

OUR FOREST



forestsontario.ca

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FALL 2021

Quality Habitat

Survival assessors evaluate lush young forests

PAGES 17-18

Green Leaders

PAGE 14



Nature-Based Solutions

We team up with many partners for a greener planet

As we move into shorter days and cooler temperatures, Forests Ontario is reflecting on a productive summer and looking forward to an exciting fall.

With Canada's 44th election now behind us, we can move forward on the most important fight of our lifetime – the fight against climate change. The federal government's commitment to plant 2 billion trees across Canada by 2030 is an important step towards reducing our emissions and cooling the planet. Our forests sequester carbon for hundreds of years, they improve soil and water quality, and they cool the air around us – they are essential nature-based solutions to climate change. As the leaders in afforestation in Ontario, we know just how crucial it is that this work be an integrated system between all groups involved. We look forward to working with the government on these all-important nature-based solutions as we strive towards a greener country.

Over the past summer, Forests Ontario staff continued to work diligently from home as we adapt to the COVID-19 pandemic. While we haven't had the opportunity to gather recently, that doesn't mean that we've been sitting idly by! Forests Ontario has been busy working with our partners across many sectors. To support the government's 2 billion tree commitment, we created a technical task team with some of our planting, nursery, and seed partners from around Ontario. On September 22nd, Forests Ontario President, Malcolm Cockwell, announced in a virtual event our new partnership with Kingbridge Centre. The goal of this partnership is to contribute to the growth of the Ontario and Canadian forest industry and the related economic and community activities, including large-scale tree planting and forest management.

Forests Ontario recognized September 30th, National Day for Truth and Reconciliation and Orange Shirt Day, as a holiday so that staff had an opportunity to learn about, reflect on, and support Indigenous communities. We must all do our part to learn more about the original stewards of Turtle Island, their cultures and traditional knowledge, and do what we can to reflect on the horrors of the residential school system. In the immediate future, we look forward to working with some of our Indigenous partners through Reconciliation Community Tree Plants. These events are important steps that we at Forests Ontario can take with our partners towards true reconciliation, healing, and ecosystem restoration.

While we have only just entered fall, we are thinking ahead to winter! Forests Ontario's 2022 Annual Conference will take place virtually February 9th–11th. The theme, Strength in Biodiversity, speaks to the need for biodiversity on the landscape and in our communities. It is fundamental to ensuring our ecosystems are healthy, resilient, and productive. We're excited to gather again with hundreds of landowners, forestry professionals, students, educators, and forest enthusiasts to work collaboratively and celebrate our shared life source. I hope to see you there for what

promises to be another innovative and exhilarating conference. Stay tuned for more details about speakers, exhibitors, and registration soon.

As of September 1st, Forests Ontario moved to our new office space at 15 Maple Avenue Unit #103 in Barrie! We spent a wonderful 10 years in Suite 700 at 144 Front Street West, but it was time for a change. The team was looking for a space that could house our staff, put us closer to our partners, and that was located near more greenspace. We'll be much closer to many of the organizations that we work with, allowing for more in-person meetings and gatherings, and we are directly across from the beautiful Lake Simcoe waterfront.

I would be remiss if I did not thank you, our readers, for your continuous support. Your help, in addition to that from our small business, corporate, and government partners, is what enables us to push forward each day on our mission to be the voice for Ontario's forests. To date, we have planted nearly 39 million trees, an impact that will be felt for generations to come. Thank you for creating a healthier, greener future.

All the best,



Rob Keen, RPF

CEO of Forests Ontario and Forest Recovery Canada



Rob Keen and Adam van Koeverden, Member of Parliament for Milton. Halton Region, July 2021.

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OUR FOREST

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On the cover: Anil Mungal of CNW photographed Forests Ontario Planting and Habitat Assessors Sarah Giles and Jon Curtis at a 50 Million Tree Program site in Cedar Valley, Ontario in August 2021. See story p. 14.

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Tori Toriseva Wins James S. Miller Memorial Scholarship

BY JOANA CARREIRA



The *James S. Miller Memorial Scholarship* is annually awarded to a student from northern Ontario who intends to pursue a post-secondary education in natural resources or a related field. The deciding factor is the recipient's demonstrated desire and commitment, not academic marks. Tori Toriseva, 18, a graduate of Fort Frances High School, is the 2021 recipient.

Tori's stewardship and appreciation of the environment began at a young age. She grew up in tiny Emo, pop. 1,300, about 1,700 km northwest of Toronto. Through her religion and parents' guidance, she has gained a genuine appreciation for both the environmental and recreational value of forests. Tori enjoys forests in every season and can be found camping, hiking, Nordic skiing, or capturing nature's beauty through the lens of a camera. She has volunteered with the Ministry of Natural Resources and Forestry in Fort Frances and worked alongside natural biologists to survey the health of different animals. Tori enrolled at Lakehead University to study environmental science. She aims to become an environmental biologist, scientist, or conservation officer and use her knowledge and voice to create a greener future.

Tree Bee Is Back

Tree identification challenge returns to York Region — online

BY MADELEINE BRAY

One of Forests Ontario's longest-running events is back in York Region this year. Tree Bee is an annual event, first started in Toronto in the 1960s, that introduces students in grades 4, 5, and 6 to concepts of forest conservation and teaches basic tree identification, while creating a lasting connection to nature through engaging activities and online resources. Tree Bee concludes in the fall with a friendly competition between participating teams of students. For the past six years, this program has been delivered in York Region. Due to the pandemic, Forests Ontario's education team is looking forward to rolling out this year's digital format.

Tree Bee traditionally draws participants from schools in York Region, but other groups can sign up! Non-traditional educators, home school groups, and other community organizations with youth in grades 4, 5, and 6 throughout the region are invited to participate in the activities and competition this fall.

Brush up on your own tree ID skills, register, and check out the resources available here: forestsontario.ca/en/program/tree-bee.



Tree Bee 1973.



Tree Bee 2019.



