

# The Professional Forester

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# Preparing for spotted lanternfly's arrival in Ontario

Emily Posteraro, Program Development Coordinator, Invasive Species Centre



Adult spotted lanternflies on a host tree in Pennsylvania. Photo credit: Invasive Species Centre.



Sooty mold growth on honeydew excretions. Photo credit: Lawrence Barringer, Pennsylvania Department of Agriculture, Bugwood.org.

A novel invasive species made its quiet debut in Ontario late this summer. Suspect finds of the spotted lanternfly were reported by community members in the municipalities of Oakville and Pelham in September, resulting in increased surveillance by the Canadian Food Inspection Agency (CFIA). Although detections were not confirmed in those areas after CFIA's searching did not turn up any live insects, the reports heightened the sense of urgency around their potential arrival.

The spotted lanternfly (*Lycorma delicatula*) is an invasive insect in the planthopper group – not a fly like its namesake suggests, or a moth like it may appear to the untrained observer. Spotted lanternflies are native to parts of southeast Asia but invasive in South Korea, Japan, and as of 2014, the northeastern United States. This insect is a *plant stressor*. Its feeding disrupts the circulation of sugars throughout the host plant and can cause sap weeping wounds, wilting leaves, and branch dieback in a host tree. Although most plant hosts are not killed by spotted lanternfly, grapevines and the saplings of black walnut, maple, and other species have been killed consistently by their feeding. Their preferred host plant, the invasive tree-of-heaven, is common and widespread in Ontario. This together with ample vineyards, a favourable climate in southern Ontario and proximity to established populations in the United States (like the one in Buffalo, New York) make spotted lanternfly a likely future invader.

Even when spotted lanternfly activity does not cause mortality in plant hosts, their feeding can weaken plants and make them more susceptible to environmental stresses, such as other insects, pathogens, land use change, and disturbance events caused by climate change. Their excretion of honeydew, which forms sticky pads that foster the growth of sooty mold, can reduce the host plant's photosynthetic capabilities. They have been documented feeding on over 100 different species of plants in North America, causing significant damage to cultivated grapes in particular. In Pennsylvania, where spotted lanternflies were first detected in North America, it was estimated that the annual direct economic impact on the agriculture sector (including nurseries, fruit growers and Christmas tree farms) was \$13.1 million in the 14 counties that were quarantined at the time of the 2019 study (Harper et al., 2019). Its proximity to the Canada-U.S. border, and its destructive feeding on grapevines in particular poses a threat to southern Ontario's grape growers.

Despite spotted lanternfly's highly varied host plant choices, it doesn't seem to be a destructive pest for forests. It tends to feed in urban, suburban and edge habitats with greater success than in contiguous tracts of forest and shows little preference for conifers. Nevertheless, spotted lanternfly's ecological impacts are not yet fully known, and it would be a mistake to assume that it would not pose considerable problems for the forestry industry. The 2019 Pennsylvania economic impacts study estimated the costs likely to be incurred by this industry to the tune of \$16.7 million in the then-quarantine zone.

(Continued on page 4)



(Continued from page 3)



Spotted lanternfly egg mass and early-stage nymph. Photo credit: Natural Resources Canada.



Egg masses laid on tree trunk. Photo credit: Richard Gardner, Bugwood.org

Costs that are incurred by the forest products and ornamentals industries are largely from implementing Best Management Practices (BMPs) to comply with guarantine protocols. This is because the activities carried out by these industries can act as significant vectors for the spread of spotted lanternfly, even if the cultivated trees and tree products are not desirable feeding hosts. Egg masses are hardy, cryptic in appearance, and are laid almost indiscriminately on human-made and natural surfaces outdoors, making them the most likely of any spotted lanternfly life cycle stage to be accidentally transported. For example, while not heavy feeders on conifers, spotted lanternflies will lay their eggs on Christmas trees and can be transported through the movement of these contaminated trees, as well as equipment, vehicles and supplies. Foresters, tree growers, municipal arborists, and others associated with the industry therefore have a significant role to play in preventing, monitoring, and reporting this rapidly spreading pest.

The CFIA has made it easy to remember what to do if you suspect the presence of spotted lanternfly with the slogan, "Spot it? Snap it, catch it, report it!".

**Spot it:** Train staff to be vigilant for spotted lanternfly and learn to recognize it at all stages of its life – eggs, early-stage nymphs, late-stage nymphs, and adults. See the Invasive Species Centre's spotted lanternfly species profile (linked below) for details on all life stages.

**Snap it:** Take a photo or video of the specimen.

**Catch it:** Trap the specimen in a sealed plastic bag or container. In the case of an egg mass, use a coin or hard plastic card to scrape it off its surface. As this pest has not yet been detected in Canada, CFIA needs to confirm all reported specimens in a lab.

**Report it:** Even if uncertain, report any suspected specimens immediately by contacting the CFIA <u>online</u> or <u>over the phone</u>.

Early detection through reporting is key to enabling a rapid response and preventing the spread of spotted lanternfly. The Invasive Species Centre has several resources to assist you in identifying, reporting, and learning more about this pest:

#### Species profile

Factsheets (available in English and French)

Posters (available in **English** and **French**)

Free, self-paced online <u>Spotted Lanternfly Training course</u> (successful completion eligible for International Society of Arboriculture and Ontario Certified Crop Advisor Association Continuing Education Units)



# Beech bark disease in Ontario

**Eric B. Searle**, Ministry of Natural Resources and Forestry and **Barry Davidson**, R.P.F., Westwind Forest Stewardship Incorporated

Beech bark disease is an insect-fungal complex that has been killing beech in Ontario. The disease is caused by interaction between an invasive beech scale insect (*Cryptococcus fagisuga*) and two, likely native, fungi (*Neonectria faginata* and *Neonectria ditissima*) that colonize wounds made by the scale insect (Figure 1). The fungal infection leads to cell death and can girdle the tree (Cale et al. 2017). The disease has spread across most of the range of beech in Ontario but is less prevalent at the northern range boundary (Figure 2).

The disease presents two major silviculture challenges in tolerant hardwoods: first, it causes high mortality rates in overstory beech. Second, the stress response from the disease can cause the dying beech to sucker, which adds beech regeneration to an understory that may already be beech dominated. To address these challenges, the Ontario Ministry of Natural Resources and Forestry (MNRF) has partnered with Westwind Forest Stewardship, Bancroft-Minden Forest Company, and Algonquin Forestry Authority to establish a network of experimental plots. The purpose is to assess whether increasing harvest intensity and vegetation management (unmanaged, mechanical removal with brushsaw, chemical removal with triclopyr) can reduce beech regeneration and promote other species.

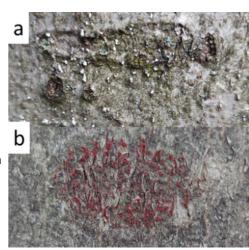


Figure 1. Close up pictures of the (a) white and "waxy" beech scale insect and (b) fruiting body of *Neonectria* on a beech stem, with the characteristic eye shaped canker. Photo credit: by Eric Searle.

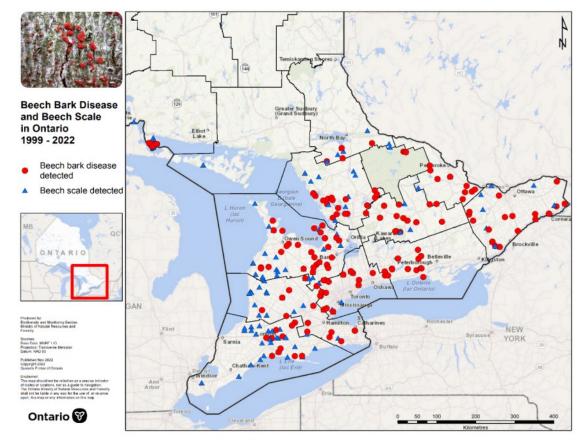


Figure 2. Extent of beech bark disease (circles) and beech scale (triangles) in Ontario as of 2022. Each point on the map is a confirmed detection (OMNRF 2023).



(Continued from page 5)

Increased harvest intensity removes as much of the overstory beech as possible before sprouting occurs. While this may seem like an excessive reaction, the disease moves quickly and can kill a substantial amount of beech in a short timeframe. For example, between 2019 and 2022 in the experimental site near Kawagama Lake in French-Severn Forest, the amount of dead standing beech quadrupled (Figure 3). Forest managers should be aware that if their stand has an appreciable amount of beech and beech scale is present they will lose a substantial amount of overstory shelter between harvest entries. Leaving dead and dying beech can also present health and safety hazards for forest users including forestry crews. Preliminary results from the experimental network suggest that simply removing beech overstory is not sufficient to promote other desirable regeneration.

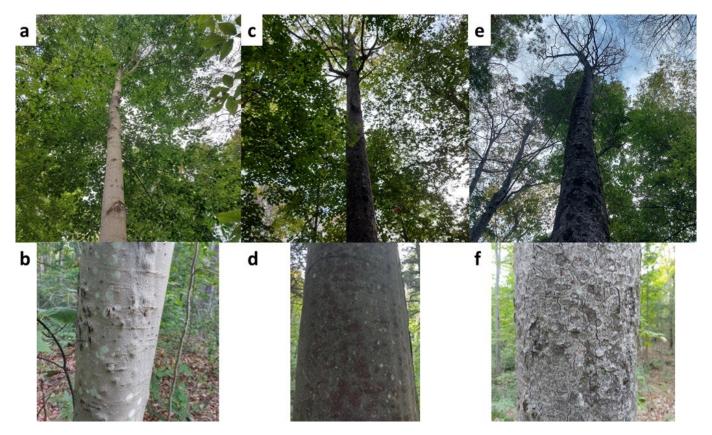


Figure 3. Progression of beech bark disease: (a,b) scale present and early signs of disease, crown remains healthy; (c,d) disease fruiting bodies obvious on stem, crown weakening; (e,f) disease scarring on main stem, tree now dead standing, minimal shelter provided by dead crown. Photographs by Eric Searle.

Controlling beech regeneration is another option to help stands affected by beech bark disease to regenerate to a more sustainable condition. Results from the experimental plot network (at six years post-treatment) show that beech regeneration can be removed through brushaw and basal bark application of triclopyr. However, resprouting may occur after brushaw treatments. In a demonstration area, Westwind has observed excellent regeneration control by combining a brush saw treatment with either glyphosate or triclopyr applied to the cut stump. While basal bark controls resprouting, it works best when applied to dry stems and wrapped around the full stem (Figure 4). Brush saw treatments cost at least twice as much as basal bark treatments and follow up chain saw treatments were needed after brushsawing to remove larger stems. Adding cut-stump applications only increases this cost disparity.

