

The Professional Forester

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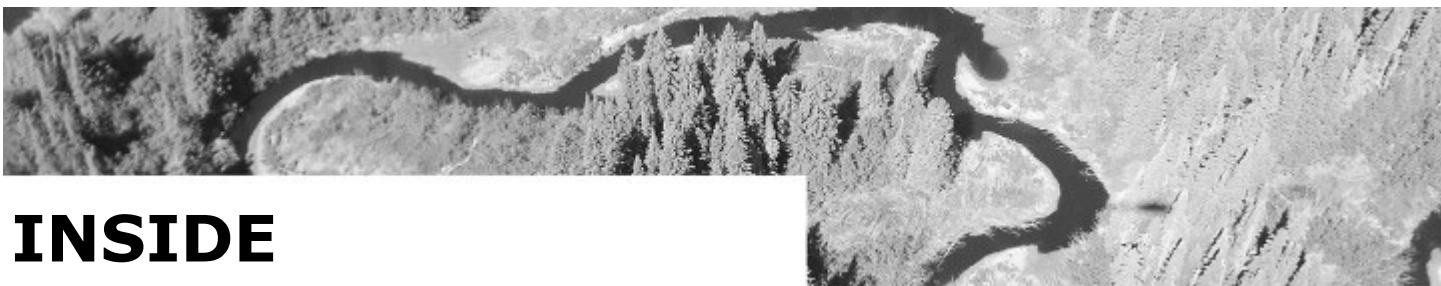


**Fostering forests to support
a diversity of uses**

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Notice of the annual general meeting for the 2022 fiscal year

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Public use of the “Algonquin Park Forest”

Joe Yaraskavitch, R.P.F.

To say “Algonquin Provincial Park” is a popular place would be an understatement. In thinking of all the various public uses of ‘the Park’, they are all rooted (pun intended) in the magnificent forests covering the broad Park landscape. Sustainable forestry occurs in just over half of the Park area and is significant to local and regional economies. At the same time a myriad of recreational and public uses occur throughout the entire Park. Indigenous peoples are continuing their traditions as well. While sometimes challenging to balance all these uses and interests, it is a unique success story as the approximately one million annual visitors continue to arrive.

The predominately tolerant hardwood forests of the west side of the Park are famous for fall leaf colors viewing. If you have never been to Algonquin to see the display of brilliant colors on the hillsides, make it a point to come during the week, not the weekend! It is easier to get Taylor Swift concert tickets than to get a weekend day pass in late September/early October to stop along Highway 60.

One of the best places to observe the majestic white and red pine forests on the east side of the Park is from the top of the Barron Canyon. It is a breath-taking view after you are trying to catch your breath from hiking up the steep approach to the canyon wall. If you are in this area in the summer, take the extra time to hike or canoe into High Falls for a swim – some people rank this site as the best natural freshwater swimming hole in any Park in Canada or the USA.

For many the Park is renowned for canoeing and camping. Options include both drive in campsites (hundreds along highway 60 and at Achray, Brent and Kiosk campgrounds) and back-country sites. All surrounded by forests, sometimes old growth if you like it like that, and clean sparkling lakes of course. More than 2,000 kilometres of canoe routes and over 1,900 interior campsites are there to explore across the breadth of the Park. Hiking/back packing camp sites are another option. Over 20 interpretive hiking trails are available, many with a forestry theme. Cycling and cross-country ski trails weaving through the forest round out the trail options. Park Discovery programs, a.k.a educational sessions, are popular as well throughout the summer where Park naturalists interpret the connections in the forest ecosystems of the Park. The Park Visitor Centre and the Logging Museum both do a great job describing the forests and the forestry history of the Park as well as current forestry practices.



Katia Charlebois, RPF In Training, stands beside a potential canoe grade white birch tree in the Algonquin Park Forest. The tree location has been provided to the Algonquins of Ontario for their potential use.

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Fishing anyone? Algonquin is well known as a trout fishing hot spot. A recent article by Steve Galea in Ontario Out of Doors magazine spoke eloquently to the fishing opportunities. Lake trout are highly prized, but brook trout make Algonquin famous again. Over 230 lakes have native brook trout which make this one of the largest assemblages of remaining self-sustaining brook trout lakes in North America. Brook trout are sometimes called the 'forest fish' as the young-of-the-year brook trout from a lake can spend their entire first summer living in a tiny groundwater fed creek or spring in the forest. This cold refuge provides an escape from predators in the lake. Brook trout spawning sites in a lake rely entirely on groundwater bubbling up as a spring in the lakebed. The role of the forest in regulating groundwater flows and maintaining cold water temperatures in small creeks ensures a healthy brook trout population.

Many enjoy wildlife viewing and bird watching in the Park. A moose sighting along highway 60 on a busy summer day can result in a 'moose jam' of vehicles backing up traffic. Evening wolf howls have attracted thousands of people to sit silently in the dark and wait for a response from a nearby wolf pack. The forests of the Park are essential to all the wildlife that reside within and adjacent to the Park.

Some of the other notable public uses, in alphabetical order, include: birch bark collecting (Indigenous), boating (limited lakes allow motors), cottaging (cottage leases), dark sky viewing, dog sledding, forest bathing (whatever that is), horseback riding, hunting and trapping (small portion of Park plus Indigenous), painting, photography, picnicking, research, snowmobiling (limited), skating, snowshoeing, and white-water paddling. Countless other activities likely occur.

Future trends include a longer recreation season. People are now enjoying Algonquin later into the fall and winter camping and other winter activities are becoming more popular. With the projected population increase in southern Ontario over the coming decades, public use of the Algonquin Park Forest will certainly increase in the future.

Forest carbon offset markets: What are options for forest owners in Ontario?

David Stevenson, R.P.F., Director of Canadian Operations, Finite Carbon Canada

First Nations, industry, and private citizens contemplating a forest carbon offset project in Ontario are often faced with very little information upon which to make a decision. One of those decisions is which market to sell offset credits into as it is not readily apparent to landowners. Reading about regulatory programs in Canada is not riveting. This article attempts to make it easier for professionals and landowners to understand the regulatory landscape.

There are two markets that can theoretically be used to sell offset credits. The first is the voluntary market which is currently available for offset credit sales and is growing on a trajectory that is truly astonishing. (Figure 1). As more and more corporations commit to net zero emission targets, the demand for carbon offsets, particularly nature-based solutions such as forest carbon offsets, is burgeoning rapidly.

The second market is the regulatory, or compliance market which in Canada is still being established in some provinces although there has been a market for carbon credits since 2007 in some provinces. Alberta for example has had a compliance market since 2007. The regulatory market is driven by provincial and federal regulations on greenhouse gas (GHG) emissions from industry. There are two types of regulatory systems in Canada: the Cap-and-Trade (C&T) system found in Quebec, and the Output Based Performance Standard (OBPS) approaches found everywhere else. (Figure 2). Provinces can choose how they regulate GHG emissions but must meet standards set by the federal government or federal regulation can be imposed (as has happened in several provinces including Manitoba). Most provinces have opted for the OBPS type approach.

Ontario switched from a C&T type system to the Emissions Performance Standards (EPS) program (an OBPS approach) in 2019. Nova Scotia made a similar switch from a C&T to an OBPS approach in late 2022. British Columbia recently announced that it is shifting its approach to what is anticipated to be an OBPS system.

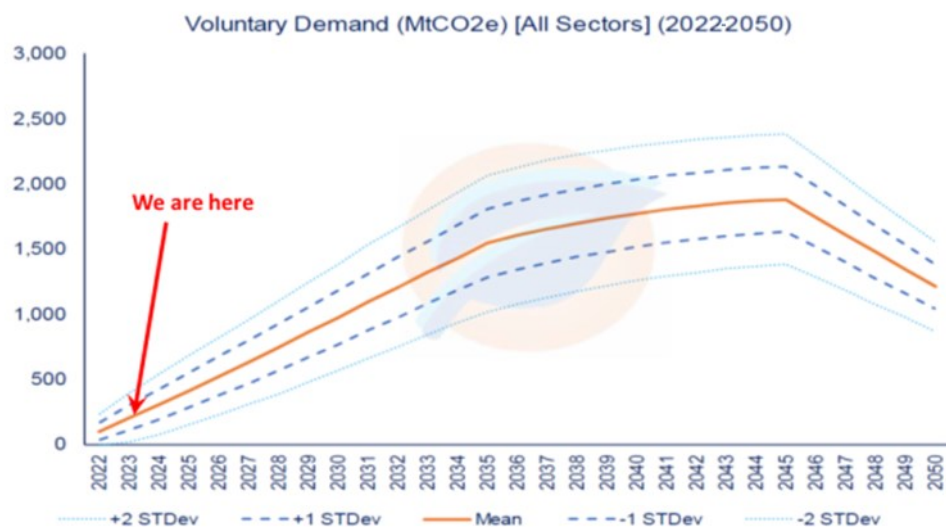


Figure 1. Voluntary offset credit market demand 2022-2050. Source: ClearBlue Voluntary Offset Market Supply and Demand Report <https://www.clearbluemarkets.com/>

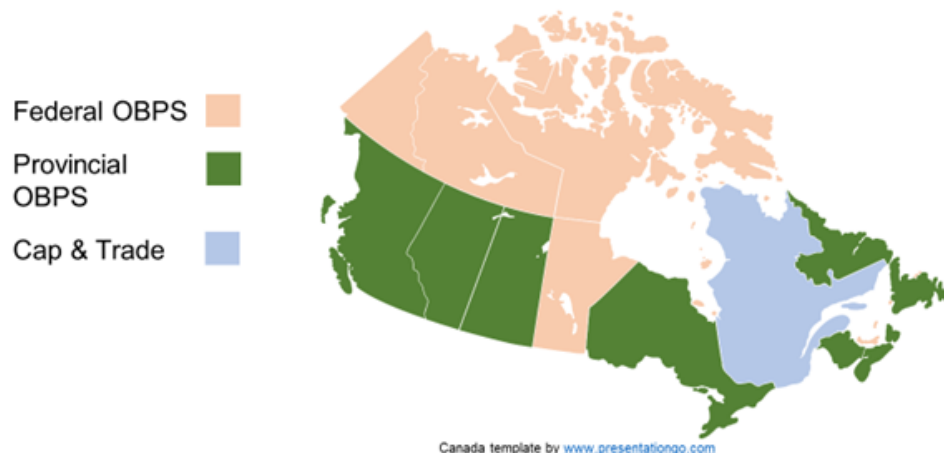


Figure 2. Types of GHG regulatory systems in use in Canada.

