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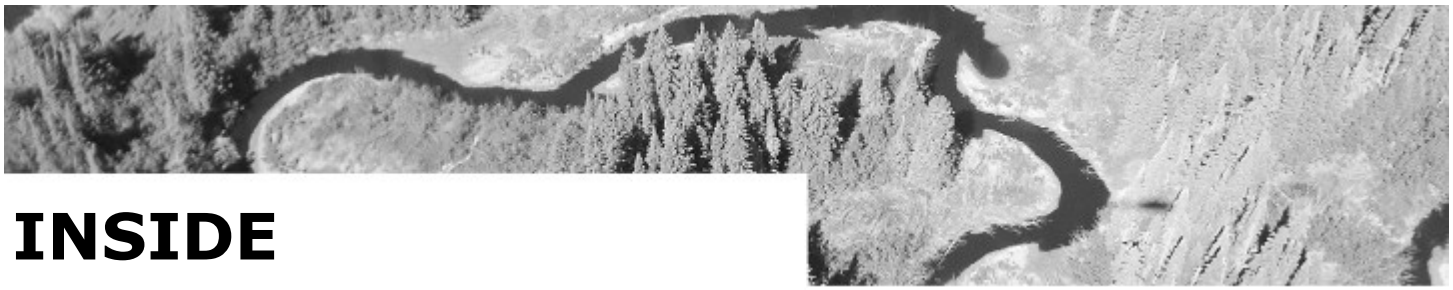
## Forest issues, operations and fire related articles from the OPFA conference and annual general meeting

ALSO INSIDE



# INSIDE

## THIS ISSUE



## EVERY ISSUE






## ONTARIO PROFESSIONAL FORESTERS ASSOCIATION

**OFFICE** 905.877.3679

**ADDRESS** PO Box 30038
Georgetown RPO Mountainview, ON
L7G 6J8

**opfa@opfa.ca** **www.opfa.ca**





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# Implementing herbicide alternatives: A growing collaboration

**Chris McDonell**, R.P.F.

The Herbicide Alternatives Program (HAP) was established in 2011 by Indigenous representatives and Tembec (formerly Rayonier Advanced Materials - RYAM, now GreenFirst Forest Products) to identify and apply alternatives to the use of herbicides on company Sustainable Forest Licenses (SFLs) in northeastern Ontario. In 2016, Wahkohtowin Development, joined the initiative, bringing substantial Indigenous knowledge, capacity and strategic support.

With a focus on the Chapleau Crown Game Preserve and the Gordon Cosens, Romeo Malette and Martel (now Missinaibi) Forests, partner engagement in HAP has grown. In 2019, Natural Resources Canada joined Wahkohtowin and GreenFirst to expand the reach and capacity of the initiative through resources provided through the NRCan Innovation Fund (see The Professional Forester March 2021) and Fibre Solutions program. The collaboration has grown with the participation of INTERFOR and First Resource Management Group, and engagement from Ministry of Natural Resources, expanding capacity of the partners to develop tools to support practitioners.

This update focuses on four areas of activity:

1. Literature compendium of vegetation management experiments
2. Ecological framework to support herbicide alternatives
3. Mycorrhizae inoculation
4. Communications

**Published compendium and synthesis of Canadian Eastern Boreal and Eastern Temperate Mixed Forest vegetation management field experiments**.

Led by Kim Chapman, forest ecologist at the Great Lakes Forestry Centre, and Dr. Nelson Thiffault, research scientist, at Canadian Wood Fibre Centre, Quebec City, along with colleagues, an online compendium has been published that enables the exploration of the variety, location and results of vegetation management treatments that have been explored under experimental conditions. The criteria used to select studies for the compendium included:

1. Study must be located in or relevant to boreal or northern temperate forests in Ontario and Quebec (mostly studies from northeastern Ontario and northwestern Quebec);
2. Study must include at least one silvicultural intervention or is a relevant compendium, synthesis or meta -analysis that evaluates silvicultural interventions;
3. Study must include tree or other vegetation-related metrics as response variable(s);
4. Study must have followed responses for 5 years or longer or is part of a project that followed responses for longer than 5 years.

The following paper describing the compendium of silviculture studies was published in The Forestry Chronicle in spring 2024. The open-access article can be accessed and downloaded at: https://pubs.cif-ifc.org/doi/10.5558/tfc2024-007

Chapman, K., Thiffault, N., Gouge, D., Deighton, H.D., Allen, I., Bell, F.W., Edge, C.B., Fleming, R.L., Flood, D., Hoepting, M.K., Kayahara, G.J., McDonell, C., Morris, D.M., Tallman, J., and Venier, L.A. 2024. Herbicide alternatives in boreal and northern temperate forests of Ontario and Quebec: A compendium of studies. The Forestry Chronicle 100(1): 128-138. doi: 10.5558/tfc2024-007.

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The compendium can be accessed at the following link:

https://doi.org/10.6084/m9.figshare.25209152

The compendium will enable a meta-analysis of silvicultural studies to assess the effects of chemical and alternative treatments on trees and ecosystems.

**Development of an ecological framework for vegetation management**

A second priority for the HAP initiative has been to support practitioners in anticipating post-harvest vegetation management conditions, prior to harvest. An ecological framework has been developed to classify sites in northeastern Ontario and northwestern Quebec to support vegetation management decisions. For the first time, the potential to have common ecological language cross-border will enable Ontario practitioners to better leverage Quebec experience to plan and apply non-herbicide prescriptions.

A first approximation of the framework has been published and may be accessed at: https://publications.gc.ca/site/eng/9.921507/publication.html.

Chapman, K., Fleming, R.L., Thiffault, N., Gouge, D., Kayahara, G.J., Morris, D.M., Bell, F.W. 2023. An ecological framework to support the use of herbicide alternatives in boreal and northern temperate forests of Ontario and Quebec: First approximation. Natural Resources Canada, Canadian Forest Service, Canadian Wood Fibre Centre. Information Report FI-X-025. Ottawa, ON. 42 p.

The framework is in its second summer of testing on the Missinaibi Forest where NRCan researchers, Wahkohtowin Indigenous Guardians and GreenFirst forest management staff are collaborating to identify and visit forest stands pre-harvest and post-harvest to compare the predicted vs actual vegetation response. The results of the work will improve the model in its utility to inform managers on the potential application of herbicide alternatives, prior to harvest.

**Mycorrhizal inoculation project**

Since the late 1990s the nursery practice of inoculation of seedlings with mycorrhizal fungi has demonstrated the potential to increase drought stress resistance and improve field performance of jack pine, black spruce and white spruce (Smith, W. OFRI, 1997). Increased seedling costs with payback at time of harvest has been a disincentive to widespread adoption of the practice. Professional Foresters with Wahkohtowin, GreenFirst and Interfor were interested in testing the application of treated seedlings to explore if benefits in growth and survival could lead to reduced herbicide use in plantations.

In December 2021, Mikro-Tek of Timmins, Ontario and Wahkohtowin Development GP were awarded $3.7 million for Sustainable Development Technology Canada to treat millions of seedlings over a 3-year period (see https://www.northernontariobusiness.com/industry-news/forestry/timmins-company-gets-37m-to-pursue-carbon-offset-tech-4818311). Three million jack pine seedlings were inoculated via the nursery irrigation system in 2023. The seedlings were planted in spring 2024 on 6 Forest Management Units in northeastern Ontario, consistent with standard operational practice. In various locations, plantings of treated and untreated seedlings were established to facilitate paired trials and for monitoring of performance by staff with the Ministry of Natural Resources (MNR) Centre for Northern Forest Ecosystem Research, Mikro-Tek and Wahkotowin Indigenous Guardians.

Seedling inoculation was expanded significantly in summer 2024 to in excess of 10 million jack pine, black spruce and white spruce in collaboration with nursery partners PRT (Dryden, ON and British Columbia) and La Maison Verte (Hearst) and through participation of over 10 SFL managers. Treated seedlings will be outplanted in 2025. Planning for 2025 inoculation for outplanting in 2026 is underway with opportunity for participation by additional SFL managers in the final year of the program. Program participants look forward to following the progress of the treated stock across a range of site and vegetation conditions.

*(Continued on page 5)*

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**Wahkohtowin Development**

Wahkohtowin is a social enterprise owned by Brunswick House, Chapleau Cree and Missanabie Cree First Nations. The mission of Wahkohtowin (which means kinship and connectedness in Cree) is to actively pursue the future needs of communities through the renewal of cultural practices and upholding of rights to create sustainable resource management for the benefit of the shared Traditional Territory, communities and livelihoods. The communities are committed to sustainable forest management without the use of chemical herbicides (www.wahkohtowin.com).

In addition to strategic guidance on the application of herbicide alternatives, Wahkohtowin leads an Indigenous Guardians program for youth in their teenage years. Participants are active each summer on the Missinaibi Forest undertaking vegetation surveys, mechanical brushing and supporting data collection for the testing of the ecological framework for vegetation management decision-making.

To stay up to date on recent HAP related activities publications visit the Wahkohtowin website https://www.wahkohtowin.com/herbicide-alternative-program. This page contains useful resources for learning about HAP such as summaries of field tours, relevant articles, and the history of the program. There are also recordings of the HAP webinar series, which includes presentations from Indigenous and scientific experts covering topics including "Our Ancestral Knowledge and Connectedness" by Sue Chiblow and "Digital Soil and Ecosystem Mapping as a Tool for Planning Herbicide Alternatives" by Kara Webster.

**Summary**

These efforts support the increased use of alternatives to herbicide to regenerate forests in northeastern Ontario and provide a forum for SFL Managers, Indigenous People and government (provincial and federal) to collaborate. A field trip to the Nipigon Forest in 2023 provided an important opportunity to learn about herbicide reduction strategies and further engagement with managers across Ontario is welcomed. MNR is active in supporting First Nations and SFL managers in Northeastern Ontario to evaluate alternatives. Indigenous communities advocate for rapid adoption of new approaches.  We look forward to applying new learnings generated amongst the collaborators and beyond to expand the application of promising alternatives to the use of herbicides to renew forests.

# Good Forestry Practices on private lands in southern Ontario

**Arben Pustina**, R.P.F.

The landscape of southern Ontario includes agricultural operations, forested lands, natural features, urban settlements, ravines, rivers, creeks, roads and highways. Forested lands include private woodlands, conservation authority conservation lands and those woodlands owned by a county, region, city or town.

Individual counties, regions and cities have enacted forest and woodland conservation by laws for private lands. The key component of these by laws, is the permit requirement that landowners must follow, when conducting forest management activities on their lands.

The landowners and logging contractors should ensure they have a forest management plan in place that outlines the goals, timelines, and methods for accessing, harvesting and regenerating the woodlot prior to undertaking any forest operations. A permit is required to be obtained from a county, region, or city to follow good forestry practices on private lands.

"Good Forestry Practices means the proper implementation of harvest, renewal and maintenance activities known to be appropriate for the forest and environmental conditions under which they are being applied and that minimize detriment to forest values including significant ecosystems, important fish and wildlife habitat, soil and water quality and quantity, forest productivity, health, esthetics and recreational opportunities of the landscape." (Haldimand County 2020)

The successful implementation of Good Forestry Practices depends on careful planning at all stages of forest management. This requires adherence to some fundamental rules that are necessary to help landowners meet their management objectives while minimizing environmental damage, maintaining species diversity, retaining significant wildlife habitats and other important features.

