Forest History Society of Ontario

Forestory

Journal of the Forest History Society of Ontario

Volume 3, Issue 2, Fall 2012

Contents

We want to hear from you!

If you have articles, photographs or images, interesting facts, web links, personal reflections or events that would be suitable for this newsletter, please contact the editor.

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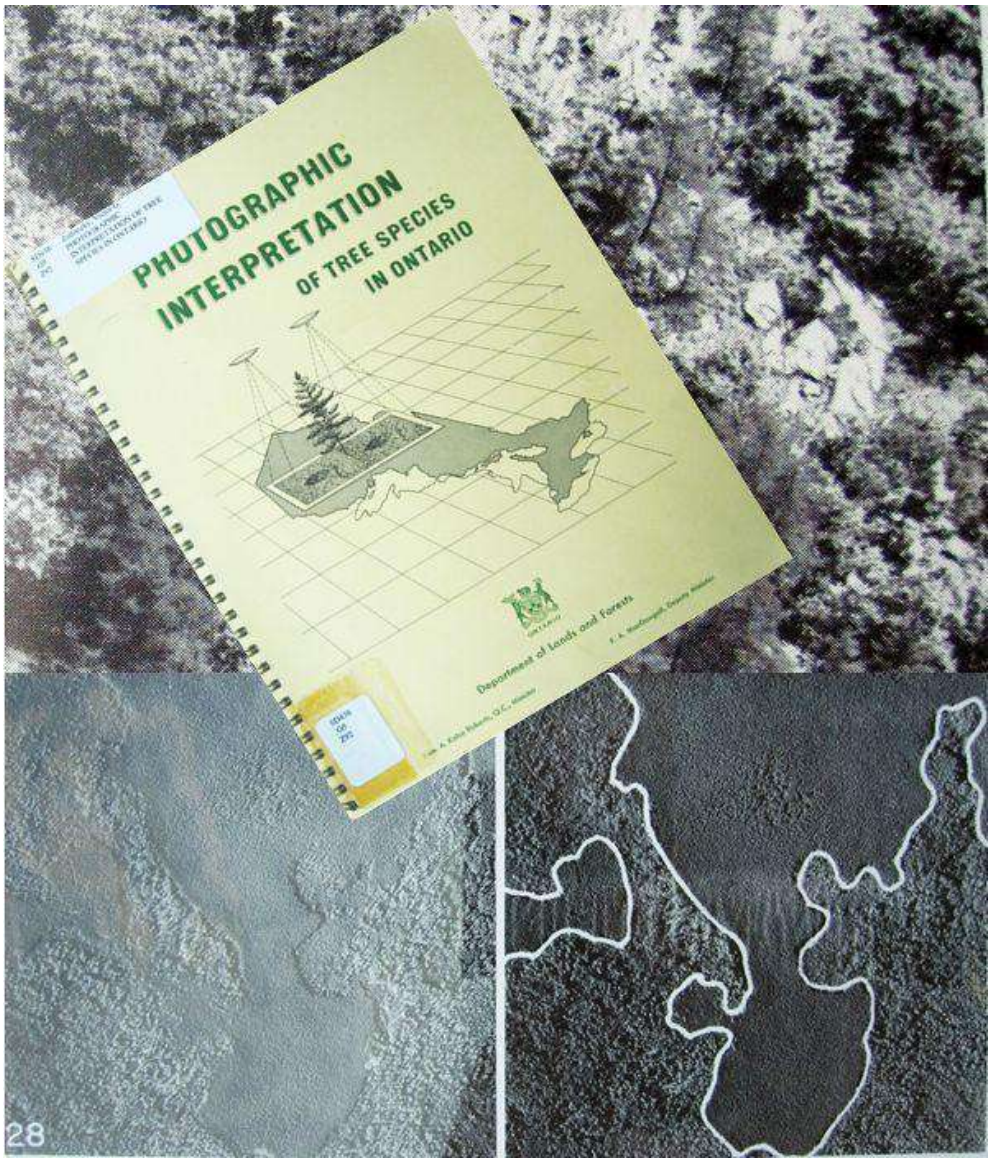

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Request for Content

Do you have an interesting story to tell about some aspect of forest history in Ontario? Or are you prepared to write an article for the newsletter on some aspect of forest history? Do you know of interesting photographs, documents, web sites or other items that would be suitable for inclusion in the newsletter? If so, please contact the editor to discuss the possibility of publishing your information in the newsletter.

Please provide your comments to the editor on items or themes you would like to see in the newsletter.

President's Message

I trust that members had an enjoyable summer and early fall. In the Spring issue of Forestory I mentioned that in cooperation with the Canadian Bushplane Heritage Centre our Society mounted a display on the history of forest inventory in Ontario at the Centre in Sault Ste. Marie. The exhibit covered the description and measurement of Ontario's forests from 1800 to the present and was on display in a central position in the Bushplane Museum from mid-April to mid-September and accessible to more than 16 thousand visitors during that period. I would hope that some of our members had an opportunity to view it.

Our Society is a provincial member of the Ontario Historical Society (OHS), which was founded in 1888 and is one of the oldest historical societies in the country. At our Directors' meeting in October it was decided to provide the same reduced membership fee ($30) for our Society to members of the OHS that we offer to members of the Ontario Forestry Association and the Ontario Woodlot Association. The OHS publishes a journal, Ontario History, biannually, and we have been asked if our Society could provide a series of chapters for a future issue of Ontario History on the theme of forest history. Professor Mark Kuhlberg has agreed to act as a coordinator in this matter.

Our Society is interested in ensuring that the memories and contributions of foresters, no longer with us, can be marked in an appropriate manner. In 2011 we were able to contribute, in concert with the Port Rowan and South Walsingham Heritage Association, to the establishment of a memorial to Edmund J. Zavitz and the naming of the forest at St. Williams after him. Presently, the Directors are looking at a possible way of recognizing the contributions of Frank A. MacDougall to forestry in Ontario. He was the longest serving Deputy Minister in the Ontario Department of Lands and Forests, and although remembered as the Superintendent of Algonquin Park with the Parkway at the west entrance named in his honour, his forestry side appears neglected. We would like to hear from members who can share memories or have suggestions as to what the recognition might be.

Finally, a reminder that the Annual Meeting of the Society will be held on Thursday afternoon, February 7, 2013, at the Nottawasaga Inn, Alliston. I hope to see as many members there as possible.

To all a very happy and safe holiday season.

Ken Armson R.P.F.
Chair, Forest History Society of Ontario

Editor's Message

Sometimes life intervenes in the best-laid plans and that is what happened to me this past few months, putting me behind in my schedule to publish the Journal in early November. But that is what life is like.

And yes! We are now a "Journal" and not a newsletter. I was thinking about the name of our publication over the summer and in the fall approached our Chair, Ken Armson, with a suggestion to change the name to Journal, and he agreed. Our new name better reflects our aims.

As with each issue, I am amazed with what I learn putting this publication together. I was not aware, for instance, of the significant role that Chief George Johnson played in Ontario's forest history; nor was I aware of the ecology of the pawpaw tree. And while I am well aware of Hurricane Hazel, I always thought it stopped at Toronto, never thinking it continued north and caused destruction in our boreal forests. I have seen lots of pictures of brag loads, but I have not before seen or heard about brag logs. And I worked at the Ministry of Natural Resources while Bud Wildman was our Minister. He was an enigma. We often wondered how policy was made, and now I know – through a helicopter ride!

The article on Stanhope Museum, once again for me, reinforces the importance of local history archives. The results of David Brownstein's archive project confirms the value of local archives and recommends that forest history societies forge relationships with these organizations. We need local ambassadors to develop these relationships. If you have a museum or historical society in your area please make a visit and find out what forest-related artifacts they have and what history they might be able to provide for an article.

I am pleased that we have a french article in this issue. I wish my french was better – it was a struggle to get the words right, and I thank M. Paillé for his patience. If you can help us with obtaining articles in french, please send me an email.

And it was with sadness that I read about Erik Jorgensen's passing. Erik was one of my professors at the University of Toronto and I always enjoyed his lectures, if not the topics. Back then I wasn't much interested in pathogens, but now I walk the local woods and trails seeking out mushrooms to photograph – with at least some knowledge gained from those lectures of long ago.

For our next issue our focus is forest fire history – a hot topic for sure! Send me your stories on this topic.

Have a great Holiday Season! And in three weeks the days will be getting longer!

Sherry Hambly M.Sc.F.

Forest History Society of Ontario

A Look Back at Ontario's Forest Resources Inventory

By Victor G. Zsilinszky, P.Eng.

When I think back more than half a century to the beginning of Ontario's Forest Resources Inventory Maintenance Program in the Department of Lands and Forests, I have a sense of nostalgia, as my own professional history is rooted in the program's development.

The purpose of Ontario's "FRI", as it was commonly known, was to update basic statistical data on the forests of the province and to provide detailed information for forest management. An early survey of forest resources of Ontario was undertaken in 1946 and completed in 1959. In 1957, however, a more comprehensive inventory program was launched (Dixon and Jenns 1965). The timing of this launch coincided with my own arrival in Canada, as one of a refugee group of foresters and engineers escaping the 1956 Soviet invasion of Hungary. It became my good fortune to become part of the FRI program from its early days and to continue there until 1969.

An FRI camp near Foleyet, ON

Lands and Forests staff member Dr. Walter L. Plonski was the original architect of the FRI program. Once the FRI Unit was formed, it fell to R.M. (Bob) Dixon (Dixon and Jenns 1965) to decide how the FRI plan would be executed, and to manage the day-to-day operations of the Unit, under the authority of J.A. (Steve) Brodie, Director, Timber Branch.

This broader FRI operation depended on the development of four main components. The first was normal yield tables for the most commercially important tree species. The second was interpretable aerial photography on which the most important tree species could be identified, described and classified. The third was a method for the collection of sample data in the field from forest plots identified on aerial photographs. The fourth element comprised the resources and processes for interpreting the aerial photographs and compiling the information obtained from them.

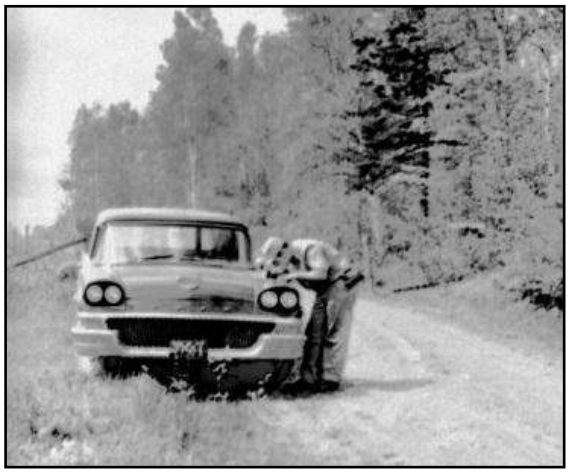
Walter Plonski had already begun working on the preparation of normal yield tables (Plonski 1960), and he pressed for the collection of data from selected forest ecological locations during the summer fieldwork seasons from 1957 to 1959. The selected locations provided a good representation of growing conditions for commercially important species across the province. During the summer of 1959, I worked as a cruiser; that is, a member of one of the field parties in charge of collecting such data. This was a good opportunity for me to learn first-hand how tree species and forest stands, as they existed in the field, also appeared on three-dimensional aerial photographic images, as viewed under a 2X-magnification stereoscope.

When I returned to the office that fall, I began organizing my field notes, sketches and stereograms into a form that became useful as a training aid for photo interpretation staff. Largely on the basis of this material, I developed a training manual designed to fill a gap that existed in a critical part of the FRI operation. The first edition was published in 1963 under the title Photographic Interpretation of Tree Species in Ontario, and a second edition was published in 1966 (V. Zsilinszky 1966).

The process by which FRI aerial photography was recorded was also being refined. In 1957, the Department of Lands and Forests invited Professor K.B. Jackson, professor of applied physics at the University of Toronto, to assist in the preparation of specifications for aerial photography designed to permit the best interpretation of forest detail (Jackson 1960). Professor Jackson's examination was directed at aerial photography with a scale of 1:15,840 and a forward overlap of 60 percent that maintained continuous stereoscopic coverage, as recorded by the best-performing photogrammetric cameras available. Jackson's recommendation was to use panchromatic film and to develop the film within a compressed contrast range; that is, within a range from light grey to dark grey that excluded both the fully black and fully white extremes in the film emulsion, which were empty of detail. This recommendation was received with scepticism by people accustomed to using single aerial photographs for casual inspection or for planimetric operations. For these purposes, even black and white infrared photographs were useful, so the value of reducing overall contrast was not immediately apparent. When the new negatives were printed, however, the resulting positive prints offered a dark grey to light grey range that was stereoscopically far richer in detail and thus provided optimal interpretability (V. Zsilinszky 1964).

End of a tough day - Glenn Crombie, Party Chief, Don Buchanan and Jim Clarke, FRI Cruisers, in Field, ON.

FRI policy prescribed that private contractors should be commissioned to record new aerial photography over a given area every ten years. The quality of this photography occasionally left much to be desired, owing to the presence of dense atmospheric haze during photographic missions, which had the effect of further reducing contrast in the images, beyond the limit helpful for interpretation. A quality control program was in place, yet it was often difficult for FRI staff to reject a substantial portion of new air photo coverage, especially when the issue was a borderline case. Contractors felt under pressure from FRI specifications that effectively curtailed an already short flying season. FRI staff were, in turn, under pressure from field offices, which were waiting impatiently for the completion of one full set of aerial photographs and also for the final forest inventory product.



Jim Clarke, a forestry student from the University of Toronto working as an FRI cruiser during the summer of 1959, is studying air photos with a stereoscope prior to entering the forest stand for FRI sampling, near Sturgeon Falls, ON.

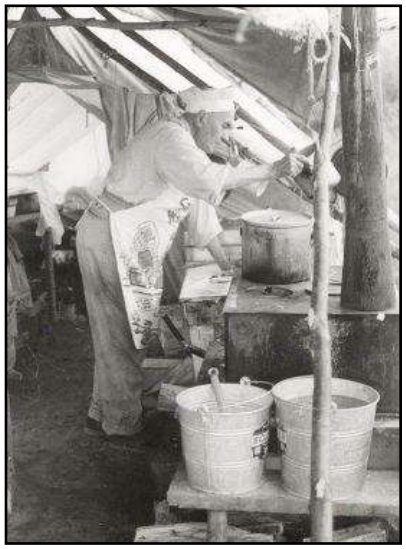
Another challenge to inventory quality was the unwritten rule of the Department from 1957 onward that foresters fresh from school were to be hired as trainees for a year in the FRI Unit and given responsibility for a number of critical functions. They were expected to use subjective judgment in selecting the locations where field samples should be taken, and they were responsible for marking those sites on aerial photographs, in preparation for summer fieldwork. They filled the role of party chief, each managing the work of a six-person crew in the field. In fall, once the field season was over, they were responsible for completing air photo interpretation for their designated areas by referring to data, information and images of the selected field sample sites. They were also responsible for the transfer of data and information onto 1:15,840-scale planimetric basemaps, which had to be made ready for compilation and drafting by in-house staff.