Unfortunately, the experimental plot network provides no evidence that removing beech regeneration stimulates regeneration of other desirable species. Where securing other tolerant hardwoods is the objective, beech control treatments may be considered as site preparation whereas tending opportunities may be more successful when releasing suppressed maple that are already well established.



(Continued from page 6)

Operationally, Westwind has primarily used a stem specific basal bark triclopyr treatment. Also, "hack and squirt", a stem injection method, has been used where beech stems are predominantly pole size. Haliburton Forest and Wildlife Reserve has applied glyphosate to the perimeter of the cut surface of harvested trees with the objective of controlling young beech using that root system. This "cut stump" treatment shows promise but also has some operational challenges. Broadcast spraying of glyphosate has been effective in areas of near pure beech with stems shorter than 2 metres. However, in addition to affecting other plants, the logistics of this treatment are often limiting, and may intensify social concerns about forestry activities.



Figure 4. Challenges of vegetation management. (a) Vigorous resprouting response of beech regeneration after brushsaw treatment. (b) Incomplete application of basal bark triclopyr leading to live cambial tissue (on right of stem) growing over the treated area (left of stem). Photographs by Eric Searle.

#### References

Cale, J.A et al 2017. Forest Ecology and Management, 394, 86-103.

OMNRF. 2023. <u>Forest health conditions in Ontario 2022</u>. Ontario Ministry of Natural Resources, Science and Research Branch, Sault Ste. Marie, ON.



# Emerald ash borer in Canada: Assessing current status and distribution against predictions

Vincent La Tassa, Program Development Intern, Invasive Species Centre

The emerald ash borer (*Agrilus planipennis*, EAB) is an invasive wood boring beetle that originates from northeastern Asia. Beyond its native range, it is highly destructive, targeting and attacking all species of ash (*Fraxinus* spp.) in North America, with millions of trees in forested and urban areas already destroyed.

The beetle is capable of decimating virtually all ash trees in an introduced area within 5 to 10 years, making it extremely difficult to manage. Adult EAB feed on tree foliage, while their larvae bore into the phloem, restricting nutrient and water flow from the roots. This leads to girdling, and ultimately causing tree mortality. While known to fly distances of up to 20 km, new populations are generally the result of anthropogenic movement of infested ash materials.

It is widely believed that EAB introduction to North America was facilitated in the early 1990s via infested wood packaging materials, where it remained undetected. The initial Canadian detection of EAB



Emerald ash borer. Photo credit: Debbie Miller, USDA Forest Service, Bugwood.org.

occurred during the summer of 2002, in Windsor Ontario. Since then, EAB has spread to more than 30 U.S. states and five provinces including Manitoba, Ontario, Quebec, New Brunswick, and Nova Scotia. In response,

EMERALD ASH BORER REGULATED AREAS OF CANADA

LIEUX RÉGLEMENTÉS POUR L'AGRILE DU FRÊNE AU CANADA

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Areas regulated | Lieux réglementés

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the Canadian Food Inspection Agency (CFIA) established federally regulated areas in 2003 to slow the insect's spread by restricting the movement of all firewood and potentially infested ash materials. In addition, movement of materials from properties where EAB has been confirmed is regulated through the issuance of a Prohibition of Movement, accompanied by notifying property owners. Currently, the CFIA officially regulates all southern and central regions of Ontario, Quebec, and New Brunswick, as well as the Cities of Thunder Bay in Ontario, Winnipeg in Manitoba, and Halifax in Nova Scotia.

(Continued on page 9)

Map of EAB regulated areas of Canada. Courtesy of the Canadian Food Inspection Agency.



#### (Continued from page 8)

At the request of the CFIA In 2020, the Canadian Forest Service (CFS) with Natural Resources Canada (NRCan) conducted an economic analysis of EAB regulations in Canada which included predicted EAB spread. The modelling was based on flight and human-facilitated transportation, climate, EAB biology, and presumed regulation efficacy. The report defined "effective regulation" as, "a reduction in the proportion of human facilitated EAB movements that successfully establish new populations."1 The modelling predicted that regardless of presumed regulation efficacy, by 2035 the vast majority of ash growing within the regulated areas of southern Ontario and Quebec would be attacked by the EAB. It was also predicted that north of the regulated areas in Ontario and Quebec would see occasional EAB introductions to both urban and rural locations.

As predicted, interceptions of EAB outside of regulated areas in Ontario and Quebec have occurred, most recently in an installed trap in Témiscamingue, Quebec on November 10, 2023. In response to this detection, restrictions for movement of ash materials and firewood were enacted by the CFIA and the property owners were notified. Other detections which have occurred outside of regulated areas in Quebec include a single detection on an ash tree in La Mitis on July 5<sup>th</sup>, 2023, and a reproducing population on private property in Gaspésie on July 11<sup>th</sup>, 2022 with Notices of Prohibition of Movement in place.

Within Ontario, EAB has become well established and continues to spread, with a recent detection occurring 2 km outside of the regulated area of Thunder Bay. In August 2023, three adults were captured in a CFIA deployed trap in the same location where two adults were captured one year prior. As with the previous year, visual surveys were conducted in the area with no additional signs or symptoms being detected. The CFIA will continue to survey this area next year along with regular annual surveying outside of regulated areas to determine changes in distribution. In Ontario, 90 traps are typically set.

One other notable interception of EAB outside of regulated areas occurred In Vancouver, British Columbia in July of 2023. An interception of a single dead adult fell on the head of a civilian who reported it to the CFIA. In response, over 50 traps were deployed by the CFIA in the surrounding area to determine if there are any additional signs or symptoms of EAB in Vancouver, however none were found.

> (Continued on page 10) Emerald Ash Borer | Agrile du frêne Agrilus planipennis Survey | 2023 | Enquête Canada Canada

Map depicting regulated areas, 2023 survey sites, and recent interceptions outside of regulated areas. Courtesy of the Canadian Food Inspection Agency.

<sup>&</sup>lt;sup>1</sup> Hope, E., Sun, L., McKenney, D., Bogdanski, B., Pedlar, J., Macaulay, L., MacDonald, H., & Lawrence, K. (2020). Emerald ash borer, Agrilus planipennis: An economic analysis of regulations in Canada. https://publications.gc.ca/collections/ collection 2020/rncan-nrcan/Fo143-2-454-eng.pdf



(Continued from page 9)

These recent detections seem to indicate that the current distribution of EAB in Canada does match the predictions made. Current regulations have so far proven effective at preventing EAB spread, considering new populations have not yet established. However, a recent study conducted by Duell et al., 2022, has shown that EAB can survive extreme overwintering temperatures reaching -50°C due to their ability to alter their survival traits. Taking these findings into account, the predictions may not have been entirely accurate. The study underscored the significance of acknowledging such extreme tolerances. Considering that the spread modelling currently guiding regulated areas incorporated previously understood EAB overwintering capacity, revisions may be necessary.

For more information on invasive species, including technical information and how to take action, visit the <u>Invasive Species Centre website</u>. Readers interested in learning more about EAB can view our <u>species profile</u> and access free management resources.

#### **Literature Cited**

Duell, M. E., Gray, M. T., Roe, A. D., MacQuarrie, C. J. K., & Sinclair, B. J. (2022). Plasticity drives extreme cold tolerance of emerald ash borer (*Agrilus planipennis*) during a polar vortex. *Current Research in Insect Science*, 2, 100031. https://doi.org/10.1016/j.cris.2022.100031

#### **Additional Resources**

 $\label{lambda} \begin{tabular}{ll} Latest information on EAB-$\underline{https://inspection.canada.ca/plant-health/invasive-species/insects/emerald-ash-$\underline{borer/latest-information/eng/1337287614593/1337287715022} \end{tabular}$ 

Map of CFIA regulated areas for EAB – <a href="https://inspection.canada.ca/plant-health/invasive-species/insects/emerald-ash-borer/areas-regulated/eng/1347625322705/1367860339942">https://inspection.canada.ca/plant-health/invasive-species/insects/emerald-ash-borer/areas-regulated/eng/1347625322705/1367860339942</a>

CFIA landing page for EAB with additional links and resources – <a href="https://inspection.canada.ca/plant-health/">https://inspection.canada.ca/plant-health/</a> <a href="https://inspection.canada.ca/plant-health/">https://inspection.canada.ca/



# Managing hemlock woolly adelgid in Ontario's hemlock forests: Best practices based on the scientific literature

William C. Parker, Ministry of Natural Resources and Forestry, Victoria Derry, Natural Resources Canada, Canadian Forest Service, Ken A. Elliott, Ministry of Natural Resources and Forestry (retired), Chris J.K. MacQuarrie, Natural Resources Canada, Canadian Forest Service and Sharon Reed, Ministry of Natural Resources and Forestry

Over the last 70 years, the exotic, invasive hemlock woolly adelgid (HWA) has caused considerable damage to eastern hemlock throughout much of the tree's natural range. During the past decade, the insect has spread farther north and become established across southern Nova Scotia and several small areas in southern Ontario (Figure 1). Hemlock has little resistance to this sap-feeding insect and infestation results in progressive crown decline, with  $\geq$ 90% of trees dying within 4–15 years depending on climate, stand, tree, and site characteristics. Importantly, hemlock with live crown ratio (LCR)>50% show greater HWA tolerance and delayed decline and mortality.

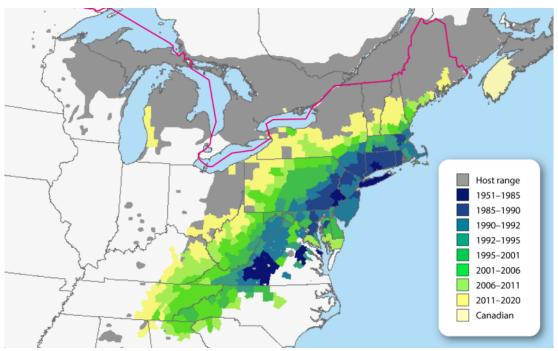


Figure 1. Period of hemlock woolly adelgid establishment in eastern North America.