Landowner objectives include producing high-value wood products, fuelwood for personal use, establishing regeneration, controlling species composition, encouraging old-growth characteristics, controlling stand density, reducing losses to insects, diseases and fires, enhancing non-timber values such as wildlife habitat, rare species protection, recreation and nature appreciation.

Good Forestry Practices Applications must include a silvicultural prescription prepared by a Registered Professional Forester or Associate Member of the Ontario Professional Foresters Association (OPFA) under the Professional Foresters Act 2000. Hiring a Qualified OPFA Member ensures that individuals preparing silvicultural prescriptions have the proper education, training and experience to make forest resource management decisions.

A Certified Tree Marker who is currently certified through the Ontario Ministry of Natural Resources must complete all tree marking for a Good Forestry Practices Application based on the prescription written and certified by a Qualified OPFA Member.

Harvesting prescriptions are a detailed plan on how, when and where timber will be harvested from the woodland. The type of equipment and harvest systems utilized can have a significant impact on soil conditions and forest renewal. There are several harvesting prescriptions to choose from: full tree harvesting, cut to length, cut and skid, seed tree and strip cuts and commercial thinning as well as harvesting equipment such as skidders, feller bunchers, loaders, harvesters, forwarders.

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**Harvesting considerations and Good Forestry Practices**

- To reduce the impact on forest soils and vegetation landowners should harvest when the ground is frozen and preferably snow-covered or when the ground is dry.
- Do not harvest in early spring when the ground is thawing or soft, the bark is easily torn from trees and avoid harvesting from April 1st to August 31st while sensitive wildlife species are nesting and/or breeding.
- Wherever possible, skid trails and roads should avoid steep slopes (greater than 12% for roads and greater than 20% for skid trails), wet spots, seepage and poorly-drained areas, and intermittent streams. Logging contractors should minimize the number, width of skid trails and follow the land contours.
- Skid trails and roads should approach and cross streams at right angles to minimize impacts on stream banks and to prevent water from flowing down skid trails. Minimize the number of stream crossings, cross at only one location and where the stream is narrow and preferably has a rocky bottom. Remember that it is illegal to destroy any fish habitat. Temporary bridges should be used when crossing a stream with harvesting equipment.
- Where possible, without lowering product value, skid shorter log lengths and never skid directly up or down a slope. Locate landings on well-drained sites away from waterbodies and watercourses. To prevent erosion, cut only on dry slopes less than 35%.
- Use careful directional felling to minimize damage to the residual stand, regeneration, and to the tree that is being felled and to reduce skidding damage.
- Equipment should reflect the scale of the harvesting operation in order to avoid excessive residual damage that heavy machinery may inflict on the forest.

**Tree Harvesting Equipment and John Deere Forestry Supplies**

- Hose down forestry equipment between work sites to prevent the introduction of non-native species. Remove non-native species to help ensure long-term health of the forest stand.
- Areas of concern are areas that should be protected due to their special characteristics or values such as species at risk; nesting and denning sites; riparian areas; and cultural and aesthetic values.
- Landowners with the help of the forestry consultant should prepare a formal contract that addresses issues such as: the use of qualified logging professionals; an agreed upon price and wood measuring methodology; only marked trees are to be cut; timing of harvest; delineate property boundaries; clean up, slash gathering, trail/road repair; liability insurance; penalties for cutting unmarked trees or causing unreasonable damage to unmarked residual trees.
- Working around wetlands requires a permit from the local conservation authority. Any developments on lands adjacent to areas designated as Provincially Significant Wetlands, must demonstrate that there will be no negative impacts on the wetlands.

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- Proper road location will reduce construction and maintenance costs and minimize disturbance to waterways and soil erosion. It is the landowner's responsibility to maintain roads after logging is completed.
- Landowners should adhere to the following best management practices to ensure maximum fiber utilization. Do not leave any merchantable timber behind; keep stumps low (30 cm); research all available markets (lumber, pulp, biomass); confirm the wood quality specifications with the destination mill; is biofibre or biomass the main product or a by-product of a harvest operation; develop a plan for the management of the logging slash.
- Logging contractors must adhere to Occupational Health and Safety regulations, fuel handling storage and transportation, emergency preparedness and response for spills, and fire.
- To ensure long-term sustainability of the forest landowners should consider their forest renewal options through natural means or artificial methods.

Application of Good Forestry Practices on private woodlands is the best approach to ensure long term sustainability of forest lands in southern Ontario.

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Ministry of Natural Resources (MNR) 2000. A Silviculture Guide to Managing Southern Ontario Forests, 654 pp.. https://www.ontario.ca/page/silvicultural-guide-southern-ontario

Sustainable Forestry Initiative (SFI). 2016. A Guide to Best Management Practices for Forest Operations in Northern Ontario and Manitoba, 63 pp. https://static1.squarespace.com/static/6494515aa8deea4e5b08e802/t/65cd12cb88b6135f4b4900f2/1707938514672/CCSIC_BMP2022_Revision+2.0_Computer+Printing.pdf

Haldimand County. 2020. Good Forestry Practices - Guidelines for the Haldimand County Forest Conservation By-law 2204/20, 8 pp. https://www.haldimandcounty.ca/wp-content/uploads/2020/10/20201015GuidelinesforGoodForestryPractices.pdf

**Tree Harvesting Equipment and John Deere Forestry Supplies**

Part four of a four part series

# Ontario's T2 inventory production process

**Ian Sinclair**, R.P.F. in Training, Science and Research Branch, Ministry of Natural Resources

**Background**

Ontario's T2 (term 2 (2018–2028)) inventory process is a lidar-based update to the T1 (term 1 (2007–2017)) forested polygons, designed to capture inventory attribute changes in tree height, density, and cover. The concept and the associated single photon lidar (SPL) and field plot validation data collection were highlighted in previous OPFA newsletter issues (see Vol. 239–241). More detail about the inventory production process is provided here.

The lidar-based update will be augmented by remote sensing analysis using change detection methods with satellite and elevation data sets in combination with optical imagery interpretation to target recent natural disturbance-based changes. Record integration is another component of the T2 inventory process that leverages past investments in the T1 data sets, such as the polygon, species, and ecosite information, plus annual reporting data submitted to the ministry by forest industry. The T2 components and process will support the provincial forest resources inventory (FRI) program transition towards a form of continuous forest inventory for future updates.

Key aspects of the T2 inventory process were developed through preparing the first of the new inventories, for the White River Forest, including the development of the T2 FRI technical specification (tech spec) in consultation with forest industry and ministry staff via the Forest Information Data Analysis Group (FIDAG).

**T2 inventory production process**

The T2 inventory production process leverages an area based approach (ABA) using field measurements captured using the structured sampling design outlined in a previous article (see part 2 of series, Vol. 240). Best practices developed by NRCan were tested operationally and are published (see Assessing Single Photon Lidar for Operational Implementation of Enhanced Forest Inventory in Diverse Mixedwood Forests). Additional projects supported by the Forestry Futures Trust Knowledge Transfer and Tool Development program helped to further operationalize the process and develop the FRI tech spec. The general steps/components are outlined in Figure 1 and described briefly.

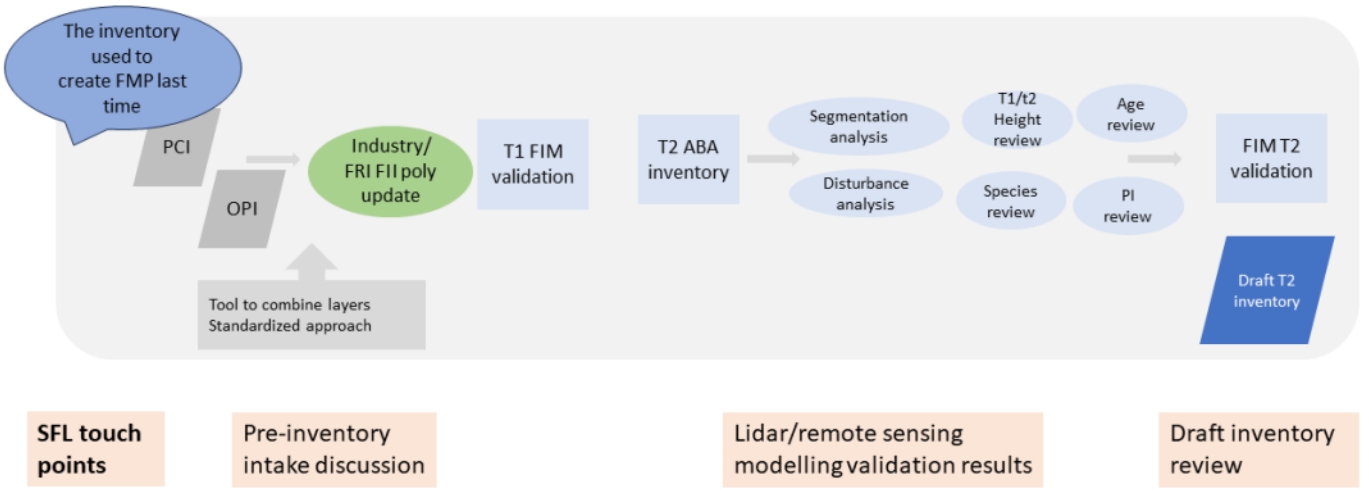


**Figure 1. Overview of T2 inventory production process, showing inputs, analytical steps, and touch points with forest industry. (PCI=planning composite inventory; OPI=operational planning inventory; FII=forest input inventory; FIM=forest information manual; ABA=area based approach).**

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In the spirit of collaboration throughout the inventory production process, three scheduled formal touch point meetings were added: First, a pre-inventory meeting to detail the process, develop a plan, and establish timelines for data exchange, collaboration opportunities, and future touchpoint meetings. Second, a session focused on the lidar and remote sensing change analysis modelling results, timed to support a 90-day review period during the growing season. Third, review of the draft attributes before finalizing the inventory.

The first step in the process is preparing the forest input inventory (FII) that builds on updates incorporated into the operational planning inventory (OPI). The licensee is responsible for preparing the FII from the T1 OPI to the time of Vegetation Sampling Network (VSN) field plot data collection (see part 3 in series, Vol. 241). FII delivery is signed off by the licensee. Full details of the touch point meetings and FII are outlined in the T2 FRI tech spec.

The area-based prediction of forest inventory attributes is based on a statistical dependency between predictor variables derived from lidar data and response variables measured from ground plots (see area-based approach overview in Figure 2). The main objective is a set of wall-to-wall (full raster set) of attributes that represent an entire forest management unit.