These tasks were required of inexperienced forestry graduates during a one-year training period in FRI, after which they were to be transferred to field offices the following spring. Except for the problem that photo interpretation of relatively large areas was completed on the basis of virtually no experience, it was a noble idea. It was an impossible situation from the point of view of quality control, as the yearly cycle of the FRI operation relied heavily on the quantitative and qualitative results of photo interpretation. In theory, these junior party chiefs could have trained themselves in photo interpretation while standing in the forest, air photos in hand, comparing reality with 3-D images. The party chief, however, was also responsible for all the details of running the FRI field camp, so that training and photo interpretation were normally left as part of the office work to be done in the fall.

Another issue was that examining aerial photographs through a stereoscope in the office for hours on end involves an intensive visual effort that not everyone can accomplish with the same level of energy or success; furthermore, not everyone is capable of seeing in 3-D. It took several years to convince upper management that, for the sake of a more accurate forest inventory procedure, the practice of replacing photo interpreters yearly must change. The recommendation was for the establishment of a permanent photo interpretation staff of carefully selected, qualified forest technicians, who would develop the expertise required for consistent performance and would thus produce better-quality inventory results. This argument was ultimately accepted and, by the early 1960s, the hiring policy was changed. FRI was on the right track to become a respected fixture of the Department of Lands and Forests (after 1972, named the "Ministry of Natural Resources").

The FRI Unit in 1957 was located at 504 Wellington Street, Toronto, and in 1962 moved to Downsview into the then-Department of Highways building complex. In 1972, the Unit was relocated to the Whitney Block in the Parliament Buildings in Toronto. Since 1988, the FRI has made its home in Sault Ste. Marie.

History is made these days more rapidly than ever, as we are witnesses to technological advances happening at spectacular speeds around us. My young colleague, Murray Radford, the current Coordinator of FRI, comments that today's forest inventory program has received the benefit of such progress, especially in aerial photography. Photography in general has gone through a major technological conversion from chemical to digital processes. Hard-copy black and white air photos have been replaced by high-resolution digital imagery that is viewed at soft-copy interpretation stations. The subjectively selected field sample sites have also been replaced by a network of permanent forest inventory plots, a change that allows for the ongoing assessment of inventory results. In light of these ever-improving capabilities, it is not surprising that the FRI program has broadened in scope. We may hope that, as such new tools promise better and faster results, the outcome will be reflected in more effective management of our forest resources than ever before.



FRI cook, Bill Moore, on the job near Gogama, ON.

Photos

All photos were taken by the author during the period 1959 – 1961, and are used with permission.

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Pre-Settlement Vegetation – Credit River Watershed

By Michael Puddister

Located just west of Toronto, the 1,000 square kilometer Credit River Watershed merges into one of the fastest growing and most heavily populated areas of Canada, and includes Mississauga and Brampton (Peel Region) in its southern reaches and Orangeville (Dufferin County) at its headwaters (Figure 1). The watershed landscape is largely rural/agricultural in its northern half and urban in its southern half. Its landscape has been subjected to incredible land use change, which largely began following the initial land surveys of the early 1800s (Figure 4) (Mersey and Puddister n.d.).

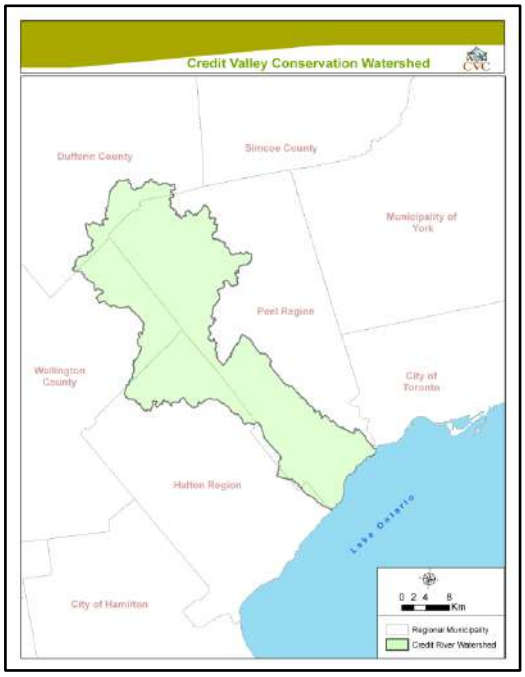

Figure 1: Map showing Credit Valley Conservation watershed.

Unraveling the Past

Predating air photographs or satellite images, the records of early land surveyors provide a valuable glimpse of the pre-settlement forested landscape; a fairly dense network of first-hand observations of vegetation type. Under written instructions from the Acting Surveyor General David William Smith (appointed as the first Surveyor General for Ontario or Upper Canada in 1792) and Lord Simcoe, Lieutenant-Governor of Upper Canada, early surveyors plotted township lines and access roads across southern Ontario, recording the vegetation observed at the boundary of every surveyed lot.

Illustration 1: Depiction of early surveyor in Ontario – from Wilson (2007).

"The practice at the time was for the surveyor to set up his circumferentor on a level stump or a flat rock and take a sight along the intended township baseline. Axemen cut away obstructing trees. One chainman carried and opened up the remaining 99 links of the chain to a point determined to be precisely correct; the surveyor then signaling the picketman to drive in a stake at that point. At the termination of every fourth lot a span of one chain was provided for a future side-road. If he came to a creek or swamp the surveyor recorded that feature in his field book. He also entered details regarding the quality of the soil, the number of rock outcroppings and the types of timber" (Illustration 1) (Wilson 2007).

The instructions specified the details that were to be gathered:

"You will return your plan and field notes to this office, and on your plan it will be requisite you lay down the swamps, rivers, creeks, springs, mill seats, lakes and minerals and note the same also in your field notes, together with the quality of the soil, timber and everything else worthy of remark" (Sebert 1980).

The vegetation, particularly forest composition, was described in considerable detail. For some lots, up to the seventh dominant species was recorded; for others only a more general description was provided such as swamp or savannah.

"The townships within the Credit River Watershed were surveyed between 1806 and 1822.

From the surveyors' field notes it is clear that they worked through a primeval forest almost unbroken except for an occasional "beaver meadow" or patch of windfall. In the valleys they found cedar, tamarack or "aulder" swamps and black ash "swails". On the valley slopes hemlock was common. Over most of the watershed the uplands were covered with stands of hard maple and beech, with a mixture of basswood, oak, ash and elm. In the central part of the watershed pine was sparsely scattered through the hardwood forest. In the north, pine was more abundant, but only near the lake did the surveyors record the timber as being principally pine and oak... The modifying influence of Lake Ontario is reflected in the presence of walnut, noted by Wilmot in the Toronto Township survey of 1806." (Ont. Dept. Pl. Dev. 1956).

Little note was made of the quality of timber, but just south of Georgetown (Halton Region) in the Esquesing survey of 1819, Bristol was sufficiently impressed to note: "Beech basswood Maple Oak timber very large." The same year at Concession VI, on the north boundary of Chinguacousy (Caledon) he recorded "timber chiefly beautiful sugar maple" (Ont. Dept. Pl. Dev. 1956).

The pine and oak of the southern watershed were located on the sandy soils of the ancient glacial Lake Iroquois shoreline. The 1806 survey documents timber reserves ("Kings Masting") for the Royal Navy of pine often 150 feet high, and oak up to 50 feet along the banks of the Credit River. It also lists seven lots south of Dundas Street as containing "a great many" pine 7 to 11 feet in circumference and 60 to 70 feet high. Three lots were said to contain "a great many" oaks 8 to 11 feet in circumference and 40 to 45 feet high (Corp. Cty. Peel 1967).

Following the initial surveys, settlement began, albeit slowly. Lieutenant Francis Hall, on his way to York in 1817 recorded that near present day Dundas Street at the Credit River "The thread of settlement is slender and frequently interrupted by hemlock swamps and pine barrens" (Ont. Dept. Pl. Dev. 1956). To legally secure their land patent, the settlers were required to carry out some tree clearing or "land improvement". After January 1820, this obligation included the cutting of all trees on a strip 165 feet deep across the entire front of each lot (Ont. Dept. Pl. Dev. 1956). Jamieson (1843) as referenced by Puddister (1999) wrote, in 1837, of her trip upstream on the River Credit, through present day Mississauga, and described a diverse landscape of untouched and unknown wilderness.

"On each side of this forest path, the eye sought in vain to penetrate the labyrinth of foliage and intermingled flowers of every dye where life in myriad forms was creeping, humming, rustling in the air or on the earth, on which the morning dew still glittered under the thick shades…The boundless forest spread all around us … The banks on either side were clothed with overhanging woods of the sumach, maple, tamarack, birch, in all the rich yet delicate array of the fresh opening year … Beyond, as usual, lay the dark pine forest."

The initial means of subsistence was of course an agricultural-based economy, and in order for that pursuit to be successful, tree clearing had to begin in earnest. Simply put, for agriculture to develop, the forest had to go, and much of it was simply piled and burned. As Kelly (1974) noted: "The prevailing attitude of the early settlers for most of the nineteenth century was one of hostility to forest … Farm and forest were seen as entirely incompatible … They attacked the forest with a savagery greater than that justified by the need to clear the land for cultivation, for the forest smothered, threatened and oppressed them".

The early settlers literally came from another world. Their relationship with the forest in their native European country tended to be one of admiration. "They had imagined clearings, patches of sunlight, and towering and spreading forest giants. In their mind's eye they had carpeted the forest floor with flowers and populated the trees with songbirds" (Kelly 1974). Instead they found a wild and untamed land, dark and foreboding, populated with black bear, wolverine, timber wolf and lynx and a wide range of other unfamiliar wildlife.

In 1821, near the completion of the original land surveys, the population of early settlers in the watershed was likely less than 2,000. By 1827, within 7 to 8 years of settlement, the population and supporting industry grew such that there

were 15 sawmills strategically located along the Credit River and its major tributaries. By 1858 that number had grown to 57 as harvesting of the primeval forest accelerated (Ont. Dept. Pl. Dev. 1956).

The sawmills of Toronto Township (present day Mississauga) were probably shipping lumber, and may have been rafting it down the Credit River. Evidence given in 1826 mentions only staves as being sent down the Credit with the spring freshet. Square timber was obtained by selecting large trees, mostly white pine, and squaring off the best part. In the earliest days of the industry the timbers were squared on all four sides to a fine "proud edge", but later, when the best timber had been cut, they were squared with a rounded shoulder or "wane"' and were known as "waney timber". Such methods, of course, were wasteful since the finest grained wood was sacrificed in the operation, but this was the type of material called for, by the British market (Kelly 1974).

W.H. Smith (Smith 1851), as referenced in the Credit Watershed Report of 1956 (Ont. Dept. Pl. Dev. 1956) notes the following shipments from Port Credit.

1844

Square Timber (Oak and Pine)	278,000 feet**
Lumber	1,433,369 feet**

1850*

Lumber	2,430,751 feet

*No square timber listed for 1850
**Presumably the square timber was recorded in cubic feet and the lumber in board feet

The Census of Canada recorded that in the 1870s and 80s forest production was dominated by the harvesting of elm, pine and tamarack (Ont. Dept. Pl. Dev. 1956).

The forest of the Credit River Watershed, as would be the case across much of southern Ontario, first represented an obstruction to the work of the surveyor, while at the same time serving as an indicator of future land potential (would it be suitable for agriculture or would it be written off as swamp wasteland?). Next, the early European settlers, on a mission to make a living off the land, attacked the forest as they perceived it to be an impediment to their survival. As the agricultural industry grew, so too did the need for building materials. This local demand, combined with growing markets abroad, and the need to supply and Royal Navy with masts and other building materials, led to a rapid expansion of the timber industry. Leading us to the present day reality of expanding urbanization, where in the minds of some, the forest remains incompatible with their plans for economic success.

Visualizing the Pre-Settlement Landscape

The map on the following page (Mersey and Puddister n.d.) attempts to illustrate the forest types that likely existed within the Credit Watershed at the time of the surveys (Figure 2). While only species by dominance were recorded, the authors attempted to describe them more through a vegetation community approach. Vegetation communities were developed by examining the primary, secondary and tertiary vegetation types, and grouping them into fewer, broader classes. The Ecological Land Classification system, developed for southern Ontario (Lee, et al. 1998) was used as a guide. For example, a sugar maple-deciduous forest includes all polygons where sugar maple is the primary (dominant) species and all associates are secondary or less. Forest species observations from the surveyor's records were manually annotated onto county maps. Using ArcView and an OBM digital township boundary file, a digital database of this information was created. New polygons were then created, extending halfway across lots; thus each observation point used by the surveyors became the midpoint of these new polygons, which were assigned the annotated vegetation type.

Sugar maple-deciduous forest dominated much of the Credit River watershed, especially in the southern and headwater regions. Twenty-nine different species were recorded with maple, beech, basswood, elm, pine and hemlock receiving most frequent mention (Figure 3) (Mersey and Puddister n.d.).

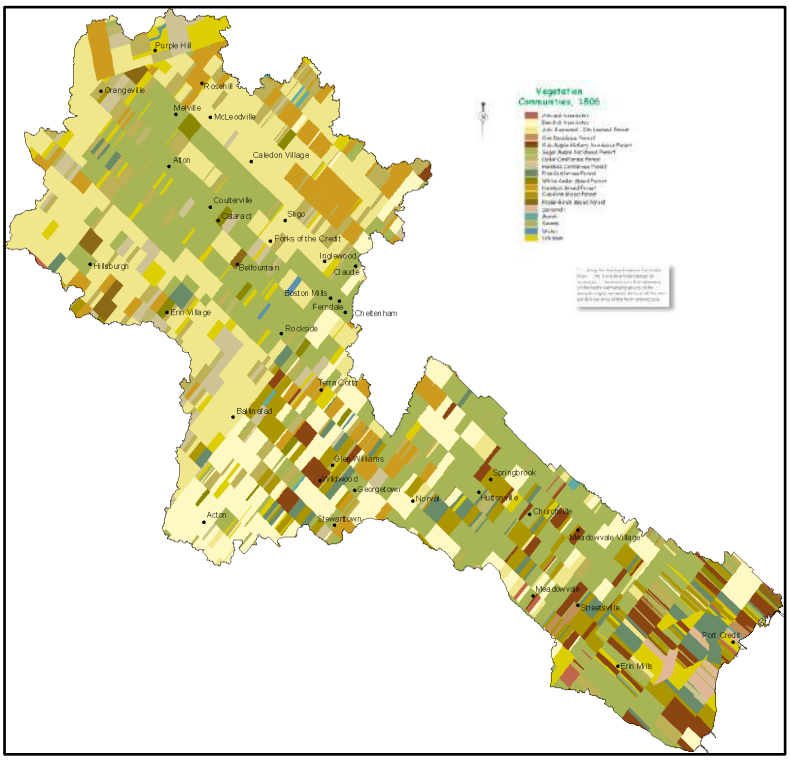

Figure 2: Map showing distribution of forest vegetation communities from original land survey records, 1806 (Mersey and Puddister n.d.).

