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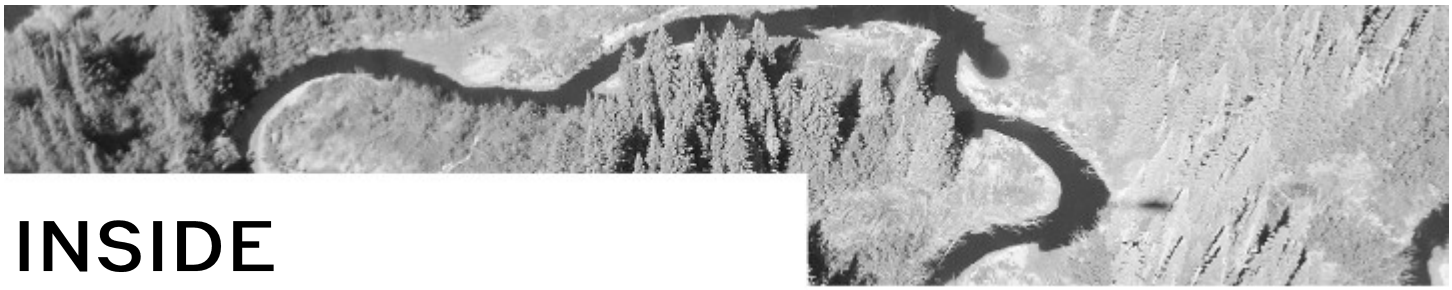
Forestry, Development and Other Disturbances

ALSO INSIDE



INSIDE

THIS ISSUE

EVERY ISSUE

The Professional Forester is published quarterly by and for members of the Association, as well as those interested in the profession of forestry in Ontario.

Unless specifically stated, views and opinions expressed do not necessarily represent those of the Association, its Council or the employers of members.

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The East West Tie Transmission Project

John Harvey, R.P.F.
Charles Alderson, R.P.F.

The East-West Tie (EWT) transmission project is a proposed 450 km double-circuit 230 kV transmission line connecting the Lakehead Transfer Station in the Municipality of Shuniah near the city of Thunder Bay to the Wawa Transfer Station located east of the Municipality of Wawa. It will also connect to the Marathon Transformer Station.

The Project is required to ensure the long-term reliability of the electricity supply in northwestern Ontario. Industrial activities in the Northwest, particularly in the mining sector, are expected to drive strong electricity demand growth in the coming decade.

In 2013 NextBridge Infrastructure (NextBridge) was designated by the Ontario Energy Board (OEB) to develop the EWT line and to file a Leave to Construct (LTC) application. NextBridge, the proponent for the Project, has committed to consulting with all interested community members, First Nations and Métis, elected officials and municipal staff, agencies, landowners and other stakeholders in a clear and mutually respectful manner throughout the life of the Project

Prior to the first shovel in the ground, a rigorous Environmental Assessment (EA) process had to be followed.

During the EA, NextBridge conducted environmental studies, and met with agencies, community representatives, First Nations and Métis communities, and members of the public to determine the potential positive and negative impacts of the Project on the people, places, businesses, economy and natural environment in the study area.

Members of the community, public, landowners, stakeholder groups, government agencies, and other interested persons were encouraged to participate in the process.

Construction of the project began in September 2019 and is targeted to be complete by the end of 2021.

One forestry contactor that has been actively involved in the development of the EWT is Kabi Lake

(Continued on page 4)

Photo credit: Charles Alderson

(Continued from page 3)

Forest Products. The construction project with Valard (Nextbridge) is for clearing the area of wood. Kabi Lake is a major part of the clearing and road construction around the White River area. Making log products is not necessary to fulfill the contract, in fact large portions of the line do not contain merchantable size wood. Additionally, areas near waterways and wetlands are cleared by hand felling and the debris is not utilized, it is left laying on the ground. Kabi Lake has been fortunate to create some log products according to the specifications from the local sawmill, White River Forest Products

Clearing the area for the towers and power line is a construction project and has comparatively different timelines and procedures than traditional forestry operations and can be challenging logistically. Roads, for example, end at a tower base and permitting limits the flexibility on road location and development. There is no room for turnarounds to be constructed for the haul to pick up the logs and the wood has to be forwarded to the original primary roads. In rare cases the logs are waiting for a log loader to load onto the haul trucks, however it is not ready for a proper truck haul. Most of these are just a half a tier to half a truck worth of logs.

Kabi Lake's goal is to negotiate with the construction contractor to be paid to move the logs and for the mill to pay the haul truck for increased load times.

As EWT development proceeds further from White River Forest Products and into rougher terrain the plan is to burn the debris.

Kabi Lake's forest operations have benefited from this additional work, Kabi Lake ordered new skidders and bunchers to complete the project and they have transitioned into regular harvest operations for Columbia Forest Products (poplar veneer), White River Forest Products (SPF studs and sawlogs) and Hornepayne Lumber's cogeneration materials (birch and poplar logs).

References:

https://www.ontario.ca/page/east-west-tie-transmission-project

http://www.nextbridge.ca/project-info

Photo credit: Charles Alderson

A Spatial Database of Ontario Fire and Harvesting Disturbances

Tarmo K. Remmel, York University
Marc Ouellette, Science and Research Branch, Ministry of Natural Resources and Forestry

Given the economic and ecological values tied to Ontario's vast forest resources, monitoring and accounting of fire and harvesting activities in the managed forest area are critical to developing long term forest management strategies. To that end, we developed a spatiotemporally comprehensive and open data set of annually detected disturbances to support improved strategic and operational forest management planning and research initiatives.

Accurate disturbance information supports:

- legally mandated annual reporting on the state of provincial forests that feed into national reporting,
- strategic and operational land use planning,
- research supporting the development of forest policy, guides linked to emulating natural disturbance, and sustainability.

In the boreal forest, fire and forest harvesting (and the associated road network) are the primary disturbances. Fire pressure is the result of a shifting function that connects human activity, fire suppression effort, the accumulation of forest biomass as a fuel source, and a changing climate. Similarly, revisions to forest legislation, policies, and management guidelines have dramatically changed the spatial and temporal patterns of harvesting. Expanding harvesting pressure produces a corresponding expansion of access road networks. Records of each disturbance type are needed to inform forest planning.

The challenge

The collective body of information assembled and reported on boreal forest disturbances has many limitations, but three stand out:

- lacking standards for the assembly or portrayal of annual historical disturbances,
- historical disturbance coverage has many gaps in space and time,
- data is generally presented deterministically and without estimates of uncertainty.

Collectively, the fragmented coverage, database inconsistencies, and absence of methodological details made the reliability and defensibility of the existing information weak and has led to disputes among land management agencies, the forest industry, and environmental non-governmental organizations.

Our solution

We compiled a spatiotemporally comprehensive data set of annually detected disturbances that is explicit in assumptions, definitions, methods, and biases of construction, representing the period 1972–2019. After each year, newly detected disturbances from the previous year will be appended to the existing archive. We emphasize repeatability throughout our modular workflow (Figure 1). Our process ensures that all decisions are clearly documented and, if necessary, could be adjusted to produce different versions of the database when new science, understanding, thresholds, or decision-making criteria become available. *(Continued on page 6)*

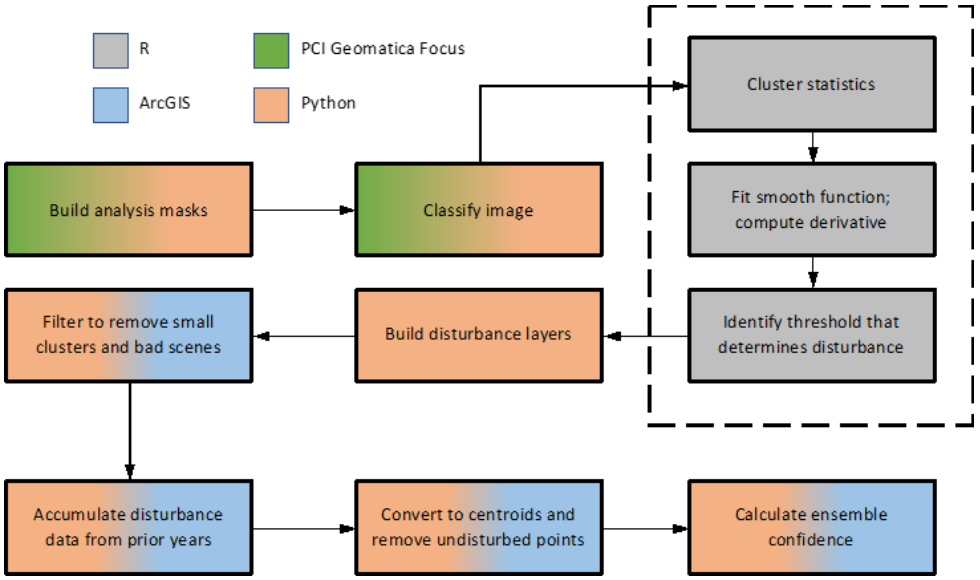

Figure 1. The modular workflow for producing annual layers of the disturbance database.

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Our approach

Our methods were adjusted to accommodate for the specific satellite sensor responsible for imaging, which correlated loosely with blocks of years. The production of annual disturbance layers relies primarily on spectral characteristics and the ability to identify signatures associated with fire or harvesting disturbances relative to undisturbed locations. Landsat scenes were initially vetted for obvious quality and contamination breaches. For usable images, cloud and shadow masks were produced while atmospheric correction was applied to all Landsat Multispectral Scanner System imagery. Results were combined into a master exclusionary analysis mask incorporating areas with water or bedrock land cover.

We performed an unsupervised classification on individual scenes to identify clusters of spectral similarity that became training signatures for subsequent maximum likelihood classification. Where local training was not possible, we implemented logic for reaching further in space and time to identify the most representative training signatures. We identified critical points of inflection for polynomial functions fit to the clusters that separated disturbed from undisturbed cases. Results were converted to points representing about 1.44 ha; we did not map explicit disturbance boundaries. The points are overlain with existing disturbance mapping data from provincial and national sources to compute ensemble agreement that is included as an attribute at each location and can be mapped (Figure 2).