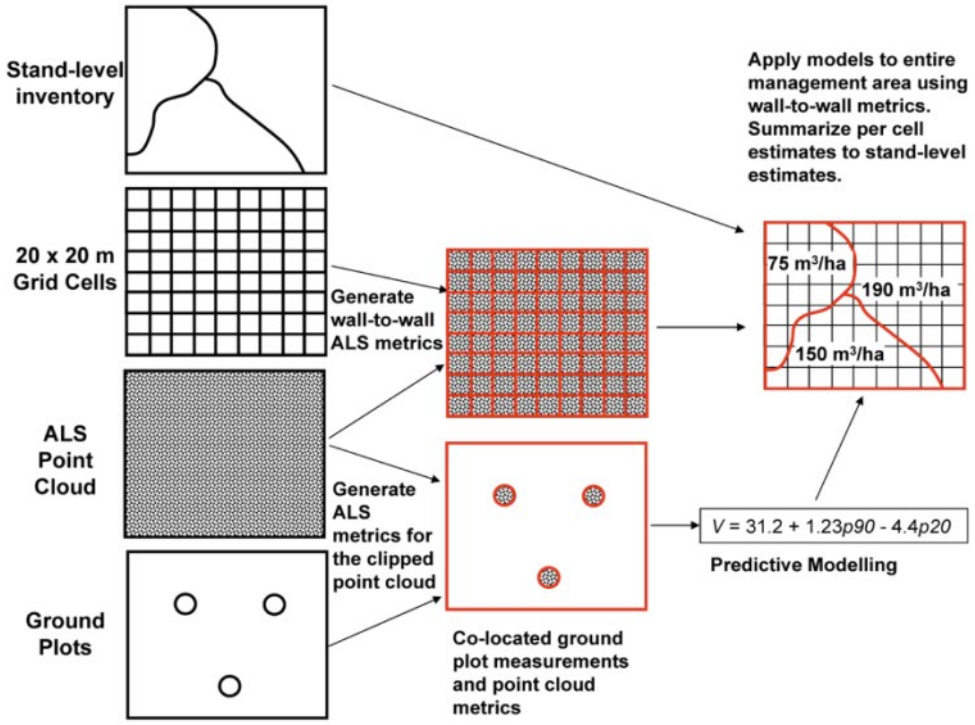


**Figure 2. Schematic representation of the area-based approach being used to develop forest inventory attributes for Ontario's managed forests. (Used with permission from A best practices guide for generating forest inventory attributes from airborne laser scanning data using an area-based approach (nrcan.gc.ca).)**

ABA attributes are developed using the field plot summaries and lidar data are subsequently applied across the targeted forest management unit using a wall-to-wall prediction process. A random forest prediction method allows determination of attributes such as heights (Lorey's height, average height of dominant/codominant trees), quadratic mean diameter, basal area, aboveground biomass, and gross total volume (for full list, see FRI tech spec).

Vertical structure is another lidar predicted attribute that is generated using a random forest prediction based on the lidar return positions via the evaluation of modal distributions and point cloud distribution. One way to visualize this process is to turn a plot point cloud on its side (Figure 3) and evaluate the frequency of returns and number of distributions, i.e., is it unimodal vs. bimodal, with the latter indicating a two-tiered forest canopy.

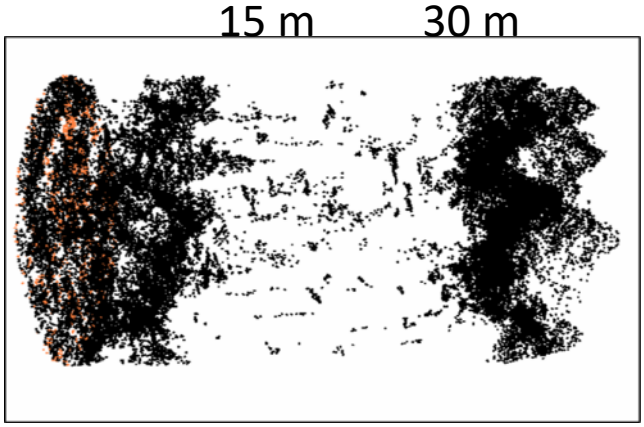


**Figure 3. Lidar point cloud of VSN field plot turned sideways to assess modality as part of vertical structure analysis (m=height above ground).**

Remote sensing analysis of spectral data and elevation data sets are used to identify stand replacing natural disturbance events via spectral change detection and cover type change. Analysis includes using satellite, current and past T1 elevation products, and 50 years of Landsat libraries to validate stand replacing ages in the boreal forest.

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Satellite-derived disturbance layers, land cover, lidar elevation derivatives, Sentinel-2 imagery and vegetation indices, and thematic layers including forest inventory are assembled in an object-based segmentation and classification process.

Disturbance, both stand replacing and non-stand replacing, is classified through a random forest classifier trained against the time series stack of annual Sentinel-2 vegetation indices. Objects classified as non-disturbance or non-stand replacing disturbance are further classified for cover type based on a multi-seasonal stack of Sentinel-2 imagery and lidar elevation derivatives (e.g., figures 4–6). Finally, the disturbance and cover type class statistics are summarized for each forest stand. The cover type statistics are then related back to the T1 species composition to identify changes.

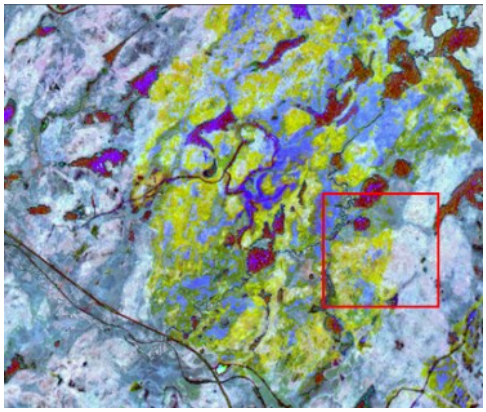

**Figure 4. Post-lidar acquisition stand-replacing wildfire disturbance (yellow) shown on a 3-year Sentinel-2 normalized burn ratio composite. Red box bounds area detailed in figures 5 and 6.**

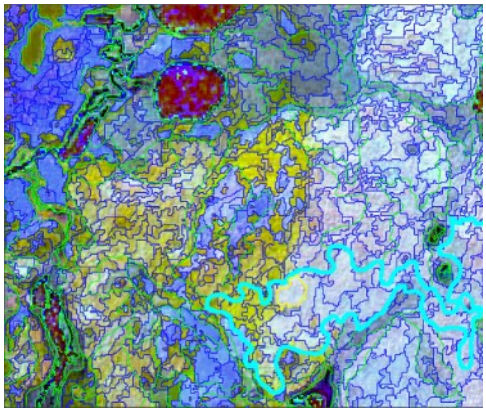

**Figure 5. Object segmentation (blue lines) and T1 inventory polygons (green lines) illustrating the proportion of the selected forest stand (cyan line) affected by stand-replacing disturbances since lidar/ field data capture.**

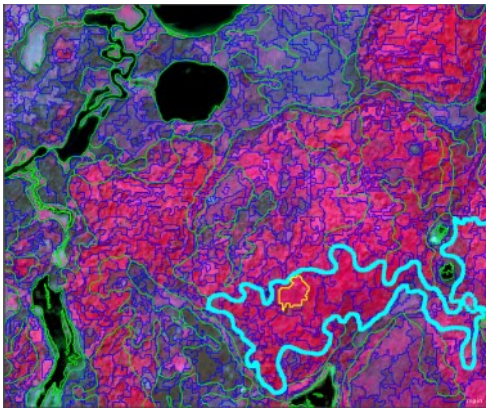

**Figure 6. Sentinel-2 false-colour composite of the area illustrated in Figure 4. Forest cover type at the object level is derived through a classifier trained on a multi-seasonal stack of Sentinel-2 vegetation indices. The object cover type classifications are summarized at the forest stand level.**

An elevation-based change detection is calculated between data sets — the lidar T2 Digital Surface Model (DSM) and T1 DSM — to evaluate forest stand replacing events with >9 m height loss.

Segmentation analysis is used to assess the T1 manually interpreted polygons to clarify the polygon sizing and the association of the polygon to lidar statistics and attributes.

The analysis and computation needed to produce the T2 inventory is made feasible through use of the Microsoft Azure cloud environment, which enables the FRI program to exchange lidar and field plot data with vendors and forest industry (Figure 7). The cloud environment also enables large data processing, analytics, and data exchange.

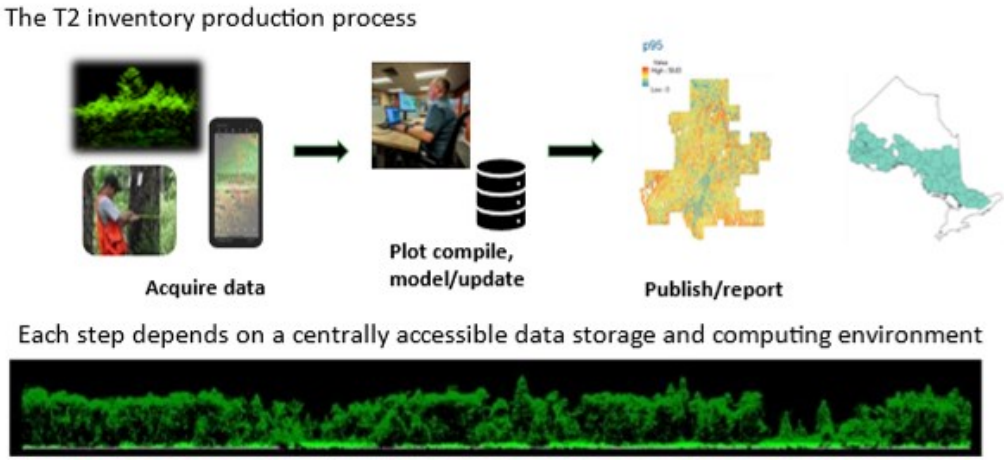


**Figure 7. General steps in the T2 FRI inventory production process that relies on the Microsoft Azure cloud environment for data processing and analytics.**

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**Progress/next steps**

The FRI program will continue to produce lidar-based ABA inventories as part of the current inventory cycle in accordance with the forest management planning schedule. The draft FRI tech spec is in final review and slated for release September 2024. The White River Forest is mid-production at the second check point and the first touch point meetings with the next 7 units are complete to support their FII production.

Licensees are encouraged to maintain updates in their OPIs to help faciliate the development of a FII. Details supporting the development and exchange of the FII are outlined in the FRI tech spec to support the development of the 7 units slated for 2025.

Public access to FRI data products and related resources is via GeoHub. Additional information and resources are available on the Forestry Futures Trust web site.

# Living in a more extreme fire climate: The role of fuel management

**Mike Wotton**, PhD, Institute of Forestry and Conservation, John H. Daniels Faculty of Architecture, Landscape and Design, University of Toronto

**Introduction**

The connection between weather and wildfire activity is well-established. The past decade's increase in wildfire activity across Canada highlights the consequences of warmer temperatures and changing weather patterns, such as poor air quality, extended evacuations, and property loss (Jain et al 2024). Significant research has focused on understanding many aspects of how climate change will impact wildfire in Canada (Flannigan et al 2009). While much remains to be learned about varied interactions within the fire environment, what's clear is that we are entering an era of more extreme fire weather, leading to greatly increased challenges for wildfire management (Wotton et al 2017). Adapting to this changing wildfire environment will require a combination of strengthened traditional approaches and the implementation of new strategies.

Increased investment in fire suppression can help, but it won't solve the problem. Even with conservative estimates of future changes, maintaining our current levels of forest disturbance from fires would demand substantial resources (Wotton and Stocks 2006). One major reason is the physical limitations of fire suppression techniques, including those involving large airtankers; fire intensity, influenced by both the speed at which a fire moves and the amount of fuel it burns, limits the effectiveness of suppression efforts. Fires, when they reach high intensities, can easily overcome suppression actions (Hirsch and Martell 1995). This has always been the case and our fire response programs are most effective when they can quickly action new unwanted fires before they become too intense to manage directly.