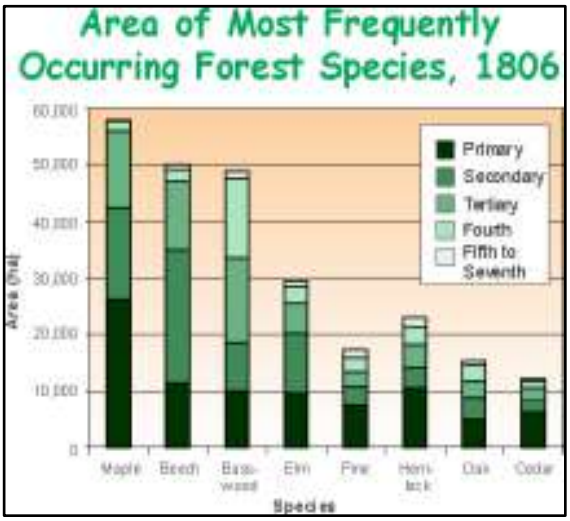

Figure 3: Area of most frequently occurring forest species, 1806 (Mersey and Puddister n.d.).

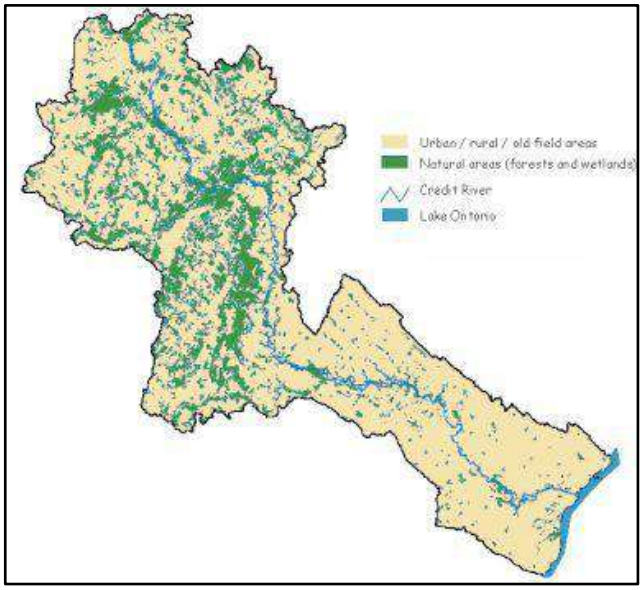

Figure 4: Remaining natural area in Credit Watershed, 1996 (Mersey and Puddister n.d.).

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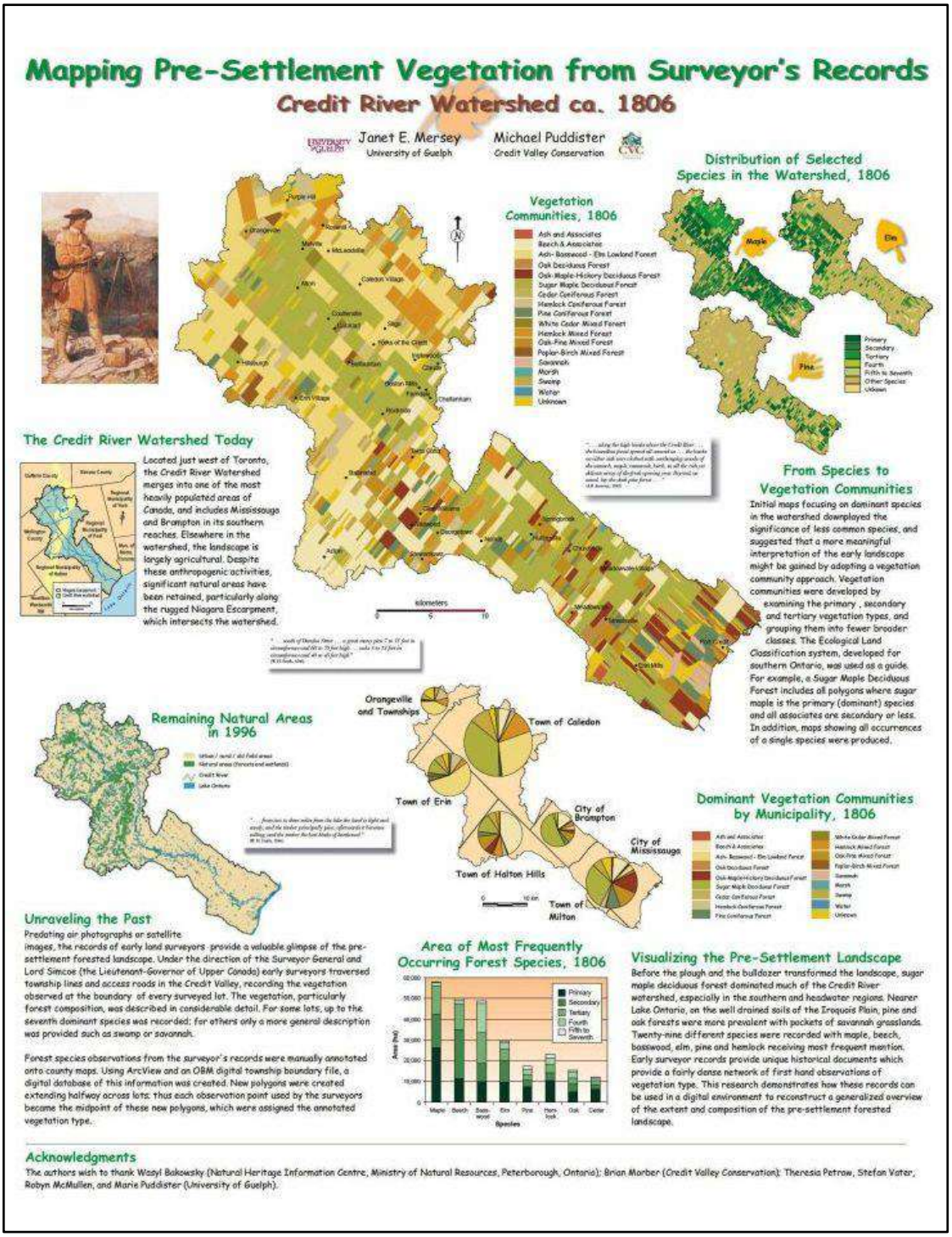
Mapping Pre-Settlement Vegetation Poster

The following poster explains the process and results of interpreting the early surveyors' records to re-create the pre-settlement vegetation cover of the Credit River Watershed. Such information provides a valuable historical baseline from which to describe land cover changes and also serves as a reference for future resource management activities. This project was carried out through a partnership between the Department of Geography at the University of Guelph and the Credit Valley Conservation Authority with assistance of the Natural Heritage Information Centre in Peterborough.



Ontario's Forgotten Fruit: The Pawpaw

By Dan Bissonnette

The pawpaw (*Asimina triloba*) is a small, slender tree that is found in wooded areas throughout much of the eastern United States as well as in portions of southern Ontario (Figure 1). Pawpaws typically grow in clonal groves, which are referred to as stands, or "patches" (Bowden and Miller 1951). This growth pattern is referenced in the traditional American folk song "Way Down Yonder in the Pawpaw Patch".

Its large leaves, combined with its slender stature, give this species a tropical appearance. The tree produces a distinctive purple flower (Figure 2) that results in an oval-shaped, edible fruit that can grow up to 12 cm in length, making it the largest native fruit in this country (Figure 3).

Despite its unique attributes, this species is not widely recognized in this province. Compared to oaks, maples, hickories and other native species in its range, the pawpaw is relatively unknown. In this regard, it has sometimes been referred to as "the forgotten fruit" (Davis 1983). Despite this, the pawpaw has an intriguing history and a potential future that could provide many benefits.

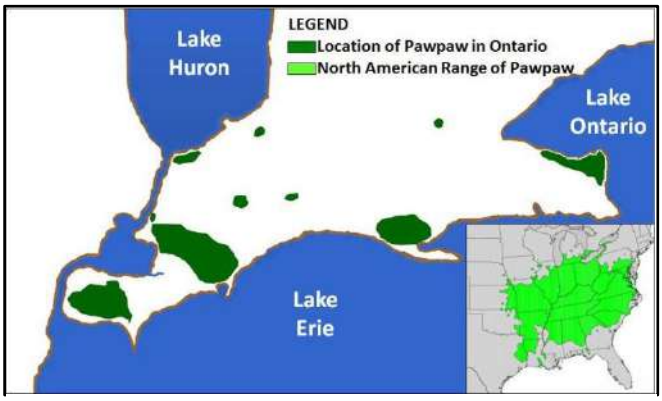


Figure 1: Range map of pawpaw in southern Ontario. This map was prepared by Dan Bissonnette based on information contained in Heimburger and Soper (1990). Inset map shows North American range or pawpaw (map obtained from eNature website (http://wild.enature.com/blog/whats-a-pawpay-taste-like-and-where) and is attributed to the USDA).

From time to time, it has been suggested that pawpaw is not indigenous to this province. Some have speculated that it was introduced by American loyalists who arrived in Ontario after the American Revolution. Others suggested that this species made its way into this province through African Americans who escaped slavery in the early 1800s (personal communication with various local people n.d.). However, neither of these scenarios are plausible and early documents and fossil records confirm that the pawpaw species has been a part of this province's natural history for a long time (Raudot 1710; Bowden and Miller 1951; Fox and Soper 1952).

Figure 2: Flower of pawpaw tree. Photo taken by Dan Bissonnette; used with permission.

Before it was known by its present english name, the pawpaw was referred to as "Assemina". This name, or minor variations of it, was the name used by the First Nations people who made the Great Lakes region their home. The early French traders and settlers adapted this name for their own use. They referred to these trees as "asiminier" and its fruit as "asimine" (Bénéteau and Halford 2008). The aboriginal name, along with its prominent three-lobed calyx, eventually formed the basis of this species' botanical name, *Asimina triloba* (Soper and Heimburger 1990).

Prior to the mid-1800s, the fruit of the pawpaw was a recognized food source among both the aboriginal people and the french who settled in this province. The fruit, with its custard-like texture and sweet banana-mango flavour, was likely sought after by many when it began to ripen in September. This species, along with the wild plum (*Prunus americana*), was planted and tended to by the Ojibwa and other First Nations throughout southern Ontario. In fact, much of the movement of the pawpaw throughout its northern range has been attributed to the aboriginal people (Waldron 2003).

Following the mid-1800s, the pawpaw's circumstances throughout its provincial range began to change. The establishment of new townships, the rapid influx of new settlers, combined with an unprecedented expansion of the lumber industry, resulted in drastic changes to the landscape. By the time most of the lumber mills throughout southern Ontario had ceased operations at the start of the 20th century, much of the biologically diverse Carolinian habitats that characterized this region were decimated. Presently, forest cover across the Carolinian Zone has been reduced to only 11.3 % (Waldron 2003).

While it is not possible to gauge the exact number of indigenous pawpaw stands that have been lost during this period, it is safe to say that this sensitive species was especially affected. Although the pawpaw is not officially listed as a species at risk in Ontario, its decline in this

province has mirrored the loss of the woodland habitat in which it depends. For example, in Essex County, where the natural forest cover has been reduced to less than five per cent, there are now less than ten remnant stands of pawpaw remaining (ERCA 2002).

As the lumber industry in Ontario's Carolinian Zone was winding down, work had begun to document the pawpaw and other native plant species. Through formal plant surveys and informal field outings conducted throughout the late 19th and early 20th century, botanists actively observed and mapped this species. One of the first people to provide formal documentation of the pawpaw was the world-renown botanist, John Macoun (Macoun and Kindberg 1902). Another prominent individual to document this species in the following years was James Soper, who later co-authored the book "Shrubs of Ontario" (Soper and Heimburger 1990). Another notable contributor was Albert "Bert" Miller, for whom a naturalist club in Fort Erie is named. Miller did a great deal of fieldwork in the Niagara peninsula in the 1940s. At a time when this species was often spelled "papaw", he also co-wrote a paper titled "Distribution of the Papaw in Southern Ontario" with fellow botanist Wray Bowden (Bowden and Miller 1951). This paper appeared in the January-February issue of the Canadian Field Naturalist in 1951 and was one of the first comprehensive articles on this species to appear in Canada.

Although the pawpaw had garnered some appreciation among naturalists at this time, it was largely unknown by the general public in Ontario. With most of the remnant stands of pawpaw seemingly hidden away in forest clearings and ravines, most people had no means to become acquainted with this species. Furthermore, in a time and culture when a tree's value was defined largely in relation to lumber or firewood, this species never achieved a status beyond a botanical curiosity. For example, in the book "Native Trees of Canada" (Hosie 1990), which was a standard reference throughout most of the 20th century, the author described the pawpaw simply as having "…no commercial value other than as an ornamental." Without a working knowledge of this species' cultivation requirements or a genuine appreciation of its ecological and nutritional benefits, the pawpaw in Ontario appeared destined to languish in obscurity.

While the pawpaw in the United States had a comparable lack of public recognition throughout the latter half of the 20th century, it began to undergo a gradual, modest renaissance across its native range. In 1988, botanist Neal Peterson and other pawpaw enthusiasts established the Pawpaw Foundation (Pomper and Barney 2003). Kentucky State University established its first pawpaw orchard and research program in 1995 (KSU 2012). Over time, organic farmers and other alternative growers found that the pawpaw lent itself to community-supported agriculture. Interest in the pawpaw was given a significant boost during this period, when nutritional research revealed that its fruit was high in vitamins, minerals and antioxidants (KSU 2012). In 1998, a group of pawpaw growers launched the Ohio Pawpaw Festival, which has since become an annual event (Ohio Pawpaw Festival 2011). A few years later in 2001, a trade organization that would eventually be known as the North American Pawpaw Growers Association was formed (OPGA 2001). In 2009, the State of Ohio declared the pawpaw as its official state fruit (Asimina 2012).

Figure 3: Fruit of the pawpaw tree.
Photo taken by Dan Bissonnette; used with permission.

Through these developments, the pawpaw has gained some degree of public recognition across its American range. It is grown by both home gardeners and professional growers who offer the fruit at roadside fruit stands and farmers' markets. In addition to being served fresh, it has also proven to be very versatile in a variety of dishes, making it a sought after commodity among gourmet restaurants and food aficionados.

In Ontario, there is some limited interest among plant hobbyists and indigenous food advocates. Yet outside of some restaurants and specialty food distributors in the Toronto area, there is very little activity in terms of pawpaw fruit distribution in this province. Compared to the progress of public awareness and appreciation of the pawpaw in the U.S., it remains a "forgotten fruit" in its Canadian range.