The value added and access

This dynamically growing data archive embodies both current and historical interest towards understanding and interpreting disturbance pressure in this vast region of natural resources. Given the extent, remoteness, and the historical aspect to this data, rigorous field validation is not possible, thus we provide an ensemble confidence label at each location. Considerable consultation and scientific thinking went into the production of this data product to ensure transparency and reproducibility. Our modular and spatial approach permits extensions, updates, testing, the inclusion of new data sources and disturbance types, or refinements to any component of our processing logic. Our report that provides all of the specifics and the data set can be downloaded from [www.borealdb.ca.](http://www.borealdb.ca)

Ouellette, M., T.K. Remmel and A.H. Perera. 2020. A spatial database of historical wildfire and timber harvesting in the boreal Area of the Undertaking of Ontario: The methodological framework. Ontario Ministry of Natural Resources and Forestry, Science and Research Branch, Peterborough, ON. Science and Research Technical Report TR-37. 31 p. + appendix

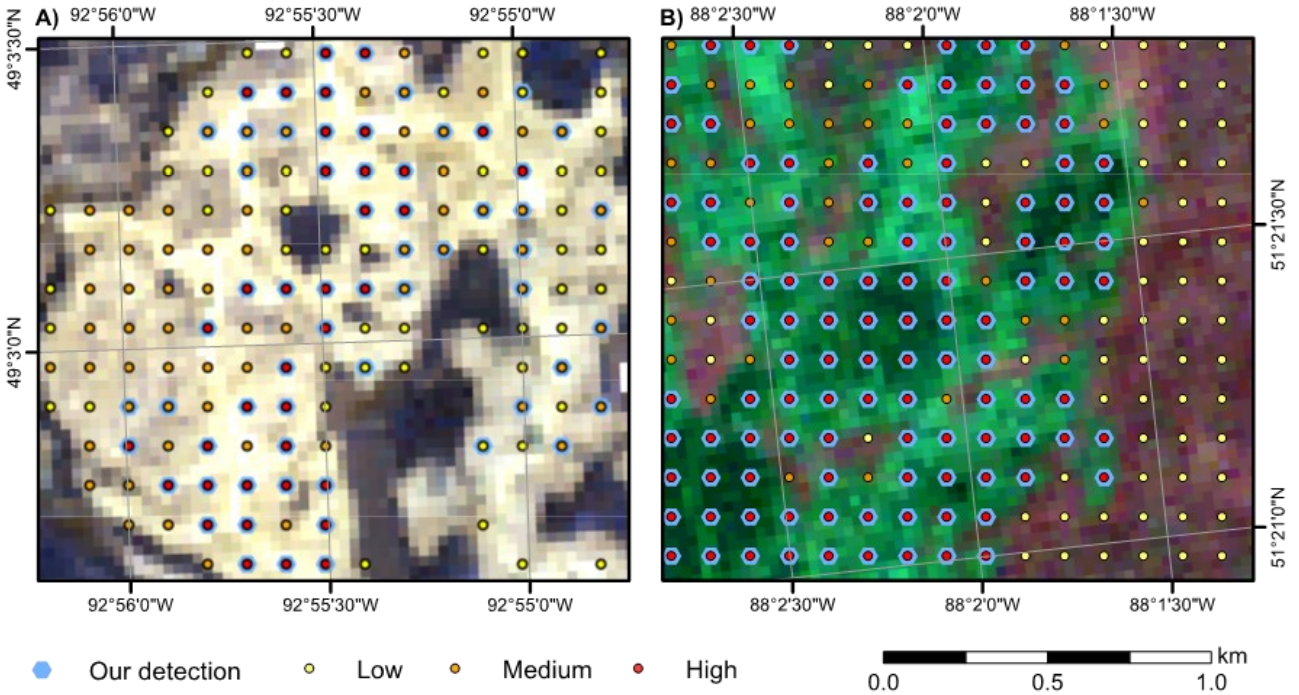

Figure 2. Examples from (A) harvested and (B) fire sites to illustrate the mapping and confidence data. Background is false colour infrared imagery from the Landsat ETM+ sensor.

Development, Fragmentation and Deforestation in S. Ontario – a Role for the R.P.F.?

Michael Rosen, R.P.F.

Historical Context

In southern Ontario (Site Region 6E and 7E) "Development" is most commonly seen as "the process of converting land to a new purpose by constructing buildings…." (Wikipedia). Throughout the 20th century southern Ontario's landscapes have undergone a massive transformation - from a mostly forested one, to an agricultural/urban one. In the pre -European contact scenario, southern Ontario probably had a forest cover of about 90% interrupted only by the occasional wetland, savannah, prairie/alvar, wildfire and Indigenous agricultural area (Puric-Mladenovic, 2020)

Today's southern Ontario landscape may look devoid of forest but alas, this was not the only time that this landscape had undergone such a radical change in forest cover. One has only to look at the photos of rural, southern Ontario from the early 20th century to understand what was happening to the landscape. Encouraged by government incentives to "settle the land", millions of hectares of forest were removed. Sometimes these removals took place on unsuitable soil types (ranging from sandy "blow sands" to poorly drained "muck" soils) converted to agricultural use for 1-2 generations before they were abandoned as being unproductive. By the late 1800's/early 1900's forest cover dropped dramatically from 90% to about 11% (Puric-Mladenovic, 2020) with catastrophic environmental effects: flooding and erosion (ultimately resulting in the creation of Conservation Authorities), deadly wildfires, water shortages and wildlife disappearances were rampant. Municipal politicians soon called on the provincial government to "do something". Through the vision of people such as Edmund Zavitz, Ontario's first Provincial Forester and E.C. Drury, Ontario's 8th Premier (1919-1923), a provincial system of tree nurseries and programs were created to ameliorate these problems. Today these "Agreement Forests" are wonderful examples of forest restoration, managed for many uses by foresters of municipalities and the conservation authorities.

Norfolk County Wastelands, 1912 (Archives of Ontario, photo taken by E.J. Zavitz).

Today, the amount of forest cover in southern Ontario is about 26%, unevenly distributed so that many parts of southwestern Ontario are presently sitting at the 3% level (Hounsell, 2020). Within that 26%, approximately 1/3 was never cleared, leaving the other two-thirds in various stages of early to mid -successional tree species (Puric-Mladenovic, 2020). This is an issue of interest for R.P.F.'s who understand forest cover's critical role for wildlife habitat, for clean water and air, for recreation and yes, for timber products. One has only to look at the population of the Greater Toronto Area from 1900 (210,000) to 2020 (6,197,000) to realize how much forest land (and then agricultural land) has been converted into houses, factories, shopping centres, roads and all the other infrastructure needed to service a major, growing population. This conversion of forest when coupled with the challenges of climate change and the marked introduction of invasive forest species is producing what many claim to be an unhealthy, less diverse and fragmented forested landscape unparalleled in Ontario's history.

(Continued on page 8)

(Continued from page 7)

Forestry, Municipal Planning and Fragmentation

This story parallels the changes to the role of the R.P.F. and is a personal one, as I was the OMNR Management Forester for York Region (and Toronto) in 1988, a period of wholesale removal of thousands of hectares of beautiful forests. My desk was piled high with dossiers of woodlots designated for removal by developers, guided by municipalities: whose Official Plans were sadly outdated, whose politicians were strongly "influenced" by the development industry and whose provincial policy statements were antiquated and not useful. I was part of the process - being asked for my "professional opinion" on the value of maintaining these forests. I had no training in municipal planning and not much in ecology, so after I gleaned from the Forest Resource Inventory (FRI) that the forest was of high quality, I was asked to send a standard paragraph about, "how important forests such as this are to the wood industry of southern Ontario". It took a planner from the Town of Richmond Hill to return my letter marked in his own pen in which he said, "Wood industry - what are you talking about? Do you realize this is in Richmond Hill?" A discussion with my supervisor ensued – we eventually looked at "other values" attributable to woodland loss and eventually participated in defining "significant woodlands".

Landscape near Ottawa, ON showing forest fragmentation. Photo credit: Michael Rosen.

The issue of forest fragmentation is primarily an ecological concern: how can organisms disperse and make their way through an increasingly fragmented landscape. As more and more development is allowed, more "edge" is created in which certain species of wildlife thrive, to the detriment of others that require large, contiguous forests with forest "interior". Birds (a well-recognized indicator group for ecosystem health) have been widely studied. The decline of species such as the Cerulean warbler, ovenbird and whip-poor-will (not to mention mammals such as black bear, eastern elk and grey wolf) are clear indicators of forest loss (Elliott, 2020). The federal government publication How Much Habitat is Enough is an excellent treatise on the amount of habitat needed to support ecological functions. It points to 30% forest cover as being, "... the minimum forest cover threshold" - a far cry from the values seen in central and southwestern Ontario. The major changes in forest cover that occurred at the time of settlement (late 1800's) relegated many of these species to the remaining larger patches that more recently have continued to decline, indicating that forest loss and fragmentation is further eroding the suitability of these habitats as *refugia*.

The retention of forests and trees in southern Ontario is really a function of the planning process. The Official Plan is a long-term planning guide required by the Planning Act and reviewed by the province every five years with public consultation which in theory, reflects the character of the community. The Natural Heritage Reference Manual explains the Provincial Policy Statements including the one which defines "significant woodlands" and provides the rationale for woodland protection. It also includes the need to develop "Natural Heritage Systems", which provide the context for woodland protection and restoration. Other plans (which feed the Official Plan or are a result of the Official Plan) include watershed (and sub-watershed) plans, secondary plans, plans of subdivision and site plans. These *may* have conditions where retention of trees may be required. The Natural Heritage Manual explains the rationale for retaining forest cover on the landscape and describes a logical approach based on forest cover levels. The Manual also points out that in the realm of wildlife habitat (and in particular forest birds) there are a number of species that are

(Continued on page 9)

(Continued from page 8)

part of the ecosystem but cannot maintain healthy populations ("function") below 30% forest cover.

Once an Official Plan designates an area for "development" there may be little protection for forest cover except for municipality-sanctioned "Tree Protection Plans" in which the developer must preserve individual trees within the developed lot. Tree bylaws under the Municipal Act "may" be passed by the municipality (most municipalities in Ontario *do not* have tree bylaws on private land) and are used to prevent the clearing of trees prior to planning approval under the Planning Act.

In all this discussion, industrial agriculture tends to very much be the "elephant in the room". With the advent of corporate (as opposed to family) ownership, larger machinery, and increased drainage, woodlots and in particular hedgerows (which play a major role in connecting forest fragments) have been lost representing a net loss for forests, particularly in southwestern Ontario.

Deforestation and the Professional Forester

Although it is difficult to track, there was probably over 10,000 ha lost to deforestation in the 1980's and about 8,200 ha lost in the 1990's. From 2000-2011, 7,115 ha of forested land was deforested in southern Ontario - about half of this deforestation occurred as a result of agricultural conversion, with one third related to urban development (Puric-Mladenovic, 2020). Unfortunately, this deforestation was accompanied by a withdrawal of government-supported afforestation programs with the result being that the rate of deforestation has been consistently greater than the rate of afforestation, resulting in a continual net loss of forest.

In other provinces (notably British Columbia) there is a Zero Net Deforestation Act to counter the effects of deforestation due to agriculture, urbanization, road construction and other pressures.

Foresters are quick to correct people that harvesting timber, even under the clearcutting system is not "deforestation". Should we not be expressing alarm at the continual problem of real "deforestation" in Ontario?