To reduce HWA populations and mitigate their effects on hemlock, integrated pest management through a combination of chemical or biological control and silviculture will be needed. Chemical control with 3 systemic insecticides registered for use in Ontario can provide effective temporary population control. Cost effective use of insecticides is limited to small, high value locations such as municipal parks and residential properties. Biological control using specialized insect predators is critical to managing HWA but not yet available for use in Canada. Minimal research information is available on the use of silviculture to reduce HWA impacts but findings suggest stand density regulation to both increase hemlock vigour and create an unfavourable environment for HWA might increase hemlock tolerance before the pest becomes established (Table 1).



(Continued from page 11)

**Table 1.** Stand, site, and environmental conditions that favour (a) hemlock survival and (b) hemlock woolly adelgid population growth.

(a) Favour hemlock survival	(b) Favour hemlock woolly adelgid		
<ul> <li>Minimum stocking level with 70% crown closure</li> <li>Live crown ratio ≥50%</li> <li>Continuous supply of growing season soil moisture</li> <li>Cool, mesic topographic positions</li> <li>Deep, fertile, loamy soil</li> </ul>	<ul> <li>High leaf nitrogen concentration</li> <li>Cool, shaded crown locations (≤30% sunlight)</li> <li>Warmer, minimum winter temperature</li> <li>Cooler, maximum summer temperatures</li> </ul>		

We provide management options for application in Ontario to reduce impacts in 4 stages of invasion: (1) before arrival, (2) scattered local establishment, (3) widespread establishment, and (4) the aftermath forest. Stages are defined in terms of the relative HWA abundance within stands and across the landscape. Silvicultural options for the canopy and understory for each stage are further defined in terms of management objectives and primary strategy. Biological control should be applied when available and will change the timing, need, and use of these practices.

- 1. In stage 1, we recommend proactive stand density regulation by removing trees with LCR<30% to enhance crown growth and tolerance of dominant and codominant trees. In mixed stands, crown release of individual hemlock on 2–3 sides is a viable approach. Because hemlock responds slowly to release by partial harvest and natural canopy disturbance, this option is best applied a decade or more before HWA establishment. Retention of other evergreen conifers in the canopy and understory can help maintain the ecological function of hemlock lost from the stand. Partial harvest can serve the dual purpose of increasing resilience to climate change and other stresses by reducing competition for resources and increasing diversity and the provision of ecological goods and services.
- 2. Stage 2 focuses on sanitation to minimize the spread of HWA established in isolated stands through selective harvest of infested trees and/or use of insecticides, together with retention of evergreen conifer in the canopy and the understory. Stand density reduction at this and later stages is unlikely to improve hemlock tolerance.
- 3. Stage 3 focuses on stand conversion of infested, decadent stands through selective removal of dead and dying trees for economic return and/or public safety concerns. Understory treatment could include planting of climate adapted stock of desired species.
- 4. Stage 4 focuses on management of the aftermath forest and potential hemlock restoration through planting of HWA resistant stock (if available) or climate adapted hemlock populations (if biological control is possible). Restoration will depend on prior collection and storage of seed from hemlock occupying a variety of soil types and climatic habitats to capture the species' full genetic variation.

Given constraints on applying this sequence in all stands, forest managers will need to use a triage to decide when and where these practices are best applied based on availability of resources to support remedial treatments and the probability of return on investment. Many stands may be left to respond to HWA disturbance without intervention. This approach is preferable to pre-emptive salvage of healthy hemlock for economic gain, which may be more detrimental to ecosystems than HWA.

#### For additional details:

To access management guidelines and other relevant publications on this insect: <a href="https://www.invasivespeciescentre.ca/invasive-species/meet-the-species/invasive-insects/hemlock-woolly-adelgid/#research">https://www.invasivespeciescentre.ca/invasive-species/meet-the-species/invasive-insects/hemlock-woolly-adelgid/#research</a>

To access review article on management of HWA in Ontario: <a href="https://www.ontario.ca/page/catalogue-natural-resource-scientific-and-technical-publications">https://www.ontario.ca/page/catalogue-natural-resource-scientific-and-technical-publications</a>



# The delicate balance of timber harvesting and forest regeneration: A closer look at harvest intensity and its impacts

**Nelson Thiffault,** Ph.D., ing.f., and **Michael Hoepting**, M.Sc.F., Natural Resources Canada, Canadian Forest Service, Canadian Wood Fibre Center

Foresters are constantly navigating the challenge of meeting timber production goals while ensuring the sustainability of forest management. Using a recent study, we have sought to investigate the effects of different harvesting intensities on soil disturbance and tree regeneration within the uniform shelterwood system, providing insights that could help professionals make informed decisions.

#### **Context and Rationale of the Study**

In pine dominated stands, the shelterwood system is a method that involves the removal of mature trees in stages to allow light to reach the understory and stimulate the establishment and growth of regeneration while providing protection from white pine weevil and white pine blister rust. Traditionally, this system has been valued for its balance of timber production and forest renewal objectives. However, there are concerns about the system's impact on soil and regeneration, particularly in the context of increased mechanization and its potential for causing damage.

Our research built on previous studies that assessed damage from conventional versus mechanical equipment in harvests, including research conducted in Sweden on regeneration damage from shelterwood harvests. We aimed to expand upon these findings by examining a broad range of pre-harvest conditions and focusing on species and equipment types typical to eastern North America. More specifically, we focused on shelterwood removal harvests in red and white pine dominated ecosystems, which are done to release previously established regeneration.

#### **Methodological Approach**

We selected plots across a gradient of conditions in a shelterwood experiment established at the Petawawa Research Forest, located in Chalk River, ON. As described in Table 1, plots covered a gradient of stand basal areas, and species composition, but were mostly composed of mature red pine with up to one-third white pine.

**Table 1.** Description of the pre-harvest (2015) basal area (BA) and regeneration height, and post-harvest (2016) basal area for each experimental unit. DBH = diameter at breast height (1.3 m). Reproduced with permission from Thiffault et al. (2023).

	Pre-harvest				Harvest		
Plot number	DBH Height (cm) (m) (		BA White pine $(m^2 ha^{-1})$ regeneration height $(mean \pm SD; m)$		BA harvested (m² ha-1)	Percent BA Harvested (%)	
3-1	45.5	28.8	17.4	2.6 (1.6)	5.8	34	
1-3	35.6	26.4	38.0	1.3 (0.8)	16.2	43	
6-2	28.9	25.3	47.7	1.0 (0.6)	23.4	49	
4-1	31.8	25.5	38.0	1.2 (0.6)	19.8	52	
4-2	33.8	26.3	33.6	1.2 (0.8)	17.3	52	
6-1	27.6	24.8	47.7	1.0 (0.6)	30.1	63	
7-3	40.5	27.7	16.5	2.9 (1.7)	11.8	71	
2-3	36.8	27.4	21.8	2.3 (1.6)	10.2	74	
5-2	35.1	27.7	20.6	2.5 (1.6)	17.5	85	

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Prior to harvest, each plot had high densities (> 10,000 stems/ha) and high stocking (>85%) of white pine regeneration established 15 years earlier. Harvest intensity varied among plots, allowing us to observe how changes in the proportion of basal area removed influenced the forest floor and regeneration outcomes.

To quantify impacts of harvesting on soil and regeneration, we conducted surveys before harvest and one year after harvest. We documented the extent of exposed mineral soil and disrupted organic layers, and inventoried regeneration by taking measurements of species composition, density and damage to seedlings.

#### **Key Findings on Soil Disturbance and Regeneration**

The main results are summarized in Figure 1. Our data revealed a clear trend: as harvest intensity increased, so did soil disturbance. Skidding trails were the primary contributors, significantly altering just over 40% of the studied area under the most intensive harvest scenarios. This disruption can have lasting implications for regeneration success.

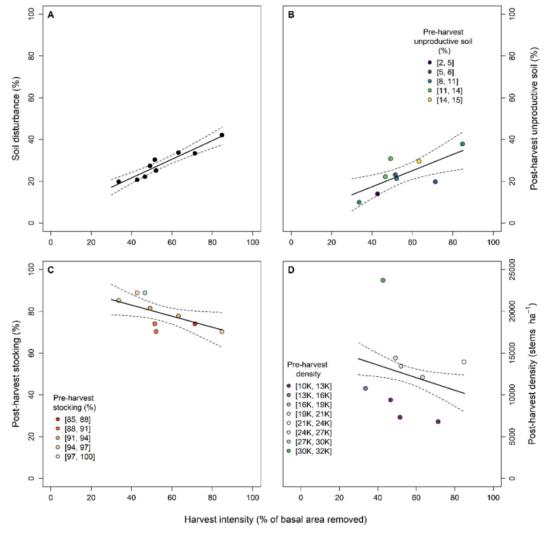


Fig. 1. Model predictions and observations for soil disturbance (a), unproductive soil (b), as well as regeneration stocking (c) and density (d) for white pine as a function of harvest intensity and pre-harvest values (except for soil disturbance, which was only assessed post-harvest). The values in brackets indicate the range of pre-harvest values. Reproduced with permission from Thiffault et al. (2023).

White pine regeneration was our focal point due to its economic and ecological significance. A quarter of the regenerating trees alive postharvest presented some form of damage. However, while the occurrence of damage was not significantly influenced by the percentage of basal area harvested, both post-harvest stocking and density declined with increasing harvesting intensity. Most losses to regeneration occurred on the skid trails. High levels of regeneration pre-harvest will help ensure stocking targets are achieved post-harvest.

## Strategies for Sustainable Harvesting

Based on this research, we propose strategies aimed at fostering healthy white pine regeneration while achieving harvest objectives:

• Pre-Harvest Assessments: Understanding the initial forest conditions is crucial. These indicate regeneration status and readiness for harvest (e.g., composition, stocking, size), provide a baseline for predicting the impact of harvesting activities and for strategizing to protect vulnerable areas and seedlings.

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- Harvest Planning: The planning and layout of skidding trails and machinery paths require thoughtful
  consideration. Strategic planning can substantially reduce soil disturbance and the extent of the area
  affected.
- *Understory Protection*: Protecting the understory ensures that a diverse and dense regeneration layer is maintained, which is vital for forest resilience and regeneration.
- *Post-Harvest Monitoring*: Monitoring the effects of harvesting on regeneration is essential. This information feeds back into the planning process, enabling adaptive management.
- *Underplanting*: Where natural regeneration is insufficient, planting seedlings can bolster forest recovery. This practice also provides an opportunity to introduce species and genotypes suited for future climatic conditions through assisted migration.
- Seasonal Harvest Timing: Harvesting in the fall when the regeneration is most visible may help operators avoid the regeneration. At this time of year, the regeneration is also still flexible rather than in winter when frozen stems are more susceptible to breakage.
- *Modifying Harvesting System*: Implementing approaches like cut-to-length systems can reduce the impact on the forest floor and established regeneration.