After more than a century of obscurity in Ontario, can we expect to restore the pawpaw in our habitats and public consciousness? Could we conceivably write a new chapter in the history of this long forgotten native tree? On one hand, attempting to duplicate the pawpaw's advances in the United States would not adequately suit our own circumstances, or address its ecological requirements. Alternately, promoting pawpaw as yet another gardening fad would have no lasting effect and may well do more harm than good for this already compromised species.

If such an undertaking were to be possible, it would require comprehensive education on this species, underscoring its uniqueness in this province and the need to preserve its remaining indigenous populations. Education will also be essential to advance this species through integrated training for both prospective growers and consumers, with an emphasis on local biodiversity and environmentally sustainable agricultural practices. Furthermore, this education would need to go beyond a few simple "how to" tips and foster a genuine appreciation of this species, while integrating it into our own landscapes, kitchen traditions, cultural heritage and regional identity. Only then, could we truly hope to restore the pawpaw as a valued part of our natural heritage.

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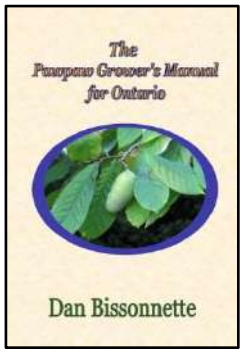
Addendum

The material presented in this article has been researched and developed by the author in conjunction with the Naturalized Habitat Network of Essex County and Windsor, as part of a special initiative called "Project Pawpaw". Originally launched in late 2011, this educational initiative is dedicated to raise awareness of Ontario's indigenous pawpaw and its benefits by providing education, training and practical experiences to both prospective producers and consumers, with the goal of restoring this species, while establishing it as a community-supported, environmentally sustainable local food resource.



Through this initiative, the author and the organization have jointly developed a new regional resource, "The Pawpaw Grower's Manual for Ontario". Published in September of this year, this is the first ever publication on the pawpaw in this province. This manual is available through mail order. For information on arranging an order, visit their web site at www.naturalizedhabitat.org .

The Swamp Forests of Southeastern Niagara

By John Bacher

Apart from aboriginal lands, notably Walpole Island and Grand River, the greatest concentration of remaining Carolinian forest (also known as Carolinian Canada) is found in the southeastern corner of Niagara Falls and Fort Erie. According to the most recent survey undertaken in 2008 by Philips Engineering for the Niagara Peninsula Conservation Authority, (NPCA) the conservation area has 37 per cent mature forest cover, which is rapidly regenerating (Philips Engineering 2008). Most of these forests are swamp communities, dominated by pin oak. This species was appropriately termed "water oak" by Edmund Zavitz, Ontario's leading forest conservation pioneer who grew up in the Fort Erie community of Ridgeway (Zavitz 1908).

Archives of Ontario photograph taken by Edmund Zavitz, circa 1956, of pin oak located near Queen Elizabeth Highway in the Niagara area.

Scorned and reviled in Zavitz's youth as wastelands, the pin oak-dominated swamps of southeastern Niagara Region are increasingly being appreciated as the great stronghold of Carolinian Canada (Philips Engineering 2008). Within the first decade after the NPCA was created in 1959, many of these swamp forests, notably the Humberstone Marsh of Port Colborne (misnamed – as it is a forest not a marsh), the Willoughby Swamp in Niagara Falls and the Stevensville Conservation area were acquired by the NPCA. Farmers informed by the extension services Zavitz created have gradually allowed marginal agricultural areas to regenerate back to forest.

One of the area residents who persuaded farmers to retire wet marginal land in the 1950s was Bert Miller, a noted local naturalist. (The leading environmental group in southern Niagara, the Bert Miller Nature Club, is named in his honour.) Miller was a lifelong friend of Edmund Zavitz.

The landscape of the stronghold of Carolinian Canada is dotted with the names of loyalist families who achieved considerable fame shaping local history.
Bert Miller's family is honoured by Miller Creek, most of which flows through what is now a provincially significant wetland. Edmund Zavitz's ancestors are immortalized through a Port Colborne road. Another road is named after the ancestor of another giant who shaped our world, A.J. Kraft. A contemporary of Bert Miller and Edmund Zavitz among Fort Erie's youth of the 1890s, Kraft founded one of the world's greatest food corporations based on his pasteurization of cheese.

Both the Kraft and Zavitz families were from pacifist religious minorities who came to Fort Erie in the 1780s because of their discomfort with American militarism. There were however, major differences between the families. The Krafts were Mennonites, devoted to farming, while the Zavitz clan were Quakers. The high respect for education typical of Quakers was the basis for two Zavitz family cousins, Edmund and Charles, becoming the key architects of the landscape of Ontario's rural landscape.

The landscape of southeastern Niagara is dominated, like much of rural Ontario, by soybean fields with forests in between. Charles Zavitz, an agricultural scientist, developed the first varieties of soybeans for widespread commercial application for Ontario farmers. Edmund preserved and expanded the forests between these fields.

By the time Edmund Zavitz was born in 1874, the family in Niagara had ceased to be Quakers, although those in western Ontario, especially Charles, continued in the faith of their fathers. Religious faith combined with education, however, continued to remain important to the Zavitz family. One key development that shaped the world Edmund grew up in was the establishment in Ridgeway of the first community library. Originally, it was a Methodist reading room, but was converted to a municipal library by the school principal, Alva Kilman, whom Zavitz, in his memoirs, credits for developing in him a love of nature.

What is astonishing is how Zavitz's skills as a scientist were honed by Kilman in the Ridgeway Continuation School that stopped at Grade 10. Kilman took his son and Zavitz on tours to the Niagara region's natural areas. As a result of these expeditions, Zavitz learned some important scientific skills. After the death of his father, Joseph, Zavitz became a high school drop out after graduating from grade 10 at Ridgeway's Continuation School.

During his teenage years, Zavitz worked as a handy man in the business empire of Fort Erie's mogul Ebert Cutler, who ran a railway (among other enterprises) between Ridgeway and the resort community of Crystal Beach. Zavitz still had the time between these varied odd jobs to build impressive and carefully-identified collections of moths, butterflies and beetles. He gave the moth and butterfly specimens to the Ontario Agricultural College in Guelph. The beetles were donated to the University Of Toronto's Department Of Forestry upon Zavitz's retirement from public service in 1954.

The past Dean of the University of Toronto's School of Forestry, Sandy Smith, gives some sense of what Zavitz did as a Ridgeway youth (personal communication 2012). She found that the beetle collection goes back to 1893 and every item is properly, scientifically labelled. This was when Zavitz was only 18.

The environment that helped Zavitz become a skilled teenage amateur naturalist can be understood by the innovative quality of Buffalo in the 1890s, which spilled over into Fort Erie. Buffalo, which, for this period, has been called the "City of Light", was a centre of innovation in the development of electricity. The city has been compared to a turn of the century version of today's California's Silicon Valley.

Some of Buffalo's millionaires who propelled the innovations in the City of Light were keen naturalists, and would have known Kilman. One of these millionaires was the newspaper publisher, Ottomar Reinecke, then Vice-President of the Buffalo Museum of Science. In the Fort Erie resort of Sherkston in 1891, he carried out one of the last recorded Canadian shootings of the soon to be exterminated passenger pigeon.

The Buffalo elite who loved Fort Erie's shores were not yet environmentalists when Zavitz's was a teenager. This however, soon changed. Around 1906 these naturalists formed the first chapter outside of New England of the American environmental group, the Audubon Society. Buffalo events played a major role in shaping Zavitz's career. The most important was the inauguration there of the American President, Theodore Roosevelt. One of his first acts was to make the United States Forest Service a major administrator of federal lands through its founder, Gifford Pinchot.

After his mother and stepfather persuaded Zavitz to go back to school and receive university training he still had no idea of what he could make his life's career, except as a teacher of botany. This soon changed when Roosevelt became President. Pinchot issued an appeal for more foresters. It was given to Zavitz by his Botany Professor, Richard Smith. The appeal set Zavitz on his life course.

Zavitz, in persuading farmers to take part in his co-operative reforestation programs, had to work with people who understood the value of trees and forests. I obtained some insight into this in an unusual way. When doing fieldwork with members of the Bert Miller Nature Club to prevent a proposed re-zoning of 827 acres of agricultural land to permit the establishment of a stock car racing track, I fell through the ice. To prevent frostbite I was ushered by the naturalists to the home of a neighbouring farmer, Richard Jukosky.

After being chest deep in icy water I got some sense of how educated, concerned and involved rural residents were in Zavitz's successful transformation of southern Ontario's landscape. While warming up I looked outside at the coniferous forest around the house. It was delightfully filled with such colourful birds as cardinals, chickadees, blue jays and gold finches.

Jukosky explained to me the history of the successful plantation near his home. A Buffalo doctor who had used the property as a hobby farm had established it. He also told me that the doctor had an enormous correspondence with an American President, Theodore Roosevelt.

The tale of the Fort Erie hobby farmer physician who was a friend of Theodore Roosevelt tells much about how a few dedicated and concerned people under Zavitz's leadership tripled forest cover in southern Ontario. Jukosky confessed to me that he later regretted burning the correspondence with Roosevelt, which he had done to make more space available.

Since 1959, when the NPCA was established, forest cover in Niagara has jumped from five per cent to 37 percent Philips Engineering 2008). This increase and prospects for increasing this amount is precarious because of threats from various developments. The creation of the NPCA, which helped facilitate the increase in forest cover, was hotly debated. Its establishment was opposed, as one of its key founders, the late Ontario legislator Mel Swart explained to me, by hostile political machines.

Swart served for a time as the Warden of Welland County. He was employed at the time by Ontario Paper, the major purchaser at the time of thinnings from provincial afforestation projects. He met with Edmund Zavitz and his close friend Monroe Landon. Swart

was greatly inspired by a legislative committee report, the Report of the Committee on Conservation (1951) that summarized Zavitz' and Swart's objectives.
Following Zavitz's death in 1968 Swart organized a ceremony at the Fenian Battlefield to have trees planted to commemorate him. Beverly Jewsen, now Secretary of the Bertie Historical Society, the principle, heritage protection group in southeastern Niagara, was able to attend both this 1970 event and the 2011 plaque unveiling at St. Williams honouring Zavitz.

The ceremonies to honour Zavitz show how a small but well-connected group concerned with heritage and natural conservation was able to launch the NPCA and subsequently guide it. This was a difficult task. Unlike other authorities in Ontario, the NPCA did not begin with a detailed technical plan calling for massive reforestation. However, a few years after it was established there was a study of southeastern Niagara. In addition to laying the basis for the acquisition of what eventually became the three major authority properties, it also recommended against further agricultural drainage schemes. As the report recommended there has been no extension of the municipal drainage systems although some of the existing drains flow across its properties.

Acquisition of lands for major new conservation areas in southeastern Niagara stopped in the early 1970s. There was one major purchase of swamp forests however, by a public agency, the Niagara Parks Commission. This was done in order to acquire the Chippewa Battlefield and the adjacent Legends of Niagara Golf course.

The Niagara Parks Commission, in establishing the Legends of Niagara Golf Course, carefully protected the swamp forests on site by converting only former farmlands to golf fields. There have been, however, major controversies over tree cutting in private courses, which have a larger acreage than conservation areas in southeastern Niagara.

The first successful conviction for violating the Niagara Regional tree by-law created in 2002 resulted from of a complaint by a dairy farmer and conservationist, the late Peter Grandoni. It involved tree cutting by the Beechwood Golf and Country Club. Grandoni and his sister Jean played a major role in protecting a forested area in Niagara Falls on Garner Road, containing pin oak, a rare buttonbush community and the threatened round-leaved greenbrier and white wood aster. After an Ontario Municipal Board appeal was launched 11 acres of this forested area was donated as a nature preserve to the City of Niagara Falls by the developer.

Photograph of vernal pool in the Smith Ness Conservation Area of the Niagara Peninsula Conservation Authority, 2010. Taken by Joyce Sankey and used with permission.

The largest urban forest in Niagara, the Ramsey Road Woodlot in Niagara Falls, which contains extensive pin oak forests and vernal pools, was also the centre of a land use dispute. Much of the forest was removed for the development of the Thundering Waters Golf Course. This area is slated to become a residential subdivision. Most of the remaining Ramsey Road woodlot has since been designated a provincially significant wetland precluding residential development proposals. In the area where development is permitted, an OMB appeal of the draft plan of the Oldfield Road subdivision by the provincial government and Jean Grandoni resulted in the expansion of protected habitat for the round-leaved greenbrier.

Niagara environmentalists have shown a lot of determination to protect their ecologically restored landscape rescued by Edmund Zavitz, Bert Miller and Mel Swart. One of the most spectacular protests involved a canoe trip from the Niagara River to Toronto, which resulted in the protection from residential development of part of the Point Albino peninsula known as Marcy's Woods by securing a Ministerial Zoning Order. Despite threats from various development proposals the unusual wetland forests of southern Niagara continue to expand.

Fort Erie contains one of southern Ontario's most heavily forested watersheds, the Kraft Drain, named after the ancestors of the founders of one of the world's largest food corporations. The NPCA watershed plan of Fort Erie's Creeks (Philips Engineering 2008) notes that the lower half of the Kraft Drain "is surrounded by a swamp, which appears to be regenerating from past attempts at agriculture, judging by the growth of tree cover and the appearance of land in aerial photography."

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The Power of the Maitland – Baechler/Platt Site

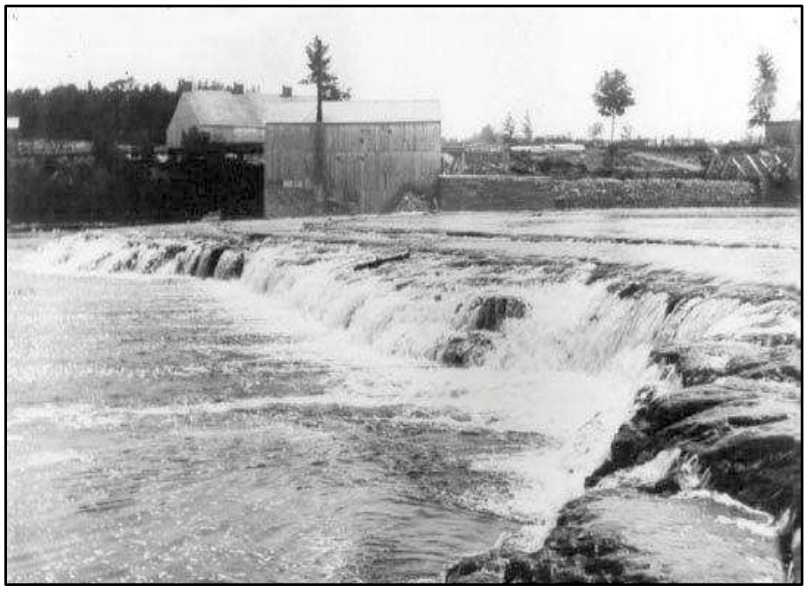
By John Hazlitt and Ted Turner

Introduction by Rhea Hamilton Seeger
John Hazlitt started out with a list of dam sites in the Maitland Watershed and Ted Turner wanted to see what was left of a wee village in the watershed named Bandon. Their shared interests led to a collaborative effort to describe the early history of the dam/mill sites on the Maitland River and the production of the book *Power of the Maitland, Powering pioneer settlement in an Ontario River Watershed*.