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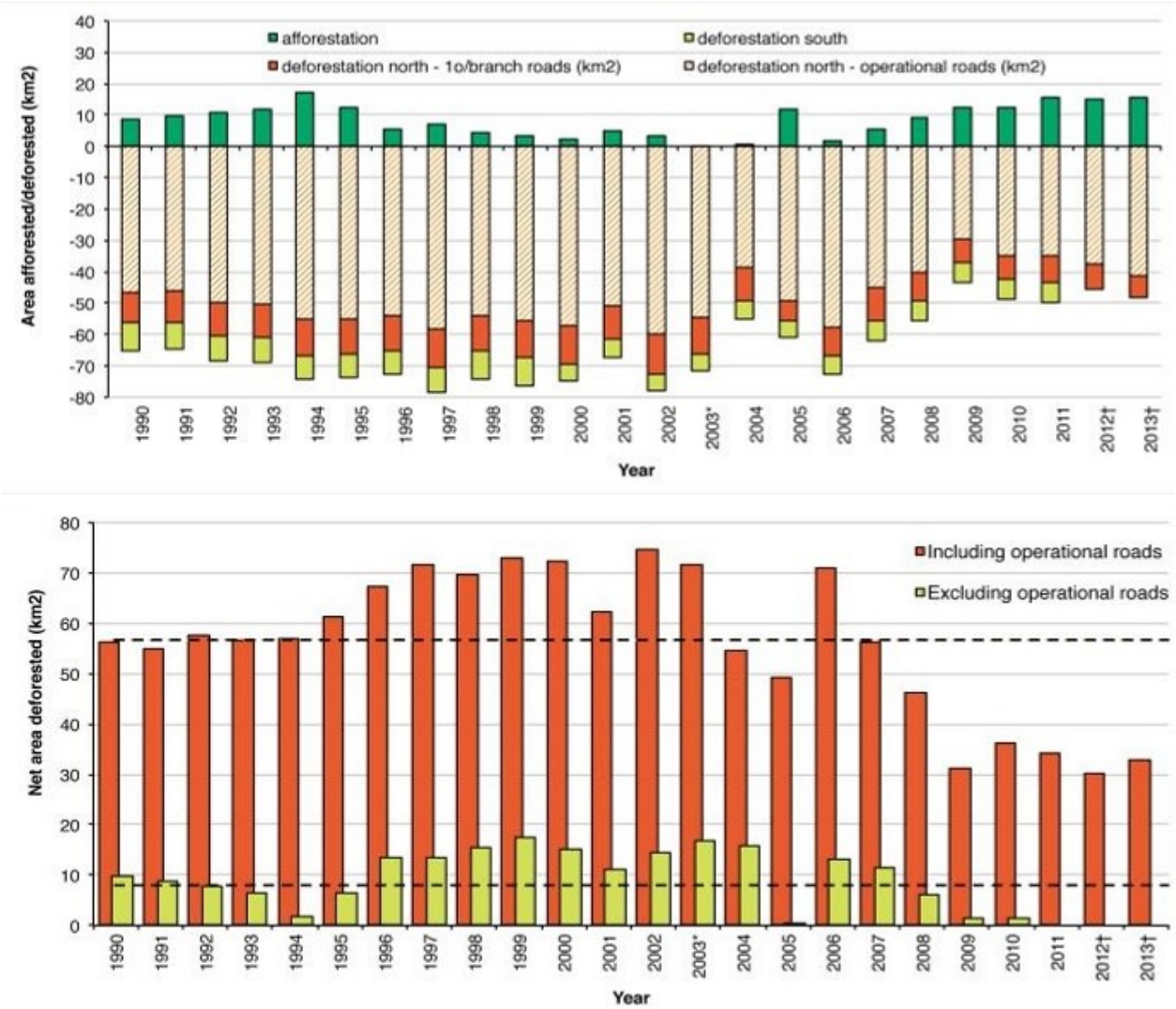

Deforestation Rates in Ontario (State of Ontario's Biodiversity, Ontario Biodiversity Council, 2015).

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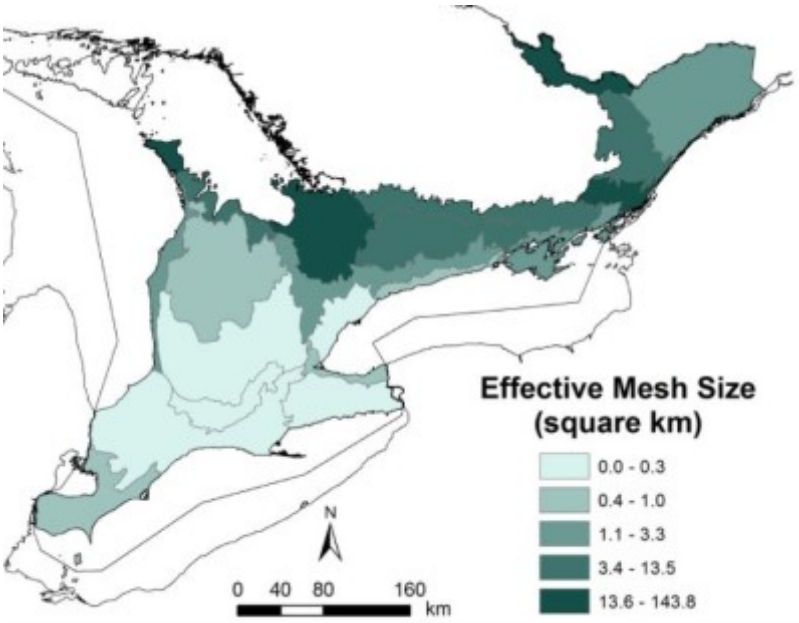
It occurs to me that the present political trend in Ontario is to remove many of the safeguards for woodland protection as a means of encouraging even more development. In 2019, Bill 108 ("The More Homes, More Choice Act") was passed with little consultation and was (by definition) seen to facilitate more urbanization of southern Ontario's lands. In 2020, Bill 197, an omnibus bill was passed (again with little consultation) to make fundamental changes to the Planning Act, the Environmental Assessment Act and other environmental legislation, with the goal of again removing the environmental "restrictions" to unchecked urbanization of Ontario. The question is not whether to urbanize or not - urbanization will continue regardless. The question is how Ontario chooses to urbanize. How to urbanize in a way that does not further imperil our precious southern Ontario woodlands (and wetlands and grasslands).

Although not easy, the Professional Forester has a role to play in pointing out the consequences of these policies and actions and their effects on Ontario's forests, including deforestation, namely:

- To improve our profession's knowledge of the municipal planning process and to participate in that process;
- To explain to decision-makers the importance of protecting and improving the dwindling, forested land base of southern Ontario;
- To support the creation of government-sponsored afforestation programs to connect woodland fragments and to bolster forest cover at a scale greater than the present;
- To suggest legislation in which net deforestation is discouraged and is in turn met with compensatory planting programs to achieve a net gain in forest cover (even though replacing mature woodlands with young plantations is not a true substitution)



Mesh Sizes in S. Ontario – a measure of habitat patch size, dark having larger more connected patches (State of Ontario's Biodiversity, Ontario Biodiversity Council, 2015).

Sources:

How Much Habitat is Enough? (Canadian Wildlife Service, 2013)

Natural Heritage Reference Manual (MNR, 2010)

State of Ontario's Biodiversity (Ontario Biodiversity Council, 2015)

Zero Net Deforestation Act (Province of British Columbia, 2010)

Ken Elliott, R.P.F. (pers. comm., 2020)

Steve Hounsell (pers.comm., 2020)

Peter Kuntz, R.P.F. (pers.comm., 2020)

John McNeil, R.P.F. (pers.comm., 2020)

Danijela Puric-Mladenovic (pers.comm., 2020)

Forestry and Development in Dufferin County

Jenny Li, Planning Coordinator, County of Dufferin

The Dufferin County Forest is made up of fourteen tracts located throughout the County, totaling 1,066 hectares (2,636 acres). The Main Tract is located north of the hamlet of Mansfield in the Township of Mulmur. Planning and development activities in relation to urban growth and expansion have an impact on the forest. Land use planning processes need to incorporate policies on forest management and conservation in order to protect this important asset. Dufferin County and its local municipalities utilize planning documents and policies, tree cutting/preservation and conservation bylaws and forest management plans to direct development activities away from the natural heritage features and to manage the forest.

Dufferin County Official Plan Policies in relation to trees and forest management

The County Official Plan Section 3.9.1 includes policies related to community design that through the review of development applications local municipalities will encourage tree retention or replacement. Moreover, Under Section 4.2 Agricultural Areas policies of the County Official Plan (2017), the permitted uses include agro-forestry, forestry and conservation uses. Section 4.3 Rural Lands says that the primary use of land will be for the management or use of resources, such as forestry. Furthermore, the County's Official Plan includes important policies on key natural heritage features and functions, which is also mapped in schedule E of this document. In particular, development and site alteration will not be permitted in significant woodlands unless it has been demonstrated that there will be no negative impacts on the natural features or their ecological functions. This is usually done through the preparation of an Environmental Impact Study/ Assessment (EIS).

Dufferin County is currently undertaking the Official Plan Review also known as the Municipal Comprehensive Review (MCR) process to comprehensively update policies in the A Place to Grow-Growth Plan for the Greater Golden Horseshoe (2020). An important component to the MCR is the natural heritage system strategy. This is needed for Dufferin County to acknowledge and integrate the natural areas (including the County Forest) and establish complementary land use planning implementation guidance for the long-term sustainability of its natural heritage system and communities.

Local municipal Official Plan policies regarding forest resources

The local municipal official plans provide more detailed policy guidance with respect to the identification and protection of *natural features and areas*, and consistent with the policies of this Plan. For example, in the Township of Mulmur the municipality includes the Main Tract and five other County Forest tracts. Specifically, in Mulmur Township's Official Plan (2010), Section 5.20 Forest Resources outlines the importance of forest to the township for recreation, conservation and wood production purposes. Tree planting and reforestation are encouraged. In particular, new developments that require planning approval should preserve trees and wooded areas to the greatest extent possible and practical while ensuring negative impact and disturbance are minimized. The Township's site plan agreement includes detailed tree protection requirements and management in forested areas.

Dufferin County Forest Management Plan

Dufferin County Forest management planning involves a twenty-year management plan, a five-year operating plan and an annual report and work schedule. The County's 2021-2026 Forest Operating Plan was passed by Council on November 12th, 2020. The operating plan outlines how the County will achieve environmental, economic and social sustainability over the five years.

All the important plans outlined above at the County and local municipal level work hand in hand to protect and preserve the forest. At the pre-consultation stage it is important to outline the requirements of any new developments if it is adjacent to wooded areas and other significant natural heritage features, the expectations and studies that are required to ensure any negative impacts and risks are avoided and minimized.

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https://www.dufferincounty.ca/sites/default/files/planning/officialplanconsolidated.pdf

https://mulmur.ca/content/build/official-plan/2012-township-official-plan.pdf

https://www.dufferincounty.ca/sites/default/files/forest/2021-2026%20final%20operating%20plan.pdf

Tree Inventories, Arborist Reports and Tree Preservation Plans

Arben Pustina, R.P.F., Certified Arborist, TRAQ, BHA

Southern Ontario is the most densely populated area in the province of Ontario. Population growth requires more infrastructure (roads, highways, bridges, railways) and services for people that live in this area. This growth puts more pressure on the natural features and in particular trees, wildlife and forests. Many municipalities and regions in southern Ontario have approved by laws related to forest and tree protection, preservation and conservation.

Where specified in tree bylaws, it is mandatory for a new development to conduct a tree inventory, prepare an arborist report and a tree preservation plan. This report identifies the impact of the development on trees and recommends ways to mitigate and compensate for that impact. The first step is to delineate the boundaries of the project footprint (project drawings). The second step is the buffer around the project footprint which varies from 6 metres in an urban setting to 10-12 metres in natural areas. The project footprint and the buffer comprise the study area. It is very important at the design stage that the project designer works with the arborist and/or forester to minimize the impact on trees and to preserve healthy and heritage trees.