Photo of the understory regeneration typical of the research area in the fall of 2015 before the onset of the harvest experiment. Photo credit: M. Hoepting.

## Implications and Future Research Directions

Our study confirms that careful consideration of harvest intensity is key to maintaining regeneration density and soil health. It's not just the harvesting itself but the associated activities, such as skidding, that need management. This study had limitations, particularly concerning the number of treatment plots and the specific range of conditions we were able to test. We suggest that future research should expand to investigate the complex relationships between seedling and tree size, species, equipment configurations, and damage to regeneration across diverse forest conditions.

#### Conclusion

Our research underscores the importance of thoughtful, science-based forestry practices that prioritize both timber production and the regeneration. It calls for a nuanced approach to harvesting—one that accounts for the interplay between harvest and stand characteristics. Our findings should help inform a balance between these.

#### For more information (reference):

Thiffault, N., Hoepting, M., Marchand, M., Moulin, M., and Deighton, H. 2023. Eastern white pine regeneration abundance, stocking, and damage along a gradient of harvest intensity. The Forestry Chronicle 99(1): 92-102. doi: 10.5558/tfc2023-011.

Available online at: <a href="https://pubs.cif-ifc.org/doi/abs/10.5558/tfc2023-011">https://pubs.cif-ifc.org/doi/abs/10.5558/tfc2023-011</a>

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# Forests Ontario's Community Forest Managers – Tree Bylaw Officers (CFM -TBO) Network update

Amber Brant, Restoration Programs Coordinator, Forests Ontario

The Stewardship Program was supported by the Ontario Ministry of Natural Resources and Forestry (MNRF) from 1995 to 2013 and used to bring together landowners, individuals, associations, and resource agencies to improve the stewardship of natural resources under a collaborative model and foster partnerships across the province through the efforts of 40 stewardship councils located across Southern Ontario. During that time, the program served as an invaluable linkage for community forest managers and tree bylaw officers. Following the closure of the MNRF program in 2013, Forests Ontario took a more active role in the development of a new network of Community Forest Managers - Tree Bylaw Officers (CFM-TBO), establishing a program in 2015 to meet the needs of this group of Ontario community foresters and tree bylaw officers. The program has since expanded to give specialists in the field access to the most up-to-date news, information and resources on community forest management and tree bylaw topics, as well as connect members with others in their field and provide support through a centralized contact.

The network looks forward to meeting face-to-face annually where members have the opportunity to connect with new people in their field, catch up on the work they've been doing for the past year with familiar faces, enjoy a field tour led by the host community, discuss topics of concern, and tune into presentations delivered by experts on a wide variety of topics. Tree bylaw officers can also take advantage of a closed-door roundtable session, facilitated by one of their peers, to discuss case studies, strategies and innovations in municipal tree bylaw enforcement and procedures. Forests Ontario plays a key role in administering the network, as well as developing the Annual General Meeting (AGM) and field tour, but these would not be possible without the continued efforts of the CFM-TBO steering committee. This past year, we said goodbye and thank you to Todd Farrell (Natural and Cultural Heritage Manager with Northumberland County), Caroline Mach, R.P.F. (County Forest Manager with the County of Dufferin), and Albert Hovingh, R.P.F. (Environmental Planner with the Region of Waterloo), for their dedication and consistent efforts on the steering committee, helping to make sure these events have a lasting impact for all members.



In October of 2023, 43 members of the group came together for the AGM and field tour. The two-day event kicked off with a closed-door tree bylaw session hosted by Halton Region in Oakville with 30 tree bylaw officers in attendance to discuss various bylaw topics. A field tour followed led by Adrian Bryant, R.P.F. and Hainal Kovacs of Conservation Halton, who walked us through the managed forests of Waterdown Woods located within the Cootes to Escarpment EcoPark System with the Bruce Trail running through it - just a snapshot of the >10,800 acres of forested land they manage.

Members of the CFM-TBO network touring the Waterdown Woods with hosts Halton Region and Conservation Halton.



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Single tree selection system, mature oak hazard tree management, oak wilt detection, and management of dogstrangling vine in the understory, were among some of the themes discussed during this walk. We were then led by Candace Karandiuk, R.P.F. and Kevin Pangborn, R.P.F. of Halton Region, joined by Tomasz Wiercioch, Program Manager, Cootes to Escarpment EcoPark System at Royal Botanical Gardens, to give an overview of their conservation-focused projects in the area.

The AGM was held at the beautiful Country Heritage Park in Milton, where everyone enjoyed a talk from Meghan Clay, Seed and Climate Change Technician with the Forest Gene Conservation Association (FGCA), who presented the FGCA's work in climate change adaptation and seed expertise programming, followed later by a virtual visit and Q&A with Simeon Wright, Plant Health Specialist with the Department of Natural Resources in Michigan, who gave an insightful overview of how oak wilt has been handled by our neighbours to the south.

As our group continues to grow, we encourage anyone who works as a community forester or forestry bylaw officer to consider joining the CFM/TBO network. To join, all you need is a Forests Ontario Membership (\$50.00 annual fee, group membership rate available) and with that, you also receive event opportunities, discounts to Forests Ontario's Annual Conference, and more.

For more information, please visit <u>forestsontario.ca/communityforests</u> or contact Amber Brant at 416-646-1193 x. 222, or by email at abrant@forestsontario.ca



# Sustainable Forestry Initiative's Urban and Community Forest Sustainability Standard

Alix Olson, Urban and Community Forestry Coordinator Alix.olson@forests.org

Trees where we live, work, learn, and play have many benefits. Cities around the world are recognizing the pivotal role of urban and community forests in fostering sustainability, resilience to the effects of climate change, and impact on the health and well-being of many. The Sustainable Forestry Initiative (SFI) has responded to this critical need by introducing the SFI Urban and Community Forest Sustainability Standard, a first-of-its-kind framework designed to guide and measure the sustainable management of urban and community forests.

The SFI Urban and Community Forest Sustainability Standard is built upon five guiding principles of responsible and sustainable forestry practices, providing a comprehensive set of guidelines that acknowledge the unique challenges and opportunities of these environments and connections to communities.

Urban and community trees and forests (and their associated benefits):

- are vital for community well-being, health, resiliency, and sustainability
- depend upon understanding, awareness, appreciation, stewardship, and engagement by communities in order to thrive
- require proper planning, care, and management to optimize benefits and minimize risks
- are nature-based solutions to pressing issues and essential green infrastructure
- must be accessible and available to everyone

The SFI Urban and Community Forest Sustainability Standard promotes sustainable urban and community forests based on 16 objectives and is appropriate for organizations that own, manage, or are responsible for urban and/or community forests, including First Nations and governmental organizations (i.e., municipalities, counties, states, provinces), non-governmental organizations, Indigenous Peoples, community groups, healthcare organizations, educational organizations and universities, as well as corporate campuses.

Beginning in 2021, SFI called for the formation of a <u>standards revision task group</u>, gathering diverse professionals with a range of experiences and interest groups to ensure a well-balanced representation of expertise, gender, community, and geographical location. Representatives came from tree-focused nonprofits, universities, municipalities, arboriculture, international urban forestry entities, and many more. Task group members were responsible for hosting <u>standard revision workshops</u> and actively engaging in the review of submitted comments relevant to their respective focus areas. Their duties also extended to preparing revised Standard text, encompassing both initial and subsequent drafts, for evaluation by the SFI Resources Committee. Throughout this process, incorporating feedback from the committee was an essential aspect. SFI has developed a <u>guidance document</u> designed to aid organizations in understanding and implementing management decisions aligned with the Standard.

The Sustainable Forestry Initiative acknowledges that many organizations involved in urban and community forestry may lack the resources needed for full third-party certification to meet the SFI Urban and Community Forest Sustainability Standard. Therefore, SFI introduced a <a href="thematic certification option">thematic certification option</a>, allowing cities, communities, or organizations to attain third-party certification for a specific theme within the Standard's objectives. Certification must still be conducted by an <a href="accredited certification body">accredited certification body</a> recognized by the ANSI National Accreditation Board or the Standards Council of Canada. Thematic certification is a crucial avenue for improving accessibility and engagement within the urban and community forestry sector.

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The four themes for the thematic option are:

- Community Well-Being and Human Health
- Environmental and Conservation Leadership
- Climate and Disaster Resilience
- Urban Forest Improvement

There are many reasons an organization may want to certify their forest to a theme or the full standard, including addressing pressing issues such as climate change, extreme heat, or wildfire risk. Implementing effective management and nurturing urban or community forests optimizes benefits while mitigating potential risks. Third-party certification adds an extra layer of assurance, confirming that the organization is not only addressing these issues but also meeting the sector's best practices and established standards.

The SFI Urban and Community Forest Sustainability Standard represents a significant step towards providing leadership in urban and community forestry and raising the profile of urban and community forests and trees as green infrastructure and nature-based solutions to human health, disparity, and environmental sustainability. By addressing the unique challenges and opportunities present in urban settings, the standard provides a roadmap for communities to manage their urban forests responsibly. As cities continue to grow and face the impacts of a changing climate, the standard serves as a valuable tool in promoting the well-being of both urban residents and the environment they co-create.



## **Council corner**

Maegan Ciurko, R.P.F., Councillor Central West Section

# Council Corner provides members with insight into the happenings of the OPFA Council and Committees.

I was nominated to serve on the Council in December of 2022, I have been welcomed and encouraged to take part, voice my opinion and have been given every opportunity to learn about how the Council operates and strives to be recognized as an official regulating authority. I have spent the last year serving on the Registration Committee where we review applications and evidence of competencies to ensure all approved members meet the Forest Professional Regulators of Canada's (FPRC) national certification standards to practise forestry in Canada. One of the main themes discussed is how to improve the registration process and how to increase the number of Registered Professional Foresters practicing in Ontario.

Those who have come through the traditional path by graduating from a Canadian Forestry Accreditation Board (CFAB) accredited program are found to have met all the competencies listed in the Certification Standards for the profession of forestry in Canada. Upon completion of their 18-month mentorship, development of their personal practice focus plan and learning plan, completion of a work history form, two witness forms and two sponsorship forms, full membership may be awarded. This process remains intact.