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Industry regulated in an OBPS is exempt from paying the Canadian carbon tax on input fuels used in their facilities but are regulated on the amount of emissions they can emit. Figure 3 shows how the regulation works in an OBPS.

Industrial facility's emissions are measured against an emissions performance standard. If a facility is not able to meet its emissions performance standard, then it generates a compliance obligation. If a facility over achieves its emissions performance standard, then it can generate emission performance credits (EPCs). A compliance obligation can be satisfied in three ways: paying money into a fund at the going carbon price per tonne of excess emission, purchasing EPCs from another facility, or purchasing a regulatory offset credit.

Ontario's EPS works very similarly to that of Alberta's and the federal governments OBPS except for one important difference. You can't use carbon offsets in Ontario. Unfortunately, there is no provision for the use of regulatory carbon offset credits to satisfy a compliance obligation for Ontario's regulated industrial facilities. Facilities are able to purchase performance credits from another facility but carbon offset credits are not enabled in the program.

If there is no ability to sell carbon offsets into the Ontario regulatory carbon market, then what can landowners do to access regulatory markets? Could they use the federal offset market?

Canada has said that provinces that lack a forest carbon offset protocol (FCOP) can use the federal FCOP when it is released. There are several reasons why landowners might consider doing so, the primary reason being the potential of achieving regulatory prices which exceed voluntary carbon offset prices. It is unlikely, however, that offsets in the federal market will achieve the regulatory price. The reason this is the case is because for a carbon offset to be purchased, a compliance obligation must be generated by a facility failing to meet its emissions performance standard.

If one looks at the total amount of GHG emissions from facilities by province (Figure 4), one can get a sense of the potential offset demand in the system. Alberta has significantly more emissions than any other province but Ontario ranks number 2 with 42 M tonnes of carbon dioxide equivalent (tCO₂e) reported by facilities.

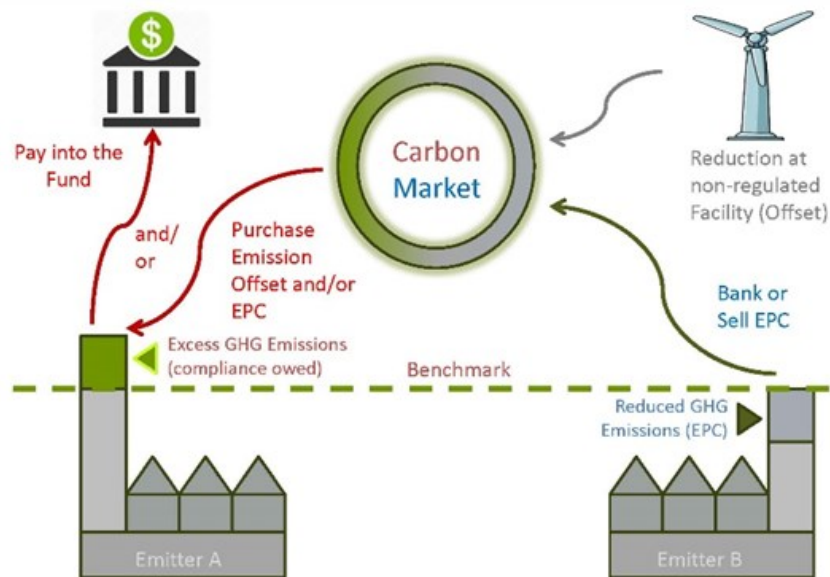


Figure 3. How an OBPS approach works. Source: <https://www.alberta.ca/assets/documents/aeos-2018-ccir-compliance-offset-workshop-presentation.pdf>

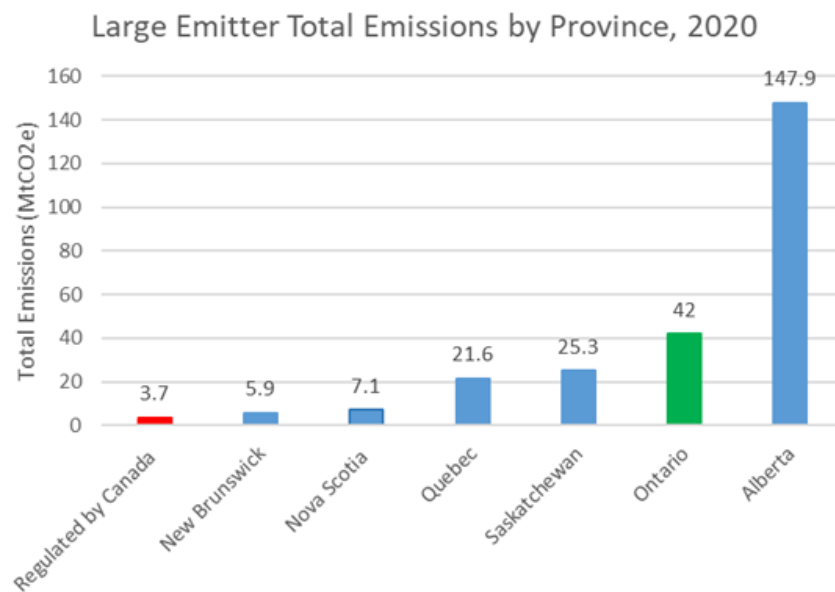


Figure 4. Large emitter GHG emissions by province, 2020. Source: Environment and Climate Change Canada Greenhouse Gas Reporting Program <https://open.canada.ca/data/en/dataset/a8ba14b7-7f23-462a-bdbb-83b0ef629823>

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In comparison, the federal government only regulates 3.7 Mt CO₂e because it only regulates facilities in Manitoba, PEI and the Territories. In other words, it doesn't regulate many facilities and therefore cannot generate significant offset demand. Because compliance obligations only represent a fraction of total emissions, and not every facility will fail to meet its emission standards, the demand for credits in the federal system is dwarfed by the potential supply of offset credits. Only Alberta is likely to generate sufficient compliance demand to continue to justify an offset market in the future. Other provinces simply don't have enough emissions to justify the regulatory effort of setting up an offset market. And in all cases (likely including Ontario) supply of offset credits will exceed demand for them. For these reasons it is unlikely that forest carbon offsets will be used in regulatory programs with the exception of Alberta.

Speaking of regulatory offsets for forest carbon projects is a bit moot as there are currently no approved regulatory protocols available for use. Alberta is reviewing a proposed FCOP (written by Finite Carbon Canada) which will hopefully be available for use in 2023 in Alberta. The federal government is expected to release its FCOP in 2023 as is the British Columbia government with its revised FCOP V2.

In the voluntary market there are several protocols that are available for use in Canada. VERRA has two protocols, VM0012 and VM0034, which can be used. The American Carbon Registry (ACR) released its Canadian improved forest management (IFM) protocol in late 2021.

While it is not likely that landowners can access regulatory markets for their forest carbon projects in Ontario, the voluntary market provides significant opportunity and long-term demand for sales. Corporations are seeking nature-based offsets and favour forest carbon projects over other types of carbon offsets. This demand is driven by corporate targets and ESG goals. Despite recent news reports about the credibility of forest carbon projects, the market for them has not softened in North America. Quality projects with clear additionality assumptions, i.e., the carbon sequestered clearly exceeds business as usual, or would not have happened without the project, will be in demand for the foreseeable future.

Regreening southern Ontario: Is it more than counting trees?

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Regreening and restoration, as a response to land degradation and deforestation, have been undertaken to various extents by many countries and groups over the past century. The UN also declared 2021 – 2030 a decade of ecosystem restoration as a global response to the deteriorating environment. The United Nations General Assembly Resolution emphasizes forest restoration as critical for stopping environmental degradation, and biodiversity loss, combating climate change and supporting human health and people's livelihoods. There are many restoration plans and efforts across the globe that pre-date the UN declaration or that have been urged by it. They range in scale from efforts at the continental, sub-continental, national, and regional scales, and local greening efforts such as site restoration and tree planting.

Only some examples are provided here though there are numerous ones. The great green wall of Africa aims to restore 100 million hectares of presently degraded land from the east to the west coast of Africa by 2030. Similarly, the Chinese Great Green Wall, which started in 1978, intends to plant trees over a 4,500-kilometre stretch to stop land desertification by 2050. Turkey has expanded its forest by 1.8 million hectares by planting 4.5 billion saplings over the past 17 years. To increase England's tree cover (currently at 14%) and improve the social and environmental benefits woodlands provide, the England Forestry Commission offers a range of grants to support tree planting and woodland creation. While their grant minimum is 1 hectare of restored land, the minimum planted area can be as fine as 10 meters wide and 0.1 hectares.

Similarly, in Canada, the federal government has also embraced planting two billion trees by 2031. Tree planting and reforestation are not new to Ontario, where the 50 million trees program started in 2007. Besides these broad-scale programs, conservation groups and landowners in southern Ontario undertake many local tree plantings. In many cities across the province, numerous tree-planting efforts lead by community groups and NGOs, aim to increase urban tree canopy, ameliorating urban climate and environmental conditions and making cities more livable.

All these, either extensive or local efforts, have their social and ecological achievements, lessons learned, and limits. Regardless, they collectively confirm that "regreening" is the way to a sustainable future. As a result, regreening and "forest restoration", in their broadest sense, have become an inseparable part of forest conservation, management, and land use planning. However, what is often broadly termed "restoration" or "regreening" includes diverse activities such as restoration, afforestation, reforestation, and tree planting. Forest restoration implies restoring a degraded forest to its original reference or historical condition, and achieving the desired forest state can take a long time. Reforestation is the re-establishment of forests and woodlands that have been destroyed, usually due to deforestation or forest clearing. Afforestation establishes forests in areas where forest is not the natural cover and where forests did not previously (historically) exist. There is also a broad range of tree-planting activities that do not necessarily fit the strict definition of restoration, reforestation or afforestation. These activities often consider tree planting to provide environmental services (e.g., reduce noise, and provide shade) and/or goods (timber plantations). Over time, with careful planning and management, some tree planting or reforestation could transition into restoration. For example, well-managed agreement forest red pine plantations in southern Ontario, established as part of reforestation in the early 1920s have successfully transitioned into the mid-successional forest. Often, they contain similar floristic and species compositions as the second-growth forest.