John and Ted compiled a list of pre-1900 dam sites in the Maitland River Watershed and then went out to find in-situ evidence of the dams. Some dams were built to power grist and flourmills and others powered sawmills. At each site the authors included a reference to the trees that grew in the area at that time as recorded by Peter Findlay in 1978 in his unpublished manuscript *Early Nineteenth Century Vegetation Patterns, Native Population And Wildlife Sightings In Huron County*. Some of the old photos of the sawmills had piles of logs that identified the lumber that was being milled.

Below is an excerpt from the book describing the Baechler Platt site, which was setup by lumbermen intent on harvesting the great forests of Colborne Township in Huron County. Photos in this article are from the book and are used with permission. Not all the photos for this section of the book are included in this excerpt.

BAECHLER / PLATT Colborne Township
The Maitland River from Benmiller to its mouth winds in a most serpentine manner complete with a major oxbow where the river actually runs in an easterly direction. A land mass that is surrounded on three sides by this natural meander is known as the Falls Reserve, and is the only Reserve in all of the Canada Company million acre holding in the Huron Tract. Two hundred and twenty nine acres of that is the Falls Reserve Conservation Area, owned by the Maitland Valley Conservation Authority.



An early postcard of the east side of the river, right, shows the upper falls, headrace and sawmill.

According to Baechler family records provided by Robert Francis Baechler of Goderich, Ontario, Francis Xavier Baechler was born in the Alsace region of France in 1845. He moved to Ontario in the mid 1800s and took up residence in Elma Township, Perth County. He was a lumber dealer and through his many connections in the trade met fellow lumberman Samuel Platt.

Samuel Platt moved his timber by river drive down the powerful Maitland River to his sawmill, that was situated downriver from the Village of Slabtown (Saltford). During times of unpredictable high water, many logs were lost to Lake Huron. They both appreciated the value of the vast tracts of elm, maple, cherry, cedar and beech growing in the Lower

Maitland River Valley and, knowing full well that movement of timber by river drive was very cost effective, they formed a partnership and leased the Falls Reserve from The Canada Company in 1882. Now, the partnership had a supply of standing timber, adequate waterpower to harness, along with the opportunity to purchase timber upriver and use water transportation to move logs to the mill site.

In 1882 they built a dam, or a low weir, to direct the powerful Maitland to the headrace, flume and sawmill at the east side of the Maitland River, downriver from Benmiller, at the Big Falls. With ample flow and a head of five metres (15 feet), the water turbine generated adequate horse power for a circular sawmill and secondary wood processing machinery.

Baechler and Platt built a number of houses, a store and a boarding house for the workmen at the site and, in 1885, a barn for cattle. Access to the Goderich lumber market and shipping opportunities by rail and water was via a bridge that Baechler and Platt built, immediately up river from the mill site. The sawmill was destroyed by fire in 1885 and the bridge later collapsed due to overloading by a herd of cattle.

Evidence of the barn foundation exists as well as the location of the house and these are preserved by the Maitland Valley Conservation Authority. We discovered ruins of the earthworks that were part of the weir/dam. The headrace with its earthwork is visible as well as the area that housed the base for the water turbine. This can be seen as a squared out area of limestone at the eastern lip of the Big Falls. Public access to this site is at the Falls Reserve Conservation Area.

Ted Turner, left, stands by earthworks to the weir/dam. The stone wall, on the downstream side of the earthworks, is hand-placed and adds strength to the structure. This area was densely overgrown but still visible and runs at 90 degrees to the flow of the river.

Samuel Platt died shortly after the sawmill burned. Francis Xavier Baechler disposed of the remnants of The Falls operation and went on to supervise and construct a large sawmill complex at Sarnia known as the Cleveland, Sarnia Sawmills Ltd. Much of the feedstock for the sawmill came from the north shore of Lake Huron via tug and log boom. The Federal Government later prohibited the booming of timber from the north country to the Lower Lakes as logs lost from booms become hazards to ships. Baechler severed his ties with the Sarnia operation and went on to commence his own sawmill operation at Camlachie, Ontario. Xavier Baechler died in 1907.

John Edward Baechler, a son of Xavier, worked with his father and became head sawyer, and chief lumber inspector. In 1912, John Edward moved to Goderich to purchase the original Goderich Lumber and Milling Co., which he operated for a number of years at the northeast corner of the Goderich harbour.

Reference

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Hugh Hill - Sawyer, Timber Merchant, Guernsey Breeder

By John Hazlitt

Hugh Hill (1884-1979) was a sawyer, timber merchant and breeder of guernsey dairy cows. Hugh Hill lived and farmed on Concession 1, Lot 9, in the Eastern Division of Colborne Township, Huron County. In the late 1890s Hugh and his father, William Hill Sr, erected and operated a steam-driven sawmill on their farm (Figure 1).

Figure 1: Hugh Hill's sawmill showing horses, mill with smoke stack and logs in the foreground. This photo is from the book "Colborne Connections" (Hazlitt 1986) and is used with permission.

Hugh and his brother, William Jr, were very much involved in the timber and lumber business of the area (Figures 2 and 3). William was directly responsible for the purchase of some 12,000 fbm* of eastern hemlock timber, from the north shore of Lake Huron. This timber was delivered by barge to the docks at Port Albert, Ontario, to provide for the construction of the 1900 foot-long railway trestle over the Port Albert River for the Ontario West Shore Railway (OWSR) that was being constructed from Goderich to Kincardine from 1906 to 1910. (The complete history of the OWSR is available at the Huron County Museum Goderich).

In 1909, Hugh and William Jr built a steam sawmill on Lots 4 and 5, Concession 1, Colborne Township, on a farm owned by William Hill Jr. This farm, with hardwood bush**, is now owned by the Treble Family.

The lumber from the steam sawmill was delivered to Charles Saunders Sr, owner of the Organ Factory in Goderich, Ontario, on a truck (1910 Granin) owned by Hugh Hill, the first truck north of London, Ontario (Figure 4).

Hugh also provided large timbers for construction such as the large maple shown in Figure 5. Hugh also furthered his sawmill/lumbering business with the operation of a large steam-powered sawmill at Hadlington, Ontario (now an abandoned hamlet). In 1916 Hugh purchased this operation from Tom Allen. The mill supported a staff of some 25 men. The species cut were eastern hemlock, spruce and balsam. The lumber was sold to markets in Toronto, Kingston and Belleville. The business was sold in 1920.

Figure 2 (left): Hugh Hill's sawmill with man scaling a large diameter log (Sallows n.d.).

Figure 3 (right): Workers at the mill, left to right, Hugh Hill, Joe Youngblut, Harry Walter, Herman Maedel (Sallows n.d).

Figure 4: Mr. Chuck Saunders Sr accompanied Hugh (driving) in 1912 during the delivery of hard maple and soft elm to the Goderich Organ Factory (Sallows n.d.).

Figure 5: Four horses drawinga hard maple log that is 55 feet long and 25 inches square, with no spring in the line. The log was being taken by Hugh Hill from the Mike Ohler farm, Maitland Concession, Hullett Township, Huron County, for delivery to W.L. Marlton, for constructionof the dredge at Goderich Harbour,1912 (Sallows n.d.).

Figure 6: Hugh Hill with his prized Guernsey cattle, circa 1940. Photo from John Hazlitt's personal collection.

A visit by the author to the site of the Hugh Hill sawmill was undertaken in the 1970s with in situ evidence of the mill foundations discovered and also the remains of the horse barn. Hugh was also a recognized breeder of prized guernsey dairy cattle. Figure 6 shows Hugh with a few of his herd (Figure 6).

Hugh also took a keen interest in the growing and managing of the forests, and was the first Tree Commissioner for Huron County.

Hugh Hill was my grandfather.

Permissions

Information for this article was taken from my taped interviews with my grandfather during the early 1970s. The photographs are from John Hazlitt's personal collection , the Sallows Collection (Sallows n.d.) and the book "Colborne Connections" (Hazlitt 1986,) and are all used with permission.

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***fbm – foot board measure**

****The 4.4 ha bush was in the direct path of the F3 tornado that came through Goderich in August, 2011. The bush was quite damaged by the toronado. With the direct help of Mr. Dave Pullen, Huron County Forester, the rebirth of this forest is well underway with much volunteer help to clear and to plant new trees to enhance those few trees that survived.**

Brag Logs

By Terry Schwan

Brag Logs

We have all heard stories and seen pictures of brag loads – those large loads of cut timber, usually on sleds in winter, that make you wonder how the horses could possibly pull them. There was also friendly competition among loggers and teamsters on "brag logs" – to see who had cut the largest individual tree. Here are some short articles about "brag logs" from local sources in the Owen Sound area.

Newspaper - *Owen Sound Advertiser*, 1897

February 9

On Tuesday Mr. Hanley of Keppel brought an elm log to Owen Sound that measures 2,000 feet, and was drawn by one team. There were three logs in this tree. It is said that this was the largest log brought into Owen Sound this winter. We do not like to boast, but we like to know who can beat this.

March 9

Three large soft elm logs were drawn to the North American Bent Chair factory yesterday from Mr. John Ormiston's farm in Sydenham. There were 3,852 feet in the three. Two of them were 20 feet and one of them 16 feet long. The largest was 42 inches in diameter, the second 39 inches and the third 27 inches. They were sawed last Friday and we understand the total weight was estimated to be 16 or 17 tons. Mr. Ormiston's team of general-purpose horses pulled the load which was viewed by a large crowd along Division Street. So far this load leads.

March 30

(It's) a few days since Mr. Gillen Currie drove to Bonnell Bros. mill at Hoath Hill, a load of soft elm logs, in all 4,536 feet taken from one tree. If you can beat it speak up.

Horse teams pulling logs at 8th Street East, Owen Sound, c. 1900. Used with permission of the Grey Roots Archival Collection.

A few years later on February 3, 1900, this item appeared:
Peter McCallum went through town with his load. There were two elm logs 28 feet long and two more 14 feet each. The two 28 feet logs were cut from one tree before the limbs were reached. They were cut in Mr. George Sargent's bush in Derby and the load contained 5000 feet.

The prize offered some years was a rocking chair for the person who delivered the largest tree to the factory

Newspaper - *The Hanover Post,* 1903
March 12, 1903
David Noble of Brant Township delivered at the Seiling factory, Walkerton, an elm tree which made 6,956 feet of lumber. It contained eight logs, the butt log being over four feet through. It brought Mr. Noble $111.89 in hard cash. This tree grew on the farm which Mr. Noble brought from the late James Buchan a couple of years ago. It wouldn't take a great many trees of the same kind to pay for the farm.

Book - *A New History of the County Of Grey**
The last known tree of virgin timber was cut about 1900 on lot 25, Con 12, Normanby Twp. owned by Mr. Kernaghan. It had been bypassed because of its tremendous girth. Finally a longer crosscut saw was made and the tree was cut into from four sides. There was still over two feet uncut, and it was left for the wind to topple. Con Becker undertook to take the timber to the mill, blasting it in two with dynamite. When one half was put on them, the sleighs were crushed and the timber was finally abandoned and left to rot.

(I am not sure the length of the crosscut saw, but if it was five feet long the diameter was about fifty-four inches, but if the saw was six foot long, then the diameter would be about sixty inches.)

*Davidson, T. Arthur. *A New History of the County of Grey*. Owen Sound, Grey County Historical Society, 1972.

Rebirth of a Forest: Part II

By John Hazlitt

The Rebirth Project to regenerate the forest on the north side of the Goderich Maitland Cemetery damaged by the F3 tornado is well underway. Even for a relatively dry season and higher than normal temperatures the new growth is just incredible.

I have taken hundreds of digital images of the new growth (Figure 1); all the pathways have been set with available material from the chipping operation of damaged trees (Figures 2 and 3). The Town of Goderich Works Department supplied a Backhoe /Loader/w/operator; and Merner Construction, the contractor of choice, provided a tracked skid steer and

Figure 1: Photo showing regrowth.

Figure 2: Photo showing site preparation.

dedicated operator to move the chips to provide pathways. There was no professional design here, only Martin Quin and I, with our "let's do it" approach.

The pathways allowed us to provide dedicated areas as "Groves" (Figures 4 and 5) for those individuals and businesses that wished to be part of the Rebirth Project by the dedication of money to buy trees and/or to provide actual trees that met the specie criteria of Martin Quinn, Parks/Cemetery Supervisor. When Martin and I met at the site in March, 2012, we talked of the tree regeneration through dedication plantings taking 2/3 years. We have now accomplished this goal in 7 months.

We intentionally left piles of debris (Figure 6) as homes for our forest creatures. Normal forest Rebirth growth and some native vine species that we intend to plant this fall will enhance the survival opportunity of our resident creatures.

On September 23, 2012, TD Canada Trust sponsored a very large planting of trees on the TD Canada Trust Grove (Figure 7). More than 150 dedicated people, some families of three generations, planted 1500 trees. These

Figure 3: Photo showing new pathway.

one-inch whips were grown specifically for the project by Baker Nursery, Bayfield.

Figures 4 and 5: Markers identifying contributors to the regeneration project.

It has been decided to call the Rebirth site "The Maitland Cemetery Arboretum", one of the most interesting arboretums in Ontario. The arboretum will be user-friendly, with the dedicated help of a service club to provide a transportation device that will allow those who are unable to walk the pathways so as many people as possible will be able to enjoy the Arboretum.

Figure 6: Photo showing piles of debris left behind for wildlife habitat.

Figure 7: Photo showing marker for site regenerated with trees provided by support from TD Canada.

All photos were taken by the author.

The Oak Ridges Moraine Conservation Plan

A Major Step Forward in the Conservation of Ontario's Natural Heritage

By Fred Johnson

On Earth Day (April 22), 2012, the Province of Ontario adopted the *Oak Ridges Moraine Conservation Plan* (Ontario Government 2002). This plan provides environmental protection for over 183,000 hectares of moraine land that extends as a broad east to west ridge located north of and parallel to Lake Ontario (Figure 1). It stretches over a 160 kms from the Niagara Escarpment in the west to almost the Trent River in the east.

Figure 1: Map showing the extent of the Oak Ridges moraine. The map was obtained from Wikipedia and has a free use policy (http://en.wikipedia.org/wiki/File:Oak_Ridges_Moraine_map.png).

The main objective of the Plan is to provide land use policies focused on the protection and, where possible, enhancement of natural heritage and hydrological features and functions. It recognizes the importance of this upland area for the protection of the abundant wildlife, numerous lakes and streams and unique geological landforms of the Oak Ridges Moraine.