Above and Right: Landowner Wanda Mitchell with her pines in 2017 and in 2021.

Landowner Thrilled with her New Forest

“I am so appreciative of the 50 Million Tree Program,” she writes

BY WANDA MITCHELL

The 50 Million Tree Program in Ontario was the best thing that ever happened to me. One spring day in 2015, I listened to a forester (Peter Gagnon) promoting the program on the radio. I contacted Peter immediately. I own a farm that once produced grain and hay for livestock but at that time grew thistles, daisies and fire weed.

Planting over 5,000 beautiful Red Pine and White Spruce in 2015 was a no brainer. In 2016, I added another 5,000 trees in a second field and finally in 2017, I filled my entire empty fields, totaling over 16,000 trees.

As I watch these trees grow, I realize what a contribution this empty land has made for the environment and the future economy. And that is not to mention the beauty of young trees growing in my view for my enjoyment.

I am so appreciative of this program and the folks behind the 50 Million Tree Program for the legacy I am leaving for future generations. And this makes me feel I’ve accomplished something good.

For Ontario’s good, I sincerely hope our government continues the program and even enhances it.



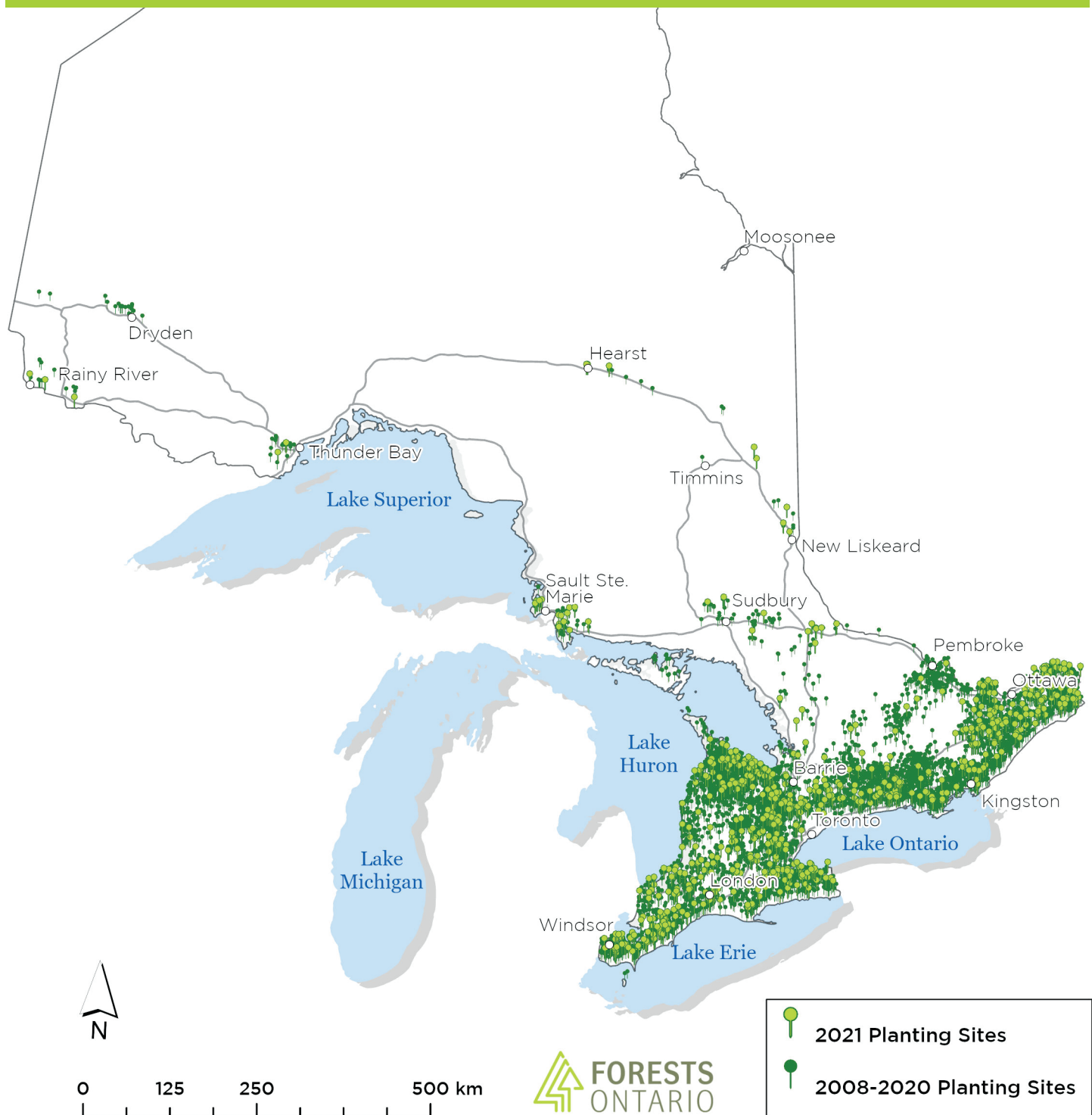
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To find out more and to donate, please visit:

tree trust.ca
Fighting climate change,
one tree at a time.

Tree Trust is a branch of the Elora Environment Centre, a registered Canadian charity.

2.8 MILLION trees planted in 2021





Brinkman Reforestation worker plants trees on the farm of Tom Ronan in Toledo, ON, May 2021. Photo by Emma Jackson.

Easy, Affordable Tree Planting has Wide Appeal

Since 2008, 34 million trees planted across Ontario through the 50 Million Tree Program

BY AUGUSTA LIPSCOMBE

Not-for-profit charity Forests Ontario facilitated the planting of 2.8 million trees through its 50 Million Tree Program (50 MTP) this planting season. These efforts created approximately 1,400 ha of new forest, contributing to the total 17,100 ha planted since 2008 – an area nearly twice the size of Barrie, ON. In total, Forests Ontario has rooted more than 34 million trees through the 50 MTP.