Thus "regreening" has been practiced in Ontario for over a century. While the peak of deforestation at the global level was in the 1980s, its peak in southern Ontario was a century before that. The colonial settlement and land clearing decimated forest cover in southern Ontario within a few decades. By the late 1800s, the once forested southern Ontario landscape had about 10-15% forest cover. The loss of the original forest cover caused many environmental problems. Soil erosion, stream sedimentation and floods were the most obvious and threatened people's livelihood and economy. Bringing tree cover back through reforestation and tree planting was the only solution. Besides addressing land degradation, reforestation was the first forest conservation effort that shaped forestry education and establishment of the first forestry school in Canada.

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The Ontario government established the first tree nurseries in 1905 (Figure 1), and the Reforestation Act Agreement Forest Program in 1920, when the first pine plantations were also established. The Agreement Forest Program continued to grow, and with the Woodlands Improvement Act (1960s) and later Managed Forest Tax Rebate Program (MFTRP, 1975), southern Ontario forest conservation and reforestation efforts were rising. The programs had proven successful as reforestation (plantations) halted soil erosion, improved land condition and increased forest cover.

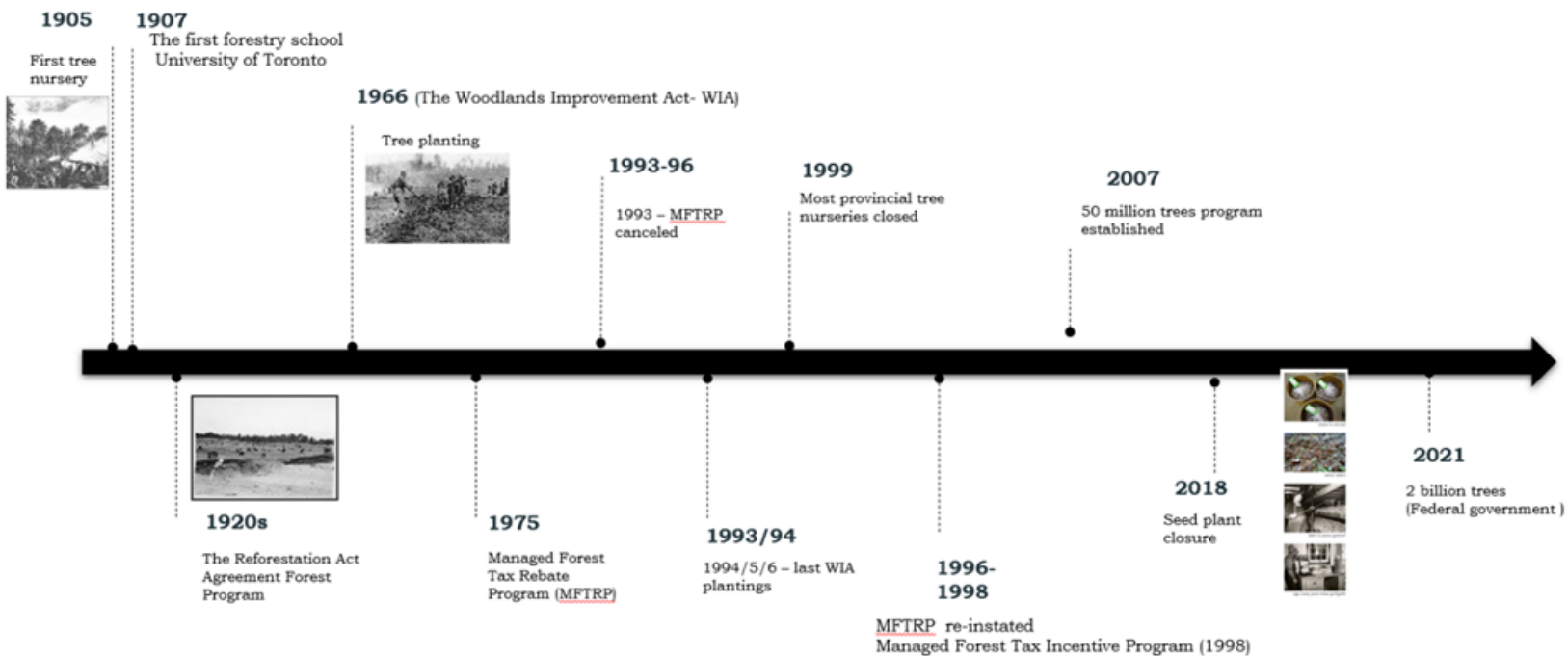


Figure 1. Southern Ontario regreening and reforestation timeline.

Yet, despite this evidence, decision-makers could not foresee the future of forestry and the importance of restoration beyond their four-year term. Southern Ontario's "restoration" and forestry programs were cut down in mid-1995. Though various groups across the landscapes continued to plant trees at the local scale, it took over a decade to start a southern Ontario-wide reforestation program again, as the 50 million trees program. The final nail in the forestry of southern Ontario coffin was pinned in 2013 when OMNRF districts were left without district foresters and stewardship coordinators, and the closure of the provincial seed plant in 2018. Instead of being ready to implement the federal 2 billion trees and 50 million trees programs, we have to build the reforestation capacity and rebuild the programs again.

Tree planting and reforestation are not our only regreening opportunities. Protection and conservation of the remnant woodland cover are crucial for safeguarding the remaining biodiversity, ensuring seed sources, and using the existing woods as nuclei to support natural forest regeneration. For example, our results from the eastern Ontario, Mississippi Lake Wildlife reserve show that the secondary succession occurred at the edges of woodlots and added 25.5 ha of forest over 100 years (Figure 2, next page). The average gain of 0.25 ha/year crept from the forest edge into the open fields. However, the initial phase of forest succession and early succession is often easily disregarded and derogatory termed "scrub." These forests don't meet canopy closure of 60% and the criteria of a productive forest (wood-oriented forest management). As a result, they are not mapped and are neglected as a way of restoration. For example, the Lake Simcoe watershed woodland cover (as per OMNRF-SOLRIS mapping and 60% canopy cover) is 96, 808 ha. Early successional forests (below 40% canopy cover) cover 11,973 ha. These forests need protection, management, and stewardship as a means of passive restoration. For illustration purposes, if we are to plant trees on 11,973 ha, we would need about ~ 11,973 000 seedlings (or 36 million dollars).

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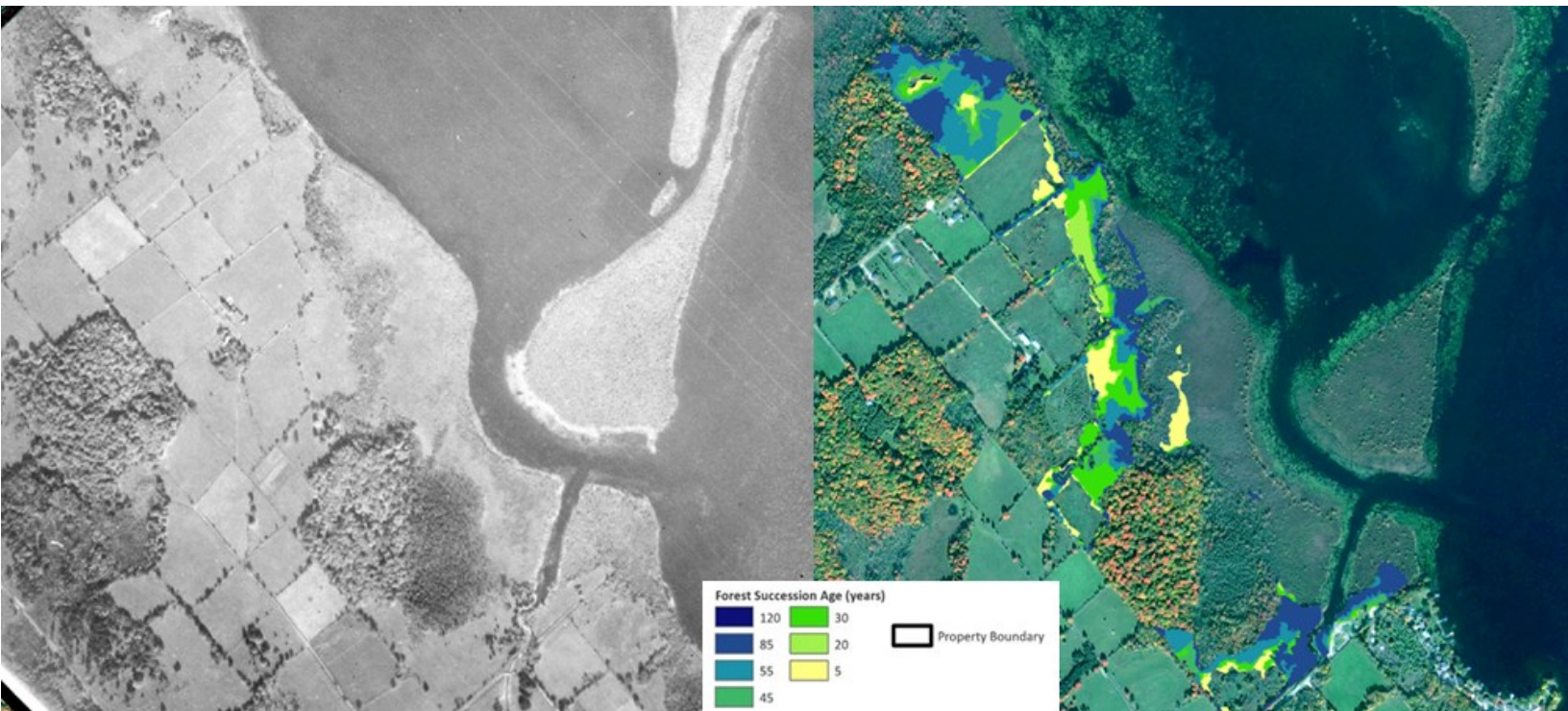


Figure 2. Secondary forest succession in eastern Ontario over a 100 year period.