The Oak Ridges Moraine is an immense ridge created over 12,000 years ago largely by the actions of glacial ice and associated meltwater. As shown in Figure 2, the ridge was formed between two lobes of opposing glacial ice: one coming out of the Lake Ontario basin from the south and the other from the Lake Simcoe and Kawartha Lake basins to the north. The merging and subsequent separation of these ice lobes formed a large rift or trench into which large quantities of glacial deposits from the opposing ice lobes and associated meltwaters poured. Over many hundreds of years, these deposits accumulated to create the huge ridge of land that is the Oak Ridges Moraine.

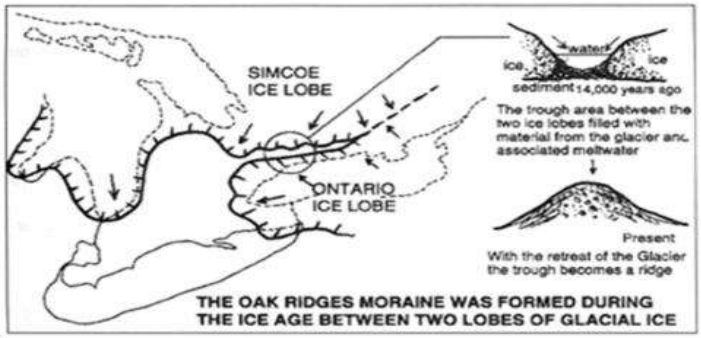

Figure 2: Illustration showing geologic formation of the Oak Ridges moraine; obtained from York Region Planning Department website (http://www.york.ca/Departments/Planning+and+Development/Long+Range+Planning/ORM+FAQ.htm).

The *Oak Ridges Moraine Conservation Plan* represents a landmark in Ontario. It is a policy document that takes an environment-first approach in managing land use immediately north of one of Canada's most intensively developed landscapes. It is the first plan that applies modern day principles of conservation biology, which entails the identification, and protection of large natural core areas, connecting natural corridors and rural countryside buffer areas. This approach results in the establishment of a landscape-scale natural heritage system. It is also the first provincial policy adopted by the Ontario Government that incorporates watershed planning as a mandatory part of the decision-making process. It has set the gold standard for ecological and hydrological protection in Ontario.

Support for the protection of the Oak Ridges Moraine as a special environmentally sensitive and significant feature can be traced back to the 1960s where emerging resource management and planning studies noted the importance of the moraine for its hydrological and ecological contributions to environmental health. However as will be discussed later in this report, it was not until the appropriate convergence of political, administrative, public input and scientific factors, that a plan for the moraine's protection became a reality.

The Oak Ridges Moraine came to the serious and focused attention of the government in 1990 with the release of a report by MPP Ron Kanter. His report entitled *Options for a Greater Toronto Area Greenlands Strategy* (Kantor 1990) provided recommendations to the Premier of Ontario for the greening of the Greater Toronto Area. One of his key recommendations was to initiate a study to consider the recognition and protection of the Oak Ridges Moraine as an integral part of the Greenland system of the Greater Toronto Area.

This report led directly to a commitment by the government to protect the moraine. The government prepared interim technical guidelines to protect the moraine until the necessary studies and protection strategy were completed. Work on the plan began with the establishment in the early 1990s of a Technical Working Group and Citizen's Advisory Committee under the aegis of the Ministry of Natural Resources. The Technical Working Group was responsible for recommending a strategy for the long-term protection and management of the Oak Ridges Moraine in the Greater Toronto Area. This Committee drew membership from environmental groups, relevant provincial ministries, municipalities and the development industry. The Citizen's Advisory Committee responsibility was to create a communication and consultation plan to increase awareness and seek input from the general public. The efforts of these two committees culminated in 1994 with the release of *The Oak Ridges Moraine Strategy for the Greater Toronto area – An Ecological Approach to the Management of the Oak Ridges Moraine* (Oak Ridges Moraine Technical Working Group 1994).

Changes in government (the election of a Conservative Government under Premier Mike Harris) and shifts towards a more economically based agenda led to a virtual cessation of any work on the Oak Ridges Moraine by the end of the 1990s. It was only through constant and vigorous pressure from environmental interest groups such as Save the Oak Ridges Moraine (STORM) and the Ontario Naturalists (now Ontario Nature) and the three Regional Governments (Peel, York and Durham) on behalf of their constituents that the government renewed efforts to craft the necessary legislation and plan to provide for the moraine's protection. In 2001, Municipal Affairs Minister Chris Hodgson tabled a bill requesting a development freeze on the moraine. The legislature passed the bill, *The Oak Ridges Moraine Protection Act* (Legislative Assembly of Ontario 2001), imposing a six-month moratorium on development. The minister then appointed an Advisory Panel of 13 members drawn from key stakeholder groups, plus a Chair, to advise him on a plan for the future of the moraine. An Inter-Ministerial Team of senior Ontario government officials was also established to work along with the Advisory Panel.

In addition, the government decided to develop a policy for the entire Oak Ridges Moraine not just that portion located in the Greater Toronto Area. This approach was based on public pressure to deal with the moraine as an ecological whole as opposed to a political artifact.

During July 2001, the Advisory Panel met and developed a series of recommendations that were incorporated in a public consultation document – *Share Your Vision for the Oak Ridges Moraine* (Ontario Ministry of Municipal Affairs and Housing 2000) – that the Minister released in August. Over 1000 people attended four public meetings hosted by the government on the advisory panel's draft proposals. After this series of stakeholder and public consultation meetings, the Advisory Panel and the Inter-Ministerial Team met to finalize their findings and recommendations, which formed the basis of the *Oak Ridges Moraine Conservation Plan*.

The panel drew membership from the key environmental and agricultural interest groups, the aggregate industry, the development industry, the regional municipalities and key provincial ministries. This panel proved an ideal venue to discuss and resolve key issues including:

- What is the appropriate mix of land uses on the Oak Ridges Moraine?

- What should be the future of the mineral aggregate industry on the moraine?
- What need if any was there for estate residential development?
- What were the key ecological and hydrological features and functions that needed protection and management?

A key difference between this initiative compared to the efforts that occurred in the early 1990s is that the panel was populated by high level representation from the participating organizations as opposed to technical or policy staff and that it reported directly to Minister Chris Hodges, the Minister of Municipal Affairs and Housing.

The *Oak Ridges Moraine Conservation Plan* was adopted and released by the Government of Ontario on April 22, 2002.

The Plan was to be implemented through several key streams:

- Area municipalities and upper tier municipalities were given 12 to 18 months to amend their official plans to bring them into conformity with the *Oak Ridges Moraine Conservation Plan*.
- Area municipalities were given five years to adopt watershed plans for streams located on the Oak Ridges Moraine to help implement the water resource policies in the Plan.
- Municipalities and other agencies (including provincial Ministries) were required to conform to the policies of the Plan when carrying out any planning, regulatory or development works on the moraine.
- An Oak Ridges Moraine Foundation was created and funded to support stewardship and other non-regulatory works on the moraine that furthered or supported the policies of the Plan.

Why Did The *Oak Ridges Moraine Conservation Plan* Succeed When It Did?

A frequently asked question concerning the success of the Oak Ridges Moraine is why the 2002 Plan succeeded when earlier attempts did not. It is especially curious given that the Plan itself was ultimately prepared and implemented by a Government that was elected on a strong economic platform and that frankly showed little interest in pushing any kind of environmental agenda. In fact, many of its forays into municipal planning and resource management emphasized streamlining and restructuring of the municipal planning system that streamlined the development process presumably to facilitate development and stimulate economic growth.

The *Oak Ridges Moraine Conservation Plan* is an interesting study in policy development since it points to a recurring fact that major leaps forward in policy development such as that which occurred with this Plan depend as much on good fortune as any careful methodical preparation and planning. Several major factors have been identified in reviews and analysis of the history of this Plan. The more significant reasons cited for its success include:

- **Public Pressure:** The government of the day was subjected to intense public pressure to change the existing planning paradigm that existed on the Oak Ridges Moraine specifically and across southern Ontario generally. Community groups in various municipalities, especially those along the Yonge Street corridor, were complaining that current planning processes had taken away the control of local communities to determine the way they wanted to grow. Development along the Yonge Street Corridor was especially intense to the point that in the portions along Yonge Street in Aurora and Richmond Hill existing and approved development had almost cut the Oak Ridges Moraine in half. The general public complained that decisions about the kind and amount of development were being determined by the development industry and administrative tribunals like the Ontario Municipal Board and not the local municipal councils that were elected to deliver on the needs and expectations of residents within the municipality. In addition, the government was enmeshed in the contaminated drinking water crisis that occurred in the community of Walkerton. The government was in need of an environmental and planning initiative that assuaged the growing public frustration. This public discontent had progressed to the point that routine public meetings to discuss specific planning proposals were attended by thousands of irate citizens, and the Oak Ridges Moraine issue became a regular entry in regional and larger Toronto-based newspapers.
- **Municipal Support:** The municipalities located on the Oak Ridges Moraine, especially within the Greater Toronto Area, were receiving pressure from their residents, similar to that being experienced by the government, to do something to limit the tide of development. Municipalities complained that without strong provincial policy it was difficult, if not impossible, to more carefully control and direct development pressure that was occurring at an unprecedented rate. In this regard, the three regional municipalities actually developed and submitted a three party strategy to the government for the more effective management of the Oak Ridges Moraine.
- **Development Industry Support:** As part of the Plan development process the government was able to engage the major players of the development industry in the form of the Urban Development Institute (UDI), Building, Industry and Land Development (BILD) and the Aggregate Producers Association of Ontario. By including these high-level industry representatives on the Provincial Panel it was possible to discuss and resolve many of the key conflicts before the Plan was even written.

- **Availability of Good Information:** One of the key advantages of the Plan development process was that the Panel and provincial staff who crafted the Plan were able to draw on data, public input and strategy discussions that were amassed as part of the efforts of the Technical Working Committee and the Citizen's Advisory Committee in the early 1990s. Normally such information can take several years to amass before serious policy development can begin. Such a process can take a government beyond its current electoral mandate and the initiative often dies when a change in government occurs. With the availability of the data in relatively current form, the Government was able to complete its policy development and implementation cycle in a mere two years.
- **Availability of GIS Mapping:** The development of the *Oak Ridges Moraine Conservation Plan* was significantly facilitated by the use of spatial information on a fully integrated GIS system under the provincial SOLRIS system. The government was able to easily and quickly generate and analyze information and develop policy options.
- **Government Level Involvement:** As opposed to other policy development initiatives, the *Oak Ridges Moraine Conservation Plan* was developed under the direction of the Minister of Municipal Affairs and Housing. This made the consideration of options and decision-making very effective as opposed to staff driven policy development, which requires the methodical progression up the established bureaucratic decision-making chain.

In a nutshell, the Plan succeeded because of a combination of good timing in the context of the current political climate; the availability of good, current, rapidly retrievable information; a committed government; and the participation of the right people from the various interest groups.

Why is Protection of the Oak Ridges Moraine Important?

Because of its high elevation relative to lands north and south of the moraine and because much of the soil left by the glacial deposition is predominated by highly permeable and absorptive silt, sand and gravel-based soils, the Oak Ridges Moraine is an extremely important hydrological landform. These soils now collect precipitation, which slowly recharges the deep aquifers below the ground. These aquifers store and slowly release water to myriad wetlands, streams and kettle lakes and provide water supplies to over 100,000 residents living on or adjacent to the moraine. These same sands and gravels filter and release this groundwater to over 65 watercourses flowing north and south into Georgian Bay, Lakes Simcoe, Scugog, Rice and Ontario.

All along the crest of this regional surface water divide are many tiny headwater streams bubbling out of the ground in seeps and swales and springs. These trickles of water join forces in delivering clean, cold water to the rivers and streams that flow off the moraine and through many urban communities, including the City of Toronto along the way to their final Great Lakes destination. Many of these streams also support healthy coldwater fish habitat.

The Oak Ridges Moraine represents a large landform feature strategically located adjacent and/or within one of the most intensively developed areas within North America. The protection of the moraine in its natural form was a conscious effort of the government to recognize and protect the moraine for the environmental, social and health benefits these natural features and processes provided to the people living and working within this part of Ontario.

This ridge with its thick deposits of sandy/gravelly, excessively-drained soils, its steep slopes and its poorly drained wetland areas represents a landscape with a great deal of land that was poorly suited for farming. Some of these areas remained in natural cover. Land originally cleared for farming in the late 1800s and early 1900s was eventually abandoned and allowed to return to forest cover. By the 1920s, 30s and 40s many areas were being activity reforested, primarily to conifer plantations of pine, spruce and larch. As a result of these characteristics, today well over 30% of the moraine is occupied by natural self-sustaining plant cover.

Some of the more specific values accruing from the protection of the moraine include:

- With over 30% of the moraine area occupied by forest cover or some other form of natural self-sustaining natural cover, the area is home to a diverse range of wildlife species that depend on large uninterrupted and diverse natural cover for their survival, especially migratory birds. Without the habitat provided by the Oak Ridges Moraine, many plant and animal species would not be able to persist in the south-central area of Ontario that is dominated by agricultural and urban landuse.
- The Oak Ridges Moraine is a major headwater area for over 65 watershed systems. Many streams that flow through the urban communities of southern Ontario receive their major sources of clean water from upland areas of the Oak Ridges Moraine.
- The Oak Ridges Moraine is a major recharge area. With thick deposits of sand and gravel, the moraine acts as a giant sponge that absorbs and stores groundwater in aquifers. This water is then slowly released to wetlands, streams and lakes located on or adjacent to the moraine. These aquifers also provide water to over 100,000 households on or adjacent to the Oak Ridges Moraine.

- With its large amount of forest and other natural cover types the Oak Ridges Moraine acts as a giant air filtration system that cleans the airshed in Southern Ontario and contributes in a major way to the clean, healthy environment enjoyed by Ontarians living in adjacent farms, towns and cities.
- The Plan was also an important catalyst for pushing forward, on a more province-wide basis, the concepts of "greenland" planning as a normal and necessary part of any urban growth plan. The Plan formed the basis for the development of the natural heritage system-approach used in the *Greenbelt Plan* for the entire Greater Toronto Area. It has helped establish the natural heritage system and watershed planning approaches as essential parts of any planning system in most major cities and towns across Ontario.

What Does the Plan Say?
The main objective of the *Oak Ridges Moraine Conservation Plan* is to protect and where possible improve the ecological and hydrological health of Oak Ridges Moraine. The Plan area is divided into four broad area designations; each of which is subject to land use policies aimed at achieving specific ecological and hydrological objectives:

Natural Core Areas: These area designations constitute 38 % of the Plan area and protect those lands with the greatest concentrations of key natural heritage features, which are critical to maintaining the integrity of the moraine as a whole. Only existing uses and very restricted new resource management, agricultural, low intensity recreational, home businesses, transportation and utility uses are allowed in these areas.

Natural Linkage Areas: This area constitutes 24 % of the Plan area and protects critical natural and open space linkages between the Natural Core Areas and along rivers and streams. The only uses that are allowed are those allowed in Natural Core Areas, plus some aggregate resource operations providing such extraction results in the protection or enhancement of the linkage function.