However, anyone applying for full membership of the OPFA who has not graduated from a CFAB accredited program must additionally undertake the Credential Assessment Process (CAP) through a 3rd party to ensure all competencies (both academic and work experience) are demonstrated. This process consists of \$1,000 of assessment fees and an additional \$100.00 - \$575.00 per bridge training course required to meet the standards and a lot of time to gather evidence and complete the training. Many Provisional members are deterred by the costs or find the assessment process too grueling to complete.

#### **Pre-Screening Tool**

One of the initiatives that the OPFA has adopted to help Provisional Members move through the registration process is the FPRC's pre-screening tool. The free online tool can be used by prospective and Provisional members to evaluate their current level of competency and highlight the areas where additional training/experience is required. This is designed to help applicants decide whether the CAP is an achievable avenue for them or not, and thus reduce the number of Provisional members "stuck" in the assessment stage.

#### **Academic Assessments**

Another method for increasing the number of Registered Professional Foresters in Ontario is by dividing the assessment process into two parts, where academic assessments are separate from work experience assessments. This approach allows Provisional members to either undergo the CAP Phase 1 academic assessment or, in the case where the member does not have a 4-year BSc (or equivalent) they can undergo their academic assessment through the Registration Committee of the OPFA. Once this is completed, Provisional Members can apply for Associate membership with a limited scope of practice based on their academic competencies.

The OPFA and the Registration Committee have been working hard to help increase the number of R.P.F.'s working in Ontario and encouraging employers to require their foresters to be registered. They also aim to increase the number of institutions accredited by the CFAB to reduce the number of applicants moving through the competency assessment processes. By encouraging institutions and employers to recognize the need for registered professionals managing and working in Ontario's forests, public perception, and trust of R.P.F.'s will increase as we are held to OPFA's Professionalism and Ethics Standard and FPRC's Certification Standards.



### 2023-24 OPFA Council

Council is the governing body of the OPFA which develops policies, determines fees, and sets strategic direction.

On behalf of all our members, the OPFA would like to convey our gratitude to the outgoing members of Council: Denis Gagnon, R.P.F., Past President, and Scot Rubin, R.P.F., Northwest Councillor. Each of them has served selflessly as volunteers and they will likely continue to help in various ways.

Below are the Councillors for the 2023-2024 fiscal year beginning December 1, 2023.

#### Council for the 2023-2024 fiscal year

#### Officers (1-year term)

President: Peter Nitschke, R.P.F.
Vice President: Lacey Rose, R.P.F.
Past President: Chris McDonell, R.P.F.

#### Elected Councillors (2-year term, maximum of two consecutive terms)

Northwest: Dayna Griffiths, R.P.F. 1st term ends: November 2025 Northeast: Wendy LeClair, R.P.F. 2nd term ends: November 2025 Southwest: Brandon Williamson, Associate R.P.F. 2nd term ends: November 2025 Central East: Ritikaa Gupta, R.P.F. 1st term ends: November 2024 Central West: 1st term ends: November 2024 Maegan Ciurko, R.P.F. Southeast: Malcolm Cockwell, R.P.F. 1st term ends: November 2024

#### Public Members (appointed by the Ontario government \*)

Larry McDermott 2nd Term ends when replaced
Sally Krigstin 2nd Term ends August 2026
Douglas Reynolds 2nd Term ends August 2026
David Goldsmith 2nd Term ends August 2026

<sup>\*</sup>The Professional Foresters Act, 2000 specifies that public members of Council may serve a 3-year term for a maximum of 2 terms but will serve until replaced.



# Introducing Brittany Tartaglia, Assistant Registration Manager, OPFA

To help in a number of OPFA initiatives and help members progress in their registration process the OPFA has hired Brittany Tartaglia as Assistant Registration Manager while Louise Simpson, Registration Manager is on maternity leave. Brittany Tartaglia has had an interest in nature since childhood, this was encouraged with a lot of camping and trips to different areas of Ontario. This interest has flourished as she has grown into an adult. In college she worked as a tree planter in Northern Ontario which ignited an interest in the forestry industry.

She attended Northern College in Haileybury, ON and graduated from the Registered Veterinary Technician & Wildlife Rehabilitation programs. Since then she has worked in the veterinary industry in Southern Ontario. She has now moved back to Northern Ontario and is excited to reignite her passion in forestry with the OPFA.

In her spare time you are likely to find Brittany exploring the outdoors looking at birds or trees, playing roller derby, or working as a dog training instructor.





# **Count me in survey**

#### **OPFA Equity & Inclusion Task Team**

As the forestry profession continues to grow and membership continues to increase, it's important that the OPFA continues to address our role in maintaining Diversity, Equity, and Inclusivity across the organization. The Equity and Inclusion task team was initiated in September 2020 and included the following, as one of its

primary purposes; 1)To identify potential strategies to uncover and eliminate any systemic discrimination that may be embedded within the OPFA to create a supportive environment that encourages all individuals without any discrimination, to join the profession. To this end, a "Count me in" survey was developed and implemented with the following three intentions:

- 1. Set a benchmark for diversity within the OPFA to monitor changes over time,
- Get feedback on representation within the OPFA, and
- Learn more about potential barriers to joining the profession

The survey was circulated to OPFA members in January 2023, with responses collected throughout January and February. Survey responses were then summarized in

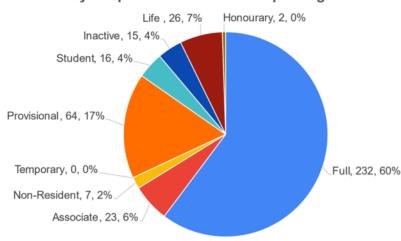
March 2023 and reviewed by the OPFA Equity and Inclusion (E&I) Task Team in April. The survey was anonymous and individual survey responses were deleted once results were analyzed. The Survey received 387 responses, which accounts for approximately 40% of the OPFA registrants. The results presented in percentages (%) are rounded to the nearest whole number.

The 387 respondents were a good representation of newer (less than 5 years) and long term members (more than 5 years). There was also a variety of age demographics that responded. The majority of respondents have a Bachelor's degree in forestry related education and have completed a CFAB (Canadian Forestry Accreditation Board) accredited program. Approximately a third of respondents (36%) have varying levels of non-forestry related education, which speaks to the diversity of educational backgrounds, knowledge, and skill sets present among members.

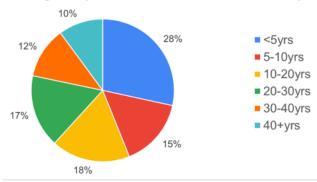
In terms of gender, the majority of survey respondents were men. Women made up 30% of respondents, and some respondents identified as non-binary, transgender, questioning, and other. Of newer members, 50% were women whereas amongst the longer-term members 26% were women. There was no difference in gender breakdown between Full and Associate members.

There is a range of sexual orientations in respondents in both newer and long-term members, including asexual, bisexual, gay, heteroflexible or demisexual, heterosexual, lesbian, pansexual, queer, two spirit, questioning, and other. There are also some who preferred not to disclose their gender.

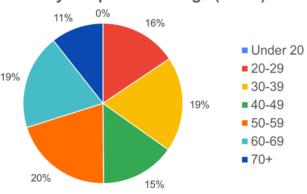
#### Survey Respondents - Membership Categories



#### Survey Respondents: Years of Membership

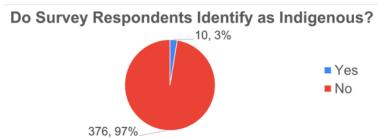


Survey Respondents - Age (Years)





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Three percent of the survey respondents identified as Indigenous (First Nations - both status under the Indian Act and non-status under the Indian Act, First Nations - both treaty and non treaty, Inuit, and Metis). Half of these Indigenous respondents identified themselves as First Nations - status under the Indian Act whereas the remaining half identified themselves as First Nations - non-status under the Indian Act, First Nations - treaty, or preferred not to disclose. 60% of the Indigenous respondents are Full Members. The majority (70%) of Indigenous respondents are long term members.

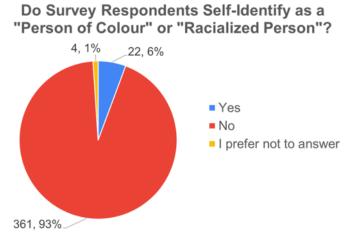
There were 138 different ethnic/cultural origins identified in survey responses, with the most common being Canadian and various European origins. For the first spoken language, 86% of respondents identified English, 4% identified French, and 10% identified other languages. Most respondents only speak English fluently, with 19% fluent in two languages and 4% fluent in three or more languages.

Most common languages respondents are fluent in				
English		331 respondents		
French		54 respondents		
German		6 respondents		
Other languages respondents are fluent in (< 5)				
Spanish	Cantonese		Hindi	
Mandarin	Nepali		Ukrainian	
Czech	Finnish		Urdu	
Albanian	Amharic		Armenian	
Bulgarian	Chinese		Croatian	
Hungarian	Newfie English		Oromiffa	
Polish	Portuguese		Punjabi	
Somali	Swahili		Swiss	
Turkish	Twi		Yoruba	

There were 6% of respondents that identified as a Person of Colour or Racialized Person; half of which are Full Members. These 6% are equally split between newer members and long term members.

Group identified with	No. of survey respondents	%
First Nations (status under the Indian Act)	5	1.3%
First Nations (non-status under the Indian Act)	<5	<1%
First Nations (treaty)	<5	<1%
First Nations (non- treaty)	0	0%
Inuit	0	0%
Metis	<5	1%
Prefer not to answer	<5	<1%







#### (Continued from page 24)

In response to the disability question, 5% of the respondents self-identified as a person with a disability. The majority of these individuals are long term members, some requiring workplace accommodations. Twenty-nine percent (29%) of respondents are affiliated with a religious or spiritual group, some requiring workplace accommodations.

A few questions were developed to assess the feelings of the respondents to inclusion within OPFA. Summary results and some unedited comments (in italics) from the participants are presented below. We have also added the OPFA response as a note if it warrants a quick clarification.

Respondents were asked about their opportunities to volunteer and participate in the organization. 77% of survey respondents feel that they are able to volunteer and participate within the OPFA. The main reasons given by those that did not feel able to participate (23%) included; lack of time, age and unaware of opportunities. According to the survey results, 42% of respondents have actually volunteered with the OPFA. Of these individuals, 94% feel that they had the opportunity to participate, and their voice was heard. Three percent who had volunteered with the OPFA did not feel that they had the opportunity to participate, or that their voice was heard.