Under pressure and demand from the urban population, tree planting is used to improve urban conditions. There are many tree-planting opportunities in urban areas. They range from increasing the extent of woodlands within the cities to individual tree planting along roads, highways, and residential areas. For example, to achieve an average of $\sim 36\%$ urban tree canopy from the existing 24% in Canadian urban areas (with 1000 people and more) we would need to plant over 160,000,000. Of these trees, only 9% would be planted as individually managed trees (street, residential areas). The highest potential of urban tree planting is in reforesting open lands, extending the existing urban parks and creating new woodlands, which is also the most cost-efficient and sustainable way. However, this assumes that there is careful land use planning that considers forests before development.

Based on the past and current programs, it is easy to measure and report restoration as how many trees were planted. However, restoration and tree planting must address multiple objectives rather than be opportunistic and serve only to count trees. Do these numbers mean more than ordering plant stock and reporting what was planted? We still need to know how many trees have survived. What area was successfully restored or not? What ecological functions were restored, or new ones created? Could it be done in a more cost and ecologically efficient way?

Regreening and restoration must be carefully planned based on ecological functions and biodiversity to be restored. Conserving existing woodlands, ensuring sustainable forest genetic resources, and seed production are the critical base of regreening success. Strategic integration of conservation, management and restoration within land use planning is also necessary, not only to conserve the forest but also to stop soil loss due to development and ensure there is land where we can recreate forest in the future.

Regreening and restoration are as much sociopolitical and land management processes as ecological ones. Our past experiences show that we took for granted what we had and did not understand the land where we live. We were not able to grasp societal and ecological changes and where forestry of the 21st century was heading. We were quick to disregard decades of intuitional knowledge, partnership, and expertise for a short-sighted cost cutting effect. Success of regreening programs should be measured by conserved forest and soils, strategically restored biodiversity, and ecological functions. It should also be measured by resilient long-term, programs that can address current and future unforeseen needs and challenges in a cost-effective and timely manner.

Hemlock Woolly Adelgid: A threat moving north

Nicole Mielewczyk (She/her), A/Plant Health Survey Biologist, Ontario, Plant Health Science Services Division, Canadian Food Inspection Agency/Government of Canada

The hemlock woolly adelgid (*Adelges tsugae* Annand, HWA) is an invasive aphid-like insect that has been present in North America since the early 1900s. It was first found on the west coast, where it was not considered a pest of the native Western Hemlock and Mountain Hemlock (*Tsuga heterophylla* and *T. mertensiana* respectively). However, in 1951 HWA was reported on the east coast in Richmond, Virginia and since that time has been spreading and causing damage to over half the native range of Eastern Hemlock (*Tsuga canadensis*) (Figure 1). In eastern Canada, seven counties in the southwestern portion of Nova Scotia and 3 cities in the Niagara area of Ontario are now regulated for the presence of this destructive pest. Unfortunately, in July 2023, a Canadian Forest Service and University of Guelph crew identified signs and symptoms of hemlock woolly adelgid in a woodlot in Grafton, Ontario. Official sampling by the Canadian Food Inspection Agency (CFIA), confirmed this woodlot to be heavily infested with HWA. This new detection is at the base of much of Ontario's high value hemlock stands, like those in Algonquin Provincial Park (Figure 5). The risk of HWA spreading throughout more of Ontario continues to

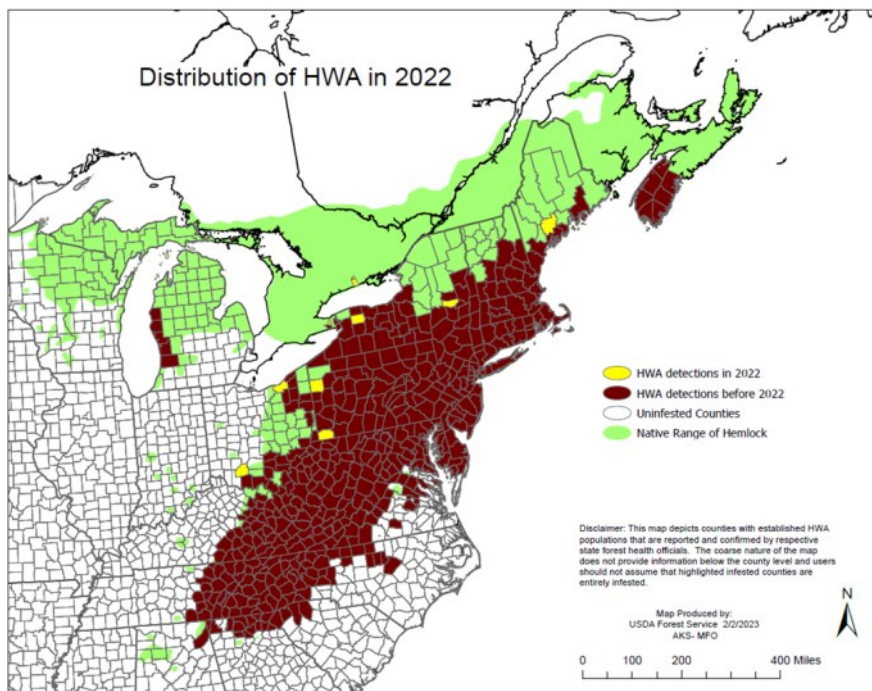


Figure 1. Reported 2022 distribution of hemlock woolly adelgid (*Adelges tsugae* Annand) within the native range of Eastern Hemlock (*Tsuga canadensis*). Source <https://hiro.ento.vt.edu/hwa/>.

increase. So, how does this insect threaten hemlock stands and what proactive measures can be taken?

Hemlock woolly adelgid reproduces asexually, meaning that a single insect can start a new population. It creates two generations per year, producing approximately 200 progeny each generation. The sistens generation emerges from eggs at the end of June, develops through 4 nymphal stages and finishes when the adults lay eggs at the end of March. The progrediens generation begins its life cycle at the end of March and completes it around the beginning of June (Figure 2, next page).

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Figure 5. Distribution and regulated areas of hemlock woolly adelgid in Ontario, Canada. Source: Canadian Food Inspection Agency.

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The damage caused by this insect occurs when the nymphs insert their specialized mouth parts into the base of hemlock needles, feeding on nutrient and water storage cells.

This causes the drying of needles, leading the tree to take on a grey cast, lose its needles, and die in as few as four years. All sizes and ages of eastern hemlock are susceptible to HWA. In its native range of Japan, the progrediens generation of HWA produces a winged nymph that uses spruce trees as a host, *but this is not occurring in North America*.

Early detection of this pest is key to stopping its spread. The most identifiable stage of hemlock woolly adelgid is the egg mass, which can be seen at the base of hemlock needles from March to June (Figure 3). If a suspect hemlock woolly adelgid infestation is identified outside of known locations, report it to the Canadian Food Inspection Agency www.inspection.canada.ca/pests.

We can all do our part to limit the spread of HWA. This insect spreads naturally when the fluffy egg masses or mobile crawlers get blown in the wind, or stick to migratory birds and mammals. The egg masses and crawlers also easily adhere to the hair and clothing of humans who move through infested hemlock stands. To reduce the risk of spread, use a lint roller to remove eggs and crawlers from clothing and hair after visiting known or potentially infested areas. Wash clothing prior to visiting any site with hemlock to prevent spread from one stand to another. Humans can also spread HWA through the movement of infested nursery stock, logs with bark, decorative foliage or firewood (Figure 4). Therefore, follow the regulations that the CFIA puts in place in regulated areas upon detection of hemlock woolly adelgid, as well as any forestry pests, and do not move logs or firewood. For any questions or reports about this pest, please contact the Canadian Food Inspection Agency.

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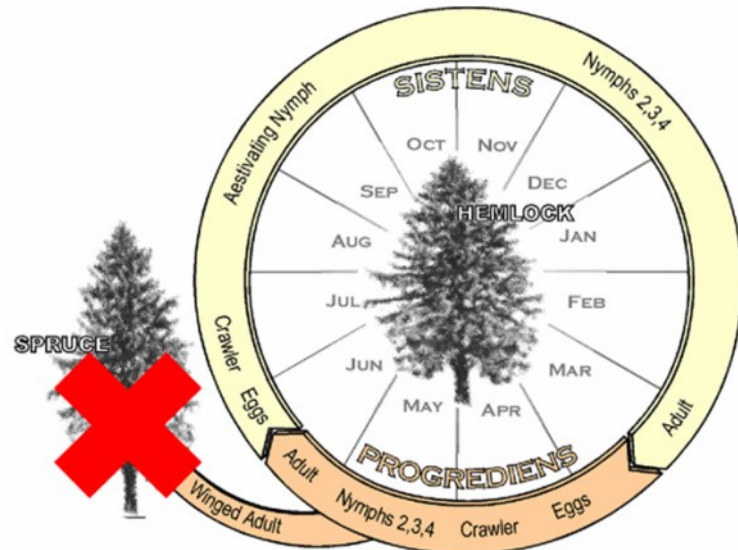


Figure 2. Lifecycle of hemlock woolly adelgid in North America (Adapted from Cheah et al. 2004).



Figure 3. Hemlock woolly adelgid nymphs (left circled in red) and egg masses (right circled in red) at the base of hemlock needles. Photo credit: R. Neville, CFIA.



Figure 4. Evidence of hemlock woolly adelgid on bark of tree. Photo credit: E. Appleton, CFIA.

Black ash and eastern hemlock: Urgent and proactive genetic conservation required

Melissa Spearing, Seed Biologist, National Tree Seed Centre, Atlantic Forestry Centre, Canadian Forest Service, Fredericton, New Brunswick

A handful of spruce seeds can hold over 50,000 unique genotypes and remain viable for decades in dried, frozen storage. In a good mast year, sampling equal volumes of viable seed from at least 30 parent trees can sustain the odds of similar genetic diversity in the next cohort. What if 29 of those trees died next year (96.7%)? What if only 500 of those 50,000 seeds (0.01%) were viable after 60 years?

The odds of >96.7% mortality for black ash (*Fraxinus nigra*) and eastern hemlock (*Tsuga canadensis*) and stands are rising in Ontario. I have seen extensive black ash swamps with hundreds of mature stems >20 cm DBH, healthy and dripping with seed around Peterborough in 2019, succumbing to emerald ash borer (EAB) by the summer of 2022. The Grafton hemlock woolly adelgid (HWA) discovery in August 2022 already had tree mortality from suspected infestation from the past few years. HWA is recurring in the Niagara Peninsula and spreading in Nova Scotia. It is only a matter of time as warming climates and winters remove the final natural barrier to containment. Canada's Hemlock Woolly Adelgid Management Plan needs to kick into high gear and is one of the few action plans where proactive seed conservation is strongly recommended (Emilson et al. 2018).