Countryside Areas: This land area constitutes 30 % of the Plan area and provides an agricultural and rural buffer between the Natural Core Areas and Natural Linkage Areas and the urbanized Settlement Areas and lands north and south of the Oak Ridges Moraine. Prime agricultural areas as well as natural features are protected in this area. Most of the uses typically allowed in agricultural and other rural areas are allowed here.

Within the Countryside Areas, the O*ak Ridges Moraine Land Use Designation Map* (part of the Plan) also identifies and delineates **Rural Settlements**. These are existing hamlets or similar, small, generally long-established communities that are identified in official plans.

Policies on creating and developing new lots in Natural Core Areas, Natural Linkage Areas and Countryside Areas are very restrictive. Exceptions are permitted in the moraine's Rural Settlements, the Palgrave Estates Community, and for limited residential development in Countryside Areas in the City of Kawartha Lakes and Peterborough and Northumberland Counties once the municipality has an approved growth management study and a rural economic development strategy, as well as a water budget and water conservation plan.

Settlement Areas: This area constitutes the remaining 8 % of the Plan area and recognizes the existing urban communities planned by municipalities in the moraine to reflect community needs and values. Urban uses and development as set out in municipal official plans are allowed.

In addition to the controls embodied in the policies of the area designations, the Plan identifies key natural heritage features (such as wetlands and woodlands) and hydrologically sensitive features (such as kettle lakes and springs) that must be protected and enhanced. In Natural Core Areas, Natural Linkage Areas and Countryside Areas, only very restricted new resource management, recreational, transportation, infrastructure and utility uses are permitted within these features. Development near these key natural heritage features and hydrologically sensitive features is only allowed if it will not adversely affect these features. In areas with significant landscape character (called landform conservation areas) in Natural Core Areas, Natural Linkage Areas and Countryside Areas, development will have to meet particularly stringent review and approval standards to ensure that the moraine is protected. Over 85 % of the key natural heritage features are within Natural Core Areas or Natural Linkage Areas.

The Plan's water resource policies require municipalities to prepare watershed plans, water budgets and water conservation plans to incorporate into their official plans within specified time periods. Restrictions on large-scale development are imposed if this work is not completed. Development in wellhead protection areas and areas highly vulnerable to groundwater contamination is limited. Limitations are also set on impervious surfaces in areas outside Settlement Areas.

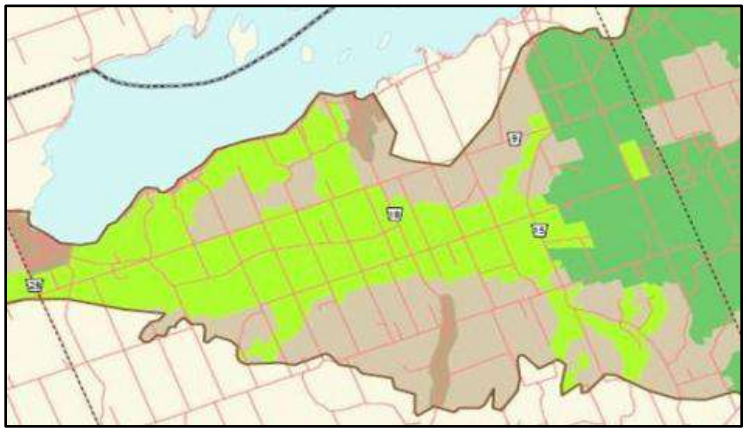

Figure 3: A part of a map showing land use designation areas for the Oak Ridges Moraine Conservation Plan. The original map was created by the Ontario Ministry of Municipal Affairs and Housing (2002).

Figure 3 shows a portion of the *Oak Ridges Moraine Conservation Plan* that demonstrates how the moraine was divided into area designations with different land use policies. The dark green areas are Natural Core Areas that protect areas with large concentrations of natural features and values. The light green areas are Natural Linkage Areas that protect areas that provide connectivity between the natural core areas. The dark brown areas are Settlement Areas. The light brown areas are Countryside Areas that maintain areas in agricultural and other rural uses and act as a buffer between the sensitive areas of the moraine and more intensively used lands to the north and south.

Relevance of the Oak Ridges Moraine Conservation Plan to Foresters

Although rarely discussed, the *Oak Ridges Moraine Conservation Plan* has many direct links to the forest community past, present and future.

The ecological value of the Oak Ridges Moraine is due in part to the large amount of forest cover that exists on the landscape, in marked contrast to areas north and south of the Oak Ridges Moraine, which are dominated by agricultural and urban areas. This large forest cover in many areas of the moraine is a direct result of forest plantation activity that took place through the regional and county forestry programs started by the government in the 1920s to 30s; private land plantings started under the *Woodlands Improvement Act* (Legislative Assembly of Ontario 1966); and the work of Conservation Authorities. These activities have resulted in the development and consolidation of many large continuous tracts of forest cover located throughout the moraine. These large tracts have been identified as critical natural core areas that are now providing essential habitat for area sensitive plant and animal species.

Although the moraine has large amounts of natural cover, the plan itself identifies the need for more reforestation to further improve the natural cover by consolidating fragmented woodlots into larger contiguous blocks; to provide greater connectivity between the nine large natural core area especially within areas located in the natural corridor designation; and to increase natural cover around exiting sensitive natural features especially the headwater areas.

On a related issue, foresters have been criticized by some for their continued preference for using conifer plantations as the preferred method of habitat restoration on the Oak Ridges Moraine. Foresters will be challenged in the future to look at opportunities to more quickly convert plantations to natural native hardwood species mixes than in the past.

The Oak Ridges Moraine also represents an interesting microcosm of the changing expectations of society on how woodlands should be managed in the future. Woodlands have been provided high levels of protection in this Plan due to their ecological, hydrological and related environmental values and the public perception that abundant woodland cover provides direct benefits to human health and well-being. Although the economic value of wood fibre is still acknowledged, it is certainly considered secondary to these other benefits. Foresters no doubt will be challenged in a major way to manage forest resources on the Oak Ridges Moraine and in other parts of Ontario for their environmental values, probably more so, than economic values, in the future.

Through a research project called *Measuring Success* conducted by the Oak Ridges Moraine Foundation in 2011 it was noted that many of the specific management plans for community forests on the moraine and many of the tree protection/cutting by-laws adopted by municipalities are badly out of step with the policies the *Oak Ridges Moraine Conservation Plan*. The standards and regulations in many cases do not comply with the requirements of the Plan and/or do not require specific review of impacts on the Oak Ridges Moraine in considering the implementation of specific types of forest management practices or removal of tree cover. These issues, no doubt, represent issues that foresters will need to deal with in the future.

The Future

A recent evaluation of the success of the *Oak Ridges Moraine Conservation Plan* conducted by the Oak Ridges Moraine Foundation shows that after nearly 10 years of existence the Plan still enjoys a wide level of support from most sectors of society. It also demonstrates that many of the objectives of the government agenda have been implemented (Oak Ridges Foundation 2011).

The review by the Foundation, however, did point to a number of areas where the Plan could be improved. It also identified the need for continued support from the government, including the need for the government to renew funding for the non-regulatory programs carried out by the Foundation and for more effective planning and policy support from provincial staff.

The *Oak Ridges Moraine Conservation Plan*, along with the *Niagara Escarpment Plan* (Niagara Escarpment Commission 2005) and the *Greenbelt Plan* (Ontario Municipal Affairs and Housing 2005), is scheduled for a major review by the government in 2015.

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Further Information Sources

There is considerable information on the world wide web about the Oak Ridges Moraine. Here are a few key sites:

- **Ontario Municipal Affairs and Housing:** For more information on the *Oak Ridges Moraine Conservation Plan*, you can visit the Ontario Ministry of Municipal Affairs and Housing website at http://www.mah.gov.on.ca/Page322.aspx .
- **Geology of the Oak Ridges Moraine:** For More information on the geology of the Oak Ridges Moraine visit the Natural Resources Canada website at: http://www.nrcan.gc.ca/earth-sciences/products-services/mapping-product/geoscape/toronto/6111 .
- **Oak Ridges Moraine Foundation:** For more information on the work of the Oak Ridges Moraine Foundation, you can visit their website at http://www.ormf.com . In 2011 the Oak Ridges Moraine Foundation completed a comprehensive evaluation of the progress made in implementing the Oak Ridges Moraine Conservation Plan as well as the effectiveness of the Plan in achieving its stated objectives. The 8 reports comprising this evaluation are posted on the Foundation website.
- **Issues and Challenges:** For more information on issues and challenges currently facing the implementation of the *Oak Ridges Moraine Conservation Plan* you can check websites posted by several of the environmental interest groups overseeing the implementation of the Oak Ridges Moraine Conservation Plan, including:
  - Save the Oak Ridges Moraine (STORM): www.stormcoalition.org/ ;
  - EcoSparks: http://www.ecospark.ca/monitoringthemoraine ;
  - Ontario Nature: http://www.ontarionature.org/act/action_alerts/alert_template.php?n_code=526 .

Bud Wildman

A Courageous Politician - No, This Is Not a Fairy Tale!

By Malcolm F. Squires, R.P.F.

Setting the Scene

Occasionally we elect a courageous individual to govern us. This is a story that involves such a rare individual as witnessed by the author. At the time, I was Divisional Forester at the Lakehead Woodlands Division of what was then Abitibi-Price Inc. responsible for the forest management of the company's 2000 square kilometers of private and approximately 9000 square kilometers of public licensed land in northwestern Ontario, Canada.

C.J. "Bud" Wildman, Ontario Minister of Natural Resources, 1990-1993.

Forest Management Agreements

In 1980 Ontario foresters were looking ahead to what promised to be an unprecedented period of government and industrial support of science-based forest management of public and private forest lands. The Progressive Conservative government of Ontario had just completed signing its first Forest Management Agreement (FMA) with an industrial company. To that time Ontario citizens were justifiably critical of the low level of renewal following harvesting on public forest land. Even the little being done by the Crown on their behalf was perceived as a failure. Their perceptions were bolstered by industrial concerns that current levels of management were not able to sustain anticipated future demand for wood. The industry, with a few minor exceptions, was almost entirely dependent on public lands (90 % of forestland in Ontario is publicly owned and vested in the province) for their wood supply.

Having an FMA assured the company that its wood supply would be guaranteed, at least in writing, dependent upon the company successfully regenerating and tending harvested and otherwise depleted areas. Other companies quickly followed suit, signing FMAs for practically all of the licensed Ontario boreal forest. The companies staffed up and acquired the equipment necessary to do the job. Most of these companies, during the first five years of their agreement, regenerated almost the entire backlog of unregenerated forestland from the previous 20 or more years and were regenerating current annual harvested areas. The industry protected its investment in the new forest where needed by applying government-approved herbicides to control other plants that were competing with the planted trees. Lack of control of competing vegetation was one of the primary reasons for the failure of regeneration when the government was responsible for forest renewal. Initial public skepticism of industrial intent and competence gradually gave way to acceptance that FMA holders were accepting their responsibilities and the new arrangement was an improvement over past government practices.

Insect Epidemics

Concurrent with the development of FMAs were intensifying spruce and jack pine budworm epidemics that the industry feared would eliminate a large portion of the existing mature forest and impact current wood supply. The industry lobbied politicians to help them save the stands that had already been developed for future harvest. Critics feared that spraying of chemicals would damage non-target species, the forest environment and human health. Biological sprays had proven effective on budworm epidemics at other jurisdictions in Canada and the USA so it was the primary agent approved for use. It successfully protected most of the targeted stands until they were harvested by planned or salvage operations.

Political Change

During the 1980's Ontario morphed into a more left leaning province by first voting in a centrist Liberal government and to the surprise of everyone, including the voters who did the deed in 1990, a left leaning labour-supported New Democratic Party (NDP) government. With that surprise turn of events all bets were off among the industry companies. I have a humorous memory, but it wasn't humorous then, from the campaign leading up to the election of the NDP, of our company's local public relations officer confronting the future premier of

the province, who was campaigning at our plant's entrance gate, and ordering him off the property. Nobody whom I knew in management in his most disturbing dreams had dreamt that he and the NDP would ever form an Ontario provincial government, but form one they did. Under the Conservatives industry usually felt it at least had a sympathetic ear despite numerous surprises when the government was seen to have caved in to activist groups that had opposing views to industry.

Environmental Assessment of Forest Management

Prior to the election of the NDP the province had been going through a very expensive and thorough test of its forest management practices. This came about as a result of requirements under the Province's Environmental Assessment Act. In order to get forest management plans approved industry and the Ministry of Natural Resources (MNR) were required to get the Ministry of the Environment (MOE) to sign its approval of those plans and this was a very stringent process by which any individual citizen could hold up the process for, what was viewed by industrial foresters, as minor, if not picayune reasons. The MNR, to avoid such an event with every forest management plan in the province, chose to make representation to the Ministry of the Environment for a class environmental assessment of the forest management planning process so that forest management could proceed with less damaging interruption and cost.

The hearings lasted for five years and into the 90s. The outcome cleared the legal requirements air as the appointed Environmental Assessment Board (EAB) approved the application and assured the Ontario public that, based on the body of evidence examined both in the hearing rooms and in the field, forest management was proceeding successfully in the public interest and that there was no long term damage being done to the environment. The hearings examined the full spectrum of forest management including insecticide and herbicide spraying and could find no damage that required anything more than minor additional restrictions beyond those already in effect. The industry was relieved because successive Ministers of Natural Resources had waffled before each public outcry and failed to take a stand and give clear promise that the industry could count on protecting the seedlings they planted. Despite the ruling made by the EAB an anti-pesticide lobby continued to press for elimination of all pesticide use in the forest.

The Forester's Dilemma

The practice of forest management is frustrating, confusing and often impossible; frustrating because at times it appears that everyone is convinced that they know more and better than foresters do, confusing because politicians are often reluctant to support government-mandated and -approved actions of foresters. Good forest management in the public's interest becomes impossible when politicians respond to pressure groups and either prohibit planned action or order changes to the game plan that make action irrelevant, a waste of public and private resources and sometimes counterproductive. After all of this the individual forester is accountable to the public for the results of his actions, results that will probably not emerge until the individuals and groups have moved on to other interests and priorities. The irony of this is that foresters see it as our responsibility to look after the public's interest. In Ontario it is our legislated responsibility.

Here Come the "Socialists"

With the election of the NDP in 1990 industrial foresters who had expressed their views within my hearing range had grave concerns about the future scope of practice and freedom to use professional judgment. When the NDP were in opposition we had been hearing frequent criticisms of our practices and statements of their intent should they ever form a government. There was no doubt in our minds, however, that their overriding concern was for the betterment of workers, citizens and the forests of Ontario. Our concern came from our perception of a doctrinaire party that would blindly follow socialist doctrine. We feared that they had inadequate knowledge of the forest and forest management. That fear was based on a perception that they were being swayed by what we believed to be the selfish interests and inaccurate understandings of a variety of pressure groups.