The province-wide 50 MTP makes tree planting easier and more affordable by providing technical and financial assistance. “Once eligible landowners apply to the program, we connect them to a local planting partner to create and carry out a site plan that suits their property and objectives,” said Rob Keen, Registered Professional Forester and CEO of Forests Ontario. “By connecting them with experienced forestry professionals and significantly reducing the cost of tree planting, the 50 MTP is a unique opportunity for those looking to green their properties.”

Another aspect which sets the program apart is the emphasis it places upon long-term survival. “It’s important to Forests Ontario that the seedlings we plant grow into healthy forests. That’s why we monitor tree health the first few years after planting,” explained Keen. A study by Natural Resources Canada found that 83 per cent of the total hectares planted through the 50 MTP are thriving on the landscape.

Planting trees supports a myriad of environmental, economic, and social benefits, including the creation of wildlife habitat, improved soil quality, increased property value, enhanced opportunities for recreation (such as hiking and snowshoeing), and climate change mitigation. Additionally, landowners with a minimum of four hectares (9.88 acres) or more of forested land may be able to take advantage of Ontario’s Managed Forest Tax Incentive Program, which offers up to 75% reduction on property taxes for eligible portions of the property.

Applicants must have space for at least 500 trees in order to apply for the 50 MTP. For those with smaller lots, Forests Ontario’s Over-The-Counter program offers trees at a discounted rate.

To learn more and apply for the program, visit www.forestsontario.ca/en/program/50-million-tree-program. For more information on Forests Ontario’s tree planting programs, contact Hayley Murray, Forestry Operations Coordinator, at (416) 646-1193 ext. 222.

As of June, 2019, the 50 MTP is supported by the Government of Canada, corporate sponsors, and donors.

Puja Uppal, an Ottawa-based actor and owner of Puja's Cupcakes, enjoys nature during a walk through a conservation area in Manotick, July 2021. Photo by Ethan Rotberg.



A Walk in the Forest Can Boost Your Pandemic-Battered Mental Health

A look into the science behind humans' connection to nature

BY ETHAN ROTBERG

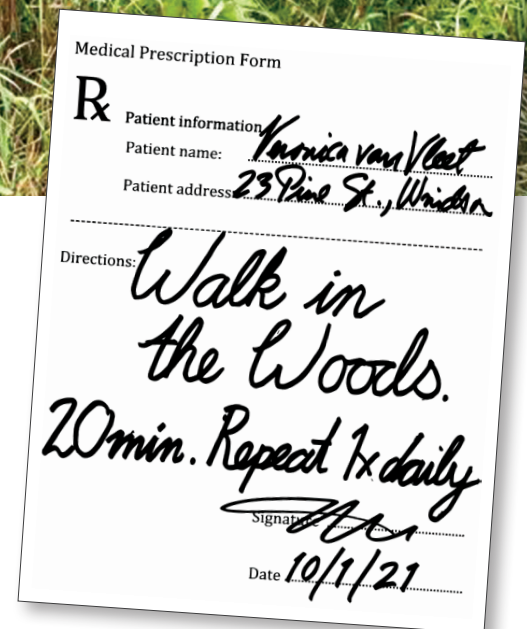
After the pandemic interrupted our regular connection with other humans, many of us discovered a helpful new connection with nature.

This connection came in the form of walks, time in the garden, visits to city parks, or roughing it in the woods. What started as just an excuse to leave the house turned into a useful insight: green space can benefit our physical and mental health.

And the lesson is well timed. The pandemic has taken a toll on our mental health.

In a 2021 study from the Canadian Mental Health Association and the University of British Columbia, 40 per cent of respondents reported that their mental health has deteriorated during the pandemic. Those surveyed reported worrying about getting the virus, separation from family and friends, job loss, and even the threat of domestic violence.

After the past year, our need for nature to boost physical and mental health has never felt as strong. Here's how science backs up those feelings.



The mood boost

“Have you tried going for a walk?” There’s a reason people sing this tune. It works. A walk can improve your mood, reduce anxiety, increase energy and help you sleep. But the grocery store is not the ideal destination.

“There is mounting evidence, from dozens and dozens of researchers, that nature has benefits for both physical and psychological human well-being,” says Lisa Nisbet, PhD, a psychologist at Trent University. “You can boost your mood just by walking in nature, even in urban nature.”

Doctors have even begun to write prescriptions for nature walks. Parks Prescriptions, offered through a new program called PaRx, assists pre-registered Ontario health-care providers with instructions on how to prescribe and log nature prescriptions for patients. A doctor may, for example, prescribe someone struggling with depression 20 minutes of daily nature outings in addition to other therapies.

Dr. Melissa Lem, a family physician and director of PaRx, has called on governments to designate parks an essential part of the healthcare system.

The benefits of spending time among trees go beyond improving your mood. It begins with air pollution's role as a risk factor for disease. A Healthy Dose of Green, a report from Forests Ontario, connects outdoor air pollution to cardiovascular and respiratory diseases, diabetes, asthma and other health issues.

Our forests fight on our behalf. Trees help reduce pollution in urban areas and filter harmful pollutants. A study from Environmental Science & Technology found birch trees especially capable of trapping toxic particles such as those emitted from vehicles.

Even on a physiological level, time spent close to trees helps us. The U.S. Department of Agriculture credits a tree-produced chemical called phytoncide — which plants use to defend themselves against insects, bacteria or fungi — for boosting our immune system by increasing natural killer cell activity. Those benefits remain even a month after we visit a forest.

Numerous studies show that exposure to trees can reduce blood pressure. The American Psychological Association says interacting with nature has cognitive benefits, like improving memory, cognitive flexibility, and attentional control.

According to one study, just 20 minutes a day in nature can pay off.

To top it off, simply looking at trees boosts our health. A 1980s study from environmental psychologist Roger Ulrich found that patients recovering from surgery whose bedside windows looked out on leafy trees healed, on average, a day faster, needed significantly less pain medication and had fewer complications than patients who instead saw a brick wall.

