, there is an easy way to prevent the spread of garlic mustard! Hand pulling is an effective strategy to remove small populations of garlic mustard, but there are a few things to keep in mind before starting.

Garlic mustard relies exclusively on seed dispersal to invade new areas. Removing plants before they release their seeds into the soil can reduce potential for future growth – but how do we know which plants to remove? During the second year of its lifecycle, garlic mustard grows small white flowers in the spring (May/June), and in the summer (July/August), produces seeds that drop nearby. Seeds will establish a few metres away from the parent plant, creating “satellite” populations that expand the plant's range.

The area between parent and satellite populations fills in over time, forming large monocultures that outcompete native species. Landowners should prioritize the removal of second-year plants in late May and early June (before they produce seed pods) to prevent the establishment of new satellite populations. To prevent re-sprouting, remove

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Top: Garlic Mustard flourishes in the damp, partially shaded understories of southern Ontario's temperate forests and drives out native biodiversity as it grows. Right: In July-August, Garlic Mustard produces seeds that drop nearby. Photos: Ontario's Invasive Species Centre



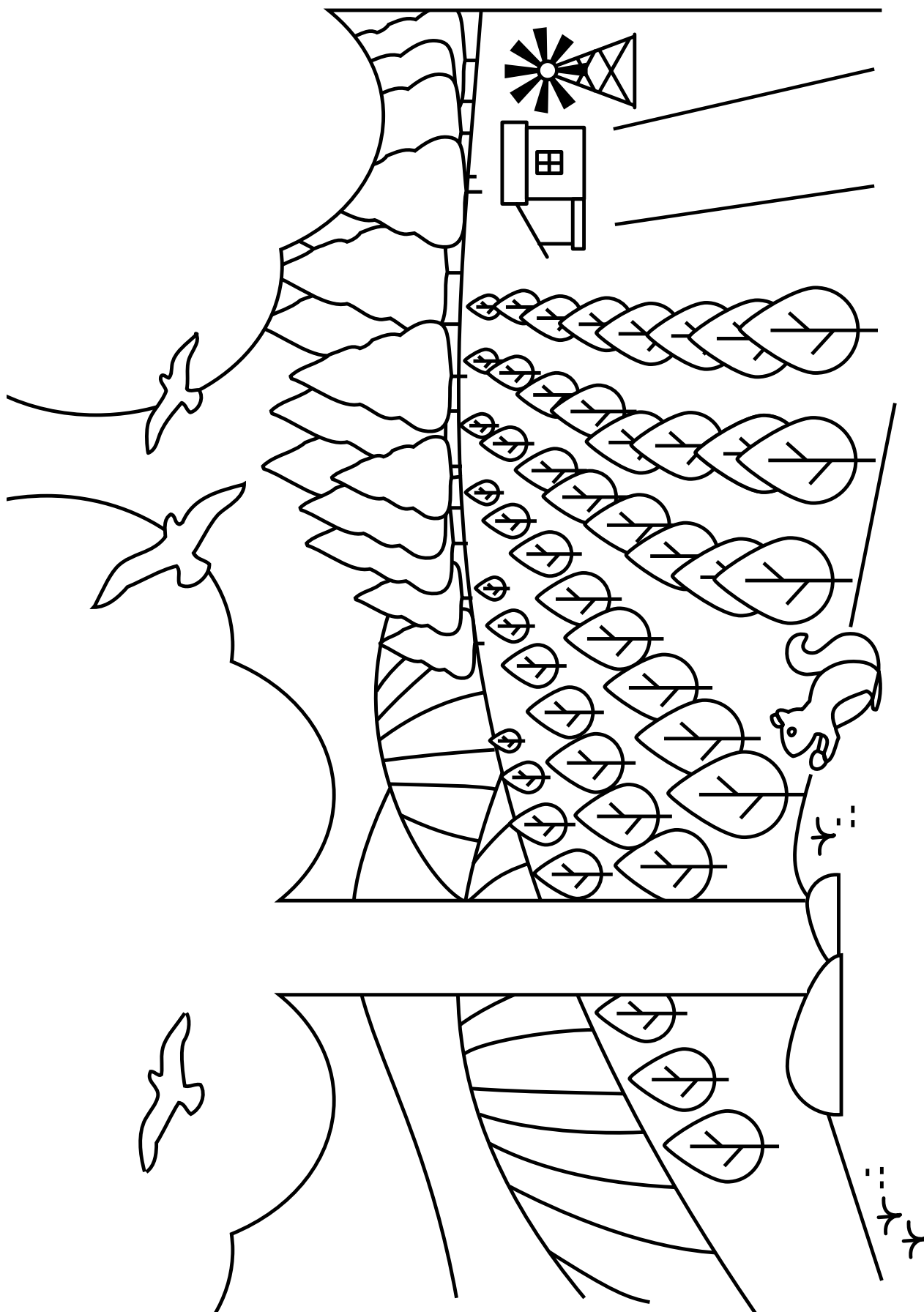
the entire "S" shaped taproot by pulling the plant from as close to the ground as possible. If you're pulling garlic mustard later in the growing season (July/August) and are concerned that the seeds are set, you can place a garbage bag over the plant (particularly the seed pods) and pull with the plant in the bag to reduce the risk of spread. You can also pull first-year plants during this time. Pulled plants should immediately be placed and sealed in a construction grade garbage bag to be sunned for 1-3 weeks, which dries them and prevents seed release. The dried garlic mustard can then be burned or kept in the bag and disposed of in the garbage. Discarding it with yard waste runs the risk of spreading its seeds. Remember to check yourself and the surrounding area for invasive species and brush off tools, boots, and clothing to remove travelling hitchhikers.

The final step is to repeat! Seeds can remain viable in the soil for long periods of time, so managing garlic mustard requires a long-term management plan of at least five years to continually diminish the seed bank. For larger, well established patches, target removal of satellite populations and edges to prevent further spread. Timing, consistency, and teamwork are key to removing garlic mustard from your woodlot.

For more information, check out *Garlic Mustard Best Management Practices* at www.invasivespeciescentre.ca

Madison Sturba is a training and outreach intern at the Invasive Species Centre.

Stumped: 50 Million Tree Program Colouring Sheet



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