Tree inventory is the first step in preparing the report. Data about tree species, size (dbh), tree condition (trunk integrity, crown vigour and health), crown width (dripline), location of the trees in the study area (gps coordinates) and ownership, tree protection zone, recommended impact and status after the development (remove, protect, preserve) and comments (species at risk, bird nests, snag trees, hydro wires, existing structures etc.) are collected in the field in an Excel sheet (Tree Inventory Plan). After these data are collected, data analysis is the next step to identify species composition, percentage of the tree condition rating (very good, good, fair, poor and dead), number of trees to be removed, injured (protected) and preserved.

After the data analysis, the next step is to prepare the Arborist Report and Tree Preservation Plan as well as figures related to footprint of the trees and the project. Several pieces of legislation and by laws are considered when preparing this report from federal, provincial, conservation authorities, regional and municipal agencies. In particular the federal Species at Risk Act, Emerald Ash Borer Regulation, Migratory Birds Convention Act; the Ontario Endangered Species Act, Regulations of Developments, Interference with Wetlands and Alterations to Shorelines and Watercourses; Forest Conservation and Tree Protection By laws.

Application of the above legislation, regulations, and by laws is dependent on the species found from the tree inventory and the location of the project footprint in relation to natural features present in the study area. If species at risk, such as butternut trees are found within 25 metres from the project footprint, the Endangered Species Act and Ontario Regulation 242/08 is applicable. In this case a butternut health assessment and report are required. If ash trees are found during tree inventory and the area of the project development is within the Canadian Food Inspection Agency (CFIA) regulated area, then directive D-03-08 is applicable to prevent the introduction and spread of emerald ash borer within Canada. According to Migratory Birds Convention Act, migratory bird species and their nesting sites are protected from April 1 to August 31 which comprises their migration and breeding periods. If an active nest is found during development activity, the project in that area must stop and a buffer of at least 10 metres (species dependent) is required around the nest. If the project footprint falls into the regulated area of conservation authorities then the Developments, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulations are applicable. In these

(Continued on page 13)

(Continued from page 12)

situations, a natural features inventory and natural environment report is required as part of the permit application from conservation authorities.

The recommended impact on trees (protect, preserve, remove) will be determined when conducting the inventory and when preparing the Tree Preservation Plan (figure) if required by the regulations, tree protection by laws, and policies that exist in the municipality where the project will be developed and the location of the trees in the study area. Trees identified for removal are those that are inside the project footprint that will be removed to accommodate the development. Trees that will be injured are those that will be protected but encroachment into the tree protection zone may be needed to help in the project completion. Tree Protection Zone (TPZ) distances are dependent on the tree diameter and location of the tree (street, park, ravine, natural area, private property) or the dripline plus 1 metre. It is recommended that no more than 25-30% of root and crown pruning be allowed inside the TPZ when encroachment is required for project development around a healthy tree. Roots over 5 cm in diameter must be protected because those are anchor roots that keep the tree standing. In addition, soil inside the TPZ must be protected from compaction using layers of steel plates and mulch if work inside the TPZ is required. Trees within the TPZ that will be preserved during the project development will have a plywood sheet fence around them with full protection from the development. A sediment control fence is installed near ravines and watercourses, as well.

Light duty Tree Protection Zone fence". Photo credit: Cardinal Tree Care.

The arborist's report and tree preservation plan also address compensation for tree loss. Depending on the size (dbh) of the trees to be removed and their health condition, compensation is required to plant or pay a monetary value for the caliper of trees (6-10 cm dbh) that will be installed to make up for the tree loss (dbh size). In addition, a deposit is required for trees that will be protected (injured) until the tree recovers from injury due to project development.

Municipalities in southern Ontario are working diligently to increase canopy cover. Tree protection by laws and tree preservation plans are one of the necessary tools to help achieve this important goal.

Arborist Reports and Tree Preservation Plans are an important tool to help nature and development live and work together while preserving, protecting and increasing canopy cover in southern Ontario.

2020 – The Largest Outbreak of European Gypsy Moth in Ontario's History

David Dutkiewicz, Entomology Technician, Invasive Species Centre

European gypsy moth (*Lymantria dispar dispar*) is an invasive forest pest that has been infesting North American forests since its introduction in Massachusetts by a French scientist in 1868. Throughout the next 150 years after its release, gypsy moth has been moving throughout most of the Northeastern United States and into Ontario and Quebec. The range of gypsy moth has now expanded to the natural distribution of oak throughout Ontario and Quebec. While oak is the preferred host of gypsy moth, it can survive and thrive off more than 300 different species of trees and shrubs, including maple, poplar, birch, white pine, and spruce.

Gypsy moth consumes over one square metre of leaf material over its life span, which is significant when a population on one tree can be in the tens of thousands. The eggs overwinter on the trees in cracks in the tree bark, branch splits, under eavestroughs, sides of sheds, and any place that is somewhat sheltered from the elements. Egg masses are tan coloured and fuzzy, measuring approximately 1-2 cm in width and 2-4 cm in length with approximately 100-1000 eggs in each mass.

From these eggs, caterpillars emerge in late April to early May and start feeding on the closest available foliage. The caterpillars start out small and black with lots of hair, which helps them to be carried by the wind, traveling from treetop to treetop within a forest. Hill tops are common areas where early infestation in a forest occurs. As the caterpillars feed, they grow and begin to develop into a speckled grey and white colour with five pairs of blue spots and six pairs of red spots on their backs. Once they are at this stage in their development (usually in mid-June), the caterpillars will wander in search of a place to pupate before developing into adults.

The pupae are red/brown in colour, usually with several white/yellow hairs along the abdomen. The pupation process takes several weeks to change, eventually emerging as an adult gypsy moth in July and August. Male and female gypsy moth do not look the same. Male moths can fly around in search of a mate and are brown in colour with black wave-like arches along the wings. The female gypsy moths are flightless, white in colour with fair black or tan wave-like patterns similar to the males. Adult gypsy moth do not eat and are only alive long enough to mate and lay eggs for the new generation to over-winter.

In 2020, Ontario has seen the highest defoliation by gypsy moth ever, with 569,384 ha of moderate to severe defoliation. Historically, gypsy moth has shown rapid increases in populations followed by a sharp decline, usually caused

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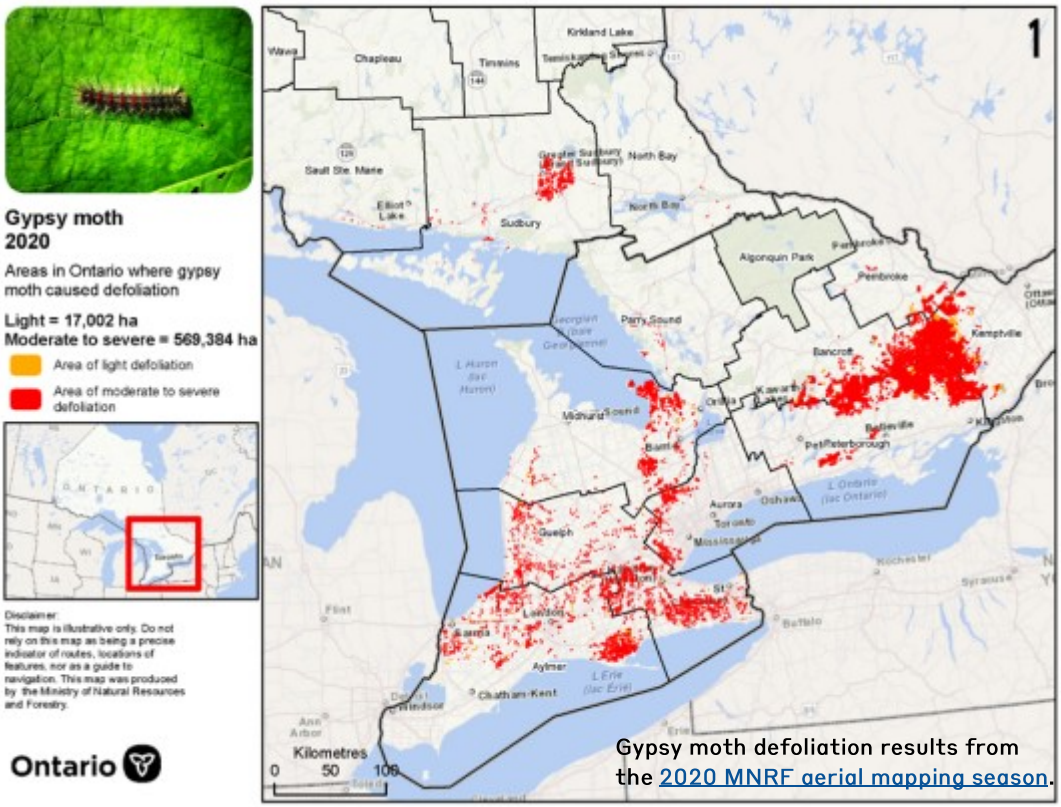


Gypsy moth defoliation results from the 2020 MNRF aerial mapping season.

by biological control factors. The rapid increases in population can be caused by a culmination of favorable weather conditions and low predation numbers which causes low mortality in the caterpillars allowing millions to feed on foliage.

Biological control of gypsy moth is the cheapest solution for dealing with rapid increase in populations over the long term. The egg parasitoid *Ooencyrtus kuvanae* rises and falls with the population of its host gypsy moth eggs. As a predator, the egg parasitoid is tiny around 1mm in length. This parasitic wasp will fly to gypsy moth egg masses and deposit one parasite in each egg. This parasite feeds off the growing gypsy moth eggs and emerges as an adult after killing the host inside. There are numerous reports by the Ministry of Natural Resources and Forestry (MNRF) field staff of predated egg masses across Southern Ontario this year which is beneficial for reducing population numbers. Parasite predated egg masses look very similar to normal gypsy moth egg masses with small holes throughout, almost like swiss cheese or a sponge.

Microscopic biological controls can also be found naturally in gypsy moth populations. *Entomophage maimaiga* is a fungus that is found in soil. This fungus is released in the spring time when moisture and temperature conditions are favourable; these spores will germinate inside the caterpillars killing them within weeks of the infection. *E. maimaiga* will leave caterpillars looking shrivelled up and stiff usually in a straight line on a tree.

Another microscopic biological control is nucleopolyhedrosis virus (NPV). This virus is present in the population of gypsy moth, but in low populations can be less effective. However, in large outbreaks of gypsy moth (since gypsy moth caterpillars do not "social distance"), the virus multiplies rapidly and kills large numbers of caterpillars. The virus works by dissolving the caterpillars' insides which usually causes the caterpillars to hang off on one foot in an inverted "V" shape oozing excrements onto the surrounding vegetation. This virus is then consumed by other gypsy moth caterpillars eating it from the foliage. These are just some of the biological controls that are in nature to help control the gypsy moth population. However, like all biological control measures, they require optimal conditions to grow with gypsy moth populations such as a cool damp spring (*Entomophage maimaiga*) or a large outbreak size population (egg parasite, NPV). It's a delicate balance in the ecosystem, especially when dealing with an invasive species such as gypsy moth. If the gypsy moth outbreak of this year follows historical data trends, then 2021 and 2022 will show a sharp decline in the population.

Gypsy moth Adults, pupa, and egg masses. Photo credit: Jason Brooks.