Approximately half of Ontario's wildfires are caused by lightning, and we expect more lightning fire to occur in a warmer climate (Wotton et al 2010). While human-caused fire occurrence can be somewhat mitigated through awareness programs and forest restrictions during extreme weather, the occurrence of summertime thunderstorms sweeping across our landscapes is beyond our control. It's crucial to maintain robust fire management programs that can anticipate and respond to these inevitable fires when they occur and manage the few that inevitably escape initial attack efforts. While we can't control the weather, one aspect of fire behaviour we can influence is the amount of fuel available on the landscape. Fuel management has become a key focus in many parts of the world as a way to build more fire-resilient landscapes and communities.

**Fuel management: An established concept**

The goal of fuel management is to reduce the amount of fuel consumed in a fire. Fire intensity – the size of the flames -- is influenced by the amount of fuel consumed. Reducing fuel can be achieved through thinning, pruning, and reducing surface fuel loads, either mechanically or through prescribed burns (Agee and Skinner 2005) . Prescribed burning was common in Canada decades ago, however its use has greatly diminished, particularly in northern forests. It is increasingly used as a fuel reduction tool in other wildfire-prone countries like the U.S. and Australia. Effective fuel management programs require careful consideration of the scope and scale of the fuel hazard, the cost of various treatments and of course the myriad of values on the landscape (Omi 2015). These themselves are complex considerations requiring both improved fire behaviour knowledge and robust economic assessments.

**Advances in the Canadian Forest Fire Behaviour Prediction System**

The Canadian Forest Service has been working to redesign and update the models within the Canadian Forest Fire Behaviour Prediction (FBP) System (CFSFDG 2021). The goal is to move the FBP System beyond its reliance on a small number of static fuel types and allow fire behaviour assessments within a range of different stand conditions. The new system will consider the complex interactions between forest stands and the fire environment, such as how thinning a canopy can increase surface litter dryness and wind, which in turn can increase fire spread and intensity. These updated models will allow for more informed decisions regarding fuel treatments and their long-term effects on fire behaviour. An interim version of the new FBP System is expected to be released to wildfire management professionals in 2025, providing a valuable tool for long-term planning and fuel management optimization.

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**Summary**

Professional foresters have a crucial role to play in addressing the increasing challenges posed by wildfires. For decades, forest managers in Ontario have used tools to plan sustainable forest management activities balancing social and economic outcomes under various constraints. Managing fuels to improve the resilience of forested landscapes and communities is also a long-term activity, and has many similarities in this regard with modern forest management planning and practices. This creates significant opportunities for foresters to engage in the growing conversation around fuel management and integrate fuel hazard reduction strategies into forest management planning.

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# Our forests are burning – what are you going to do about it?

**David L. Martell**, PhD., Institute of Forestry and Conservation, John H. Daniels Faculty of Architecture, Landscape and Design, University of Toronto david.martell@utoronto.ca, http: www.firelab.utoronto.ca

**Based on a presentation to the Ontario Professional Foresters Association Annual General Meeting, April 18, 2024.**

As of October 6, 2023, 6,551 fires had burned 184,961 square kilometres in Canada, more than six times the long-term average of 27,300 square kilometres for that time of the year. More than 5,000 fire fighters had been borrowed from other countries and seven fire fighters and one pilot had lost their lives.

Many people were forced to evacuate, many had their homes and businesses destroyed and many people across parts of North America suffered exposure to wildfire smoke and large amounts of carbon had been emitted by Canadian wildfires.

**Ontario is not immune to wildfire disasters**

223 lives were lost in the 1916 Matheson fire and 43 lives were lost in the 1922 Timiskaming fire that burned 168,000 ha. The May 25, 2012 edition of the Globe and Mail reported (with respect to the Timmins 9 fire) that "Raging wildfire leaves Timmins, Ont. in state of emergency"1. The August 12, 2020 edition of the Globe and Mail reported (with respect to the Red Lake 49 fire) that "Residents of Red Lake, Ont., continue to evacuate as nearby wildfire grows"2.

**The role of professional foresters?**

Some professional foresters have and continue to play very important roles in fire management in Ontario, but I believe they can and should do more. Some of Ontario's professional foresters are currently employed by forest companies, develop management plans for forest companies, audit Sustainable Forest Licenses (SFLs) held by forest companies, help manage private woodlots and manage urban forests.

**Foresters that manage forest companies and develop management plans for forest companies**

I expect massive amounts of money are going to be spent on fuel treatments adjacent to communities and on the larger extensive forest landscape in Canada in the coming years. Unfortunately, our understanding of their impact on fire behaviour and our ability to mitigate fire losses is at best, very rudimentary (e.g., Hunter et al. 2022 and McKinney and Taylor 2022).

Foresters that manage forest land regenerate cut blocks and apply silvicultural treatments to those and some other stands. One of the ways we can further our understanding of the cost-effectiveness of fuel treatments is to have foresters or other company staff document what actually happens when fires reach cut blocks and other fuel treatments on their management units, and share that data with researchers who could combine it with the results of their experimental burns to enhance our understanding of the cost-effectiveness of landscape level fuel management.

Foresters that are employed by companies might also be able to help reduce the cost of FireSmarting communities and other values at risk. FireSmarting[3] is focussed primarily on homes and other structures, but some communities will, I expect, augment their FireSmart initiatives by creating fuel breaks and carry out other forms of fuel treatments on the edges of their communities and some of those fuel treatments will entail expensive harvesting of trees near those communities – and the mills that are located in those communities. Professional foresters employed by such companies should explore the possibility of donating company resources to help plan and implement such fuel treatments, transport that merchantable wood produced to nearby mills and thereby generate goodwill while reducing some, albeit a very small portion, of their delivered wood costs.

*(Continued on page 16)*

[1] https://www.theglobeandmail.com/news/national/raging-wildfire-leaves-timmins-ont-in-state-of-emergency/article4210056/ Accessed September 3, 2024

[2] https://www.theglobeandmail.com/canada/article-residents-of-red-lake-ont-continue-to-evacuate-as-nearby-wildfire/ Accessed September 3, 2024

[3] https://firesmartcanada.ca/ Accessed on September 3, 2024

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**Foresters that live in forest communities**

Many forested communities will hire contractors and others to develop and implement FireSmart fuel treatments. Some communities will opt to "go it alone" with municipal staff and/or volunteers. Foresters that live in such communities should consider the possibility of providing "pro bono" advice to communities that opt to do so.

**All foresters**

I believe that professional foresters have an important role to play in expanding the use of prescribed fire in Ontario. Fire is a natural ecosystem process that cannot and should not be completely excluded from all our forests. Ontario's forest fire management program has "done its part" by developing and implementing a sound Appropriate Response fire management strategy. I suggest that professional foresters should explore the possibility of increasing the use of prescribed fire for silvicultural purposes and habitat restoration. If the City of Toronto can conduct prescribed burns in High Park in downtown Toronto, surely you can more in the rest of Ontario.

**Prescribed burn in High Park, Toronto, April 13, 2023. Photo credit: David L. Martell**

**Accreditation of professional foresters**

The Masters in Forest Conservation program at the University of Toronto is an accredited Forestry program and Canadian Forestry Accreditation Board (CFAB) representatives visit us to scrutinize our curriculum to ensure it meets CFAB requirements. The academic standards used for conducting accreditation reviews of Canadian four-year degree forestry programs are described in 2022 CFAB Academic Standards for Degree Programs[4]. My recent search of the 2022 CFAB Standard Tables revealed that:

- The word economic appears 19 times
- The word fire appears twice
- The word community appears once

As I said at your annual meeting in 2017 and again in 2021, society looks to you for leadership in forest management. Fire management is an important aspect of forest management in Canada, and I believe it is time professional foresters became more involved. My forest management includes fire management - I hope yours does too.

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[4] https://www.fprc-orpfc.ca/academic-standards Accessed on September 3, 2024.

# The imminent invasion of the spotted lanternfly and its risk to Canada

**Anna Turbelin**, PhD, Post-doctoral research scientist, Natural Resources Canada, Canadian Forest Service

The spotted lanternfly (*Lycorma delicatula*; White, 1845), a planthopper native to Southeast Asia, has become a significant invasive pest in Korea, Japan, and the United States over the past 20 years. This insect, known for its striking appearance, primarily feeds on the tree of heaven (*Ailanthus altissima*) but has over 70 host plant species. These include trees such as sugar maple and economically important crops such as grapes, hops, apples, and stone fruits.

The spotted lanternfly feeds on the sap of plants, weakening them and excreting copious honeydew, which promotes the growth of sooty mold, further damaging the plant. Large populations of nymphs can cause significant harm to perennials and annuals, leading to dieback in tree branches. Whilst heavy adult feeding has killed grapevines, tree of heaven, and black walnut saplings. This pest also affects garden vegetables, fruits, herbs, and is particularly fond of herbaceous plants like cucumber, basil, horseradish, and raspberries.

The spotted lanternfly has one generation per year. In the fall, from September to November, it lays eggs on various surfaces, including trees, buildings, and outdoor equipment. These egg masses, covered in a waxy coating that resembles mud, contain 35 to 40 eggs. The eggs hatch in the spring - from late April to June - and go through four nymph stages before reaching adulthood. In the first three stages, nymphs have black bodies with white spots, while in the fourth stage the body is red with white spots and black stripes. Adult lanternflies are about 2.5 cm long, with gray forewings spotted with black and red, black, and white hindwings.

The spotted lanternfly impacts a wide range of habitats, from agricultural fields to suburban gardens and natural forests, causing significant economic damage through both direct feeding and the indirect effects of sooty mold. In Pennsylvania alone, the costs associated with yield losses, increased pesticide use, decreased tourism, and quarantine measures exceed $42.6 million annually. In addition to the economic impact, the insect is a nuisance in residential and commercial areas due to its large size and tendency to gather in large numbers, causing public concern.

While the spotted lanternfly has limited natural dispersal capabilities, all life stages spread easily through human activities, such as the movement of infested materials. It is believed to have been introduced to the United States via egg masses on a shipment of stone. Since its first appearance in Berks County, Pennsylvania, in 2014, the lanternfly has spread to 21 Eastern states. Recently established populations in Buffalo, New York, and Pontiac, Michigan, have brought this invasive species close to the Canadian border. Although there are no known established spotted lanternfly populations in Canada, the number of interceptions doubled from 2022 to 2023 (Canadian Food Inspection Agency, 2024).

*(Continued on page 18)*

**Egg mass.**
**Photo credit: Eric Bartkowski https://www.inaturalist.org/observations/151326380**

**Fourth instar nymph.**
**Photo credit: NRCan**

**Adults. Photo credits: Stan Runnels https://www.inaturalist.org/observations/183855589**

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While cold winters can slow the spread of many invasive species, recent research suggests that North American populations of the spotted lanternfly may be more cold-tolerant than previously thought. A recent study from the Great Lakes Forestry Centre shows that their eggs can survive exposure to temperatures as low as -25 °C for an hour and -20 °C for up to ten days. In Canada, only regions with prolonged extreme cold, such as in the vicinity of Winnipeg, may be able to prevent the lanternfly's establishment. Other areas – including the Maritime Provinces, southern Ontario, and southern Quebec - may not experience cold spells severe enough to stop the insect.