The National Tree Seed Centre (NTSC) has been banking seed for long-term gene conservation since 1998 (Graves et al. 2023); our best eastern hemlock and black ash collections are now over 35 and 24 years, respectively. For black ash, 2019 was the “year we’d been waiting for”; a range-wide bumper mast year from Manitoba to Newfoundland. The Canadian Forest Service, many Indigenous communities, Parks Canada, citizen scientists and regional FGRM associations rapidly mobilized to fill core range gaps (Figure 1).

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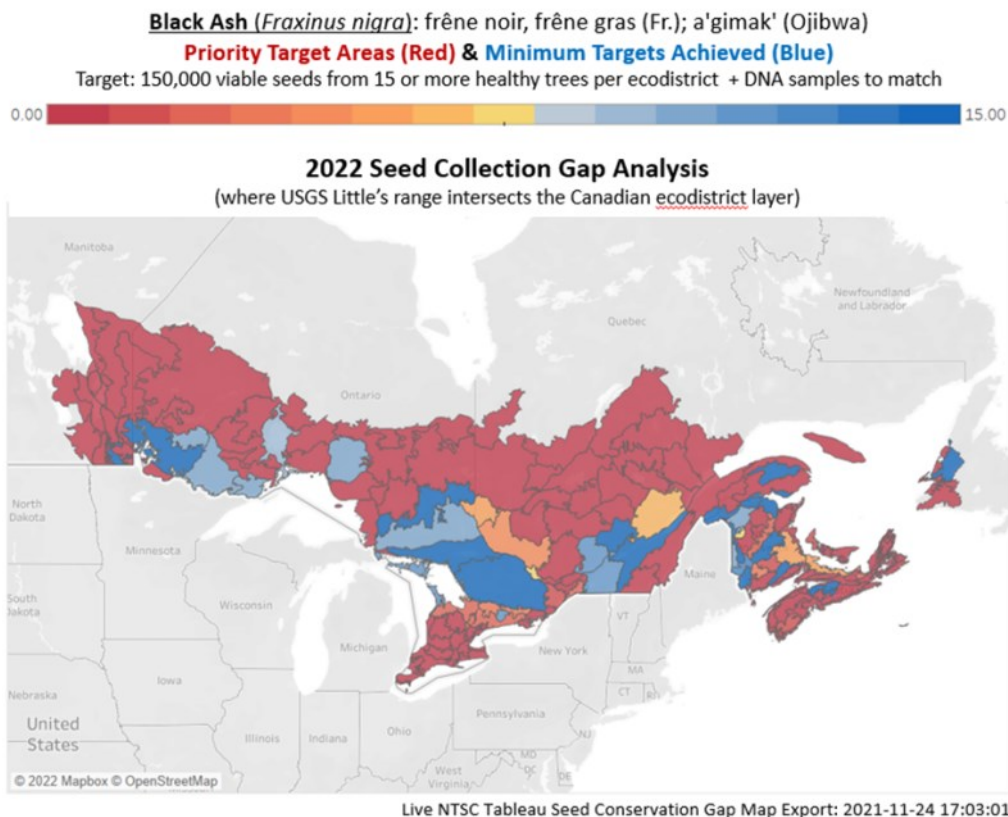


Figure 1. A basic 2022 NTSC seed collection gap analysis based on conservative sampling guidelines of a minimum of 15 trees per ecodistrict x 1,000-10,000 seeds per tree. 150,000 viable seeds per ecodistrict is ideal to prepare for 30-year seed storage attrition and restoration programs. We currently utilize the Canadian Ecological Land Classification (2017) spatial layer, though analysis can be done with any provincial planning layer due to GPS coordinates kept with most of our collections.

(Continued from page 13)

Many red zones with no collections remain. Ontario's black ash recovery listing pause until 2024 allows time to incorporate in and ex situ gap analysis. An enhanced inventory of stands >500 or even 5,000 reproductively mature individuals and a quantified matrix of existing viable seed collections is the place to start (Government of Alberta 2018; Wang et al. 2020).

Which populations are already special? Simply put, we still don't know. Genetic differences in eastern hemlock populations are better known than for black ash, but northern and Ontario hemlock stands were still only sparsely studied in the past (Lemieux et al. 2011; Potter et al. 2012). Because of those knowledge gaps, the NTSC recently sent away over 600 Canadian black ash seed samples to the Schatz Center for Tree Molecular Genetics at Pennsylvania State University, where Dr. Melissa Lehrer and Dr. Jill Hamilton will begin range-wide genotyping and provenance test installations towards EAB resistance breeding. When the results are known, we hope this can rapidly inform future black ash management strategies in Canada. In the meantime, the 2019 seed collections will remain soundly asleep in their -20°C frozen foil packets until at least 2050 or 2060.

How much seed to collect if 2023 or 2024 is a good year in your forest? The good news is that even a few hundred seeds can contribute towards the cause. The challenging part is estimating the scale of future restoration needs when you are standing there collecting. Dr. Alvin Yanchuk (2001) provided a robust quantitative framework well employed today in multiple jurisdictional plans, as summarized in Table 1.

Table 1. Number of individuals in an in situ population or ex situ seed collection needed to capture a desired number of copies of a trait with a 95% confidence interval (reproduced from Krakowski (2010)).

Phenotype (quantitative trait)		Dominant (binomial) allele		Recessive (binomial allele)	
5 copies	20 copies	5 copies	20 copies	5 copies	20 copies
181	554	89	275	>5,000	>15,000

Yanchuk proposed that from these founding populations, future breeding programs can go as low as 30-40 plus trees per breeding zone, but 80 is better for sustaining 10+ generations of stable allelic diversity. Aiming for more seeds per tree also counters genetic resource attrition via population mortality, research use, seed viability testing, seed deterioration, human error, etc. In our experience, most collectors underestimate the number of initial viable seeds in their bags anyways, even when cut testing is done at each tree or arborists hired to collect higher quality cones from the upper parts of dominant crowns (Figures 2-4).

Today, Alberta recommends at least 3,000 seeds per single tree collection, or 150,000 seeds per bulked population (20,000-50,000 per stand x 3 populations per zone). This is much easier to achieve for conifers than hardwoods. NTSC suggest 3-10 litres of raw fruit per tree, but this will be tailored as seed yield and testing data accumulate. Dr. Sean Hoban post-collection assessments of the UK's National Tree Seed Project's coverage of

659 trees from 59 sites, for a total of 2.3 million seeds, suggests this has been a successful sampling effort, but could still be improved to capture 50 copies of rare alleles potentially needed to restore *Fraxinus excelsior* in the wake of ash dieback (Hoban et al. 2018). His models and conservation assessments are increasingly sophisticated and can be tailored for a variety of common or rare plant species (Hoban 2019): https://github.com/smhoban/BSAS_sampling.



Figure 3. Large, dominant eastern hemlock trees were marked in a stand by the Nova Scotia Department of Lands and Forests after seed forecasting in Upper Musquodoboit, NS. Photo credit: Mitch Jamieson, Atlantic Tree Solutions, 2021.



Figure 2. 2019 black ash cut testing before collection decisions were made. This is a significantly high filled seed estimate in the field.

(Continued on page 15)

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Ontario's forest genetic resource management policies and Species at Risk recovery programs are currently not this explicit in terms of effective minimum population sizes needed for future forest health. Seed conservation also takes significant funding, fieldwork expertise and coordination at every stage. We always have and will continue to support provincial conservation programs, particularly as Canada's seed supply chain dynamics change (Spearing et al. 2023, Spearing 2023). But we can't do this alone – cooperation with Indigenous communities and professionals who care will go a long way towards a brighter future.

Visit our website to learn more: <https://natural-resources.canada.ca/science-and-data/research-centres-and-labs/forestry-research-centres/atlantic-forestry-centre/national-tree-seed-centre/ntsc-seed-collection-and-conservation/23984>



Figure 4. Arborists from Atlantic Tree Solutions taking in the view before cone collections of dominant eastern hemlock trees in seed in Upper Musquodoboit, Nova Scotia. In total 18 trees were forecasted, marked and climbed as part of the provincial seed conservation strategy, in advance of hemlock woolly adelgid infestation. Photo credit: Mitch Jamieson, Atlantic Tree Solutions, 2021.

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Fighting spruce budworm in the Northeast Region

NER SBW Team, Northeast Region, Ministry of Natural Resources and Forestry

Spruce budworm (SBW) is a native species to our forests. It feeds primarily on balsam fir and white spruce but can also be found occasionally defoliating other conifer trees. Although ever-present in our forests, the population escalates into an outbreak every 30-40 years. These outbreaks can last up to 8 or 9 years. During that time, they can defoliate extensive areas of white spruce and balsam fir. Trees and forest stands that are stressed by spruce budworm defoliation can lead to reduced volume – which directly affects wood supply – as well as increasing the risk and severity of wildland fire due to the dead and dying forest cover.

Aerial forest health detection surveys conducted annually by Ontario's Ministry of Natural Resources, and Forestry (MNRF) have been used to map areas of defoliation caused by the spruce budworm. In 2020, these detection surveys identified 442,000 hectares of moderate to severe defoliation in forest management units across the Northeast Region (NER). The area of defoliation has grown to approximately 2 million hectares in 2022, spanning a much larger geographic area in the NER. It is estimated that since 2019, the spruce budworm has contributed to approximately 58,000 hectares of mortality throughout the defoliated area.

MNRF is developing its third consecutive insect pest management program (IPMP) to manage the ongoing spruce budworm infestation in Northeastern Ontario. This IPMP is being developed with information provided by forest industry, local citizen committees, Indigenous communities, and the public. Forest industry has worked with MNRF to identify priority areas that require enhanced protection measures for conifer forests. Protecting forest health and encouraging economic growth in the forestry sector are a priority for the MNRF. The forestry sector is critical to the provincial economy and many Indigenous, northern, and rural communities, generating over \$18 billion in revenue and supporting approximately 147,000 direct and indirect jobs in regions with few other industries.