Gypsy Moth Larvae. Photo credit: David Dutkiewicz.

Forecasting methods like Modified Kaladar Plots (MKP) can help estimate population severity for gypsy moth in woodlots. MKP plots estimate the number of egg masses per hectare by counting the number of egg masses above ground (on trees, rocks, shrubs, etc.) and on the ground. This method can be used for forecasting management strategies in woodlots and conservation areas. For example, 5 MKP plots of 0.01 hectare are chosen in a 10 hectare woodlot. If the egg mass count is less than 1250 egg mass/ha, the population is considered to be light with little defoliation, 4000 egg mass/ha moderate, and 10,000+ egg mass/ha is a heavy infestation and 100% leaf defoliation is expected. This model plot design is used to estimate the population size as well as the parasitism rate by counting infested egg masses as well. Information on MKPs is available on the Ontario.ca website.

Gypsy moth has been in North America for over 150 years and can still surprise even the most seasoned forester. It's an invasive species with a huge appetite for leaves but is manageable with biological control and human intervention, if needed. Please visit the Invasive Species Centre and Ontario pest profiles for more information on gypsy moth populations in the 2020 Season.

Monitoring Gypsy Moth in Southern Ontario

Matt Mertins, R.P.F., Mazinaw-Lanark Forest Inc.

Professional foresters are carefully monitoring the increase of Gypsy Moth populations across the hardwood forests of southern Ontario. Population levels of this insect haven't been this high in decades. The debate is ongoing about whether this past summer was foreshadowing a more serious threat to the forests across our region, or merely another passing problem that the forest will easily bounce back from.

Gypsy Moth (*Lymantria dispar dispar*) is an introduced invasive species native to Europe. The first detection of gypsy moth in Ontario was in 1969, however widespread defoliation did not occur until 1981. It wasn't until the mid-1980s when the outbreak became so serious that the Ministry of Natural Resources implemented a massive aerial spray control program for the insect.

The epicenter for the current outbreak near Kaladar is roughly similar to the initial one in the 1980's. The small town of Kaladar is located between the red oak dominated rock ridges roughly in the center of the Mazinaw-Lanark Forest. The forest is a mixture of hardwood species and White Pine, but one of the defining features of this forest is the amount of red oak present. Red Oak is highly sought after by the forest industry for a variety of uses such as lumber, hardwood pulp and commercial fuelwood. Red oak makes up 25% of the forest on the Mazinaw-Lanark Forest and is the most highly favored tree species by Gypsy Moth.

Hardwood tree species in southern Ontario tend to be well adapted to defoliation events caused by insects. Trees will bounce back after being defoliated and red oaks are especially hardy. But after a number of tough years from hot, dry summers and defoliation caused by tent caterpillar outbreaks it is tough to know how much more the trees can take. Evidence of badly damaged stands appeared in recently hard hit areas causing large, high quality trees to decline in wood quality, rendering the wood to be undesirable at the sawmill.

Stand damaged by repeated tent caterpillar defoliation and drought.

Eventually, the tent caterpillar population crashed in the area and evidence suggests this may be the case for Gypsy Moth too, but how long will it be before this occurs?

Although the level of damage seen in the picture above is still uncommon it is feared that the latest Gypsy Moth outbreak will further stress the trees and will cause similar damage to that caused by Tent Caterpillar but on a much wider scale.

The question remains, what is the best approach to managing for a Gypsy Moth outbreak on Crown land today? Many things have changed since the days that MNR implemented the last large scale Gypsy Moth spray program in the area. Managers must assess the cost vs. benefit of spraying on a complicated landbase where the duration of the outbreak is uncertain. If spraying is to occur the MNRF and SFL companies involved must prepare an Insect Pest Management Program following the 2020 FMPM and perform consultation with the public. After discussing the Gypsy Moth outbreak with local organizations and individuals over the course of the summer it is apparent that misinformation is common and there are wide ranging opinions about whether spraying is the right approach or not. With limited capacity, local managers need to find new ways to reach the public to dispel bad information and increase knowledge of the various advantages or disadvantages to a spray program.

For the time being the Ministry of Natural Resources and Forestry and Local SFLs have opted to continue to monitor the current outbreak and reassess the need for spraying in the future. Meanwhile local landowners, maple syrup producers and cottage associations are organizing their own spray programs where there are willing participants.

One thing is for certain. Mazinaw-Lanark Forest Inc. and the Ministry of Natural Resources & Forestry will be back outside next field season and will continue to work together to ensure the threat from Gypsy Moth to the Crown Forest continues to be managed appropriately.

Part Two of a Four Part Series

Ontario's Single Photon Lidar Acquisition

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

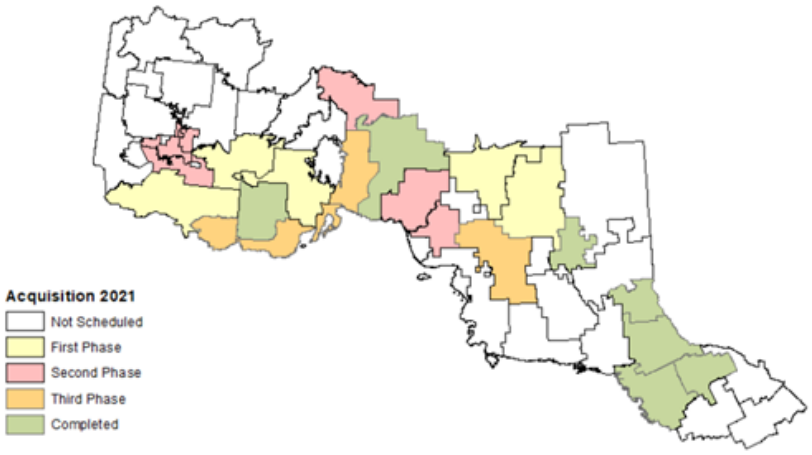
Ontario's Forest Resources Inventory program is acquiring single photon lidar (SPL) for 45 million hectares in the area of designated management units (previously referred to as the Area of the Undertaking). The acquisition program spans an 8-year time frame to support the development of forest resource inventories for the 2018–2028 period (with lidar collected a year or two in advance of 10-year plan development).

Acquisition considerations

Lidar acquisition is scheduled during leaf on conditions to capture detailed information about the structure of the top of the deciduous and conifer vegetation canopy. In addition, the lidar sensor captures information about multi-tier forest conditions and complexity of the forest structure.

A typical acquisition season starts mid-June and extends until early to mid-September, with season length varying depending on when leaves are fully flushed (season start) and the onset of senescence and leaf fall (season end). The ideal conditions for capturing SPL are clear skies during day or night or very light high-level clouds that permit capture of long flight lines of data to maximize aircraft efficiency.

Factors that affect collection include atmospheric smoke from fires in Ontario or other jurisdictions. For example, in 2020 smoke from the west coast of the United States affected flying conditions. Depending on the amount of smoke, data can still be captured by using slower flying speeds to maintain the lidar point density. Pest outbreaks such as jack pine and spruce budworm, gypsy moth, and forest tent caterpillar defoliation that affect the amount of leaves on the trees also pose a challenge. And atmospheric conditions, such as low-level haze and cloud cover, can reduce data quality.



Acquisition schedule

In 2018, data collection focused on the Petawawa Research Forest, and the Romeo Malette and Dog River Matawin forests. These acquisitions supported lidar-based research projects funded through the Forestry Futures Trust Knowledge Transfer and Technology Development program, with results available soon (pending acceptance in scientific literature). The 2019 lidar acquisition objective was to capture lidar on forest management units for which forest management plans are in development now or imminently: Kenogami, Hearst, and Nipissing forests have been started and the French Severn, Algonquin Provincial Park, and Dog River Matawin forests are being completed.

In 2020, lidar acquisitions across the Temagami, Nipissing, Hearst, Kenogami, and Black Spruce forests were finished, with related field sampling scheduled for 2021. For the 2021 schedule, the first stage (yellow polygons) will be to complete blocks for which lidar acquisition started in previous years, with field sampling following in 2022. The second and third stage will be focused on completing the acquisition for blocks in forest management units scheduled for lidar acquisition in 2020 and 2021 (pink and orange polygons on the map above).

In addition to the lidar capture, survey grade Global Positioning System points are collected to support the spatial accuracy of the point at a quality 2 level (QL2) as per the Ontario Lidar Specifications (https://www.urisaontario.ca/resources/Presentations/2018_Lidar/LidarSpecs/OntarioSpecificationsForLidarAcquisition2016.pdf). This becomes the survey control data.

(Continued on page 18)

(Continued from page 17)

Data processing

Data processing involves a validation stage to ensure point density and flight coverage extend across each scheduled forest management unit after the data was captured. Data is then shipped to the contractor's processing facility where it is adjusted to survey control data, aircraft movement is removed, noise is filtered, and the data is classified into a tiled classified product and derivatives.

Products

Tiled classified point clouds

The delivered lidar products include the classified point clouds, which are classified into the categories outlined in the Ontario lidar specification with the addition of classes 3, 4, 5 listed in the table below. Four derivative products are included in the delivery of the lidar data from the imagery vendor: the bare earth digital elevation model, digital surface model, canopy height model, and length of pulse return signal. Lidar data is delivered as .las files in a 1x1 km tiling structure of about ~1.2 GB, depending on number of points per tile.

Class code	Description
0	Unprocessed
2	Bare earth
3	Low vegetation (0–0.3 m)
4	Medium vegetation (0.3–2.0 m)
5	High vegetation (>2.0 m)
7	Low noise
9	Water

Lidar derivatives

The four derivative products included with the classified point cloud data are described below. File format is GeoTIFF and they are tiled in 1x1 km tiles ~ 16kb in size per tile. In all cases, data are delivered in the same tiling scheme as the LAS point clouds.

DEM (digital elevation model) creation utilizes the ground classified points from the LAS file format point clouds to create a TIN (triangulated irregular network) model of the area. Elevation values are interpolated between points for areas where the point spacing between ground returns is greater than the desired DEM resolution. The elevation values are exported at a user defined interval and the DEM GeoTIFF file format is generated. Slope and aspect can be derived from this data derivative.

DSM (digital surface model) creation utilizes the fully classified point clouds. The first return data from the point cloud is extracted and then the highest hit (highest elevation) with a user defined cell size is extracted to create the model.

CHM (canopy height model) is a subtraction of the DSM and DEM. No pitting (negative values) should exist in the model.

Intensity (width of pulse return signal for SPL) is derived from the embedded intensity value in the points from the LAS files. Like the DSM derivative, the first return value points are analyzed, and the value is extracted at a user defined interval. The values in the intensity product are scaled to 8 bit.

Once a block has been fully captured, the processing time is about 4 to 5 months to produce the classified tiles and derivative products described.

Two subsequent articles will describe how this lidar data will be used with other remote sensing products to model forest structure attributes.

Indigenous Guardians, Exploring a Renewed Relationship with Paper (White) Birch

David Flood, R.P.F., General Manager, Wahkohtowin

Wahkohtowin is a forestry business development enterprise owned by three First Nations in Treaty No 9. The group has a strong sense of what full participation in the benefits derived from Forestry and Forest Management means and includes a serious exploration into their own acts of reconciliation.