Participants were asked for their personal opinion on whether they felt represented within OPFA images. 87% of survey respondents do feel represented by the images displayed by the OPFA, while 13% do not. When asked why respondents feel "not represented", some reasons offered included:

- It is impossible to represent everyone
- Lack of diversity on Council & Executive Committee [Note: The diversity in Council and Executive Committee is higher than that found in the OPFA membership as a whole]
- Images are too urban/Southern [Note: OPFA also receives comments from foresters working in urban forestry about lack of urban forestry images]
- Images are not diverse enough in terms of forestry subject matter

Some solutions suggested by respondents included:

- Showcase diversity of people through images (such as women and people of colour, Indigenous Peoples and their connections to the land, different body types and sizes, trans people, different age groups, and different educational backgrounds)
- Showcase the diversity of careers (such as office and planning roles, urban foresters, community and school outreach, small consulting companies, private land forestry, and roles outside of the field)
- Showcase forestry specific images (such as images portraying prescribed burning as a forest renewal tool, silviculture, tree seedling nursery profession, planting systems, regeneration, and seedling tray systems

Fifty-three percent (53%) of the respondents indicated a willingness to provide images to improve visual representation. [Note: OPFA staff have followed up with the individuals who provided their contact information for this purpose, however the response rate has been very low. We would like to encourage all members who are willing to provide good quality photos for this purpose to please contact OPFA staff].

When looking at potential barriers to joining the forestry profession, 32% of survey respondents believe that barriers exist. These potential barriers can fall under six types of barriers:

- Social barriers
- Economic barriers
- Lack of awareness of the profession, including the diversity of people and careers



(Continued from page 25)

- · Access to appropriate education
- The process to become licensed
- Barriers in the workplace

The five most common barriers identified by respondents are:

- Length and complexity of Credential Assessment Process (CAP)
- Public lack of awareness and misconceptions of forestry and the profession
- Financial barriers
- Barriers to accessing post-secondary education
- Small number of/ability to access CFAB accredited schools

Moving forward with these survey results, OPFA has been discussing actions to address Diversity, Equity, and Inclusion using the feedback received through this survey, in combination with other recommendations from the E&I Task Team.





# Forestry in Sault Ste. Marie

#### John Harvey, R.P.F.

In advance of next April's Ontario Professional Foresters Association (OPFA) Annual General Meeting (AGM) in Sault Ste Marie, the OPFA editorial board felt it may be of interest to showcase Sault Ste Marie (and surrounding area) and its unique role in forestry. The following is the first of two articles that will showcase Sault Ste Marie.

Nestled on the shore of the St. Mary's River, with Lake Superior to the west and Lake Huron to the east, sits the regional hub of Sault Ste Marie ('the Soo'). Although largely renowned as a steel town for the last 120 years, the Soo maintains an important role in Ontario's forestry sector. With its unique and strategic location to the Boreal and Great Lakes-St Lawrence forests, as well as close proximity to major North American urban centres, the Soo is a forestry cluster that supports industry, academia, and government. The Soo is home to the Natural Resources Canada's Great Lakes Forestry Centre, a sprawling federal research facility where researchers study forest pests, climate change, forest fires, and forest ecosystems. The federal government is not the only research institute in town; Ontario's Ministry of Natural Resources and Forestry (MNRF) facility, the Ontario Forest Research Institute (OFRI), is home to research on forest carbon, forest genetics, growth and yield, and forest management, to name a few. The Soo is not limited to government research; between Algoma University, Sault College, the non-for-profit 'Invasive Species Centre', and Sault Michigan's Lake Superior State University, there are myriad of projects and partnerships where natural resource management is of high-priority. Aside from OFRI, MNRF also has a large footprint with its Aviation, Forest Fire and Emergency Services (AFFES), Forest Industry Division (FID), and a considerable contingency of MNRF's policy division.

Although the iconic St. Mary's paper mill shuttered once and for all in 2011, the Soo remains an integral hub for forest products manufacturing, particularly in the value-added sector. At Boniferro Mill Works Inc., tolerant hardwoods (and white birch) are consumed and turned into boards which eventually end up in products like bowling pins, musical instruments, flooring, and kitchen cabinets. Next door to Boniferro is Interfor's I-joist mill where SPF lumber and Oriented Strand Board (OSB) is brought in from mills and used in the process to manufacture engineered I-joists. In Garden River First Nation, just east of the Soo, lies Garden River Truss where roof and floor trusses and interior and exterior prefabricated wall panels are manufactured. Back across town on the north shore of the St. Mary's River is the Arauco Medium density fiberboard mill (MDF), where byproducts from other forest product producing facilities are manufactured into MDF, an engineered wood product.

It's not just bricks and mortar (and boards) in the Soo – the Soo and surrounding area is home to breathtaking scenery and productive forests; in fact, some of the famed Group of Seven's artwork was inspired in the area. The Crown Forest surrounding the Sault forms the Algoma Forest Management Unit (FMU). The Algoma Forest's southern portion sits in the Great-Lake St. Lawrence Forest and is dominated by tolerant hardwoods, white pine and red pine, while the northern portion sits in the boreal forest with jack pine, spruce, and intolerant hardwood. Clergue Forest Management Inc. holds the Sustainable Forest License (SFL) for the Algoma Forest and ensures sustainable management as per Ontario's Crown Forest Sustainability Act (CFSA). Distinctly different than Crown and atypical of areas north of the French River, the Sault and surrounding area is home to an array of large privately owned forests. These private forests are managed for a variety of objectives, including timber management, carbon sequestration, and maple syrup.

If you're talking forestry, the Sault is a happenin' place.

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#### WHO WE ARE

Recognized as a GTA Top Employer, one of Canada's Top Employers for Young People, one of Canada's Greenest Employers, one of Canada's Best Diversity Employers, as well as a Forbes Top Employer, The Regional Municipality of York is Canada's fastest growing region, with a population that is expected to grow to over 2 million by 2041. York Region stretches north from Toronto to Lake Simcoe and includes many hectares of protected Greenbelt. York Region's diversity is evident in its nine local cities and towns, geography, economic development, and population. York Region works to provide residents and businesses access to a broad selection of services and resources.

#### THE OPPORTUNITY

This position is responsible for administrating the Region's Forest Conservation Bylaw including review of permit applications, conducting site inspections and investigations, monitoring permits, orders and educating landowners and other stakeholders on bylaw requirements and good forestry practices. Also responsible for supporting management of the York Regional Forest as it relates to public use and responding to customer inquiries regarding Forest Conservation Bylaw and York Regional Forest.

This is a Permanent Full Time role Starting rate: \$47.86 per hour This is a unionized position with CUPE 905 York Region

#### WHAT WE OFFER

DEFINED BENEFIT PENSIONS PROGRAM - With the Ontario Municipality Employees Retirement System (OMERS) defined benefit pension plan, you can confidently retire knowing that you will have income for life. Eligibility from date of hire as a full -time employee and includes employer-matched contributions. DISCOUNTS AND INCENTIVES - Enjoy corporate discounts from a variety of local businesses, such as, gyms and fitness studios, Canada's Wonderland, Telus or Rogers phone plans and the Personal or Cooperators insurance. Don't forget to take advantage of our Apple Employee Purchasing program! EMPLOYER OF CHOICE - Recognized as the highest-ranking government employer in Canada and fourth overall among 300 organizations. BENEFITS AND WELLNESS - A comprehensive employer-paid benefits plan includes extended health, dental and life insurance. Access to 24/7 Employee and Family Assistance Program (EFAP). INCLUSIVE AND DIVERSE WORKPLACE - Creating an environment which recognizes and celebrates all dimensions of diversity and inclusion.

#### What you bring to the region

- Successful completion of a College Diploma in Resource Management Technology, Natural Environment Technology or related field or approved equivalent combination of education and experience.
- Must be Registered Professional Forester.
- Minimum three (3) years forestry related experience in the management of public/community forests, administration of tree or forest conservation by-laws and management of forests in the Great Lakes-St. Lawrence Forest region.
- Experience in forest management and/or a natural resource field including integrated management of both coniferous and deciduous forest types.
- Knowledge of applicable Acts, legislation and by-laws including The Occupational Health and Safety Act and regulations.
- Ability to work in adverse weather conditions.
- Valid Ontario Class "G" driver's license free of serious offences under the Highway Traffic Act
- Ability to work outside of regular business hours, as required

Please submit your resume to <u>careers@york.ca</u>, please reference OPFA#3230 in the title of the email Application deadline is December 31<sup>st</sup>, 2023. We thank all applicants for their interest in York Region.



# Letter to the editor: Silviculture without herbicides? – Only in Quebec

Michael Rosen, R.P.F., Adjunct Professor, UBC

Response and follow-up questions (see September issue for initial letter)

Hello, Mike:

I hope I got your correct address. It's unlikely you remember me – I used to be a forester in the former Tweed District, turned Mazinaw-Lanark Forest (SFL) until my retirement in 2017.

There are two reasons for me to write this message:

First - I'd like to congratulate and thank you for your Letter to the editor, Professional Forester #251, titled Silviculture without herbicides? – Only in Quebec. It's refreshing and, shall I say, courageous, to share an independent view in a fairly rigid environment of foresters sometimes stuck in their positions, as demonstrated by the article Herbicide reduction – economic, ecological, and silviculture impacts in the same issue of Professional Forester. I would not be surprised if you receive a substantial push-back to your letter but it will certainly not come from me.

Second: would you care to elaborate what is meant by large dimension planting stock? You mentioned containerized 310 cm3 plugs. What age, typical size & species are involved and how are they planted (tool)?

Best regards;

Jan Smigielski

Hi Jan,

Thank you for your positive feedback to my article. Although I tried to not take a position on herbicide use, it is obvious that even reporting on jurisdictions banning herbicide use makes it a sensitive subject with professional forestry organizations including the OPFA. I believe that professional foresters should be encouraged to develop practices that serve the public good including: producing less carbon emissions, using less herbicides, emulating natural disturbance, protecting biodiversity etc. Forestry seems to be increasingly moving towards this approach.