So how will this insect pest management program be executed? First, we must look at the lifecycle of the spruce budworm itself:

- Moths emerge in late-June to early-August and lay their egg masses on the underside of needles in the crown of host trees.
- The eggs hatch in about 10 days, and the tiny larvae crawl or disperse on silken threads throughout the fir-spruce forest canopy. They spin overwintering shelters in the host tree foliage where they molt and remain dormant through the winter.
- The larvae then emerge in late April or early May and feed in the previous year's needles and within the newly developing buds of the host tree.
- Most of the feeding damage to trees occurs in mid-to-late June. The pupal stage, where the larvae transform into adult moths, lasts about one week, and occurs at feeding sites or lower branches.
- The moths emerge in late-June to early-August to mate and complete the life cycle.



Science and Research staff take samples from a white spruce tree.



Science and Research staff assess development stage of spruce budworms.

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The ministry is targeting the timing of the IPMP to coincide with when the spruce budworms develop into a semi-mature larva and are eating the fresh shoots and needles (approx. mid-June). It's a tight window of opportunity (about 1-2 weeks) to apply the treatment to the trees so it will be effective on the budworm. Science and research staff will be in the field monitoring the development of both the larva and the host. Once the larva reaches the peak of the third instar and the shoots of the targeted host trees are beginning to elongate, treatment will begin. Development monitoring will continue throughout the duration of the operation to ensure the larva do not reach a stage where feeding is complete, making the treatment ineffective.

Next, we look at the treatment and how it will be applied. In this case, the ministry is using a biological insecticide *Bacillus thuringiensis* variety *kurstaki* (Btk). Btk is a naturally occurring bacteria that is found in forest soils. It is a registered pesticide with the Ministry of the Environment, Conservation and Parks and is certified for use in organic farming operations. The treatment will be applied aerially by fixed-wing or rotary aircrafts.

Aerial treatment programs are not new to the province; in fact, they have been carried out since the 1980's. The insecticide that will be used has been thoroughly researched and has many commercial and non-commercial uses. For example, Btk is often used in agriculture to control pests that enjoy munching on produce.

Btk only harms the larvae of lepidoptera (moths and butterflies), and does not affect adult moths or butterflies, insects other than lepidopterans, insect predators or parasites. Btk produces spores and crystal proteins, which are toxic to certain insects and must be ingested by the spruce budworm larvae for it to cause mortality. The insects have an alkaline digestive system, as opposed to the acidic digestive system of birds, animals, and fish. When the spruce budworm ingests the foliage of the treated forest stands, they become sick, stop feeding within hours and perish.

The operational goal is to reduce tree mortality by lowering the spruce budworm population, which will also provide foliage protection through the natural infestation cycle. By treating high valued stands within the approved application parameters and continuing to monitor the outbreak annually, the spruce budworm population will continue to maintain its important niche in a diverse healthy landscape while reducing the negative impacts on forest stands.

The ministry's northeast IPMP is a multi-year project that will treat up to 150,000 hectares (double application) of targeted forest stands, helping to protect important white spruce and balsam fir forest stands. By stemming the spruce budworm outbreak, the ministry is supporting our government's plan to create jobs and encourage economic growth in the forestry industry, and support the Indigenous, northern, and rural communities that depend on the sector.

Once approved, the final IPMP will be available on www.nrip.mnr.gov.on.ca/s/fmp-online.

For more information on the Insect Pest Management Program please contact NERbudworm@ontario.ca.



2022 Operational Spruce Budworm Program team in Cochrane, ON.

Council corner

Chris McDonell, R.P.F., President

Professional forestry – Opportunities abound for all age classes

Supporting individuals to join the ranks of the profession of forestry in Ontario is top-of-mind for the OPFA. Pathways can include from Canadian Forestry Accreditation Board (CFAB) accredited programs or other programs in Ontario, Canada or beyond that are not CFAB accredited, both as recent and not so new graduates. Whether from any of these streams, attracting more individuals to the active practice of professional forestry benefits employers, the province and serves the public interest in the sustainable management of forests for a multitude of benefits and values.

Think back. How did you find your way towards a forestry education and ultimately join the ranks of the OPFA? If you were making your acceptance speech for, say the Golden Globe for "Leading Professional Forester in a Planning and/or Silviculture Role", who would you thank in your acceptance speech? Was it a conversation with a family friend, summer work experience, a perceptive guidance counselor, career fair, a desire to be outdoors, to find one-self, to help a community?

We all have a story and the ability to be an ambassador for our profession. Your story can light a spark that blazes a trail towards a range of objectives - a meaningful career, supporting a family, personal independence, job satisfaction, environmental restoration, community leadership - while contributing positively to healthy, well-managed forests in a changing climate. All around us, there are opportunities to share our stories and capture the imagination of the next registered professional forester. Who knows better the selling points of professional forestry? Let me highlight a few options.

(Continued on page 20)



Scott McPherson, R.P.F., Nipissing Forest Resource Management Inc. speaking to U of T MFC class the week of Feb 20th during a winter forestry field trip in the Near North (Mattawa, Powassan, North Bay, Petawawa). Photo credit: John Pineau, OWA.

(Continued from page 19)

For those who graduate from one of Canada's accredited forestry programs, e.g., B.Sc.F at Lakehead, Master of Forest Conservation (MFC) at Toronto, the path to the profession is relatively straight forward. While a degree and relevant work experience will take you there, making connections within the profession and finding an employment match with one's interests and objectives can be challenging. Initiated by recent graduate, Francisco Murphy, R.P.F. and supported by an OPFA Committee, the *Shadow a Forester* Program is designed to support student and provisional members on their journey to full membership. Check out the OPFA website to [learn more](#) and consider if you can play a part.

In my time serving on OPFA's Executive Committee, I've come to learn a bit about the 'calling of entrants' to our profession, especially those arriving by what I would previously have understood to be the "non-traditional" route. In fact, the majority of new registrants do not travel the CFAB accreditation path. Generally, in mid-twenties or older, individuals find their way to us from a diversity of educational, international or career backgrounds, experiences and motivations. Supporting these candidates is a priority of OPFA and takes special skills, support and resources.

I see first-hand the dedication of OPFA staff to support candidates through the various steps of the Competency Assessment Process (CAP). This process provides the roadmap for the journey to connect a candidate who is a graduate of a program that is not CFAB accredited (including allied sciences and technical programs) whose career path has led them to seek RPF registration. Timely information sharing and good communication is key, between applicant and staff. A customized plan is developed outlining the checkpoints on the journey to registration. The trip takes time, involves study and assignments and is challenging, as the candidate wrestles to balance the milestones with work and family life. Essential in this journey is the role of mentorship. A registered forestry professional, who is available to provide technical support and guidance, and most importantly focus and encouragement, is an essential aspect of the process. While it takes a commitment of time to be a mentor, it represents a rewarding opportunity to give a little back to the profession. For more information on how to become a Mentor, visit the [Mentoring New Members section of the website](#)

I recently had the opportunity to join the Toronto MFC class on their winter field trip in the North Bay/Mattawa area at the end of several days interacting with forestry professionals across a variety of disciplines. The students spoke of the value of meeting practitioners in forest product facilities, at research institutes, managers of public, private and Indigenous lands, and engaging in conversations about climate, energy, economics, silviculture, forest management planning, environment and social justice. The questions were abundant as students invariably were exposed to a new array of roles, experience and perspectives offered by a career in forestry – eyes and minds were opened. Thank you to all RPFs across Ontario who are so generous with their time in supporting engagements like this - it makes a difference.

Many adages abound about age: 'You're only as old as you feel'. '60 isn't old - if you're a tree'. In my travels and conversations across Ontario, both personal and professional, I am frequently struck by the impactful contributions of professional foresters across all age classes. I am impressed and often rejuvenated, both by the passion of practicing foresters for the work that they do and marvel at the enthusiasm, adaptability and new ideas advanced by aspiring professionals who are following in our snowshoe tracks. That never gets old.

Keep it up. Share your story; in person or virtually; campfire or classroom. You never know how your journey can inspire.

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Volunteer Opportunity

The Team (OPFA Editorial Board) which oversees the development of the OPFA's quarterly newsletter is seeking new members for the OPFA's Northwest and Northeast sections, meaning those that reside in northwestern Ontario and that live along the Hwy 11 corridor north of Temagami.

Are you interested in participating on the Team that designs the OPFA's quarterly newsletter?

Do you enjoy writing?

Are you interested in volunteering in a way that will serve to inform your fellow registrants about new developments in forestry research, operations or policy?

An established network of contacts is a critical element that contributes to successfully participating on this Team.

This volunteer opportunity will require attending one hour online meetings 4 times a year, offering ideas about new themes and articles of interest to registrants on current issues and of benefit to their continuing education. At the same time, it also involves drafting articles and approaching potential contributors to write articles for the newsletter.

The OPFA Editorial Board Terms of Reference and Report for December 1, 2021 to November 30, 2022 will be provided to registrants who are interested in this opportunity.

Buses, bowling and breaking bread

Back again in person at last: OPFA's Annual Conference 2023

Peter Kuitenbrouwer, R.P.F.

A field tour to the forests of the Oak Ridges Moraine, an opening ceremony with a First Nations elder, a series of speakers, a session led by Women in Wood, a swag bag, a trade show, a banquet, and social outings that includes a visit to a bowling alley. Yes, you read it right: after several years of virtual conferences due to the Covid-19 pandemic, the Ontario Professional Foresters Association is thrilled to announce that we will gather at last again in person this April, in Peterborough, for our annual conference and annual general meeting.

Those who prefer can join virtually. Conference organizers have worked more than a year to refine what will be the OPFA's first hybrid conference. The conference, with the theme Professional Foresters Adapting Through Collaboration and Innovation, convenes April 18-20, 2023 in Peterborough, about 140 kilometres northeast of Toronto.

The field tour offers a chance to visit the Ganaraska Watershed on the Oak Ridges Moraine, a land of conservation authorities, private landowners and smaller working forests. The field tour begins at 8:30 a.m. on April 18, departing from the Holiday Inn in Peterborough. Participants board one of two buses. One bus visits the Ganaraska forest in the morning and a private forest in the afternoon; the other bus does the reverse.

Gus Saurer, RPF will lead the tour through the Ganaraska Forest. Deforested by settlers more than a century ago, the area became a wasteland of blow sand. Reforestation after World War II produced the largest forest in southern Ontario, where multiple-use recreation comes together with forest management. David Puttock, RPF and Chris Gynan, RPF from Silv-Econ will represent Peterborough County and the forest management occurring on the Cavan property.