**How you can help: Stop the spread**

If you live in or travel through areas where the spotted lanternfly is known to be present, you can help prevent its spread. Here are some steps you can take:

1. **Spot it? Snap it, catch it and report it:** If you find a spotted lanternfly in Canada take a photo or collect a sample, and report it to the Canadian Food Inspection Agency (https://inspection.canada.ca/en/plant-health/invasive-species/insects/spotted-lanternfly).
2. **Inspect Your Vehicle:** Before traveling, check your vehicle and outdoor items (such as grills, furniture, and landscaping supplies) for egg masses or insects. The spotted lanternfly can easily hitch a ride on these surfaces.
3. **Monitor Your Property:** Regularly check for nymphs and adults on your property during the growing season. Avoid parking under infested trees, and don’t move firewood.

# Carbon markets are coming for your professional competency

**David Stevenson**, R.P.F.

The past 18 months have been a difficult time for forest carbon projects globally. On January 18, 2023 The Guardian published an investigative report that concluded that "more than 90% of rainforest carbon offsets by biggest certifier are worthless"[1]. This kicked off a series of subsequent reports highly critical of forest carbon projects, most recently with The Washington Post's article[2] and editorial[3] on projects in Brazil. Most of the focus has been on projects in Africa, Asia, and South America, while North American projects have been seen to be of higher quality. This is not to say North American projects have been immune to critiques as particular focus has been trained on the methods used to calculate the baseline condition[4].

Critiques of forest carbon projects have focused on the additionality of the project baselines. Additionality is a key concept in carbon offsets and refers to carbon that is sequestered above and beyond the business-as-usual approach[5]. A baseline is a hypothetical scenario that attempts to measure what would or could have happened on a land base in the absence of a project. Because you don't know what the future harvest would be you have to make assumptions about it. The difference between what is assumed could be harvested and what the landowner commits to doing is the basis for generating offset credits. Overly aggressive baselines generate more offset credits but likely do not well reflect what actually would have happened in the absence of a project. It is here where the critiques focus, and rightly so[6].

Critical review of these methodologies is welcome as it will increase investor confidence in the underlying additionality of projects[7]. This will in turn lead, hopefully, to better pricing for offset credits from credible and high-quality projects. Several initiatives are underway to help determine what constitutes high quality in the carbon market[8,9,10].

In April 2024, the Integrity Council for the Voluntary Carbon Market (ICVCM) approved several carbon crediting programs as Core Carbon Principle (CCP) eligible[11]. ICVCM is currently reviewing the various methodologies to determine which projects will be able to use the CCP label on credits. Improved Forest Management (IFM) methodologies are among those being reviewed. It is expected that the CCP label will be something buyers require for their offset purchases in the future.

In response to these changes and the ICVCM review of methodologies, on July 1, 2024, the American Carbon Registry (ACR) released an update of their US IFM protocol[12] which is the most widely used forest carbon offset

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[1]The Guardian. January 18, 2023. https://www.theguardian.com/environment/2023/jan/18/revealed-forest-carbon-offsets-biggest-provider-worthless-verra-aoe

[2]The Washington Post. July 24, 2024. https://www.washingtonpost.com/world/interactive/2024/brazil-amazon-carbon-credit-offsets/

[3]The Washington Post. August 26, 2024. https://www.washingtonpost.com/opinions/2024/08/26/carbon-offsets-scam-climate/

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[5]Krapfl, Kurt. 2024. Additionality and Baselines for Improved Forest Management Projects. https://acrcarbon.org/resources/additionality-and-baselines-for-improved-forest-management-projects/

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[8]https://icvcm.org/

[9]https://sciencebasedtargets.org/

[10]https://vcmintegrity.org/

[11]ICVCM. April 5, 2024. Integrity Council reveals first CCP-eligible carbon-crediting programs. https://icvcm.org/integrity-council-reveals-first-carbon-crediting-programs/

[12]The American Carbon Registry. 2024. Improved Forest Management on Non-Federal US Forestlands. Version 2.1. https://acrcarbon.org/methodology/improved-forest-management-ifm-on-non-federal-u-s-forestlands/

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protocol in North America. The new version incorporates many of the recommendations that have been made[13] to increase the additionality of the baseline assumptions and the overall project quality. In particular, the new version features a dynamic baseline which adjusts to changes in underlying assumptions over time. It is expected that similar updates are coming to ACR's Improved Forest Management (IFM) on Canadian Forestlands[14] either later this year or early in 2025.

As practicing foresters, we all have our areas of professional competence. Perhaps for you it is in forest policy, silviculture, timber markets, operations, or finance. How many RPFs can say they are competent in all those areas? How many Ontario RPFs can say they are professionally competent to assess a forest carbon project baseline?

This is what professional foresters are being asked to attest to in the new ACR US IFM v2.1 protocol[15]. There is a new requirement to be completed by professional foresters that helps "substantiate the feasibility of the baseline scenario for certain constraint categories" in forest carbon projects under the ACR IFM protocol in the US. It is highly likely to be a feature of the soon to be revised ACR Canadian IFM protocol.

This new requirement is not a bad thing. It will raise the professional scrutiny/accountability of the underlying assumptions of forest carbon projects and in doing so raise the bar for the underlying quality of these projects. This is exactly the result you would want from professional accreditation and regulation. However, it does raise some concerns. I suspect very few foresters in Ontario have the knowledge, skills, and ability to sign off on this document. Foresters interested in this type of work will need to better understand how forestry activities affect the baseline scenario.

There are some professional risks in completing an attestation that RPFs should be aware of. The heated debates in the carbon world have resulted in media scrutiny so reputational risk is something to be aware of. Legal risks come from climate litigation such as the corporate directors of Shell being sued over their climate strategy[16].

Clearly there is room for those interested in work related to forest carbon to up their game. A good start is to read the ACR protocol to understand how baselines are developed[17,18]. There are reports and webinars available to learn more (ACR has one scheduled for September 19 for example)[19]. Interested foresters who want to provide professional quality assurance of forest carbon projects in Ontario can be part of the emerging competency on forest carbon. This will not just benefit Ontario's forest landowners but also Ontario's forest economy as, at the end of the day, carbon is just another forest product.

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[13]Barbara K Haya, et al. 2023. Comprehensive review of carbon quantification by improved forest management offset protocols. Frontiers in Forests and Global Change. Volume 6. https://www.frontiersin.org/journals/forests-and-global-change/articles/10.3389/ffgc.2023.958879/full

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[16]The Guardian. February 9, 2023. Shell directors personally sued over 'flawed' climate strategy. https://www.theguardian.com/environment/2023/feb/09/shell-directors-personally-sued-over-flawed-climate-strategy

[17]The American Carbon Registry. 2021. Improved Forest Management (IFM) on Canadian Forestlands. Version 1.0. https://acrcarbon.org/methodology/improved-forest-management-ifm-on-canadian-forestlands/

[18]The American Carbon Registry. 2024. Improved Forest Management (IFM) on Non-Federal US Forestlands. Version 2.1. https://acrcarbon.org/methodology/improved-forest-management-ifm-on-non-federal-u-s-forestlands/

[19]The American Carbon Registry. 2024. Primer: Improved Forest Management https://acrcarbon.org/resources/improved-forest-management/

# A tool for collaboration on forest management: SFI's Climate Smart Forestry Playbook

**Zac Wagman**, R.P.F. in Training, Sr. Manager, Market Access, Sustainable Forestry Initiative

**Understanding the Climate Smart Forestry Playbook: A path to sustainable forest management**

In the face of escalating climate change, the forestry sector is uniquely positioned to play a pivotal role in mitigating greenhouse gas emissions, promoting biodiversity, and supporting sustainable rural economies. The 2022 SFI Forest Management Standard is a gamechanger on the Canadian landscape, with SFI certified forests representing 119 million hectares in Canada, with a new objective focused on climate change mitigation and adaptation. SFI certified organizations are doing more than raising awareness (as was required by the 2015-2019 SFI Forest Management Standard) and are now engaged in practical actions and proactive planning (Figure 1).

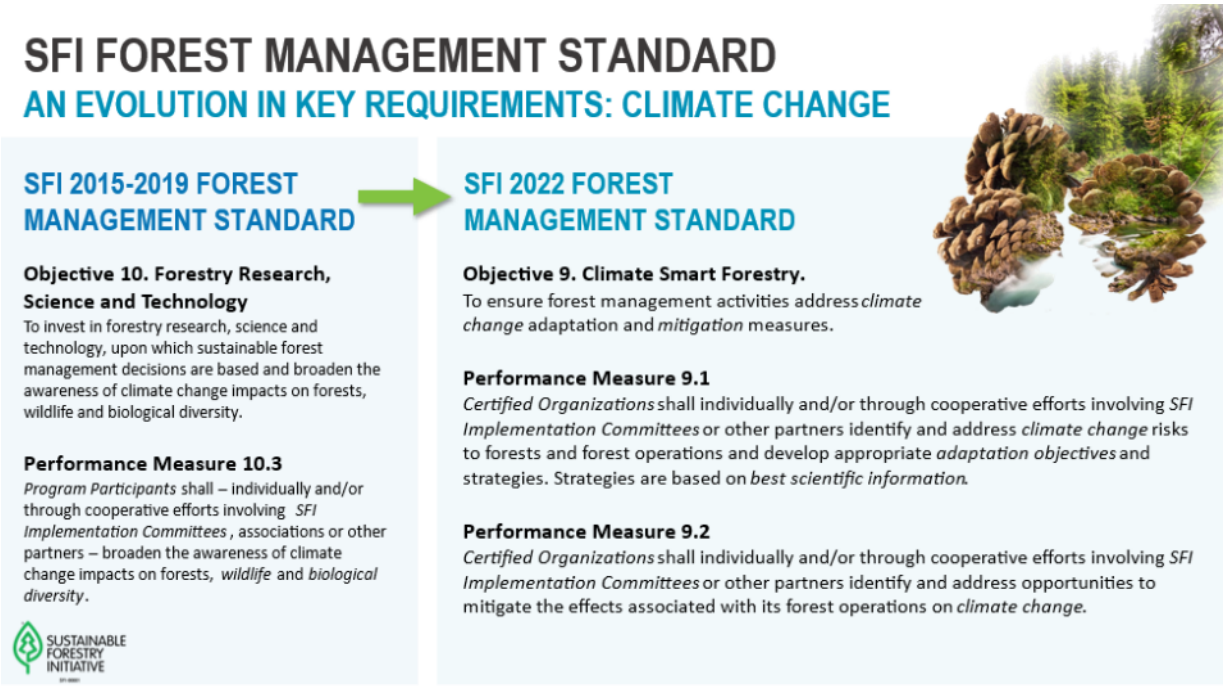


**Figure 1. Changes from the SFI 2015-2019 to 2022 Forest Management Standard.**

SFI has developed a set of SFI Implementation Committee (SIC) Playbooks that provide resources and actionable tips for SICs to promote collaboration and knowledge exchange between certified organizations. The SIC Playbooks outline specific steps and resources that could be mobilized by SICs to maximize the efficiency and impact of enhanced elements of the SFI Standards including Climate Smart Forestry, Fire Resilience and Awareness, and Conservation of Biodiversity (Forests of Exceptional Conservation Value). The Climate Smart Forestry (CSF) Playbook offers a comprehensive approach to addressing these challenges while providing practical steps for implementing sustainable forestry practices.