Getting back to nature

Forests Ontario is sounding the alarm on how our rural and urban forests face jeopardy due to displacement by other land uses, climate change, invasive species, and pollution. The organization is leading the effort to increase forest cover to a minimum 30 per cent in southern Ontario for a healthy ecosystem.

That connection you feel to the great outdoors? American biologist E. O. Wilson noted that our connection to nature is actually hardwired into our DNA. Something to remember the next time you stare into the great forest.



Strength in Biodiversity

Forests Ontario's 2022 Annual Conference

February 9, 10 & 11, 2022

Join us for inspiring discussions around how we can work together to ensure our planet's – and each other's – future.

Learn more at www.forestsontario.ca





Architects, engineers and union leaders from Southern Ontario toured forest and mill operations in Timmins in August 2019, on a trip organized through the Forests Ontario initiative It Takes a Forest. The visit promoted the use of wood as our most environmentally friendly building material.

Build With Wood and Cool the Planet

Careful forest harvest can help to mitigate climate change

BY AUGUSTA LIPSCOMBE

Our forests are the ultimate climate warriors: they remove carbon dioxide from the atmosphere and lock up carbon in their wood, releasing oxygen in the process. Did you know that 50 per cent of wood is made of carbon? Planting more trees is a great nature-based solution to climate change; however, so is sustainable forest management!

What is Sustainable Forest Management?

Sustainable forest management maintains the long-term health of our forests while supporting a wide range of economic, social, and ecological values. Across Canada, sustainable forestry is guided by rigorous regulations that ensure all activities are based on sound science, extensive planning, public and Indigenous consultation, and continuous monitoring.

How can Sustainable Forest Management Fight Climate Change?

Sustainable forest management has been widely recognized as an important tool in mitigating climate change. In 2019, the UN's Intergovernmental Panel on Climate Change stated: "Sustainable forest management aimed at providing timber, fibre, biomass, non-timber resources and other ecosystem functions and services, can lower GHG emissions and can contribute to adaptation." All levels of government have embraced sustainable forestry as a key component of a carbon-friendly future.

Trees sequester and store carbon as they grow. Older trees can store a large volume of carbon (the average

80-year-old Canadian tree absorbs 200 kg of carbon over its life); however, as their growth slows, so too does their ability to absorb additional carbon. Conversely, younger trees can sequester carbon at a much higher rate as they grow. Further, older trees often become carbon sources rather than sinks, either through natural decay or as they become more susceptible to fire or pests.

The carbon implications of aging forests are evident here in Canada – today, our managed forests are net sources of carbon, owing in part to advances in fire suppression during the 1950s that resulted in an older forest than would naturally occur.

Sustainable forest management limits carbon losses associated with natural tree death. Harvesting trees allows sequestered carbon to remain locked up in the form of wood products for far longer than the natural lifespan of a tree. And, for each tree harvested, new trees take root, resulting in an additional carbon benefit. Canadian law mandates forest renewal.

Additionally, wood products can displace carbon-intensive materials while still providing the range of products we rely on (toilet paper, books, furniture, television screens, renewable energy, etc.). Through innovation, wood increasingly replaces single-use plastics and high-carbon construction materials.

As Canada moves towards a 2050 Net-Zero objective, our forests, and their sustainable management, are a big part of the solution.

To learn more about Ontario's forests, their sustainable management, and the value they provide, visit It Takes A Forest: ittakesaforest.ca.

Renfrew County Green Leaders Reforest Homestead for Future Generations

Harold and Gail Murphy plant 7,000 trees through the 50 Million Tree Program

BY COLLEEN MAHAFFIE

Ontario's newest Green Leaders, Harold and Gail Murphy, were pleased to be selected for Forests Ontario's program, which celebrates landowners committed to re-greening the province. "We go out and check on them regularly," says Gail. "They're quite sturdy!"

The Murphys live in Dacre on a 228-acre property that came into Harold's family when his great-grandfather, Paddy Murphy, immigrated to Canada from Ireland in the 1870s. Paddy cleared existing forest on the property to make space for cattle pasture, and used the timber to build a log home. Harold and Gail, who both grew up in the area, rebuilt the house seven years ago after moving there full time.

Years ago, the late Earl Bohart, a Murphy family friend, logged the property. Harold and Gail decided they wanted to replenish the forest because it is good for the environment, provides a home to wildlife, and aids in carbon sequestration. Aside from the ecological benefits, they look forward to leaving a legacy for future Murphy generations.

Harold and Gail worked closely with Tim Gray, Field Advisor with Forests Ontario, to devise a plan for their property. Through the 50 Million Tree Program (50 MTP), the Murphys planted 7,000 trees on their property this year. Planting crews put in a mix of Red Pine and White Spruce. "They worked very hard, even though it was very hot," says Gail. "Even the blackflies didn't stop them."

The Murphys first heard of the program through Harold's previous role as Ward 2 Councillor on the Greater Madawaska city council. Asked whether they would recommend the 50 MTP to others, Gail offers a resounding yes. "We have already recommended it to friends and family in the area!" The couple intends to create a Managed Forest plan for the property and apply for the Managed Forest Tax Incentive Program (MFTIP). Landowners who enroll in the MFTIP can qualify for up to a 75 per cent reduction on their property taxes for the forested portion of their land.

"We're just happy with the whole process," Gail says. To learn more about the 50 MTP and to apply for tree planting in spring 2022, visit www.forestsontario.ca.



Gail and Harold Murphy pose with Tim Gray of Forests Ontario and a tree-planting machine on the couple's farm in Dacre in May, 2021. Photo by Terry Fleurie, Eganville Leader.



Bridging the Gap

A path to attract Ontario's youth to the province's forest sector

BY AUGUSTA LIPSCOMBE

Forests Ontario has teamed up with the Ontario Forest Industries Association (OFIA) to support a critical objective of Sustainable Growth: Ontario's Forest Sector Strategy: growing talent in the forest sector.