Since 1925 the area First Nations were evicted from their homelands around Missanabi Lake and surrounding areas that make up the Chapleau Crown Game Preserve. What followed were decades of continued policies and acts of oppression.

Today after the Truth and Reconciliation Commission findings and calls to action our Elders have set a Vision Statement to reignite our youth, elders and community place based resurgence of our ways or Natural Law.

Wahkohtowin is a Cree term and is a life or living philosophy around how everything is connected. In its simplest interpretation it can be used as a reference to cousin.

Since 2015 - Wahkohtowin has been exploring a renewed relationship with Paper Birch - its sap, rendering to syrup and this past summer through engaging a master canoe builder Chuck Commanda - a 4th generation builder and Algonquin from Kitigan Ziibi our emerging team of Guardians were taught how to collect all of the needed materials to build a birch bark canoe.

The canoe is blessed before the launch.

The build took place November 2 to 11 and was birthed in ceremony taking its first dip into the Chapleau River in minus 3 degrees weather. Over the 10 days - 7 working days on the canoe we came to a point where as a tradition Chuck has all participants sign the main thwart. David Flood, RPF and Isabelle Allen, RPF as Indigenous professionals both felt the need to sign and seal as a sustainable forestry project using our OPFA stamps. The key take away being that forests should be available to meet the cultural and spiritual needs of forest dependent people.

(Continued on page 20)

The people involved signed the main thwart and the two professional foresters involved sealed it with their professional stamps.

(Continued from page 19)

The build team decided to name the canoe - Raven as they reflected on the adaptability, strength, intelligence and resiliency of our nations in comparison to the continued presence and similarity to the Raven in our forests.

There were so many firsts for the team and the community members that came by to observe during this time of social distancing. The build observed protocols with ceremony, a female and male balance and of course many laughs and stories.

This build occurred on Treaty 9 territory in the Martel Forest which holds an FSC FM Certificate held by RYAM. It's important to acknowledge the 15 plus year committment by then Tembec to pursue and maintain certification. It is a combination of the long standing direct agreements and relationships born that has in part given rise to our organization - Wahkohtowin. Heading into this coming spring we are on our own and feel comfortable with the idea of taking the lead in our own build.

The building team is comprised of:

Amberly Quakegisic - Guardian Program Manager

Isabelle Allen R.P.F. - Project Forester

First Paddle - This was the first time in over 95 years that Indigenous people were able to practice their cultural teachings and construct a complete birch bark canoe from the local forest.

Elena McCulloch - Biologist Intern

Jace Jolivet - Seasonal Guardian

Erin Knight, Student member of the OPFA - Lakehead U - Mitacs

David Flood R.P.F. - General Manager

Norm Desjardins - Main Helper

Chuck Commanda - Ogimaw Wigwasii

The group involved in the project.

My Journey, from an Internationally Trained Forester, to an Ontario R.P.F.

Arben Pustina, R.P.F.

The following article by Arben Pustina, R.P.F. is being submitted as an illustration of the diversity of members within our profession. Our profession (as every other profession in Canada) has been undergoing a period of reflection to better understand how (either advertently or inadvertently) we may be discriminating in how we recruit and manage our members. To this end, the OPFA has formed an Equity and Inclusion Task Team of which Carol Walker, R.P.F. is its Chair. Future issues of The Professional Forester will give greater details of the activities of this Task Team. - Michael Rosen, R.P.F. (Task Team member)

The following is my personal story - an immigrant's story of becoming an R.P.F. in Ontario. Before coming to Canada in 2003, I searched what the requirements were to work in my profession in Ontario. My degree was in "Forestry Engineering" and so I thought that Professional Engineers Ontario (PEO) would be the organization I needed to get in touch with. The PEO accepted my application and pre-qualified me to become an "Environmental Engineer" with the requirement of taking 4-5 exams. I continued my search about forestry and found the Ontario Professional Foresters Association (OPFA) as the body that regulates the forestry profession in Ontario. My application to the OPFA was accepted with the requirement that I take forest ecology, silvics, forest fire ecology and management, entomology and forest administration and policy exams due to the absence of these subjects from the curricula of my country of origin (Albania).

My journey continued as I had to find the books to study and prepare for exams. I was a frequent user of the Earth Sciences library (Noranda) at the Faculty of Forestry at the University of Toronto as well as the North York Public library in Toronto where some of the books were available. In addition, I purchased other books that were part of the reading list for each exam. I completed all exam requirements in a timely manner but then had difficulty in finding a mentor and sponsor.

In 2008 the "Credential Assessment Process" was added to the requirements of application and acceptance as a Registered Professional Forester. My next part of my journey had me prepare a self-assessment matrix with seven core academic standards (tree and stand dynamics, forest to landscape, forest management, economics and administration of forestry, leadership skills, information acquisition and analysis, professionalism and ethics). For this I went back to the library to find books to study and prepare to complete this self-assessment matrix, purchasing additional books as well. I gained valuable knowledge and experience by studying many of the latest books of forestry science in North America. Since more than five years had passed since I took my first Forest Policy and Administration exam, I was asked to take that exam again.

I had now completed my academic and field experience requirements and now had to find a mentor and sponsor, another challenge for me as it

(Continued on page 22)

(Continued from page 21)

was difficult to find somebody to commit to the obligations detailed by the OPFA. Finally, I found a mentor and sponsor while working as Forest Ecologist with the Town of Oakville. My application for full membership was now complete and so in 2016 the Registration Committee of the OPFA now accepted and granted me the designation of Registered Professional Forester, a mere **thirteen years** after my first application. This was a huge accomplishment for me, as an immense feeling of relief and enthusiasm came over me for the many steps I had to go through on this incredible journey. I have to admit that I learned a lot from the forestry profession in North America and definitely improved my knowledge and skills, despite the difficulties (including doing everything in another language).

However, my search for professional excellence did not stop here. I wanted to continue to offer something else now that I became an R.P.F. I had a profound feeling of wanting to "give back" to our Association, to forestry in Ontario, to the general public and to my fellow members. I volunteered and became a member of the Editorial Board of the *Professional Forester* newsletter, offering new ideas on how to improve our newsletter to better serve members, their continuing education and the general public. For each issue, I found and proposed topics of interest and approached different contributors in the province to write articles, a process that has been very successful and satisfying, most of the time.

I also felt an obligation to help Provisional members (R.P.F.'s in training) as much as I could in becoming Full or Associate members of our Association. I have volunteered to mentor and/or sponsor them through the 18 months mentorship agreement. This has been a great experience for me and I believe for the provisional members. Besides helping others, it has enabled me to improve my leadership skills, as well.

Although arduous, my journey to be an R.P.F. has been very satisfying. I would like to encourage other full members to take on provisional members and mentor or sponsor them toward full membership. In this way we can help each other, fulfil and sustain our mandate as R.P.F.'s in Ontario and continue to serve with professionalism the general public and forestry profession in our province, as well.

Council Corner

Waseem Ashiq, R.P.F., PhD
Councillor Southeast

Council Corner is to provide membership with insight into what happens at OPFA Council meetings.

As I embark on the start of my second year as an OPFA council member, I'm excited to share the insights I've gained during my time on the council.

My journey as a council member began soon after I got my full membership (RPF). My amazing mentor, Terry Schwan, contacted me and asked if he could nominate me for a council position. It was a huge honour for me that someone saw potential in my leadership abilities. At the time, even though I was aware of the legislative structure and the role of the council, I had little knowledge of the practical functions of the council.

Despite being new to OPFA, I was eager to contribute my leadership experiences from over twenty years of national and international forest management, research, and teaching work. Additionally, as an internationally trained forester who has gone through the Credential Assessment Process (CAP), I am able to bring a new perspective to the council on registration matters for applicants from non-accredited programs.

As I look back on my last two years on the council, we have gone through a journey of individual and collective learning. Some pressing topics we've addressed, or are currently working on, include membership fees, financial and strategic planning, inclusion and diversity, virtual work due to COVID-19, and clarity on OPFA's role for advocacy. In the last few newsletters, my fellow council members either provided detailed insights or briefly mentioned some of these issues. Many of these issues may seem isolated, but they are in fact intertwined and require deep deliberation for decision making. A recent focus area for the council is to become aware of, and proactively respond to, the changes in regulations related to regulatory bodies. The OPFA's legal counsel, Julie Maciura, and our Executive Director, Fred Pinto, have been instrumental in educating the council on ongoing regulatory changes and trends across Canada and internationally.

As I mentioned earlier, a key focus of the council was defining OPFA's role as a regulatory body, and what this means for advocacy work for OPFA members. There is a common misconception that OPFA should be the voice of its membership and be at the forefront of advocacy and rights protections of its members. The Professional Foresters Act 2000 defines OPFA's scope as a regulatory body. In essence, advocacy is not one of OPFA's key roles. When I first joined the council, we were unsure as to what level of advocacy OPFA could engage in. For example, the council previously prepared an OPFA response letter commenting on the proposed changes to the Endangered Species Act. We dedicated extensive time towards writing this letter and debated what was within our scope to include in the letter's contents. After considerable deliberation, we realized that advocacy is not within OPFA's jurisdiction and refrained from taking a stance on the proposed changes to the Endangered Species Act. Past President Peter Street provided a detailed account of our rationale for this decision in December 2019's Council Corner Newsletter.

(Continued on page 24)

(Continued from page 23)

Since then, the council has a better understanding of its scope; we use past precedents like the aforementioned to determine the extent to which we can do advocacy work. However, this doesn't mean that we can't do any advocacy at all. In fact, the Professional Foresters Act 2000 empowers council "to promote public awareness of the role of the Association and to communicate with the public on behalf of its members" [2000, c. 18, s. 5 (2)], only if it is in accordance to OPFA's Principal Object. The Principal Object of the OPFA is "to regulate the practice of professional forestry and to govern its members in accordance with this Act, the regulations and the by-laws in order that the public interest may be served and protected" [2000, c. 18, s. 5 (1)]. Similarly, the Act also defines the role of council members as "board of directors of the Association" [2000, c. 18, s. 6 (1)], meaning that council members' duties include strategy, policies, and risk management, among other steering duties. Overall, this is one insight I wanted to share in the hopes that you gain a better understanding of OPFA's role and scope.

My time on the council has been full of great learning and collaborative decision-making. I'm looking forward to two new initiatives: the newly formed diversity and inclusion task team, and the recently initiated strategic planning process. I hope you will keep your eyes on these initiatives, and particularly contribute to the diversity and inclusion task team when the opportunity arises. I am one of the members of the task team, and I'm very excited for what's to come. I hope you are too.

Sincerely,

Waseem Ashiq, RPF, PhD

Council for the 2020-2021 Fiscal Year

Officers (1-year term):

President: Denis Gagnon, R.P.F.

Vice President: Chris McDonell, R.P.F.

Past President: Peter Street, R.P.F.