The Central Canada SFI Implementation Committee (CCSIC) plays a pivotal role in supporting the implementation of CSF as outlined in the 2022 SFI Forest Management Standard in Ontario and Manitoba, which is also reflected in their updated Guide to Best Management Practices. While demonstration of conformance lies with individual certified organizations, SICs play an instrumental, supportive role. The SIC Playbook is designed to identify activities that may be undertaken in collaboration at the SIC level and provide a basis for action by SFI-certified organizations.

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This includes:

1. **Collaborative Support**: SICs provide a venue for SFI-certified organizations to collaboratively engage in activities that facilitate compliance with SFI certification requirements. These activities include gathering and analyzing scientific data, conducting research, identifying best practices, and developing educational materials for stakeholders such as foresters, loggers, and landowners.
2. **Regional Coordination**: SICs are encouraged to explore regional collaboration, as many climate-related risks and strategies are best understood at a regional level. This allows for the efficient sharing of resources and best practices across states or provinces.
3. **Actionable Steps**: The CSF Playbook provides specific steps and resources to help SICs operationalize CSF requirements. While use of the Playbook is not mandatory, it is designed to support the strategic implementation of CSF initiatives across various regions.

SICs act as hubs for coordination and sharing of best practices, significantly amplifying the impact of CSF efforts across certified organizations.

**How Can the CSF Playbook Be Implemented?**

The Climate Smart Forestry requirements are structured like a funnel. They begin wide with the gathering of the best scientific information and identifying climate related risks, focal issues, and strategy options. The approach then narrows, as certified organizations further refine, select, and implement the management techniques that are most appropriate for their operations and land base. The implementation of the Climate Smart Forestry Playbook involves a step-by-step approach that encourages collaboration between forest managers, policymakers, and other stakeholders:

1. **Assessment and Planning**: The first step is to assess current forest conditions and identify areas where climate-smart interventions are needed. This can involve evaluating carbon stocks, biodiversity, and forest health, and using best available information to assess the likely effects of climate change in a given area. Once this baseline is established, forest managers can develop a climate-smart plan tailored to their specific context.
2. **Adopting Best Practices**: The CSF Playbook provides a toolkit of best practices that can be adopted by foret managers. These practices include selective logging, reforestation, afforestation, and the use of mixed-species plantations. Emphasis is placed on maintaining or enhancing carbon sequestration while minimizing negative impacts on biodiversity and water resources.
3. **Monitoring and Reporting**: Implementing climate-smart forestry requires ongoing monitoring to ensure that the practices being adopted are effective. The playbook outlines methods for tracking carbon stocks, biodiversity metrics, and forest health over time. These metrics can be used to adjust management practices as needed and report on progress toward climate and sustainability goals.
4. **Policy Integration**: Successful implementation of the CSF Playbook requires alignment with policy frameworks at the local, national, and international levels. Governments can play a critical role by incentivizing sustainable practices through certification programs. Engaging policymakers is key to ensuring that forestry practices are supported by legislation that encourages climate-smart actions.
5. **Community Engagement**: A significant element of the CSF Playbook is the involvement of local communities in forest management. This participatory approach ensures that the needs and knowledge of local populations are integrated into climate-smart strategies. Communities are often best placed to identify climate risks and opportunities in their forests, and their involvement fosters ownership and commitment to sustainable practices.

**Conclusion**

The Climate Smart Forestry Playbook is a vital resource for guiding the forestry sector toward sustainability in a changing climate. By implementing its practices, forests can continue to serve as carbon sinks, biodiversity havens, and economic resources for rural communities. As climate change challenges continue to grow, the CSF Playbook provides a roadmap for ensuring that forests remain resilient, productive, and sustainable for generations to come.

# Canada's headline-grabbing industrial policies need to be more practical

**Derek Nighbor**, President and CEO of Forest Products Association of Canada (FPAC)

Industrial policy has long sparked debate among economists, policymakers, and business leaders. At its core, industrial policy involves government efforts to promote and support specific sectors of the economy deemed strategically important. However, it remains controversial, primarily because it can be expensive and potentially distort markets.

Critics argue that large-scale government interventions can lead to inefficient allocation of resources, create unfair advantages for certain industries, and burden taxpayers with significant costs. Picking winners, they say, implies there may be losers.

From my experience as head of Canada's national forestry association, I've seen firsthand that there are times when government engagement is necessary to address challenges that can't be dealt with at the industry or firm level.

However, this intervention doesn't need to be expensive or distortive. Industrial policies don't always require "moonshot" initiatives that make large bets on emerging sectors. They can also be more pragmatic, addressing the day-to-day challenges faced by existing (often traditional) industries - what I call practical industrial strategy.

Practical industrial strategies acknowledge the need for government involvement but take a more measured approach with the primary aim being a more coherent and supportive business environment.

Key elements of a practical industrial strategy include regulatory harmonization, targeted infrastructure investment, workforce development, global advocacy for national economic interests, innovation support, policy coherence across government departments, and active stakeholder engagement. These elements can work together to create an environment that fosters competitiveness, innovation, and sustainable growth.

For instance, streamlining regulations across different government departments can significantly reduce bureaucratic hurdles for businesses without incurring substantial costs.

Sometimes, we just need the government to realize they are getting in the way. The Bank of Canada's latest Business Outlook Survey found the share of firms citing taxes and regulation as one of their top concerns jumped by 15 points to 42 per cent in just the past three months.

Similarly, aligning workforce development programs with industry needs can address skills gaps more effectively than broad subsidies or protectionist measures.

A practical industrial strategy would also include the government actively defending national interests globally, countering misinformation and addressing protectionist measures in other markets that threaten the competitiveness of domestic industries.

To be sure, these elements are just good governance principles that can and should apply economy-wide. But sometimes, they also need to be applied purposefully to one sector. There are times when an industry-specific plan is needed.

To illustrate, let's take the forestry sector as an example.

I've been calling for years for the federal government to develop an industrial roadmap for my industry. Forestry needs a plan and strategy that provides hands-on support to deal with serious challenges that have nothing to do with our ability to compete globally.

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For example, the federal government could do more to help build infrastructure in forestry communities to make them more livable and attractive to skilled workers. Improved infrastructure would also support efficient transport of goods even as it enhances the quality of life for residents.

A forestry strategy can also include steps to promote the use of timber in construction - small things like increasing the height allowances in the National Building Code from 12 to 18 storeys. A forestry plan would strive to eliminate regulatory barriers to active fire mitigation and prevention. It would identify educational pathways that provide workers with the skills and practical experience needed to meet our industry's specific needs.

An engaged federal government would also enhance efforts to defend Canada's forestry interests globally, countering misinformation from anti-everything groups that put Canadian jobs at risk, and addressing protectionist legislation in other markets.

By incorporating these elements, a forest sector industrial strategy can provide a comprehensive and coherent framework that ensures the long-term sustainability and competitiveness of Canada's forestry sector.

In recent years, industrial strategies have made a significant comeback in economic policy discussions worldwide. Governments are increasingly recognizing the need for coordinated efforts to promote and sustain key sectors of their economies.

While big swing strategies for sectors such as critical minerals and electric vehicles make all the headlines, it's equally important not to lose sight of other industries that have long been the backbone of our economy. These sectors, like agriculture, forestry, and energy, also require thoughtful, coordinated, and strategic policy measures to unlock their full potential and ensure their continued contribution to national prosperity.

# Trade — Softwood lumber and punishing duties

**Betty van Kerkhof**, R.P.F.

The trade in softwood lumber continues to be impacted by stiff anti-dumping and countervailing duty rates. OPFA members are encouraged to remain informed and engaged on the latest trade developments. These stiff duties can have an impact on our ability to manage the forest sustainably.

The U.S. is the largest market for Canadian softwood lumber. Canada supplies most of the shortfall not supplied by domestic American producers. Trade disputes between the US and Canada over softwood lumber have been ongoing for four decades. A previous agreement expired in October 2015 and provided industrial stability and predictability, but a replacement agreement has not been negotiated.

Following its most recent yearly review, the U.S. Department of Commerce announced its final results on August 13, 2024. "The new combined duty rate (anti-dumping and countervailing) that will apply to most softwood lumber exports is 14.54% compared to the previous rate of 8.05% from the fourth administrative reviews. The new rate will be applied retroactively to exports made in 2022 and will apply to new exports of softwood lumber products to the United States from companies that were subject to the fifth administrative reviews. (Government of Canada 2024)

Definitions: "U.S. countervailing duty and antidumping laws – laws that allow the imposition of import duties when a U.S. industry is allegedly harmed by subsidies in the exporting country (countervailing duties), or by dumping, which is when a U.S. industry is allegedly harmed by imported products sold at prices that are lower than the cost of production or lower than prices in the domestic market (anti-dumping duties)." (Government of Canada 2017).

For further information:

https://www.international.gc.ca/controls-controles/softwood-bois_oeuvre/index.aspx?lang=eng

https://www.canada.ca/en/global-affairs/news/2024/08/statement-by-minister-ng-on-us-department-of-commerce-fifth-review-of-duties-on-canadian-softwood-lumber.html

# Council corner: How did that happen?

**Peter Nitschke**, R.P.F., President

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

I'm sure we've all had those moments. You know, where you "wake up", look around, and wonder how you got yourself into whatever situation you're in. In my personal life, I'm working through a move. It's all going well but buying and selling property has its moments. I have had occasion to question my sanity. I find working through difficult challenges personal and professional can be very satisfying.

I served on Council about 15 years ago, while I was still working. It was a difficult time for the OPFA – membership numbers were falling, leadership of the Association was in turmoil, we had just lost an unauthorized practice case, and I sat on the only Discipline panel in the history of the OPFA. Balancing the demands of work with the needs of the OPFA was challenging. And yes, occasionally frustrating.

At the time I had misconceptions about what the OPFA's role was, although it was clear to me that it was an important influence on my professional life. I served partly so that I could understand it better and to contribute to its operations and policies.

Towards the end of my term, Council made a couple of decisions that I deeply disagreed with. I felt out of step with the organization. In the end I served out my term and did not offer to continue. And I had no intention of ever volunteering my time to the OPFA again.

Fast forward to today, and I'm completing my first year as President and my third as a member of the Executive Committee. I have a much better understanding of what the Association does and why. The number of registrants is growing. I better appreciate the challenges the OPFA faces, the changes others have made, and am grateful for everything that OPFA staff does to keep the organization moving forward. There is always a challenge, and I think we are doing a pretty good job of prioritizing and addressing them.

During a quiet moment recently, I realized that I was President of an organization that I had no intention of ever serving again. Just how did that happen?  I had strong feelings about the value of my contribution during my previous term as a Councillor. The changes which the organization has made are good ones, and I sit here now feeling quite positive.

I did an informal root cause analysis and identified what I believe are the two main contributors to such puzzling behaviour.

For one, I've always felt some obligation to help any organization I was a member of. This is especially the case for an organization like the OPFA that has such strong influence on my professional life.