As I mentioned in my article, the banning of herbicides for forestry use in Québec was a political decision which forced several technical modifications to reforestation including the development of the plants de forte dimension (large dimension planting stock). These are typically 310 cc containers grown in cassettes of 25 or 15/cassette, although there are other variations used as well. They are typically two years old (one year in the greenhouse, one year outside) which are maintained using traditional greenhouse techniques (fertilizers, fungicides, mechanical tending, herbicides). The size of the stock varies with the species, but I have seen rather small (15 cm) red oak as well as rather large (30 cm) tamarack in these containers. Quebec has a hybrid government/private system of tree production with the province responsible for seed collection and extraction and the private sector responsible for growing about 60% of the trees on an annual basis with only the government nurseries growing the hardwoods. There are about 130 million trees grown/year in Quebec with 1.2 million of these hardwood. There is still a small percentage of bareroot production – about 6% for conifers, 16% for hardwoods. Conifer production is typically species found in reforestation in Ontario: black and white spruce, red, jack and white pine. About 70% of the hardwood production is yellow birch, sugar maple and red oak. Planting is typically done with a short, planting spade although some planting is done with an "extractor" which production planters tend to not favour.

Thanks for your interest, Jan!

Mike



# The 2 billion tree program's Indigenous funding stream (IFS)

Do you provide professional forestry services to First Nations, Métis, Inuit and Unaffiliated Indigenous governments and organizations? The 2 Billion Trees (2BT) program is excited to announce opportunities for new projects under the **Indigenous Funding Stream** and is looking for applications. Please visit **our website** to apply.

Following extensive engagement and co-development with various regional and national Indigenous governments and organizations, the IFS will deliver \$500 million of funding using a distinctions-based approach for First Nations, Métis, Inuit and Unaffiliated governments and organizations.

Indigenous governments/communities/organizations interested in tree planting and/or capacity building projects can apply through the following three (3) options: **Prepare to Plant** and **Tree Planting** (Indigenous Small-scale Planting and Indigenous Mass Planting):

	Duamana ta	Tree Planting		
	Prepare to Plant *	Indigenous Small-scale *	Indigenous Mass planting	
Average # of trees per year in which planting occurs	0-49,999	50,000-199,999	200,000+	
Maximum funding per year	\$5 million	\$65 million	\$65 million	
Latest date for projects to be completed	2 years, or March 31, 2027	March 31, 2031	March 31, 2031	

<sup>\*</sup> A limited number of projects will be approved on an annual basis for the Prepare to Plant and Indigenous Small-Scale funding options

All projects in the IFS will allow capacity building activities such as training, planning, feasibility studies, seed collection, and nursery infrastructure to support planting.





# GREY AREAS NEWSLETTER

A COMMENTARY ON LEGAL ISSUES AFFECTING PROFESSIONAL REGULATION

sml-law.com/resources/grey-areas/

SML's Grey Areas newsletter has been in publication since July 1992 and discusses the latest developments in professional regulation. New issues are published monthly.

#### **Recent articles:**

#### September 2023, Issue No. 282 - Addressing Gender-Based Violence

While Canadian politicians spar over whether gender-based violence, particularly intimate partner violence (IPV), is an epidemic, regulators are assessing their role. Regulators of professions, particularly in the health and law enforcement domains, treat IPV in a registrant's private life as serious professional misconduct. While important, questions arise as to whether regulators can and should do more.

#### October 2023, Issue No. 283 - Reflecting on Reporting and Responding Requirements

Vastly different words are used to describe the concept, each with their own moral implications: "snitch", "informant", "whistleblower", "professional". Whatever term is used, an obligation to report problematic conduct by other registrants is an important regulatory tool. Such information enables the regulator to investigate issues of misconduct, incompetence, or incapacity that may place the public at risk and that might otherwise never be known.

#### November 2023, Issue No. 284 - How They Do Things Across the Pond

Since the establishment of the Professional Standards Authority (PSA), Canadian regulators have been monitoring professional regulation developments in the United Kingdom. Some, but certainly not all, of the approaches taken in the UK have been adapted by some Canadian jurisdictions and regulators. Most notable was the enactment of the Health Professions and Occupations Act in British Columbia.



## **In Memoriam**

#### Jacques Pierre Gaudet De Lestard, R.P.F. (Ret.)

1936-2022

Jacques "Jack" Pierre Gaudet de Lestard passed into the arms of his Beloved Lord & Saviour Jesus Christ Sunday morning, July 10, 2022. He is survived by his loving wife of 58-years, Andrea (nee Brake); his son Shawn & daughter Alison Gaudet de Lestard; and his daughter Rebecca ("Becka") Enns; Grandchildren Kaytlan (Jason Magee), Kostin (Tanya), Josiah (Alexis), Keanelek (Emily), Chae, Kai, and Shaeraeyah Enns; Aristea, Andrew (Becky), Peyton (Maddy), Carrie Gaudet de Lestard, William (Deanna) Szwarc; GREAT Grandkids Zaex Enns-Magee, Mason, Hunter & Zakairah Enns; and Jesse Pierre Gaudet de Lestard. His brother Paul & sister Jean-de Lestard; Great nieces Faith & Neveah Hughes;



cousins John Brunt of London, ON; Philip (Mary Fran) Brunt of Niagara-on-the-Lake, ON; Patti (Tony) Murray of Hohokus, NJ; and Fran (Norm) Huebel of Richmond Hill, OYvonne Gaudet de Lestard of Halton Hills, ON; niece Danielle (Jay) Hughes & nephews David, Marc & Kevin Gaudet N. Jack is predeceased by his parents Jacques René & Jean Elizabeth (nee Brunt) and his brother Guy René.

Born November 27, 1936 in Toronto, Jacques was 85. He graduated from UBC in 1962 with a Bachelor of Science in Forestry (Honours) and was a Registered Professional Forester (Ret.) and life member of the Canadian Institute of Forestry.

Jack's career began at the Ontario Department of OPFA headquarters in Toronto, then Sudbury (1962-1967). On loan to the Natural Resources Campus of Sir Sanford Fleming College, Lindsey, he obtained Tenure as a Teaching Master (1967-1973). He joined the Federal Government's Department of Indian Affairs and Northern Development (DIAND) as a Forest Protection Advisor (1973-1981) in Ottawa & transferred to the Yukon as Regional Manager, Forest Resources (1981-83). He retired from Victoria's Pacific Forestry Centre (1983-93) as Forestry Liaison Officer.A long retirement was joyously spent with family and international travels (1993-2022). He valiantly battled Parkinson's for 16 years, these last five the toughest. FREE now of the burdens of his fight, he is rejoicing in the Presence of his Lord & Saviour Jesus of Nazareth!

https://www.arbormemorial.ca/en/sands-colwood/obituaries/jacques-pierre-gaudet-de-lestard/88646.html



# **In Memoriam**

Vidar John Nordin, Ph.D, R.P.F. (Ret.)

1924 - 2023

Vidar Nordin, loving son, dedicated brother, devoted husband, greatest father in the world, cherished Poppah, demanding professor, innovative Dean, respected consultant and caring mentor peacefully departed this world in his 99th year with his daughter, son-in-law and eldest grandson lovingly by his side. Proud father to Christopher (Emy) and Katrin (Doug) he is predeceased by his parents John Herman and Beda Catherine, his older brother Voge and his cherished wife of 73 years Julianne Leona. He is also survived by his three grandchildren Erik, Chace and Chelsea. He will be fondly remembered by the extended Smith family, friends, colleagues in the Forestry sector and numerous former students and staff during his term as Dean of Forestry at the University of Toronto.



Dr. Nordin had an exemplary career in International Forest Pathology travelling the world to treat and/or eliminate devastating diseases that affect trees globally. He received a BA Biology in 1946 and BSc Forestry in 1947 from the University of British Columbia in Vancouver. In 1951 he was awarded a Ph.D. in Forest Pathology from the University of Toronto.

After working in research labs in Fredericton, Toronto and Calgary, in 1956, Dr. Nordin moved to Ottawa as Associate Director, Forest Biology with national and international responsibility for Canada wide programs for forest pathology and participation in international activities such as the North American Forestry Commission (NAFC) and the International Union of Forest Research Organizations (IUFRO) and research collaborations with countries such as India, the UK, Norway and the United States.

His career then pivoted to the academic side of forestry as he joined his alma mater the University of Toronto as Professor and Dean of Forestry in 1971 with a mandate to establish a Ph.D. program and expand and strengthen the programs of teaching and research through additional staff appointments and to generate funding support for research.

Upon completion of his University of Toronto contractual commitments in 1984, Dr. Nordin was appointed Professor and Dean Emeritus in 1986. At the same time, the southern Ontario section of the Canadian Institute of Forestry (CIF) established the V.J. Nordin Prize. This trust provides ongoing financial support to selected Forestry graduate students on an annual basis. This was the first of several lasting legacies in the national and international forestry sectors.

Dr. Nordin served as the founding Chairman of the Algonquin Forestry Authority Corp (1974-1982), an agency that has served, and continues to serve, as an outstanding model of a sustainable, balanced and integrated forestry management in a large provincial park.

In 1987, Dr. Nordin was commissioned by the Association of University Forestry Schools of Canada (AUFSC), the Canadian Institute of Forestry (CIF) and the Canadian Federation of Professional Foresters Associations (CFPFA) to develop a process of National Accreditation for the Canadian University Faculties of Forestry. This process periodically assesses and ensures world class forestry educational programs in Canada and continues today as another legacy to maintain excellence in university forestry education and research.

In the international forestry sector, Dr. Nordin coordinated two Canadian International Development Agency (CIDA) supported projects that led to the establishment of a Masters Degree program in forestry at the National Agricultural University in Lima Peru and a PhD program at the Federal University of Vicosa in Vicosa Brazil. Both of these programs continue today with ongoing collaboration with several Canadian forestry faculties.



(Continued from page 33)

In 1980, Dr. Nordin and fellow Canadian forestry deans visited and established significant contacts with the major Chinese forest education facilities. In 1985, The Chinese Association of Forestry took an unprecedented step and awarded an Honorary Membership to Dr. Nordin, a non Chinese citizen, for his contributions in promoting China-Canada Forestry collaborations.

Dr. Nordin is the author of over 175 papers and reports in the fields of forest protection, management, education and international forestry for various research and trade journals. He had served as a member, chair, co-chair, director or project director on numerous Canadian and international committees and associations. Similarly, he had received many Canadian and international awards too many to cite here.



In his retirement years, Dr. Nordin continued to consult in the academic forestry sector through V.J. Nordin Associates Inc. In addition, he was the editor for the sector's academic peer reviewed journal, The Forestry Chronicle, from 1995 to 2005 inclusive as well as co-editor from 1995-1997.