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

Northwest:	Scot Rubin, R.P.F. -	1st term ends:	November 2021
Northeast:	Gordon King, R.P.F.-	2nd term ends:	November 2021
Southwest:	Carol Walker, R.P.F.-	1st term ends:	November 2021
Central East:	Sarah Todgham, R.P.F.-	1st term ends:	November 2022
Central West:	Neil McLean, R.P.F.-	2nd term ends:	November 2022
Southeast:	Waseem Ashiq, R.P.F.-	2nd term ends:	November 2022

Public Members (appointed by the Ontario government *):

Larry McDermott	(1st Term ended June 2019)
Sally Krigstin	(1st Term ends August 2023)
Daniela Corapi	(1st Term ends August 2023)
Douglas Reynold	(1st Term ends August 2023)
David Goldsmith	(1st Term ends August 2023)

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

Major OPFA Initiatives Currently Underway

Fred Pinto, R.P.F., Executive Director, OPFA

1. Seeking changes to the Professional Foresters Act and Regulation145/01

In 2020, Ontario's Forest Sector Strategy was approved. As part of this Strategy, MNRF further embraced a more comprehensive use of the professional reliance model in managing its forests in the 2020 Forest Management Planning Manual and the 2020 Forest Information Manual. Recent changes to the Forest Management Planning Manual (2020), have removed the requirement for District MNRF approval of Annual Work Schedules and most Annual Reports. The Government is relying on professional foresters to prepare these documents in full accordance with the manuals so that Crown forests meet social, economic and environmental needs of present and future generations.

The public expects regulated professionals to possess specific knowledge, skills and training to meet or exceed the requirements and to do so from a position of trust. Clarifying the roles and responsibilities of a Professional Forester will accomplish this.

During the development of Ontario's Forest Sector Strategy, the Ontario Government was informed of problems with developing solutions for complex forest plans and prescriptions that must meet provincial legislation, regulations, standards and guidelines. The OPFA suggested that competent and accountable registrants of a regulated profession would be able to develop forest plans and prescriptions that best meet local conditions and objectives. The OPFA reiterated this message in its December 2020 submission to the Standing Committee of the Legislature for Bill 229. You can find the OPFA's submission elsewhere in the newsletter.

The OPFA has informed the Minister that a major limitation to governing OPFA registrants is the lack of clarity associated with who must be a member. Currently, the scope of practise of professional forestry overlaps with the scope of other occupations. The Professional Foresters Act Regulation 145/01 attempts to deal with this overlap by excluding a list of regulated professions and unregulated occupations. This causes a problem as there is a lack of clarity as to who should be registered. This is especially problematic with the listing of unregulated occupations because their scope of practise is not defined by law or regulation. It is left to the individual or their employer who may choose to use the job title of an excluded occupation.

A jurisdictional scan shows that no other Ontario laws governing regulated professionals exclude unregulated occupations. Further, a review of regulatory laws for professional forestry in the six other provinces with right to practise also shows that unregulated occupations are not excluded.

The OPFA is evaluating various approaches, such as changes to legislation, policy or regulation and how they would allow Ontario to move to a model of professional reliance similar to other regulated professions. That is, as provincial regulations are changed or removed, the regulated professional can provide services that protect the public interest due to its enforceable code of ethics and member competency. The OPFA is also working on engaging stakeholders that have an interest in the changes that are being evaluated. As you can understand there is a lot of work that is being done and will need to be done if any of the desired changes are actually accomplished.

Stay tuned as more information will be shared with OPFA registrants and stakeholders in the coming months as we progress towards our goal of improving how professional foresters are governed to better serve the public and various users of professional forestry services.

2. Developing the 2021 to 2026 strategic plan for the OPFA

The OPFA issued a request for proposal for the development of its 2021 strategic plan. Proposals were sought from individuals with strategic planning expertise and experience and knowledge of Canadian regulatory bodies. Four excellent bids were received. The contract was awarded to Carla Rhyant, a leadership consultant. Carla is leading OPFA staff, Councillors and the Chair of the Registration

(Continued on page 27)

(Continued from page 26)

Committee in the development of a new strategic plan using remote telecommunication.

The timing of the new strategic plan is appropriate, given that the OPFA is going through a change in its membership as baby boomers retire and new registrants seeking membership increase. The number of new registrants has reached historic highs as those seeking to practise forestry and their clients become aware that professional forestry is regulated. As stated earlier potential changes to the Professional Foresters Act, its Regulation and policy is another major initiative that will need to be carefully implemented to ensure that the OPFA can meet the expectations of the people of Ontario to protect the ecological integrity of forests and also serve the interests of landowners and current and future citizens.

The first phase of the work has started and includes:

- a historical review of the OPFA,
- an organizational analysis,
- defining of the values, mission and visions,
- a report of organizational issues and
- proposed changes to the regulation of the profession.

Implementation of the 2017 Certification Standards for the Profession of Forestry in Canada

Louise Simpson, Registration Manager, OPFA

You have likely heard of the Certification Standards for the Profession of Forestry in Canada, but do you know where they come from? The Forest Professional Regulators of Canada (FPRC)/ Organismes de réglementation des forestiers professionnels du Canada (ORFPC) (formerly known as the Canadian Federation of Professional Forester Associations) is an advisory group composed of representatives of forest professional regulatory organizations across Canada. Its role in the regulation of forest professionals in Canada is to:

- Promote consistency where mutually beneficial between Regulators in each province,
- Coordinate and communicate collectively on issues that affect the regulation of forest professionals,
- Enable the movement of forest professionals between jurisdictions through compliance with federal and provincial labour mobility agreements,
- Develop and maintain competency-based academic and work experience **certification standards** for approval by each Regulator, and
- Define and maintain accreditation standards to assess and accredit as appropriate applicable Canadian post-secondary forestry programs.

FPRC has provided the platform for discussions and development of a common set of certification standards for forest professional applicants that aim to enter the profession in Canada but who have not attended a Canadian Forestry Accreditation Board (CFAB) accredited post-secondary program. FPRC member organizations, exclusive of the Ordre des ingénieurs forestiers du Québec (OIFQ), have formally approved, adopted and use the standards for applicants wishing to enter into professional practice in each of their provincial jurisdictions.

CFAB was established by the FPRC in 1989 as a committee, to provide the evaluation of university level forestry degree programs to ensure that they meet the FPRC Certification Standards. FPRC advises the Canadian Forestry Accreditation Board on the nature and content of education programs required for the practice of professional forestry in Canada. The Accreditation Standards used by the CFAB are fully harmonized with the FPRC Certification Standards.

(Continued on page 28)

(Continued from page 27)

The certification standards are reviewed every 5 years, and the revised versions must again be approved by the Councils of the regulators who are members of the FPRC. The national 2008 Certification Standards continue to be used for competency assessments. In 2017 new Certification Standards were approved by the Councils of the member organizations of the FPRC. Following approval by the regulators' Councils, work began to implement them in both the CFAB accreditation process and the Credential Assessment Process (CAP). CAP is used to assess which of the competencies listed in the certification standards have been attained by an individual who has graduated from a program that is not CFAB accredited, and where they may require additional training.

To ensure that both CFAB and CAP programs meet Canadian and provincial laws, the coordinating committee of Registrars decided to develop a strategic plan, which was developed between 2018 and 2020. During this time, the Association of BC Forest Professionals (ABCFP) procured an update to the CAP program database and manuals so that the 2017 Certification Standards could be used. This revision was a major undertaking as some fundamental changes had to be made to adapt to the 2017 Certification Standards and to ensure that all processes meet the fair registration legislation now in effect in various provinces including Ontario. In addition, new training for CAP assessors and regulators' staff had to be developed.

The 2017 Certification Standards are now being used by the CFAB in their accreditation process for educational institutions and will be implemented for use in the competency assessment processes beginning in April 2021.

You can view the 2017 Certification Standards here.

What does the implementation of the 2017 Certification Standards mean for OPFA registrants?

The implementation of the 2017 Certification Standards will only affect Provisional Members who have not graduated from a CFAB accredited program. These registrants are encouraged to review the information sheet that has been provided and is also available on the OPFA website to see how the changes may affect their registration process. The implementation of the 2017 Certification Standards will not affect Full, Associate, Life, Inactive, Student or Honorary Members, or Provisional Members who have graduated from a CFAB accredited program.

To become a registered forestry professional in Ontario, applicants must demonstrate that they meet the current certification standards, and additional OPFA registration requirements. Registrants who have graduated from a post-secondary program that is accredited by the CFAB have met the certification standards by completing the accredited program.

Registrants who have not graduated from a CFAB accredited program are required to undergo a competency assessment. These competency assessments review an applicant's educational qualifications and work/volunteer experience to determine which of the competencies within the certification standards they can currently demonstrate, and whether there are any competency gaps that need to be filled before the individual is ready to become a Full (R.P.F.) or Associate (Associate R.P.F.) Member.

Those who are applying for Full Membership must undergo the Credential Assessment Process (CAP). Under the 2017 Certification Standards, applicants will be required to meet the competency requirements of Standards 1 through 7 and one of the Standard 8 streams (8A-8E). The choice of Standard 8 steam does not place additional limitations to the work an applicant will be able to do as an R.P.F.

Registrants who are applying for Associate Membership must demonstrate that they meet the required competencies within the certification standards identified for their intended scope of practice. Those wishing a broad scope of practice must undergo the CAP. For those with a more limited scope of practice, the competency assessment may be completed by the Registration Committee.

2021 Virtual OPFA Annual Conference
April 6-8, 2021

By acknowledging the past and recognizing the present, foresters are able to more effectively plan for the future. This year's virtual conference Our Roots Our Future will have attendees networking with forestry professionals, friends, and students of all ages, exploring how looking back can help us prepare as a profession for what is to come. Attendees will be delving into climate change and its impact on our rural and urban forests, perspectives from forestry in Ireland, and Indigenous Knowledge experts here in Ontario, the status of professional forestry in all jurisdictions, and laying the groundwork for our private and public forests.

A virtual field tour will provide attendees with a unique experience to visit York Region, Lake Simcoe Region CA, and Simcoe County from home, providing a glimpse of the urban and semiurban landscapes managed by some of OPFAs committed members.

Whether you are a member, working to become a member, or just interested in learning more about the association in this new virtual world, we challenge you to participate and engage and inspire the next generation of OPFA members and forest stewards.

Stay tuned for more information and registration details which will be available on the OPFA website. All are welcome!

REMINDER-ANNUAL MEMBERSHIP RENEWAL

Annual membership renewal involves:

1. Reviewing and **updating your personal information**-please ensure your mailing address and other information is accurate;

2. **Paying your annual membership fees** (if applicable) for December 1, 2020, to November 30, 2021. Fees were due December 1, 2020, and are subject to a Late Payment Fee (see the current Fee Schedule) and;

3. **Completing your Competency Support Report form** (if applicable) for December 1, 2019, to November 30, 2020. Competency reporting is due January 15, 2021, and is subject to a Late Reporting Fee (see the current Fee Schedule)

The chart below summarizes what activities are required for each membership category:

MEMBERSHIP CATEGORY: / ANNUAL RENEWAL TASK: ☑ required	Student	Provisional	Full	Associate	Non-Resident	Inactive	Life	Honourary
1. Update Personal Information	☑	☑	☑	☑	☑	☑	☑	☑
2. Pay Membership Fees (by Dec. 1)	no	☑	☑	☑	☑	☑	no	no
3. Competency Reporting (by Jan. 15)	no	no	☑	☑	☑	no	no	no
4. Report working only within Scope (by Jan. 15)	no	no	no	☑	no	no	no	no

Submission for Bill 229 Protect, Support and Recover from COVID-19 Act (Budget Measures), 2020

The Ontario Professional Foresters Association (OPFA), under the authority of the Professional Foresters Act RSO 2000 and its regulation, is the regulator of professional foresters in Ontario. Professional foresters advise landowners and their clients of the known short and long term results of forest activities including impacts if any on the habitat of species at risk. As the only provincially regulated profession involved in the manipulation of forest cover of provincial Crown land, professional foresters play a key role in forest management planning and development of access, harvest, regeneration and maintenance including the protection of wildlife habitat of provincial Crown forests. Professional foresters also work as employees or owner-operators of small businesses serving private landowners, Conservation Authorities, forest products companies, First Nations, all levels of government, and a variety of management consulting companies.