Ontario's forest sector is experiencing a labour force and skills shortage. By working together alongside industry, municipal and Indigenous leaders, and government, we can begin to bridge the gap between Ontario's youth and the provincial forest sector to improve industry competitiveness and positively impact the socio-economic standing of hundreds of communities across the province that rely on the forest sector.

"Forestry, like many industries, is suffering from labour shortages in a variety of roles – from harvesting and log hauling operations, mill operations, to skilled trades, truck drivers, and supervisors. Addressing this challenge requires collaborative efforts by associations, industry, Ontario and the federal government."

-- Sustainable Growth: Ontario's Forest Sector Strategy

In 2019, Forests Ontario brought 50 high school students to the Shaw Woods, northwest of Ottawa, to tell them about opportunities in the forest sector. Photos by CNW.



It is estimated that, in the forest sector, Ontario will experience an average deficit of almost 2,400 workers per year through to 2028, resulting in a labour shortage equivalent to 40 per cent, impacting industry competitiveness, community wellbeing, and the global supply chain of sustainable forest products.

The primary intent of the project is to gather critical information related to youth perceptions and the sector's labour needs. This information will be used to increase the number of youths entering the forest sector labour force with the appropriate education or training to work in the positions in which they are needed most. This will be accomplished through a series of surveys and focus groups designed to identify existing job vacancies and the associated training and educational requirements needed to fill those openings. Furthermore, the project will explore the perceptions of youth, teachers, and parents with respect to forestry and the forest sector as a potential area of employment.

It is hoped that this venture will allow the forest sector to reduce anticipated labour shortages over the next five years, thus benefitting employers, forestry-dependent communities, and the province as a whole.

Funding for the project comes from the Ministry of Labour, Training and Skills Development through their Ontario Labour Market Partnership Program.

"We are investing in the training programs that give people the skills they need for in-demand careers in their communities," said Monte McNaughton, Minister of Labour, Training and Skills Development. "As we prepare for the economic recovery of our province, it is more important than ever that employers have the workers they need to succeed."

Committee members:

Columbia Forest Products

CRIBE

EACOM

Fleming College (Post-Secondary)

Forests Ontario (Lead)

Hec Clouthier & Sons (Contractor)

Indigenous youth

Lavern Heideman & Sons Ltd. (Sawmill)

OFIA (Lead)

Oskhi-Pimache-O-Win

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Checking Up on the Trees

Forests Ontario's assessment team criss-crossed the province in the summer of 2021

BY JOANA CARREIRA

Over the summer, many landowners who planted trees on their property under the 50 Million Tree Program (50 MTP) may have received a call from Forests Ontario's Planting and Habitat Quality Assessors, Jon Curtis and Sarah Giles.

In cases where the original planting partner is unable to complete the scheduled survival assessments, our survival assessors reach out to landowners to schedule a visit to assess and record the health and survival of trees planted under the 50 MTP. After their assessment, they follow up with landowners regarding their findings, answer questions, and provide resources and information about any issues observed on site. Under the 50 MTP, survival assessments occur multiple times for up to 5 years post-planting. Survival assessments in the first few years of a tree's growth will indicate whether management activities need to be implemented or adjusted to support the health of the growing forest. Some common examples of management activities recommended to landowners are weed and rodent control near the newly established trees. When completing a survival assessment, the assessor will be looking for:

- Lack of growth, missing leaves or needles, early browning of leaves or needles, or brittle, damaged or missing branches.
- Reasons for poor survival include vegetation or weed competition, girdling by rodents, browse, pest damage, presence of disease, and environmental factors (i.e., ice storm or drought).
- If trees have been removed or destroyed (i.e. lawn mower), the landowner will be notified of these concerns

This summer, Curtis and Giles visited 42 sites. Some of those sites had multiple planting plots, for a total of 88 sites evaluated in three months. In total, the team spent more than 82 hours in the field and counted over 26,263 trees. "We have had the pleasure of venturing all over Ontario and visiting some extraordinary sites," said Giles. "We have seen everything from Sugar Maples to White Pines and newly planted trees to acres of healthy, lush forests." Each site is unique, and varies depending on the landowner's vision and the site conditions. Whether the trees were planted for aesthetic reasons or for a practical use – such as a windbreak – our survival assessors are trained to evaluate every site accordingly.

An assessment can take anywhere from 30 minutes to multiple hours depending on the size of the site. "We begin by counting the trees that have survived while taking notes on anything that could impede the site's growth, like the height of the grass, nearby invasive species or any animal markings left on the trees," explained Curtis. "There are other factors that might affect a site's health such as improper care and past unstable weather. Each site is vastly different, and we take all these factors into consideration when analyzing their health and growth."

After our survival assessors complete their assessment, they contact landowners and answer any questions they may have regarding their site's survival rate, health and maintenance.

Jon Curtis and Sarah Giles, Planting and Habitat Quality Assessors for Forests Ontario, check a young forest planted in 2011 in the Cedar Valley, part of the York Regional Forest. Photo by CNW.



Also, landowners often ask survival assessors to comment on their trees' growth and health. "We first collect all the data and only afterwards are we able to properly analyse our findings," said Giles. "We understand landowners' interest in their sites' health and prosperity; however, we cannot answer such detailed questions until we ourselves have fully evaluated every aspect of the site."

Landowners who have previously planted under the 50 MTP that have questions about their trees have a couple of options. First, they can reach out to the original planting partner. Planting partners that participate in Forests Ontario's 50 MTP are forestry professionals with a wealth of experience to help answer your forestry related questions. Finally, landowners can reach out to Forests Ontario directly with questions – our team of Forestry staff is happy to help guide landowners to resources or answer any questions about their newly establishing forests!



Above: Jon Curtis, Cedar Valley, ON.
Photo by CNW.



Left: Sarah Giles, Cedar Valley, ON.
Photo by CNW.



Big Brown Bat
photographed by
iNaturalist contributor
Navin Sasikumar near
Philadelphia, Pennsylvania
in April, 2021.