But everything really came down to a phone call from a colleague shortly after I retired from full-time work. One of those people who when they need something, the answer is yes – which was my answer. And it was the right response – despite some initial misgivings, it has been a very positive, rewarding, and humbling honor.

My message to you is to be mindful of those moments and think about giving your "no" muscle a rest whatever your feelings at the time might be. This is a regulated profession, and we all need to maintain our licences to legally practice our craft. Our participation provides us both better understanding and an opportunity to help guide the OPFA on behalf of both the profession and the public.

# Update on the Indigenous Peoples' Lands and Resources learning module

**Brittany Tartaglia**, OPFA Assistant Registration Manager

Since the soft launch of the first module of the Indigenous Training Standard has been released, OPFA staff have been monitoring the numbers of participants taking the training, as well as the exam. Within the first month of the release we were pleased to see that 32 members had taken the training in full. 31 out of the 32 participants also took the exam after completing the training. Out of those 31 participants, 89% passed the exam on the first attempt.

A total of 39 people took the exam in that first month, 7 of those people had started the training, but not completed it. Only 1 person so far took the exam without taking any of the training. To date the majority of people taking the exam have gone through the training material in full, leading to a high success rate for those participants. There is a lower success rate on the exam for those who have not completed the training. However, 57% of those participants were able to pass the exam on the first try.

We encourage all participants to complete the feedback surveys for both the training material and the exam. This feedback will assist the OPFA task team in making appropriate adjustments to the current training module, and to make changes to the upcoming modules that have yet to be released.

The training resources and exam can be found in the OPFA Training Centre. To access the training centre, you need to create an account and password through the invitation email titled "Invitation for OPFA Training Centre" that was sent May 31, 2024 from Ontario Professional Foresters Association (invite@easy-lms.com). If you have any questions or need assistance accessing the training centre, please contact the OPFA at office@opfa.ca

# Meeting with students?

## OPFA has resources you should share with them

**Brittany Tartaglia**, OPFA Assistant Registration Manager

The OPFA has been working on a multi-phase process towards creating communication resources to increase awareness of professional forestry as a regulated profession in Ontario. After a competitive bidding process, the OPFA hired a third-party design team to create resources geared towards high school and post-secondary students. Many of you helped with photos for these resources, thank you!

The prepared resources include templates for social media posts on Facebook, Instagram, X, and LinkedIn; print outs such as brochures and posters, plus templates for presentation materials. The goal is to use these materials to inform students about professional forestry in Ontario and what it means to work as a regulated professional.

OPFA members that meet with or employ students are welcome to contact us to access these resources. You are also welcome to share OPFA posts through your social media accounts.

This year the OPFA is working on the second stage of this initiative. We have put together a new task team to advise the contractor in the creation of additional communication resources for individuals in allied occupations who may be interested in becoming an R.P.F.

# Not a monoculture: Registration pathways for a growing profession

**Louise Simpson**, CAE, OPFA Registration Manager

Professional forestry in Ontario is growing and diversifying. The OPFA consistently receives feedback about the high demand for professional foresters and has been receiving record numbers of applications for Provisional Membership over the last 3 years. As a regulatory body, the OPFA is committed to streamlining the licensing process for qualified individuals to help meet this demand and serve the public interest.

For all regulated professions the standards set for licensing must be rigorous enough to assess entry-level competence, and the processes used to evaluate candidates' qualifications against these standards must be objective, fair, and transparent. To ensure that registration processes facilitate licensing rather than creating barriers, regulators in Ontario must comply with legislation such as the Fair Access to Regulated Professions and Compulsory Trades Act (FARPACTA) and the Ontario Labour Mobility Act. Oversight from the Ontario Fairness Commissioner and, for the OPFA, the Minister of Natural Resources, occurs through regular reporting. The OPFA remains fully compliant with the revised FARPACTA and continues to be classified by the Ontario Fairness Commissioner as low risk. Staff and volunteers, particularly those serving on the Registration Committee, work hard to continuously review and improve the registration processes.

## So, what is the OPFA doing to help people become licensed?

1. **Providing pathways for individuals from a wide range of educational and experiential backgrounds to become licensed.**

As professional forestry diversifies, so does the backgrounds of those who apply to become professional foresters. Only approximately 45% of Provisional Members (R.P.F.s in Training) come from Canadian Forestry Accreditation Board (CFAB) accredited university programs; the majority are from other forestry and allied science programs. The OPFA has different registration pathways available to allow all qualified candidates to work towards becoming licensed, no matter the educational route they took to get here. All pathways require 18 month of mentored work experience, professionalism and ethics, Ontario forest policy & legislative framework competency, good character requirements and sponsorship.

To be eligible to work towards Full Membership (R.P.F.), a candidate must have a 4yr BSc or equivalent; equivalence has been defined by OPFA Council to allow for flexibility. For example, candidates with a science-based BA, a relevant Masters/PhD, or a relevant diploma with 3+ years of relevant progressive work experience are considered to meet the equivalency requirement. All these candidates, except those from CFAB accredited programs, must undergo an assessment of their education and in most cases, their experience, through the Credential Assessment Process (CAP). They must then fill all competency gaps and meet the other standard registration requirements before applying for Full Membership.

If not eligible for Full Membership, individuals who have graduated from relevant diploma or degree programs can still apply for Provisional Membership and work toward Associate Membership (Associate R.P.F.), potentially becoming R.P.F.s in the future through further education and experience.

2. **Breaking the competency assessment process up into more manageable components.**

Candidates from programs that are not CFAB accredited undergo an assessment of their academic competencies, and potentially their experience, against the entry level standards required to become licensed as an R.P.F. as defined in the national Certification Standards, and fill any competency gaps. The complexity and time requirements of preparing for the competency assessment has resulted in candidates stalling out in the Provisional Member category.

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*(Continued from page 29)*

To reduce the workload and improve efficiency, in 2023 the Credential Assessment Process (CAP) was divided into two phases:

- Phase 1 - academic assessment (mandatory) -only transcripts & course outlines required.
- Phase 2 - experience assessment for those competencies identified as gaps through the Phase 1 assessment (optional)

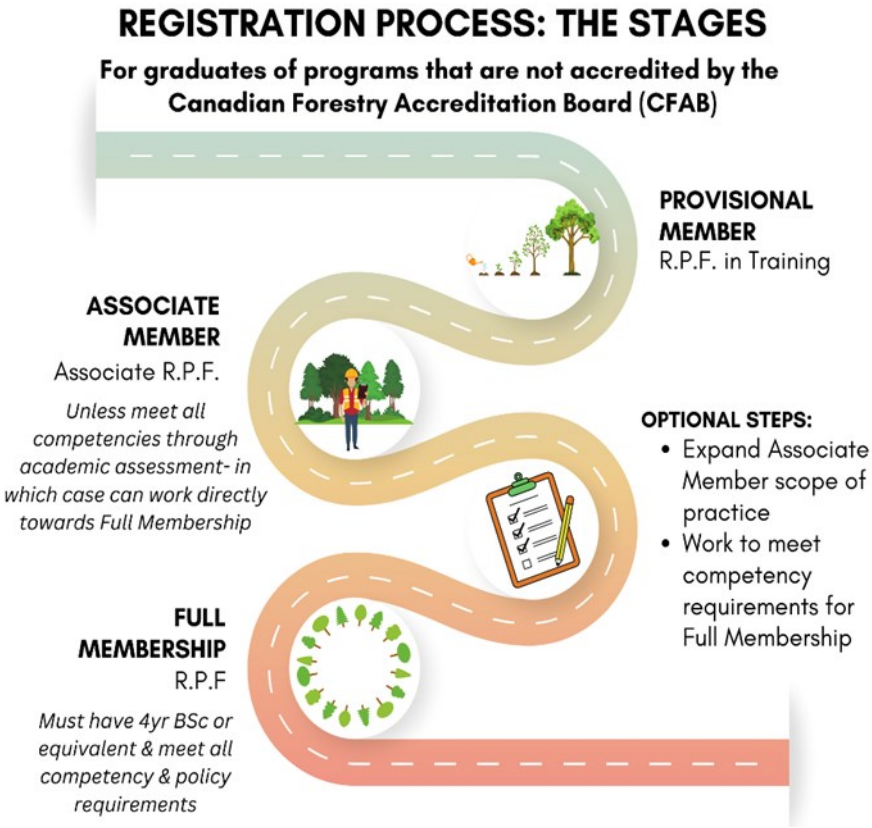
The OPFA has seen increased numbers of individuals completing assessments and progressing through the registration process in shorter timeframes. Feedback regarding the changes has been very positive.

**3. Restructuring the registration process to make it more flexible.**

Another stage of the registration process where Provisional Members from programs which are not CFAB accredited can stall out is filling all their identified competency gaps through additional education or experience to become eligible to apply for Full Membership.

To deal with this issue, when these Provisional Members have completed an academic assessment, they are now advised to apply for Associate Membership under a prescribed scope of practice which aligns with their academic competencies, once they have met the other standard registration requirements. This allows individuals to become licensed sooner to provide limited services in areas in which they are competent, whilst having the flexibility to adjust their scope of practice as their career progresses and potentially work towards becoming an R.P.F. through an assessment of their experience and additional training.

The Associate Membership category is not new, but restructuring the registration process to encourage qualified Provisional Members to utilize it is. Increasing numbers of Provisional Members are now working towards and becoming licensed as Associate R.P.F.s.




**4. Creating online screening tests for competent individuals to bypass unnecessary training.**

A no-cost online screening test is now in place to assess competency in the Professionalism and Ethics Standard, with a similar test under development for the Ontario Forest Policy & Legislative Framework requirement. If candidates don't pass, they must complete the Bridge Training module(s). Previously, all non-recent CFAB graduates needed to complete these modules, unless they had submitted an exemption request that had been evaluated and approved by the Registration Committee.

**5. Reducing timelines for experienced candidates through credit for prior experience.**

Candidates who already have relevant experience that is within the last 5 years, was acquired after graduating from a post-secondary degree or diploma program and was mentored by a registered forestry professional in good standing can request credit towards the 18-month mentored experience requirement, whether their experience was obtained in Ontario, another Canadian province or territory, or another country. FARPACTA now prohibits Ontario regulators from requiring Canadian experience, however the OPFA removed that requirement long before this was enforced through legislation, earning a commendation from the Ontario Fairness Commissioner at the time.

*(Continued on page 31)*

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**6. Connecting new Provisional Members with a mentor.**

Provisional Members must secure a mentor to provide guidance through the 18-month mentored experience period. Although encouraged to seek a mentor themselves, some individuals experience challenges in establishing a network and require assistance finding a mentor. The OPFA has a high success rate of connecting these Provisional Members with a volunteer mentor.

**7. Providing opportunities to explore forestry careers through the Shadow a Forester Program.**

This program is a great example of a member-led initiative within the OPFA. It provides an opportunity for Student and Provisional Members to meet with professional foresters to make connections and learn about some of the different careers in professional forestry.

**8. Keeping application & Provisional Member fees low.**

Application and Provisional Member fees have been kept low to assist aspiring professional foresters who are beginning their career to become licensed. The application fee is currently $120 ($60 for Student Members within 6 months of graduation) and the annual Provisional Member fee is $110. For comparison, the application fee in British Columbia is $998 and the annual Forester-In-Training fee is $708. In Alberta the application fee is $300, and the annual Forester-In-Training fee is $534. A comparison of OPFA annual fees, members and staff compared to that of other Ontario regulators is available here.