As the Regulator of professional foresters, the OPFA ensures that its registrants possess the skills to manage Ontario's urban, private and crown land forests by ensuring registrants are current in their competencies through continuing education and abide by the laws in Ontario. The OPFA does update the competencies its registrants must possess so that they can better serve the people of Ontario. For example, the OPFA approved an explicit standalone professional competency standard related to Indigenous jurisdiction in Canada in 2019. Three years ago it developed specific professional standards for urban forestry, ecosystem restoration, natural resources and ecosystem management, forest operations and forest management. As a provincially regulated profession, our registrants are also accountable to the people of Ontario as the public can have their complaints against a registrant addressed by the OPFA through a process defined by provincial law at no cost to taxpayers.

OPFA registrants are aware that many people of Ontario are concerned that the proposed changes described in Bill 229 may result in environmental issues. The OPFA does not offer an opinion on the proposed Bill 229. However, we would like to inform the Standing Committee that our registrants are competent in professional forestry including the protection, maintenance and restoration of wildlife habitat and other aspects of professional forestry defined in Section 3(1) of the Professional Foresters Act. As such, professional foresters are already serving and will continue to serve the public interest as required by Section 5(1) of the Professional Foresters Act. They will ensure that they use their skills and training to meet the objectives of their clients while first ensuring the public interest is served and protected.

Ontario, its people, and businesses can benefit by employing OPFA registrants as Ontario fully embraces a professional reliance model in forestry, similar to that which Ontario uses for its other regulated professionals. This would enable OPFA registrants to develop and implement forest plans and prescriptions that fit the unique environmental, social and economic circumstances we find in the different regions across Ontario. The public's interest would be protected as that is the object of the legislation that governs professional foresters. Further, the Government of Ontario has oversight over the OPFA through its direct reporting to the Minister of Natural Resources and Forestry, the Ontario Fairness Commissioner, and the use of members of the public to serve on our governing Council.

The one limitation to Ontario's benefiting more fully from the services of professional foresters is the listing of unregulated occupations being exempt from having to be registrants of the OPFA (O Reg 145/01 Section 4). The OPFA supports the removal of these exemptions to better enable the OPFA to regulate its members to protect the public interest.

Submitted by:
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Grey Areas

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A COMMENTARY ON LEGAL ISSUES AFFECTING PROFESSIONAL REGULATION

The Trouble with Awards

by Erica Richler
January 2020 - No. 242

Awards season has arrived in North American popular culture. Some critics argue that such recognitions are flawed for numerous reasons including the use of non-inclusive selection criteria and providing a platform for celebrities to speak out on issues outside of their expertise.

Regulators often also bestow awards to leaders or members of the profession who inspire by their dedication, altruism or talent. Such recognition can encourage the profession to aspire to excellence. It can also remind the profession that the regulator does not just enforce minimum standards, but also fosters superior performance. The broader pride in the profession that can result from such acknowledgements can counter-balance the discouragement that many practitioners face and which can negatively affect both their performance and attitude. Properly structured awards criteria can actually promote values such as diversity and advances within the profession.

However, these benefits need to be balanced against the risks. One risk from regulatory awards arises where the recipient later requires an investigation, discipline or other enforcement measures. There have been a number of media reports of such situations including a best teacher of the year recipient accused of sexual abuse, and a lawyer/politician who received a prominent award, later alleged to have sexually harassed women for decades. See, for example: https://www.ctvnews.ca/world/teacher-of-the-year-accused-of-sex-acts-with-student-1.4706767 and https://www.theglobeandmail.com/opinion/article-everyone-turns-to-lawyers-for-metoo-advice-but-the-legal-community/.

These circumstances bring discredit to the regulator. More importantly, the ability of the regulator to perform its primary public protection functions is compromised. Harmed clients, colleagues and other witnesses may be reluctant to come forward because of the public accolades previously bestowed on the practitioner. Apparent conflicts of interest may arise as those involved in the recognition of the practitioner may not be seen as impartial in an investigation of that same person. Public confidence in the process or the appropriateness of the outcome could be undermined.

Additional risks exist. The time, energy and cost of the awards process are not available for core regulatory activities. Registration applications, investigations and discipline activities may be delayed to the extent that staff, Board and committee members take time to prepare for and attend the events. The amount of time committed to such an occasion may be surprising, especially if it takes the form of a gala event.

Public perception can also be an issue. Awards and recognitions are often seen as a professional association activity. Self-congratulatory functions can confuse members of the public and even the profession as to the public protection role of the regulator.

Regulators who confer awards to practitioners should constantly evaluate whether the public interest benefits outweigh the risks. There is a strong case to be made that this activity should be left to a separate

FOR MORE INFORMATION
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A COMMENTARY ON LEGAL ISSUES AFFECTING PROFESSIONAL REGULATION

professional association. A candid debate should be held as to the real reason why those in favour of continuing with the awards like them.

Regulators who decide to continue with this activity might consider some or all of the following safeguards:

- The public interest purpose of the award should be clearly articulated.
- All communications related to the award, including its name, should promote that public interest purpose.
- The criteria and process for selecting award recipients should be transparent and should reflect the public protection values of the regulator.
- There should be a rigorous screening of award candidates.
- There should be consideration as to whether the event can be downscaled so as to use an appropriate level of resources.

The selection and administration of the award should be separated as much as possible from the regulatory functions of the regulator. Ideally a separate awards committee or group, which does not involve compliance and enforcement staff or committee members, is ideal. It is even preferable that as few Board members as possible participate.

Should a concern about the conduct of an awards recipient arise, specific measures should be taken to avoid even a perception of a conflict of interest. For example, those involved in the acknowledgement should, as much as is possible, not be involved in the investigation, screening or adjudication of the concern.

Regulators should include explicit terms and conditions for the award that include the possibility of rescinding the award should the recipient, in the past or future, engage in conduct incompatible with the values of the regulator.

At first glance it may seem that acknowledging outstanding contributions by members of the profession is innocuous. However, further reflection may identify substantial risks to regulators who grant awards to practitioners.

In Memoriam

Gordon Breau, R.P.F.

1972-2020

It is with deep sadness that we announce the death of Gordon Breau, who died accidentally on December 9 in Hearst, Ontario, at the age of 48. He is survived by his parents, Ronald and Betty Ann, his brother Jimmy (Renée Roll) and his godson Maxime. He is also survived by his beloved Sonia Coll, the children of Sonia, Céleste and Pascal. He is also survived by an uncle, Dennis (Claudette) and an aunt Zélia (his godmother), his cousins Marc (Joanne), Brigitte (Gordon) and Lee. As well as several great uncles, great aunts and his many friends from Hearst and Tracadie.

Gordon graduated from the WA-Losier High School in Tracadie in 1990 and the Forestry Engineering Faculty at UNB (1997). He has worked in the forest industry in northern Ontario since 1997. He was employed by the company Tembec for several years and currently by the company Rayonier Advance Materials located in Hearst. He was passionate about his work in the forestry industry and a great lover of nature. He will be sadly missed by his family, his beloved and his many friends.

Funeral arrangements entrusted to the Robichaud & fils funeral home in Tracadie.

Member News

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

Rashid Azimov
Erin Burgess
Amy Doudiet
Lucie Harvey (from Inactive Membership)
Christine Leduc
Hannah Rideout

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):

Emily Angermann
Kellie Chippett
Kaitlyn Drcar
Larissa Huot
Joseph Silva
Kristy Vannieuwenhuizen
Timothy Winegard

New Student Members:

Zoe Bedford
Guo Cheng
Rainer Dinkelmann
Monique Dosanjh
Sarah Grubb
Michael Jacques
Joshua Kelly
Alexandre Levesque
Kuntusangpo Ling
Vanessa Ngan
Kristen Sewell
Darya Shinwary
Shan Skukla
Adam Tweedle
Sanda Violoni

The following people are not entitled to practice professional forestry in Ontario but remain members of the OPFA:

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

Nancy Houle
William Thornton

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

Martin Litchfield
Reino Pulkki
Richard Raper

The following people are not entitled to practice professional forestry in Ontario and are no longer a member of the OPFA:

Resigned, Associate Member:

Rodger Leith
Jim Pedersen

Resigned, Full Members:

Sarah Martin
Mary Lynn McKenna
Brian Nicks
Bertha Strickland

Resigned, Non-Resident Member:

Keith McClain

Resigned, Inactive Members:

Frances Bennett-Sutton
Kenneth Lennon
Roy Sidders

Resigned, Provisional Members:

Gary Both
Cam Bennett
Michael Irvine
Ken Reich

The following person is still a member of the OPFA but is not currently entitled to practice professional forestry in Ontario:

Membership Suspended for Administrative Reasons:

Willem de Bakker

Continuing Education

Webinars

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

1. Canadian Institute of Forestry

https://www.cif-ifc.org/e-lectures/

2. Ontario Ministry of Natural Resources and Forestry. MNRF Science, contact Kristy Mckay, Science Transfer Specialist at Kristy.McKay@ontario.ca

3. Forestry and Natural Resources Webinars

http://www.forestrywebinars.net/

4. Conservation Webinars

http://www.conservationwebinars.net/

5. Urban Forestry Today

http://www.urbanforestrytoday.org/

6. Climate Webinars

http://www.climatewebinars.net/

7. Cornell University

http://blogs.cornell.edu/cceforestconnect/subscribe/

8. How To Do Urban Wood

http://illinoisurbanwood.org/urban-wood-network-announces-how-to-do-urban-wood-webinar-series/

9. Forestry Chronicle

http://pubs.cif-ifc.org/journal/tfc

10. Canadian Journal of Forest Research

http://www.nrcresearchpress.com/journal/cjfr

11. FPInnovations

http://blog.fpinnovations.ca/

New resources for urban foresters

The Research and Development arm of the US Forest Service has released a series if webinars and reports related to standardized guidance for monitoring urban trees. The reports and webinars can be found here: https://www.fs.fed.us/research/urban-webinars/tracking-tree-survival-growth-health.php

Coming Events

Climate Change Response Framework: Adaptation Planning and Practices Online courses

Fall 2020 - Winter, Spring 2021

https://forestadaptation.org/learn/adaptation-planning-and-practices-online-courses-fall-2020-winter-spring-2021

Forests Ontario Annual Conference: Growing Our Futures

February 3- 5, 2021

https://www.forestsontario.ca/en/event/annual-conference

2021 Ontario Invasive Species Forum

March 1 - 4, 2021

https://www.invasivespeciescentre.ca/events/ontario-invasive-species-forum/

2021 Virtual OPFA Annual Conference

April 6-8, 2021

https://opfa.ca/about-us/event-list/#!event-list