Forests Need Bats, and Bats Need Our Help

These little mammals provide big benefits to our environment

BY MICHELLE VISCONTI

When asked about bats, most people think about vampires, Halloween, or Dracula, but many fail to realize just how unique and important these creatures are. Bats are vital to our environment. They are insectivores, and consume great quantities of the pests which threaten us, our forests, and our agricultural fields. This feeding can save farmers, as well as foresters, huge amounts of money.

Bats are mammals, just like us, and are the only mammals that can fly. Contrary to many myths, they are not blind; they simply prefer using echolocation to travel and to find food. Bats generate sound waves from their mouths or noses. As these waves strike an item, they hear the echoes, which helps them identify what is around them.

So, just how helpful are bats? It is common for a bat to consume the equivalent of their body weight in insects every night. That means that a single bat has the capacity to eat thousands of insects daily. Ontario has eight bat species: the Little Brown Bat, the Big Brown Bat, the Hoary Bat, the Eastern Red Bat, the Silver Haired Bat, the Tricolor Bat, the Northern Long Eared Myotis and the Eastern Small-Footed Myotis. Unfortunately, four of these eight species are endangered. Their worst enemy is white-nose syndrome, an infectious disease that has eliminated around 95 per cent

of Ontario's bats. With bats being of such importance to the maintenance of our ecosystems and forests, spreading awareness and saving these small creatures is essential.

The bat shortage can also hurt farmers as some bats help pollinate many of Ontario's crops. Similar to other pollinators, fruit-eating bats feed from the nectar of flowers and gather up a layer of pollen. This then gets carried and transferred to other blooms as they travel from one plant to another.

Bats also provide essential ecological services by increasing seed reproductive success as well as seedling recruitment. Some bat species disperse seeds from many important trees and plants, including fruit trees. Bats eat fruits and their seeds. Then, at night, they travel long distances and defecate the seeds while in flight. The dropped seeds have already been fertilized by the bats, which aids their germination process and overall growth.

With their services to forests, ecosystems, humans, and even economies, bats are essential to us all. However, their existence is threatened, in Ontario and worldwide. We must work together to bring awareness to both their importance and the threats they face.

LDD Moths Are Eating All My Tree Leaves

Natural diseases can control moth populations

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, 15 Maple Ave. Unit 103, Barrie, ON L4N 2N6



LDD caterpillars, Schomberg, ON, June 2021. Photos by Allison Hands.

DEAR SILVIE,

The Gypsy Moth caterpillar has eaten all the leaves from my oak trees. What do I do?

Horried in Huron County

DEAR HORRIED IN HURON COUNTY,

Before we get going, please note that the forestry community has chosen to drop the term "Gypsy Moth," as it is an offensive slur. As a placeholder, foresters use the Latin name, *Lymantria Dispar Dispar* (LDD).

Now, to your question. LDD moth infestation has become commonplace across Ontario. The moth's larvae, better known as caterpillars, are destructive leaf eaters, and unfortunately they are not picky. The LDD moth has 300 known hosts, including the leaves of oak, maple, and birch as well as the needles of White Pine and spruce. A female moth can lay up to 1,000 eggs. Regions with large numbers of egg masses in fall will see the largest leaf loss the next year. Fortunately, one year of this defoliation rarely kills trees. Healthy trees are often able to regrow their leaves in the late summer after the caterpillars transition to their next life stage, pupa.

Why has there been an outbreak?

Native to Europe, the moth does have natural predators in North America. Birds and small mammals control LDD when moth populations are low. When environmental conditions allow (temperature, moisture, food ...etc.), and predator populations are low, LDD populations explode. The booming LDD population often collapses after two to four years.

Two diseases are crucial players in causing an LDD outbreak to collapse. The caterpillars naturally carry low doses of the nucleopolyhedrosis virus (NPV). NPV will kill the caterpillars when the population reaches very high densities, such as during an outbreak. The second disease, *Entomophaga maimaiga*, is a fungus that contributes most to LDD caterpillar mortality in rainy springs when the conditions are best for the fungal spores to spread.

What can I do to protect my trees?

Caterpillars are active in early May to mid-July. Wearing gloves, pick up the caterpillars and drop them into a bucket with soap and water. Starting in the mid-summer, regularly inspect your trees for tan-coloured, 4 cm long egg masses. Remove egg masses from tree trunks, branches, and outdoor equipment (e.g., lawn furniture) between August and May by scraping the eggs into a bucket filled with soap and water.

Trapping caterpillars using burlap is also effective. Wrap a 25cm wide strip of burlap around the tree at chest height. Tie a string around the centre and fold the top part down, forming a skirt. Pick off the caterpillars daily and dispose of them. If you have too many trees to control LDD moths manually, consult a forestry professional.

Yours, Silvie

Make the Right Choices for Your Forest

Managed Forest Tax Incentive Program helps landowners in more ways than one

BY PETER KUITENBROUWER

Along with the joy that privately-owned forests bring to their owners, the forests also benefit everyone else. Forests purify air, sequester carbon, emit oxygen, stabilize soil, help mitigate flooding, raise property values, filter water, and provide habitat for animals, birds, and pollinators.

The Government of Ontario wants to encourage landowners to protect and nurture their forests. To encourage sustainable forest management, they created the Managed Forest Tax Incentive Program (MFTIP).

For anyone who owns four hectares or more of forest, a managed forest plan makes sense. The plan will help you to take care of your forest, and it will reduce property taxes by up to 75 per cent on eligible forested land.

The number of properties enrolled in the MFTIP continues to grow, from about 17,500 properties across Ontario in 2018 to close to 19,000 properties last year.

Forest Plan as Teaching Tool

When people purchase a forest, they often have a lot to learn. For example, a young couple, who grew up in the United Kingdom, bought and moved to a roughly 30-hectare property on a dirt road in Eastern Ontario in 2019. They love the great outdoors; as children, both spent time on farms, and are avid hikers who have travelled all over the world. But they knew little about how to tend their forest — a wild, swampy, and magical place, well-travelled by deer. They contacted a Managed Forest Plan Approver to write a plan.