Occasionally, we encounter concern that changes to the registration process will mean the "watering down" of the standards or making it "too easy" to become licensed. This is not the case. The OPFA has a responsibility to continue to protect the public interest by ensuring that candidates demonstrate that they are competent, experienced, professional and ethical, of good character, and have the necessary understanding of relevant Ontario forest policy and legislation to become licensed. Changes made to the registration process are not about lowering standards; they are about improving efficiency and creating a more flexible registration process that better aligns with the diverse nature of forestry careers in today's world.

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**Question from a new member:** "I'm really looking forward to being an RPF and can't wait to shout it from the rooftops about how proud I will be to be licensed to practice with the OPFA. What kind of documents will it be appropriate to use my RPF stamp on?"

**Answer:** You should be proud! Being a regulated professional is a big deal and a big responsibility. The most common places for you to use your designation stamp are documents that are required to be prepared by a full member of the OPFA, like Forest Management Plans, woodlot plans, and written advice you provide, but you can also feel free to use your stamp to sign off on other correspondence you complete within your capacity as a Registered Professional Forester. Remember that using your stamp and "R.P.F." after your name means that you are accepting responsibility for managing Ontario's forests in the best interest of the public, within your scope of practice, while adhering to the OPFA Code of Ethics and professional standards.

# Submission to the Ontario government: Modernizing wildland fire management in Ontario

**Fred Pinto**, R.P.F., OPFA Executive Director and Registrar

Ontario announced in July 2024 that it was seeking comments from interested parties to help it modernize wildland fire management in the province and suggest improvements to the *Forest Fires Prevention Act*. The purpose of these changes as stated by the Government is to strengthen community preparedness and response and improve prevention and mitigation.

I participated in a virtual meeting on July 30, 2024 and submitted a written response following the meeting. Here is a summary of some of what was submitted:

> The current *Forest Fires Prevention Act* enables the Ontario Government to enter into agreements with First Nations and municipalities but these agreements are limited to the prevention, control or extinguishment of grass, brush or forest fires. The OPFA supports broadening the scope for agreements with municipalities, First Nations and other parties that would allow and support partnerships and collaborations that can be more responsive to changing wildland fire risk. The OPFA also supports the Ontario Government working with insurance companies to create a policy framework that incentivizes actions that reduce the risk of communities and people to wildfire.
>
> The OPFA suggests that Ontario develop an incentive-based policy framework where private enterprise can develop and deliver cost-effective customised fire prevention plans and their strategies to municipalities, First Nations and other parties. This model should build on existing Ontario human and business infrastructure. Improved wildland fire risk evaluation and the implementation of wildland fire hazard reduction strategies will help to reduce direct and indirect costs to citizens and their governments.
>
> Professional foresters are a key human resource that use landscape forest estate computer models to evaluate the cumulative results of forest activities on wildlife habitat, forest cover and timber supply over a period of many decades. With additional work forest cover data can be analyzed and converted into forest fuel types. The resulting forest fuel maps can be connected to community infrastructure. Planned changes to community infrastructure can be added and used to evaluate fire hazards and develop fire risk reduction plans.
>
> Note that professional foresters are accountable for their work and have an enforceable code of ethics developed by the Government of Ontario. Using professional foresters for the modelling, evaluation and the delivery of wildfire risk plans provides the people of Ontario and insurance companies the assurance that competent and accountable professionals are involved in these tasks.
>
> Professional foresters and the organizations they serve can with additional training, resources and equipment play a role in: 1) fire hazard and/or abatement assessments, 2) fire management planning, 2) prescribed fire management plans or prescriptions,4) Community Wildfire Protection Plans, and 5) advising on the development of bylaws and policy for local and provincial governments, Fire Smart assessments, fuels management, ecological restoration, smoke management, and fire suppression.
>
> Risk mitigation in modern society is mediated through insurance programs. Similarly, wildland fire risk can be addressed through an incentive-based regulatory framework and insurance. The policies and practices used by other jurisdictions can inform Ontario on what it should do and what has not worked elsewhere. For example in some jurisdictions where those governments did not ask for fire hazard planning services from competent and accountable professionals large wildland fire losses continue to occur.

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The OPFA suggests two approaches to incentivize action that will help reduce direct and indirect wildland fire costs:

a) The Ontario Government consults with insurance companies to determine what is needed for Ontario to incentivize fire risk mitigation strategies across the province. By creating an incentive-based policy framework Ontario will allow landowners, First Nations and municipalities to benefit from their actions where proven and practical wildfire risk mitigation strategies result in immediate cost savings for these landowners and governments. The OPFA is willing to work with the Ontario Government and insurance sector to develop the information needed to evaluate wildfire risk that will be needed by Government, the insurance sector, and the public. Ontario can learn from other jurisdictions where their governments have developed a policy infrastructure to incentivize wildfire mitigation strategies.

b) The Ontario Government exempts a professional forester's services from HST. This would provide an incentive to private landowners, municipalities, and others to use professional foresters in resource and land development. Doing so will allow professional foresters to comprehensively evaluate the planned development and inform the landowner of the benefits and risks and ways to achieve desired objectives.

This strategy would not require the Government to increase its expenditures, nor would it require the Government to increase its infrastructure such as hiring additional staff. The strategy would also help Ontario develop a competitive market of qualified and accountable regulated professionals for all landowners and rights holders to use.


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:

June 2024, Issue No. 291 – Big Minds

Ralph Waldo Emerson wrote: "a foolish consistency is the hobgoblin of little minds." Regulators of professions and industries dwell in inconsistency. Many registrants practice their profession within a system that is often beyond their control. Yet regulators usually only have jurisdiction over a registrants' individual actions and oversee only individual registrants despite trying to address failures flowing from the work of teams.

July 2024, Issue No. 292 – Whistleblowers and Regulators Part 1

Whistleblowers are insiders within an organization who disclose apparent wrongdoing to outsiders because the organization is unable or unwilling to address the issue. The motivation of the whistleblower can be altruistic, for personal advantage, or to be disruptive (or a combination thereof). Often, but not always, whistleblowers want to keep their identities confidential.

August 2024, Issue No. 293 – Whistleblowers and Regulators Part 2

As discussed in the July edition of Grey Areas, whistleblowers are insiders within an organization who disclose apparent wrongdoing to outsiders because the organization is unable or unwilling to address the issue.

# In Memoriam

## Marc Nellis, R.P.F.

Mr. Marc Nellis R.P.F. passed away on July 6, 2024 at the age of 57.

He was the son of Rose-Aimée Audet and (the late) Rodrigue Nellis. In addition to his mother, he is survived by his wife Denise Bellehumeur, his children: Charles Nellis and Gabrielle Nellis.

Originally from Sept-Îles, Marc is a graduate from Université Laval in Forestry. He worked for 30 years as a professor at Collège Boréal in Sudbury in the Forest and Wildlife Environment program. He was an outdoor enthusiast and an avid athlete for cycling and cross-country skiing. He is remembered fondly by the many students and forestry colleagues he taught and worked with.

The family wishes to thank all the doctors, nurses and other staff for their dedication and exceptional care over the years.

# Member News

### New Associate Member-Associate R.P.F.:

Emily Angermann
Leighanne Howard

### New Full Member-R.P.F.:

Allison Craig
Aileen Duncan
John Hoogendoorn
Jordan Killing
Valentine Lynch
Krishna Selvakumar
Shan Shukla
Anders Van Damme

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)

Hannah Adair
Annabella Aoshana
Alison Bijman
Aliya Bein
Jayme Caron
Cameron Cornelsen
Evan Fiorito
Daniel Guindon
Jingyu He
Curtis Holomek
Joshua Kelly
Dustin Kinzett
Garrick Ksiezopolski
Amanda Ladd
Natalie Mechalko
John Newell
Hany Nour el Dean
Sean O'Grady-Michon
Amanda Puopolo
Kristen Sewell
Sangeetha Subhash
Madeleine Tooke
Lucas Udvarnoky
Matteo Veneruz
Zachary Wagman
Jacob Wells
Guy Herman Zanguim Tchoutezou

### New Student Members:

Olanrewaju Abidakun
Ella Anderson
Yuanbo Gan
Joel Goodwin
Daniel Lowe
Hashveenah Manoharan
Ravi Shah

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

### Resigned, Inactive Member:

Matthew Kendrick

### Resigned, Non-Resident Member:

Robert Maxwell

### Resigned, Provisional Members:

Bilei Gao

### Revoked Due to Expiration of Certificate, Provisional Members:

Timothy Quinn
Jennifer Roberts

The following registrants' certificate of registration has been cancelled:

Jake Chalmers
Kellie Chippett
Lisa Clark
Nick Courtney
Garth Kayes
Michell Lindsay
Scott Macdonald
Cole Miller
Hunter Roberts

The following registrant has had the suspension of their certificate lifted:

Dave Wiley, Associate R.P.F.

### Deceased Members:

Robert Mackey, R.P.F. (Ret.)
Glenn McLeod, R.P.F. (Ret.)
Marc Nellis, R.P.F.
Norman Oldfield, R.P.F. (Ret.)
Robert Staley, R.P.F. (Ret.)
Rudolph Susanik, R.P.F. (Ret.)
David Turner, 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) 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 http://www.urbanforestrytoday.org/
- Climate Webinars http://www.climatewebinars.net/
- Cornell University http://blogs.cornell.edu/cceforestconnect/subscribe/
- 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) https://treefund.org/webinars
- 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) 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

Association of Alberta Forest Management Professionals (AAFMP) webinars:

How Far Have We Come from Treating Indigenous Peoples as "Just Another Stakeholder" in Forest Management?
September 24, 2024
Peggy Smith Session Sheet (visme.co)

Forest Ecosystem Simulator (For-ES): A Climate and Harvest - Sensitive Spatial Tool for Predicting Caribou Habitat
November 28, 2024
Webinar info & registration: Forest Ecosystem Stimulator Short Promo (visme.co)

Landscape Resilience and Wildfire; A Primer for Collaborative Dialogue
December 3, 2024
Wildfire and Landscape Resilience Webinar Promo (visme.co)

Burn P3+: A Practical Tool to Predict Burn Probability
January 29, 2025
Burn P3+ Short Promo (visme.co)

Untangling The Human Dimensions of Caribou Conservation in Alberta: A Social Network Analysis of Caribou Conservation Practitioners
February 11, 2025
Untangling The Human Dimensions Long Promo (visme.co)

AAFMP Professional Development Series https://aafmp.ca/:
Working Across Sectors and Disciplines: Challenges, Opportunities and Support https://forms.clickup.com/8667422/f/88g8y-3737/HTLB7NCDBQ437YJR5B
Oct 9, 2024

Bridging Perspective and Enhancing Public Engagement Through Social Science Tools https://forms.clickup.com/8667422/f/88g8y-3817/4FLD01JRKLFQSE5USK
Oct 23, 2024

Global Wood Summit
Timber, Forest Products and Trade
October 29-30, 2024
Vancouver, BC
https://globalwoodsummit.com/

*Please send any upcoming events to opfanewsletter@gmail.com*