The second bus will take visitors to the Daniel Property, a private property with 160 acres of forest on the Oak Ridges

Moraine, owned by the same family since 1987. Fraser Smith, RPF, a forester with FSmith Consulting, and his team will lead visitors through red and white oak stands, mixedwoods and several plantation areas.

The next morning, April 19, an elder from Curve Lake First Nation will lead a special outdoor opening ceremony next to the Holiday Inn. The first technical session, on silviculture, brings together Dr. Bill Parker, a research scientist with MNRF, to look at Hemlock Woolly Adelgid management; Steve Bédard, ing. f., M. Sc., from the government of Quebec, to discuss irregular shelterwood, and Ken Cox, Southern Region Fire Advisor MNRF, on wildfire and prescribed burns. Also on the program, Liz Cobb, RPF, a forest operations manager with Petawawa Research Forest at Natural Resources Canada will discuss adaptive silviculture for climate change. Later comes the technical session, annual general meeting and banquet.



Conference organizers exploring sites for the field trip in the forests of Northumberland County.

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On the third day, Mark Pearson, Executive Director at the Canadian Institute of Forestry, speaks at breakfast. Then Dr. Alexis Achim of Laval University leads off a session on forest technology with a look at remote sensing data. Jessé Moura, M. Sc., a solutions analyst with Remsoft Inc., asks how we can incorporate forest carbon in strategic forest planning, and Craig Robinson, RPF, looks at bio-fibre synergies in Ontario's wood supply chain.

A session on Indigenous knowledge brings together Knowledge Keeper Gary Pritchard, who is a private conservation ecologist from the Curve Lake First Nation, an Ojibwe community 14 kilometres north of Peterborough, with Hunter Corbiere, an Indigenous forestry consultant, who will discuss conservation and food sovereignty.

At the afternoon technical session, Climate Change Adaptation and Mitigation, Charles Levesque, BSF, a forester who works in New Hampshire and Maine, will talk about how to manage forests for forest carbon and climate resiliency; Alex Nott, P.Eng, M.Eng, MNRF, will discuss the benefits of mass timber construction; and Dr. Rasoul Yousefpour, a forestry professor at the University of Toronto, will look at how to make forest decisions in the face of climate change.

It all ends at around 3:45pm on Thursday, following a special outdoor conference closing ceremony lead by Curve Lake Elder Lorenzo Whetung.

There will potentially be a second field tour on the Friday. Participants will travel north about 100 kilometres to visit Haliburton Forest & Wild Life Reserve Ltd, one of Ontario's largest privately-owned forests, an innovative model that combines recreation with sustainable forest management. Details to come.

2023 Annual Conference & AGM



April 18th - 20th at the Holiday Inn in Peterborough
Professional Foresters Adapting through Collaboration and Innovation

Annual Conference Field Tour: April 18, 2023

After years of absence due to the pandemic, the tour returns! Organizers of the 2023 OPFA Conference plan a memorable full-day outing in lovely Northumberland County.

Participants will board one of two buses. One bus visits the Ganaraska Forest and Peterborough County Forest in the morning and a private forest in the afternoon; the other bus does the reverse.

-- Forester Gus Saurer leads Ganaraska tour; David Puttock and Chris Gynan of Silv-Econ escort visitors through Peterborough County Forest.

-- Fraser Smith, a private land forester (pictured at right) guides visit to private woodlot.

Sit-down lunch included.

Stay tuned for more details!





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NOTICE OF THE ANNUAL GENERAL MEETING FOR THE 2022 FISCAL YEAR

Notice is hereby given of the Annual General Meeting of Members of the Ontario Professional Foresters Association for the 2022 fiscal year to be held virtually and in-person using hybrid video conference technology at 3:30 p.m.-5:00 p.m. (EDT) Wednesday, April 19, 2023, for the purpose of conducting the affairs of the Association, including:

Agenda Items (may be subject to change):

1. Call to order
 - Notices, Members, and proxies
2. President's remarks
 - Hybrid AGM procedures
 - Who can vote?
 - Accessing the 2022 Annual Report
3. In memoriam
4. Recognition of new Members
5. Approving the minutes of the Annual General Meeting for the 2021 fiscal year
6. Receive Annual Reports
 - Receive and consider reports of the President, Executive Director & Registrar, Auditor, and Committee Chairs for the fiscal year December 1, 2021, to November 30, 2022
7. Auditor's Report and Financial Statements
 - Receive the audited Financial Statements as of November 30, 2022
8. Appointment of Association Auditor
 - Report Council's appointment of the Auditor for the fiscal year ending November 30, 2023
9. Concluding the Annual Report
 - Thank you to the sponsors and exhibitors of the 2023 Annual Conference.
10. Confirming and approving the acts and procedures of Officers and Councillors
11. Business highlights in 2022
12. 2024 Annual Conference
 - Location
 - Acknowledging the conference organizing team
13. Termination of the Annual General Meeting

If you are eligible to vote and are unable to attend this meeting, please complete the Instrument of Proxy (next page) and return it to the OPFA office.

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

INSTRUMENT OF PROXY

I, _____
(Name of Member) (Member number)

of

(address of Member)

Being a Member of the Ontario Professional Foresters Association hereby appoint:

Chris McDonell, R.P.F., of Callander, Ontario
WHOM FAILING
Peter Nitschke, R.P.F., of Stirling, Ontario
OR

_____, (_____) of _____
designation

as my proxy to vote on my behalf at the
Annual General Meeting of the Members of the Association
to be held virtually and in person at 3:30 p.m. (EDT) Wednesday, April 19, 2023.

Dated this _____ day of _____, 2023 at _____

(signature of Member)

IF YOU ARE NOT ABLE TO ATTEND THE ANNUAL GENERAL MEETING, PLEASE RETURN THIS PROXY TO THE OPFA OFFICE by 2:00 p.m. (EDT) Friday, April 14, 2023.

Email: opfa@opfa.ca, Fax: (905) 877-6766, Mail: 201 - 5 Wesleyan St., Georgetown, Ont. L7G 2E2

Grey Areas

SML
Steinecke Maciura LeBlanc
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A COMMENTARY ON LEGAL ISSUES AFFECTING PROFESSIONAL REGULATION

Measuring Regulatory Performance Part 2 – Less Common Features

by Rebecca Durcan
January 2023 - No. 274

How should regulators measure their regulatory performance? As noted last month, we were surprised at a [newspaper reporter's observation](#) that securities regulators were less effective regulators because they obtained lower fines and less prison time than in previous years.

We have conducted a review of the most recent annual reports (all for 2021) of ten Ontario regulators. Five were for regulators of health professions and five were for regulators of other professions. We selected a mix of larger, medium and smaller sized regulators. Our goal was to identify what objective measures of performance the regulators highlighted in their annual reports.

In Part 1 we examined the more common or recurring performance measures contained in regulatory annual reports. In this Part we will look at less frequently used measures of performance that some regulators chose to publish.

Demographic Data

Demographic data about a profession is not a performance measure in itself. However, the data can be relevant to assisting policy makers in workforce planning (e.g., age range, full or part-time practice, areas of practice). Five of the reports provided at least some of this sort of information.

In addition, some EDI data (e.g., race, gender, age, country of education) can be relevant to equity, diversity, and inclusion initiatives. Three of the reports provided this information, again to varying degrees.

Inquiry Response Times

One of the reports contained data on response times for inquiries from registrants or the public. For example, what percentage of inquiries were responded to within 24 or 48 hours.

Another report contained data on the average time callers to their call centre were placed on hold. The regulator reported a significant increase in wait times that was well over its target prompting a discussion of its origin and measures taken to address the concern.

Another report did not contain this information but provided the total number of inquiries received and responded to by the practice advisor to registrants (i.e., a throughput number). Another report indicated an enhanced commitment from two-days to one-day response times but did not report on its success.

Communications

Four of the reports set out statistical information about the effectiveness of their communications such as the frequency with which messages from the CEO were opened, or the number of social media followers, impressions, and engagements. One regulator provided detailed statistics of coverage of its activities by print, broadcast and online media and the number of media inquiries. Most regulators probably have at least some of this data but did not consider it worthy of inclusion in their annual report.

Board Performance

One of the reports contained interesting measures of the performance of the governing Board. Examples included dashboards on percentage of Board members who attended meetings, percentage of Board members who attended orientation sessions, whether the Board assessed the CEO's performance, the hours of continuing education provided to Board members, and an evaluation of whether the Board

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members accurately responded to questionnaires about their understanding of their public interest role. Most of the dashboards for this portion of the report contained targets that the regulator was attempting to achieve.

Regulatory Performance

As noted in Part 1, all of the health regulators are required to report on a government-required College Performance Measurement Framework (CPMF). In addition, one of the regulators has developed its own voluntary performance measurement framework that uses criteria analogous to that used by the Professional Standards Authority of the United Kingdom. The regulator assessed whether it has met the twenty standards (e.g., Regulation is proportionate to the risk of harm being managed).

Other Unique Features

Some of the reports contained additional measures of performance that were not found in the other reports.

One regulator had a link to separate report on its EDI initiative. That report contained information about the number of visits to the EDI page on its website compared to total visits to its website (0.03% of total site traffic). The report also gave the number of pageviews of its five EDI cover stories in its newsletter, which figure was more than six times the number who had visited its EDI page. One could describe this kind of reporting both courageous and informative.

One of the reports limited the information reported to a single theme (i.e., how the regulator is strengthening the health care system, especially during the pandemic).

As noted in Part 1, one of the reports was in a webpage format with multiple links to specific documents. The cumulative report was hundreds of pages long. It was quite difficult for someone not

familiar with the organizational structure to navigate or to locate specific information. However, there were scores, if not hundreds, of performance measures to be found on many aspects of its operations.

Another regulator contained statistics of the use of online communities it had set up, including the number of active users, the number of users who had posted discussions, and the number of volunteers that were involved.

One of the reports contained information about its privacy improvements including a 52% reduction in boxes of paper stored off-site.

Another regulator reported on its commitment to providing services in French. Interestingly, despite its receiving over a hundred thousand calls, only 15 were in French. In addition, despite receiving over 2000 complaints, only one was in French.

Conclusion

Regulators continue to work towards trying to identify and publish meaningful measures of their performance. The regulators' annual reports are an intuitive place in which to publish these statistics. However, there is little consensus in identifying which performance measures are relevant, useful, and quantifiable. Much more work needs to be done before consistent and meaningful reporting can be provided by regulators.