The plan approver arrived at the start of maple syrup season. He noticed that, seeking some sap to boil for syrup, the pair had tapped three trees: a poplar, a Black Cherry, and an ironwood. The couple had not realized that they tapped trees which wouldn't provide sap for maple syrup; granted, it is tough to identify trees in winter when they have no leaves. With the plan approver's help, the pair switched their spiles to maple trees, and produced several litres of maple syrup.

The couple also wondered whether they should thin their forest and harvest some trees. Inventory of the forest found a predominance of young cedar in many areas. In the hardwood sections of the forest, previous owners had cut a lot of trees; most trees were less than 50 years old. An abundance of poplar, which comes in first after logging, provided more evidence of the harvest.

Given the forest's relative youth, the plan did not recommend logging at any scale for a number of years, to let the forest recover. The couple will clear trails, take fallen dead trees for firewood, and cut some trees that compete with young maples to give them light, so the maples may thrive and provide maple sap.

Managed Forest Plan Approvers charge for the plans they write. A plan lasts 10 years. Typically, a forest owner recoups the cost of the plan in tax savings within the first few years. To learn more about the MFTIP program and to find a plan approver in your area, visit www.ontario.ca/page/managed-forest-tax-incentive-program.

Tree I.D. Can Be Sweet

To make maple syrup, be sure to select the right species



Poplar
Do Not Tap



Cherry
Do Not Tap



Sugar Maple
Okay To Tap

Overtapping Sugar Maple trees or tapping young trees can harm the trees. Do not tap trees under 25 cm diameter at breast height. The province of Ontario recommends one tap for a tree 25-36 cm diameter; two taps for 37-48 cm, three taps for 49-61 cm, and four taps for Sugar Maples over 62 cm in diameter. Bypass some mature trees to reserve them for tree seed production. Details: Eastern Ontario Model Forest, www.comf.on.ca. Art by Peter Kuitenbrouwer.



Forest Tent Caterpillars,
Awenda Provincial Park, 2019.
Photo by Madeleine Bray.

The Friendly Hungry Caterpillar

The Tent Caterpillar is a domestic species and nothing to fear

BY JOANA CARREIRA

These past two years, *Limantria dispar dispar* (LDD), formerly known as the Gypsy Moth, has left a deep scar on Ontario's trees and on people's perception of caterpillars. An invasive species, the LDD moth is known to eat everything in sight, and in 2020, it defoliated more than 580,000 hectares in Ontario alone. The LDD moth rampage consequentially has given all caterpillars a bad name.

The Tent Caterpillar is very different. This insect has over 26 species, six of them native to North America. Among the most common in Ontario is the Eastern Tent Caterpillar. Its name comes from the elaborate tent-like nests it creates. The insect's appearance, food sources, and lifespan make it easy to differentiate.

How to spot one

The Eastern Tent Caterpillar lays its eggs in late June or early July. Reddish brown, they have rows of blue and orange spots on their backs and are soft to the touch. After cocooning, the caterpillar becomes an orange-brown moth with yellow lines on its wings.

The caterpillars' unsightly tents truly make them distinctive. They work together in egg colonies to spin their silk tent in tree branches and forks and then go on the hunt for leaves. The caterpillars then come back and rest in their newly created home.

Like the LDD moth, the Eastern Tent Caterpillars feed on tree leaves. However, they do not pose the same threat. They have coexisted with the landscape for many years and predominantly feed on fruit trees like cherry and apple,

but have also been known to feed on Trembling Aspen and Sugar Maple. Although there have been significantly large outbreaks in the past causing mass defoliation, little permanent damage is done.

Should you be concerned?

In short, no. "Eastern Tent Caterpillar outbreaks come in predictable 10-year waves, and typically last two to three years," says Dr. Sandy Smith, professor in Forestry at the University of Toronto. "Although these caterpillars seldom kill their host trees, tree owners should recognize the signs of an infested tree and act accordingly. Specifically, those who own maple trees should not tap their trees immediately after an outbreak as it causes further strain on the trees." Also, it is important to note that the Eastern Tent Caterpillars have natural predators like birds and rodents that help to control the population.

How to treat an infestation

While this species causes no severe damage to trees, their nests can look unpleasant. There are ways to treat an infestation if severe. "The easiest way to treat an infestation is by removing the nest," says Dr. Sandy Smith. "The most effective time to do so is when the caterpillars are resting in the nest, either early morning or late in the evening."

These hungry caterpillars are nothing to fear. The LDD moth may have forever changed the way people view caterpillars; still, it is nice to know that some are friendly.

Our Forest Photo Contest Winners



First Place

Red fox spotted between branches at Claireville Conservation Area, Ontario. Viktor Arzethauser, October 2020.

 @viktorsmash

Second Place

A golden-hued tamarack borders a marshy area near Thessalon, Ontario.
John Hoogendoorn, Autumn 2020.

📷 @dekkutree



Third Place

A perched Eastern Screech-Owl
in Paris, Ontario.
James McClure, February 2021.

📷 @james.pr.mcclure



Sign up for our TreeLine newsletter at www.forestsonario.ca to receive updates on future contests.

Stumped: Urban Landbarks

Create a tree map of your neighbourhood

BY MADELEINE BRAY

Trees are everywhere in our communities, on sidewalks and in thriving urban forests. We pass by them every day on our drive to work, way to school, or walk around the neighbourhood.

An urban forest can be defined as any woody plants growing in and around a city, suburb, town, or other urban environment. This includes trees and shrubs in parks, along roadways, and in backyards. Urban trees reduce air pollution, lower temperatures, and provide wildlife with important habitat.

The management of urban trees is known as urban forestry. It is a specialised field of forestry that considers the contributions that trees make to the health and well being of people, while also considering the challenges trees must overcome in the city. Urban trees deal with more stress than their forest counterparts: they face air pollution, road salt, soil compaction, and invasive species.