Above all, Dr. Nordin was the ultimate man of service. He continuously used his gifts and strengths to help others be it a graduate forestry student who had lost his/her path or a stranger in distress. He was always calm under duress and never spoke ill of others. Vidar was repeatedly described as the man with a smile who always lit up the room and had a kind word for everyone.

Despite being away a lot in his early career, Vidar cherished his time with family. Without fail he wrote a letter to his mother every week. Sundays were spent with the family at the National Art Gallery, Fridays at the RA bowling alley and in between he took his daughter to ballet lessons and his son to sailing at Britannia. But on a personal level he loved to fly and always had a camera in hand. Having been just too young to join the air force during WWII, he finally got his pilots licence in his mid 50s. This was indeed a milestone achievement. His camera was a necessary accessory on any business trip or family vacation and there are boxes and boxes family photos in slide format. He loved taking photos of his children and each Christmas the Nordin Christmas card was the latest family photo. As an international forest pathologist, Vidar had travelled the globe far and wide missing only the continent of Antarctica. On his return, he always had interesting stories to share with his family and he brought back unique gifts which decorated the Nordin home over the years.

Vidar's celebration of life will take place at Beechwood Cemetery on Friday, December 22, 2023. This will be a private family ceremony.

https://ottawacitizen.remembering.ca/obituary/vidar-nordin-1089118446

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## **In Memoriam**

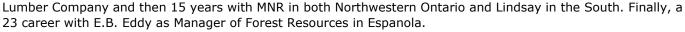
James (Jim) Waddell, R.P.F. (Ret.)

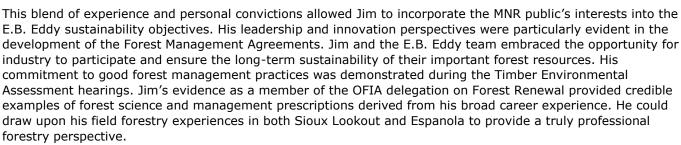
1931-2023

#### **Gentle Giant: Field Forester**

Born in London Ontario, Jim's 92-year journey included early years in Walkerton, Capreol and finally Toronto. Jim was a competitive athlete in track and field, hockey and football at both high school and university levels. His family often referred to him as a Gentle Giant. His Forestry career began with graduation from the University of Toronto in 1954.

Jim's management style was influenced by experiences achieved within both MNR and the forest industry. His first job was with the Pembroke





As Jim approached the final days before retirement, I had the opportunity to shadow him, for one week, as his successor. Jim lamented that it must be time to go. Things were changing so fast and it seemed that we had lost the personal touch. "Here I am on the last day of work and nobody has called to say goodbye! Not the folks at OFIA, despite all my days on EA ... not my industrial colleagues or MNR ... it must be time to go! At least my girls (his wife Audrey and his 2 daughters) are taking me out for supper"

Needless to say, rather than a small family supper, he was surprised by a retirement celebration/roast at a lodge on Lake Huron. Special busses and a barge transported the many guests. E.B. Eddy executives, the OFIA, the MNR, friends, family and colleagues travelled from across Ontario to pay tribute and reminisce about this truly professional forester.

Jim will be missed, but never forgotten.

https://www.bourcierfuneralhome.ca/obituary/james-waddell





### **Member News**

The following is a listing of member changes since the last newsletter. While we have several registrants retiring and resigning we have even more new registrants. The OPFA ended the 2022-2023 fiscal year with a net increase in practicing members.

Please welcome our new members, we look forward to their contributions to the people and forests of Ontario. For those retiring, resigning, or moving to new careers we thank you for your work in professional forestry and wish you the best in your new endeavours.

#### **New Full (R.P.F.) Members:**

Gerard Arsenault

Riley Belanger

**Brock Bell** 

Adam Chamberlin

Asad Choudhry

Brandon Figliomeni

Marie-Paule Godin (from Inactive

Membership)

Adam Gorgolewski

Don Grebstad

Neal Hissa

Brelvnn Howard

Larissa Huot

Luke Kastelic

Michelle Kratky

Meagan Krzywicki

Vicki Kwong

Scott Seaman

Helen Sereda

Jeff Sharp

Janani Sivarajah

Alex Stepniak

Dan Szekelv

Megan Thompson

James Thordarson

Alex Weegen

Please welcome and support the following people who have been admitted into the OPFA but are not yet entitled to practice professional forestry in Ontario:

#### **New Provisional Members (R.P.F. in Training):**

(may practice if under the direct supervision of a qualified member)

> **Emmanuel Boakye** Aditi Chanda Lauren Chisholm

Liz Elliott

**Devin Fischer** 

Scott Gauer

Simrit Kaur

Steph Lacev

Ryan Liu

Shawna MacLean

Sérgio Maffioletti

Alex Martin

Dave Maxfield

Kyle McCarthy

Dawson Meecham

Andres Olaya Davila

Bert Omac

Ashton Overton

Edie Russell

Marian Scaffeo

Justin Snape

Mady Sousa

Adam Solomon

Jerret Thibadeau

#### New Provisional Members-R.P.F. in **Training with Scope:**

(may practise within their prescribed scope of practice)

Adam Buitendyk

Jake Wakelin

Sam Warrington

Felix Winkelaar

#### **New Student Members:**

Gurveen Arora

Madison Dyck

Evan Fiorito

Damien Gilberds

Ty Golden-Duval

**Amber James** 

Rezaul Karim

Samantha Mitchell

Ronke Onireti

Samna Osti

James Somerville

Yingying Zhu

The following registrants are not entitled to practise professional forestry in Ontario:

#### New Inactive Member - R.P.F. (Non-Practising):

Abby Anderson

(Continued on page 37)



## **Member News**

#### **New Life Members-R.P.F. (Ret.):**

Bruce Byford

Dirk Kloss

Gaetan Mercier

Jeffrey Mundy

Eleanor Reed

Bill Thornton

Michael Willick

**David Winston** 

The following people are no longer registrants of the OPFA and are not entitled to practice in Ontario:

#### Resigned, Full Members:

Troy Anthony

Keith Fletcher

Bill Greenaway

Michael Gray

Karen Jackson

John Lawson

Joe Silva

Jan Smigielski

Glen Swant

**Bridget Trerise** 

Joe Williams

#### **Resigned, Inactive Members:**

Brian Campbell

Martin Neumann

Anthony Ritchie

#### **Resigned, Provisional Members:**

Mathieu Alain

Michael Armstrong

Erin Knight

Jacob Rudy-Froese

Abhishek Tripathi

Karrah Watkins

#### **Deceased Members:**

Jacques Gaudet de Lestard, R.P.F. (Ret.)

James Waddell, R.P.F. (Ret.)

Vidar Nordin, R.P.F. (Ret.)



# Continuing Education

#### **Webinars and Other Resources**

Websites that offer free webinars to earn CEUs for your membership maintenance.

- Canadian Institute of Forestry (CIF-IFC) Offers considerable resources and ongoing lecture series
  - https://www.cif-ifc.org/e-lectures/
- Ontario Ministry of Natural Resources and Forestry. MNRF Science Insights, contact Kristy Mckay, Science Transfer Specialist at Kristy.McKay@ontario.ca
- Forestry and Natural Resources Webinars http://www.forestrywebinars.net/
- Conservation Webinars
   http://www.conservationwebinars.net/
- Urban Forestry Today <u>http://www.urbanforestrytoday.org/</u>
- Climate Webinars http://www.climatewebinars.net/
- Cornell University
   <a href="http://blogs.cornell.edu/cceforestconnect/subscribe/">http://blogs.cornell.edu/cceforestconnect/subscribe/</a>
- Forestry Chronicle http://pubs.cif-ifc.org/journal/tfc
- Canadian Journal of Forest Research http://www.nrcresearchpress.com/journal/cjfr
- FPInnovations
   https://web.fpinnovations.ca/blog/
   https://wildfire.fpinnovations.ca/index.aspx
- Tree Research and Education Endowment Fund (TREE Fund) <a href="https://treefund.org/webinars">https://treefund.org/webinars</a>
- Eastern Ontario Model Forest LDD Moth Webinar Link to the recording on YouTube Channel: https://youtu.be/U4BZOM8GtvU
- Ontario Woodlot Association Oak Wilt Webinar Link and passcode to the recording: <a href="https://us06web.zoom.us/rec/share/1xAH8qHGgwVV9ki-78A83oQMbcIIZKbH5uHqHtP7xLfEJ8I8mNJE7U4iGx2nZuFp.3LYLtySIGeCzRor">https://us06web.zoom.us/rec/share/1xAH8qHGgwVV9ki-78A83oQMbcIIZKbH5uHqHtP7xLfEJ8I8mNJE7U4iGx2nZuFp.3LYLtySIGeCzRor</a>
   Passcode: 8Mnwb+@J

 Ontario's Centre for Research & Innovation in the Bio-economy (CRIBE) - Forest EDGE.
 Decision support tools, projects and case studies.

https://www.nextfor-forestedge.ca/

- Canadian Partnership for Wildland Fire Science (Canada Wildfire). Partnership members include: the Canadian Forest Service, Alberta, BC, Northwest Territories, Saskatchewan and the University of Alberta. Originally focused on western Canada, it has expanded and includes information and research of interest to forest managers elsewhere in Canada. https://www.canadawildfire.org/
- Invasive Species Centre webinar series
   https://www.invasivespeciescentre.ca/learn/webinar-series/
- PlaniIt Geo Urban Forestry Webinars
   https://planitgeo.com/urban-forestry-webinars/

#### **Coming Events**

Ontario Invasive Plant Council Conference: Building Resilient Communities January 18, 2024 Virtual

https://www.ontarioinvasiveplants.ca/events/2024-ontario-invasive-plant-council-conference/

2024 Invasive Species Forum
February 12 to 15, 2024
<a href="https://www.invasivespeciescentre.ca/event/2024-invasive-species-forum/">https://www.invasivespeciescentre.ca/event/2024-invasive-species-forum/</a>

Forests Ontario's 2024 Annual Conference February 28, 2024 Vaughn, ON https://forestsontario.ca/en/event/annualconference

2024 OPFA Annual Conference and AGM April 16 to 18, 2024 Sault Ste Marie, ON https://opfa.ca/about-us/event-list

Ontario Woodlot Association Annual Meeting, Conference and Tour 2024 April 23 to 24, 2024 Barrie, ON https://www.ontariowoodlot.com

Please send any upcoming events to opfanewsletter@gmail.com