In the meantime, regulators will continue to provide qualitative reporting and, occasionally, rely on third party reviews.

To see the reports themselves, go to:

- AOLS https://www.aols.org/site_files/content/pages/resources/reports/2021-annual-report.pdf
- CMLTO http://cmlto.com/images/stories/Resources/CollegePublications/AnnualReports/cmlto_ar%202021_web.pdf
- CMO <https://www.cmo.on.ca/wp-content/uploads/2021/09/CMO-Annual-Report-2020-21.pdf>
- CNO <https://www.cno.org/globalassets/1-whatiscno/annualreport/cno-2021-annual-report-en.pdf>
- COptomO <https://collegeoptom.on.ca/wp-content/uploads/Annual-Report-2021.pdf>
- CPSO <https://viewer.joomag.com/annual-report-2021/0389290001652738123?short&>
- HRP A <https://hrpa.s3.amazonaws.com/uploads/2022/05/HRPA-2021-Annual-Report.pdf>
- LSO <https://lso.ca/annualreport/2021/home>
- OAA <https://oaa.on.ca/publications/detail/2021-OAA-Annual-Report>
- RECO <https://www.reco.on.ca/wp-content/uploads/RECO-Annual-Report-2021-vF.pdf>

Grey Areas

A COMMENTARY ON LEGAL ISSUES AFFECTING PROFESSIONAL REGULATION

SML
Steinecke Maciura LeBlanc
Barristers & Solicitors

Manipulating Online Reviews and Ratings

by Natasha Danson
February 2023 - No. 275

Shocking allegations against a Washington State cosmetic surgeon and clinic (Allure) could challenge regulators of professions to consider their role in the prevention of the manipulation of online reviews and ratings by their registrants.

The Washington Allegations

The State's Attorney General [alleges in the legal proceedings](#) (the allegations have not been proved in court), that the clinic:

- Required patients to sign non-disclosure agreements (NDA), as part of the initial package of documents before they saw the surgeon, restricting them from posting negative reviews;
- Offered patients cash and free services if they took down their negative reviews (which required signing a further NDA agreeing to pay up to \$250,000 damages for any breach);
- Threatening patients with a lawsuit for monetary damages if they refused to delete their negative reviews;
- Directing employees to post fake positive reviews using a VPN (virtual private network), to conceal its source, and using fictional online personas; and
- Using altered "before and after" photos to materially enhance the apparent results of procedures.

Interestingly, the proceedings are brought by the State rather than the regulator of the physician.

Context

The manipulation of online reviews and ratings has been observed generally for some time, including through posting of [fake reviews](#), [contractual gag clauses](#), [bartering or buying false reviews sometimes through a reputation management firm](#), and [purchasing negative reviews about competitors from brokers](#).

It is often extremely difficult for the victims of false reviews to [persuade the hosts](#) of the review (e.g., Yelp) to remove them.

Online reviews and ratings are obviously important to registrants from a business perspective, particularly to registrants who market their services directly to the public. However, online reviews and ratings also have regulatory implications. Poor reviews are often cited by complainants to bolster their concerns about registrants: [Complainant v. College of Physicians and Surgeons of British Columbia](#), 2020 BCHPRB 83 (CanLII). Indeed, regulators sometimes look at internet reviews as a part of their investigation of registrants: [Law Society of Ontario v. David](#), 2021 ONLSTH 98 (CanLII).

Current Regulatory Experience

There are only a few reported cases of Canadian regulators addressing online reviews and ratings or similar issues.

Many of the existing cases deal with advertising directly or indirectly made by registrants that are misleading or unverifiable. For example, many regulators treat client testimonials, or before and after pictures, as inherently misleading or unverifiable: [D.R.E. v D.Y.](#), 2015 CanLII 58798 (ON HPARB).

There are also some cases in which inappropriately facilitating misleading reviews have been alleged. For example, [J.R.G. v N.R.A.](#), 2019 CanLII 41253 (ON

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HPARB), is an unusual case where a negative review of a colleague with whom the registrant was having a dispute may have been placed online by a registrant's relative. The registrant was cautioned.

Similarly, there have been a few cases in which retaliatory action for a negative review was addressed. In [Wakely v Aziz](#), 2022 CanLII 87252 (ON HPARB), a veterinarian received "advice" from the regulator relating to a social media posting responding to a negative online review by a relative of a client. The regulator encouraged the veterinarian to be more circumspect in their postings, even when defending their actions, and to refrain from publishing confidential information when responding.

Similarly, using social media to make provocative, demeaning, or threatening comments about a registrant's regulator or peers can result in discipline action: [Zuk v Alberta Dental Association and College](#), 2018 ABCA 270 (CanLII), [leave to appeal refused by the SCC](#).

In some contexts there can even be said to be an obligation on registrants to monitor other websites in order to seek corrections if they inaccurately refer to the registrant's status: [D.G. v J.H.](#), 2016 CanLII 47 (ON HPARB).

Implications for Regulators

The first issue is how much of a priority regulators should assign to the issue of manipulation of reviews and ratings by registrants. Most regulators emphasize health and safety and harm to clients and members of the public. One can argue that "advertising" related concerns can divert resources from these important activities. Often such complaints turn out to be registrant-to-registrant disputes where the essence of the concern is unfair competition by colleagues.

However, as the Allure scenario illustrates, such conduct can have significant implications for clients

who may choose a registrant based on such reviews and ratings rather than on the quality of their services. A focus by registrants on image over substance and the covering up of less-than-good results creates inherent risks of harm to clients. In addition, some such manipulation techniques are so dishonest as to harm the reputation of the entire profession and undermine public confidence in the regulator.

The Allure example also illustrates how expensive these investigations can be.

Another issue is where to draw the line between appropriate reputation management and improper manipulation. Few would fault a registrant for requesting (often futilely) that the host of the review or rating remove a false posting. In addition, approaching a client who posted a negative review to address their concerns could be proper in some circumstances (e.g., where there are no threats and no inducements). However, to what degree should registrants be able to respond to criticisms made of them on the internet. As the [Wakely v Aziz](#) case indicates, such a response may be unprofessional or result in the disclosure of confidential client information. Also, to what extent should registrants be responsible to monitor the reputation management services they retain?

For some regulators, a first step may be to develop a guideline to clarify the expectations upon registrants. Such a guideline can assist registrants in understanding the considerations and boundaries that apply in this area.

For other regulators it may be appropriate to develop a plan for addressing inappropriate manipulation, including some additional training for investigative staff, adding items to inspection or peer review program checklists, CPD offerings, and assessing when a referral to other enforcement agencies (e.g., the Competition Bureau, the police) might be indicated.



More broadly, a regulator might look strategically as to its role in becoming a respected primary source of information for consumers. A centralized and well advertised public register within each province or even within Canada could be an effective regulatory strategy. In the longer-term, regulators might even develop their own reliable and trusted client-review and rating system for registrants.

The manipulation of online reviews and ratings by registrants is not an issue that is going to go away for registrants.

Member News

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

Lesley Phillips

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)

Aileen Duncan
Shari Hoggart
Luke Kwong
Christian Lachapelle
Robyn Northway
Jordan Rolph
Michelle Kratky
Claire Leuty

New Student Members:

Andrej Askovic
Breanna Atkinson
Piumi Godakanda
Isaac Mazer
Sangeetha Subhash

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

New Inactive Members:

Brian Campbell
Ronnie Huang

New Life Member:

Joseph Kapron

New Non-Resident Member:

Mitchell Long

Resigned, Full Members:

Colin Arlidge
Dan Drennan
Brendan Ross

Resigned, Inactive Members:

Ben Bartlett
Thomas Case
Martin Kaiser
Rick Monzon

Resigned, Non-Resident Member:

Dan Coombs

Resigned, Provisional Members:

Ayumi Akimoto
Sishir Gautam
Normand Genier
Erik von Luczenbacher

The following person is not entitled to practice professional forestry in Ontario and is no longer a registrant of the OPFA:

Membership Cancelled For Administrative Reasons:

Shawn Mizon

Continuing Education

Webinars and Other Resources

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

- Canadian Institute of Forestry (CIF-IFC) - Offers considerable resources and ongoing lecture series
<https://www.cif-ifc.org/e-lectures/>
- Ontario Ministry of Natural Resources and Forestry. MNR 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/ccforestconnect/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>
- Eastern Ontario Model Forest LDD Moth Webinar
Link to the recording on YouTube Channel: <https://youtu.be/U4BZOM8GtyU>
- Ontario Woodlot Association Oak Wilt Webinar
Link and passcode to the recording: https://us06web.zoom.us/j/78A83oQMbcIIZKbH5uHqHtP7xLfEJ8l8mNJE7U4iGx2nZuFp.3LYLtY_SIGeCzRor
Passcode: 8Mnwb+@J

- Ontario's Centre for Research & Innovation in the Bio-economy (CRIBE) - Forest EDGE. Decision support tools, projects and case studies.
<https://www.nextfor-forestedge.ca/>
- Canadian Partnership for Wildland Fire Science (Canada Wildfire). Partnership members include: the Canadian Forest Service, Alberta, BC, Northwest Territories, Saskatchewan and the University of Alberta. Originally focused on western Canada, it has expanded and includes information and research of interest to forest managers elsewhere in Canada.
<https://www.canadawildfire.org/>
- Invasive Species Centre webinar series
<https://www.invasivespeciescentre.ca/learn/webinar-series/>
- PlanIt Geo Urban Forestry Webinars
<https://planitgeo.com/urban-forestry-webinars/>

Coming Events

2023 OPFA Annual Conference and AGM
Professional Foresters Adapting Through
Collaboration and Innovation
April 18 to 20, 2023
Peterborough, ON
[https://opfa.ca/about-us/event-list/#!
event/2023/4/18/2023-annual-conference-and-agm](https://opfa.ca/about-us/event-list/#!event/2023/4/18/2023-annual-conference-and-agm)

Ontario Woodlot Association Annual Meeting,
Conference and Tour 2023
April 25 to 26, 2023
Niagara-on-the-Lake, ON
[https://www.ontariowoodlot.com/event-5103031?
CalendarViewType=1&SelectedDate=4/11/2023](https://www.ontariowoodlot.com/event-5103031?CalendarViewType=1&SelectedDate=4/11/2023)

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