Cities and urban forestry departments rely on a forest inventory database to determine and monitor urban forest health. The trees are different in each town or city; still, each inventory will include information on tree species, location, size, and general tree health. In this activity, you can explore your local urban forest and design your own tree inventory map.

MATERIALS

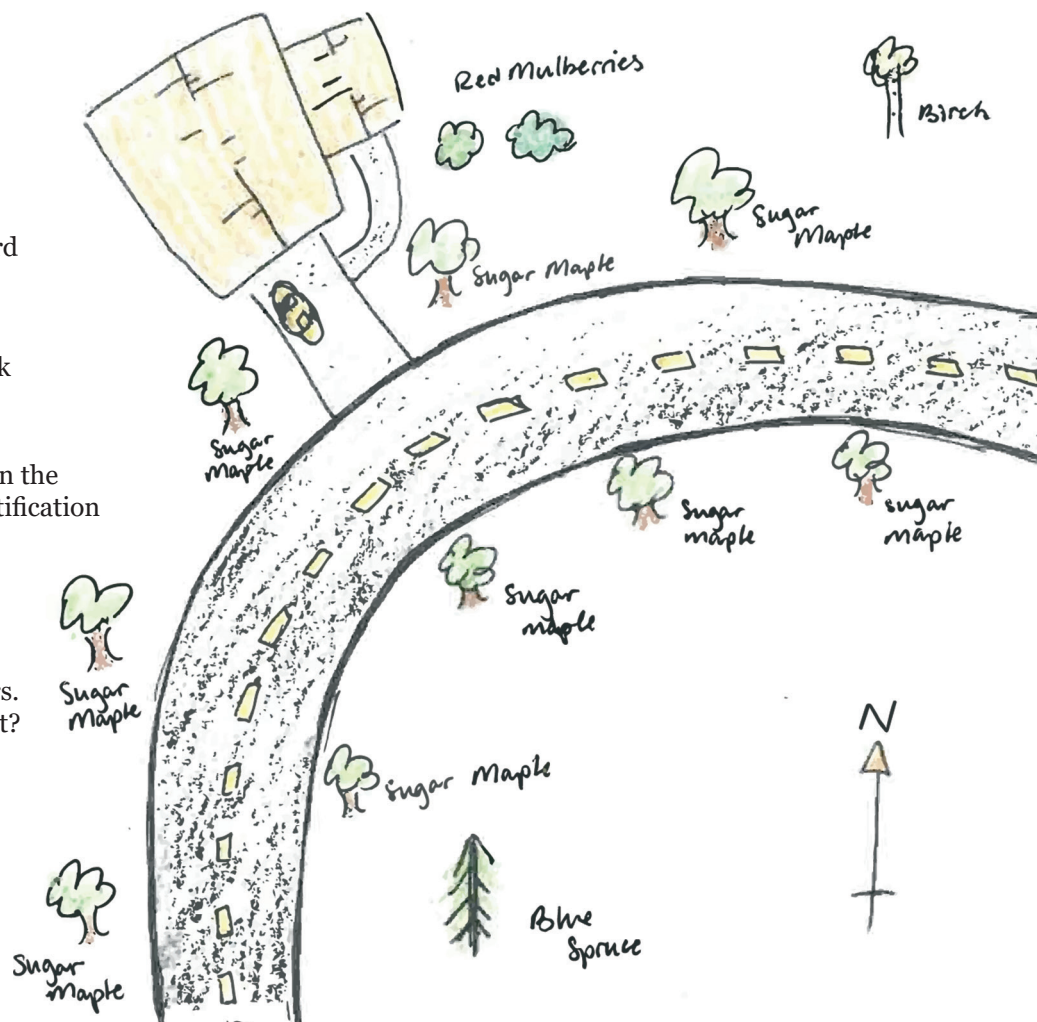
- Pencil
- Paper
- Clipboard or notebook
- Pencil crayons (optional)
- Pocket Tree Bee ID guide (www.treebee.ca)

ACTIVITY

1. Draw a map of your street or school yard
2. Add important landmark features (i.e. buildings, statues)
3. Add trees. If there are lots of trees, pick your favourites.
4. Try to identify each tree on your map, using either the pocket tree ID guide on the Tree Bee website, or another tree identification guide for your area.
5. Label the trees drawn on your map.

Go further: Count how many trees of each species you see in the area your map covers. Are they all the same? Or are they different?

Note where the trees are located. Do you think they were intentionally planted there? Why/why not?



Drawing by Madeleine Bray

Stumped: Tree ID Wordsearch

P R H E K V K R A B N E V T A P
 A L D N U O P M O C Q F K A O T
 N R E S K E J I R T A M N B P Q
 D Z C A N Q G S M I E Y U Z T A
 B U M T F E S D H K O X R I K M
 Q O B I O D I V E R S I T Y M A
 S V G Y I W M G V B R A L U W P
 H S A E Q Z P P J U O E Q S R L
 A T L A T S L M Q R D L L F O E
 P R M H N I E V L G F D A M Z E
 E G A Q K C S Y E E N E R S H Y
 E T P D E L R O H W A E B D V F
 H W A N O B R G P A R N Q E G I
 T I T A U E C U R P S O W H P T
 O G T U E V W A V N O K P T R N
 O J E T A N R E T L A G C O J E
 M V R O R Z A N A R U O L O C D
 S R N J Q E B I R C H Y I T R I
 M Q I S H F E P T S E N O H N S
 P H E P A T K J Q M E V I T A N

Pine
 Spruce
 Elm
 Birch
 Bark
 Smooth

Texture
 Colour
 Trunk
 Simple
 Compound
 Oak

Ash
 Maple
 Pattern
 Native Biodiversity
 Identify
 Tree

Leaf
 Needle
 Bug
 Twig
 Alternate
 Opposite

Lobed
 Toothed
 Whorled
 Edge
 Shape

For more great activities, fact sheets and free lesson plans, visit:

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