The new premier appointed Charles "Bud" Jackson Wildman as his Minister for Natural Resources. Bud, as he was and is affectionately known, had been a schoolteacher until he was elected to the Ontario Parliament in 1975 to represent the Algoma riding in northern Ontario. He retained his seat with significant margins in four subsequent elections including that of 1990. Popular yes, but in my opinion at the time, a doctrinaire socialist.

Minister Wildman was known to have supported the concepts of good forest management and environmental protection; however, that did not quell our fear that we were about to lose the freedom to use herbicides as a tool in rearing softwood seedlings, particularly black spruce, beyond the reach of severe grass and brush competition to ensure their future survival and growth. The Minister made it known in 1992 that he was going to make a ruling on herbicide use. I, for one, foresaw the worst.

The alarm bells were rung and anxiety was raised to fever pitch. Avenor and Abitibi, two large forest products companies that later through a number of mergers and a restructuring became part of what is now known as Resolute Forest Products, were quick off the mark. They met with the Ontario Forest Industries Association (OFIA) and planned a strategy to help the Minister see the need for the availability of herbicides from their foresters' perspectives. The group decided to invite the Minister to accompany the two companies' senior foresters to the field to view some selected locations representing a variety of forest management treatments and to discuss pre-treatment conditions and post-treatment results. The Minister accepted the invitation.

A Plan is Developed
Both companies leased helicopters for forest fire detection and field supervision of their large forest holdings. Abitibi's Bell Jet Ranger could accommodate three passengers and the pilot in relative comfort and had in-cabin communication, while Avenor's Bell Long Ranger could accommodate five passengers in relative luxury. The long ranger was chosen for Minister Wildman, Bill Roll (now deceased), Avenor's senior forester, and me, the Abitibi divisional forester in Thunder Bay. We were designated to accompany Wildman because we were most informed on the locations that we would be visiting. The jet ranger contained Mike Innes, Manager of Forestry with Abitibi, and Marty Donkerwoort, the Minister's policy advisor.

This Man Is Actually Interested in What We Do
Our planned route had us flying generally northeast of Thunder Bay International Airport to the Black Sturgeon Forest FMA, some 45 minutes away, to view 20-year old cutovers of Avenor and its predecessors. Enroute, Bill and I got familiar with Mr. Wildman as we described the forest and its history along our flight path and got his reaction. We quickly learned that he was a willing listener and was absorbing the information offered. His questions were relevant, precise and indicated some foreknowledge of the subjects.

Jack Pine Regeneration 101
Our first target was an extensive 20-year-old jack pine stand that originated following logging. The logged stand had been primarily jack pine that had regenerated from the seed of burnt trees following a wildfire. Following logging the logging debris (slash) on the treeless landscape (clearcut) had been mechanically crushed and distributed to release the seed-bearing cones it was carrying and bring them closer to the ground surface where on hot summer days the cones would open releasing their seed. Meanwhile the machinery was also lightly roughing up the organic material that had accumulated beneath the stand over the previous 70-80 years creating a good jack pine seedbed. A good seedbed for jack pine is either a very thin organic layer over mineral soil or small patches of bare mineral soil with organic material within easy reach of the developing seedling's roots. Foresters call this treatment scarification.

Scarification was necessary as jack pine evolved in concert with frequent wildfires in the boreal forests of North America. In northwestern Ontario (NWO) these wildfires were particularly frequent. Jack pine had developed seed-bearing cones that were fire resistant and would only release seed following relatively high heat. The cones of this species are distributed evenly over all of the branches (crown) of a tree so that distributing the slash distributed the seed. Street knowledge, supported by imprecise or incomplete forester communications, says that jack pine needs fire, in order to successfully regenerate, because of these fire resistant cones.

We were telling Mr. Wildman that was not the whole story, that indeed on hot summer days ground surface temperatures are hot enough to open cones that are near the soil surface much as they would following fire. This occurs in full sunlight and one will often notice that around the edge of a scarified cutover where there is partial shade that there are no, or fewer, jack pines than there are in full sunlight further out into the cutover. To a lesser degree, black spruce shares these characteristics with jack pine and that partially explains why the two species occur together in most fire-origin stands.

As we flew over the apparent single-species man-made stand (monoculture) Mr. Wildman was expressing his concerns about the lack of wildlife habitat and we were pointing out the inconspicuous black spruce that were scattered evenly throughout the apparent monoculture and that indeed the species mixture was almost identical to that following wildfire. Perhaps the convincing evidence for Mr. Wildman was his own discovery of the numerous small mammals that were darting about beneath the stand. He quickly identified them as snowshoe hares that he realized are the bottom of the food chain for many boreal forest mammal and bird predators. His normally stoic and skeptical facial expression quickly turned into a broad grin and Bill and I felt we had gained a small bit of credibility with him. To solidify his discovery Bill found an opening on an old extraction road where both helicopters could land and we did a walk about. There he could confirm the species mixture, witness evidence of the hares winter feeding on the bark of low hanging jack pine and white birch branches and see the faint parallel ridges on the ground surface that was evidence of the scarification treatment.

Black Spruce Regeneration 101
Airborne again we moved southeast into the Wolf River Watershed of the Spruce River Forest FMA of Abitibi-Price and stands that were more familiar to me. Here the treatment was more intensive because of the moister, finer textured and more fertile soils and also less frequent fire occurrence. This was the main target of the tour. This was the forest condition on which industrial foresters felt it was necessary to use chemical herbicides in order to ensure successful regeneration of black spruce. Mr. Wildman and his party members were perceived by some industry managers to be, at best, skeptical of and probably against industrial forest management. They were correctly convinced that black spruce, until 1980 and the dawn of FMAs, was a declining species in the Ontario boreal forest. Earlier forestry practices, particularly the dearth of tending with effective herbicides on many spruce regenerated areas, had not enabled the success of black spruce following harvesting to the same degree that followed natural stand disturbance. The need for herbicide tending relates to, among other factors: soil type, pre-harvest stand composition, soil disturbance, season of harvest, harvesting and extraction techniques, and individual species adaptations relative to natural plant succession that have evolved over thousands of years through a variety of past natural and human-caused stand disturbances.

Abitibi foresters had prepared for this day. We knew that it was going to take years of intensive scientific study to document the full effects of chemicals on the forest, but in the meantime, we were legally responsible and accountable for the successful regeneration to the species harvested on the areas that we were harvesting.

Much of the Wolf River watershed of the Spruce River Forest had been harvested of black spruce during the previous 30 or more years and it was now in what the MNR referred to as NSR (not sufficiently restocked). We were legally committed to return those areas to the production forestland base used in determining the amount of timber we would be allowed to harvest by regenerating it to commercial tree species. As Abitibi was in the newsprint manufacturing business and black spruce was the "Cadillac species" for the manufacture of newsprint and black spruce had been the primary species harvested from those locations we were obligated and determined to regenerate them to black spruce.

Glyphosate Works

The location that we were visiting was a demonstration of the effects on a black spruce plantation of chemical tending to control competing vegetation. The plantation had been established nine years earlier using the best planting stock available, the best handling methods, intensive mechanical site preparation (woody debris alignment and soil preparation) and tight planting control. On one side of an extraction road the plantation had been treated with glyphosate (called Vision) three years after planting to control competing vegetation and on the other side of the road on similar soil no chemical tending had been used. During the week preceding the Minister's visit we had completed lists of all of the plant, mammal and bird species that we could find on each of the chemically treated and untreated portions of the plantation. This was done to complement the visual effects of the separate treatments and to offer discussion background. We had anticipated the Minister's probable concerns about loss of species richness and biological diversity and wanted him to see actual conditions in the forest on which to base his opinion before taking action.

As the lead helicopter with Mike Innes, and Marty Donkerwoort, approached the test area to land, the pilot had to wait for a bear and her cubs to move away from the chosen location on the road separating the test and control sites before he could land. Our pilot relayed the message for us to hold and explained why. I remember Bill giving me a grin and wink as if I had organized the whole affair.

We landed and walked first into the test area where it was obvious that the planted spruce trees were growing relatively fast and were taller than any remaining competing vegetation, with the exception of a few scattered naturally regenerating white spruce, trembling aspen and white birch trees. The list of species present on the site was handed to the Minister and his assistant. A look around quickly confirmed the presence of a variety of plant and a few bird species. Moose and deer droppings were evidence of their continuing use of the site. The group next moved across the road to the unherbicided control. We had now moved into a stand of taller trembling aspen with no birch or white spruce and the much smaller planted black spruce obviously struggling for survival with some already dead. We had moved from a mixed stand of four tree species into one with a single dominant tree species, looking around we confirmed that there were fewer forest floor plant species and surprisingly no bird species. It was acknowledged that the lack of any birds was unrepresentative.

It was obvious that our black spruce plantation that had been herbicided was not the much-detested plantation "monoculture" that our critics were describing. The unherbicided black spruce plantation was rapidly becoming a trembling aspen monoculture, and worse still, a monoculture of a then undesired species. Our investment in the unherbicided plantation was a virtual lost cause.

The Minister showed no indication of which way his thoughts were moving. On the return trip to the airport he graciously thanked us for the experience and made light conversation. I thought to myself it had been a wasted day. I had previously taken politicians on forest tours that had not yielded any noticeable results and with my political biases I had low expectations with this man despite the more favourable impression I now had of him.

Much to my and the industry's surprise, a few days later Minister Wildman announced that he was approving herbicide spraying for the current year. I don't remember the media reporting that he made any reference to his tour or made any effort to explain his action. There has been no great change in Ontario government policy on use of herbicides in forest management since that day despite the changes of government through a Progressive Conservative and the current Liberal party governments. His decision appears to have established a general acceptance of careful application of herbicides to achieve well-planned silviculture objectives. Given the perception that the NDP opposed herbicide use on principle, the timing of his decision relative to the current controversy around the use of herbicides and the risk of highly publicized negative responses from conscientious objectors, I view his decision to allow herbicide use as very courageous. It changed for the better my opinion of one politician.

Mike Innes, my former head office superior and now also retired, has this to say today, "(I was) Impressed with Wildman's obvious recognition (after he had seen the sites and heard our explanations) those things were not the way he had been lead to believe. I give him great credit to have approached such a difficult and politically sensitive issue as herbicide spraying with an open mind. This gave him, in my opinion, stature, and bolstered my thoughts of him as an honest man. I believe that it also gave us at the OFIA Woodlands Board a sense that, yes, we could work more closely with the politicians and have reasonable hopes for an honest dialogue."

We need more like him.

George Johnson

Pioneer Native Canadian Forest Conservationist

By John Bacher

Oren Lyons, Secretary of the Iroquois Confederacy at Onondaga, tells the story of Euro-Americans slowly adapting the values of native peoples regarding the respect for the environment (Pers. comm. 2010). This change began in Canada and the United States with the beginning of conservationist thinking among a minority of farmers and lumbermen in the 1870s (Roach and Gillis 1995).

One surprising aspect of the fertile exchange of thinking between cultures that sparked conservation was the warm reception at this time given to the pioneering German forester, George Bernard Fernow, by the Wyandots (descendants of the Hurons who had been exiled from Ontario). This friendly embrace took place in the future state of Oklahoma. Less than a century after the Hurons' exile, many of the Wyandots' fertile, ancestral lands in Ontario had been degraded to wind-swept, "blow sand" deserts (Rodgers 1950).

The towering figure responsible for bringing the native perspective to the educated elite of Ontario farmers was George Johnson (Figure 1), father of the famous Canadian poet, Pauline Johnson. Leighton (n.d.,) in the Dictionary of Canadian Biography, provides material on George Johnson's life. Johnson held the title Teyonhehkon, handed down from one of the fifty original sachems (paramount Chiefs) of the Iroquois Confederacy created by the Peacemaker.

Johnson was an active participant in the meetings of the Ontario Fruit Growers Association, which frequently met in the last decade of his life at the newly formed Ontario Agricultural College (OAC) in Guelph. This organization provided the necessary support for OAC's pioneering forest conservation work. This was started by one of its founding professors, William Brown, and subsequently fostered by his dedicated students, such as Charles Zavitz, Judson Clark, Nelson Monteith, and E.C. Drury.

Figure 1: Chief George Henry Martin Johnson. Photo used with permission of Chiefswood National Historic Site.

Before Johnson's involvement in the Ontario Fruit Growers Association he had served as the Six Nation's Forest Warden. His mission was an enormous challenge since the Six Nations Reservation was by the 1860s a well-forested island in a deforested landscape. The crisis was quite intense in the town of Caledonia, which bordered the Six Nations Reserve. Caledonia was home to the biggest lumber business in southwestern Ontario, owned by James Little. In 1873 the inability of Little to procure sufficient timber to keep his mills operating forced him to relocate to Montreal (Gillis n.d., Martindale 1994). [Little was the first Canadian lumberman to advocate forest conservation, and he gave an eloquent speech to the American Forestry Congress at age 83. His son William went on to become President of the Canadian Forestry Association and friend and supporter of Edmund Zavitz].

As described by Hale (1985) conflict between lumbermen facing dwindling timber supplies and the Six Nations Confederacy Council attempting to protect their forests was murderously violent. In 1865 Johnson was beaten to unconsciousness for five days. A more severe attack, involving six men who attempting to shoot him to death on the road in front of his home, took place in October, 1873. This latter attack aroused "such a flame of popular indignation" that efforts to steal reserve timber ceased, although by this time the scale of the industry had shrunken with the relocation of Little's mill. Two thinly disguised fictional short story essays by George Johnson's daughter Pauline entitled "His Majesty's Guest" and "My Mother" provide moving accounts of Johnson's struggles to protect the reserve forests (Johnson 1913).

Pauline Johnson's two short stories written to honour her parents provide vivid details as to the background of the first attack on her father in 1865. This outrage took place in a time of intellectual isolation for the Six Nations since it occurred before small groups of fruit growers began to embrace forest conservation.

The short story "His Majesty's Guest" provides details of how one of her father's attempted murders was sentenced to a five-year prison term. This conviction was the result of an elaborate yearlong sting operation undertaken by an Anglican theology student, then a Deacon, on leave from his studies. The Deacon posed as a whiskey buyer.

In the story, "My Mother", Pauline Johnson detailed the enormous profits made by the illegal timber trade. She wrote how the exchange involved a "quart of bad whiskey for a cord of first class firewood, or timber." Through such means a "hundred dollars' worth of bad whiskey, if judiciously traded, would net the white dealer a thousand dollars of cash." She termed the traffic the source of "the depletion of the Indian forests and the degradation of Indian souls."

Pauline Johnson gave a detailed account of how her father's regulation of forests worked. All the trees that were legally cut for sale were marked by George Johnson's "V.R. (Victoria Royal) hammer". To protect forests, "Night after night he lay, concealing himself in the marshes, the forest, the trails, the concession lines, the river road, the Queen's Highway, seizing all the timber he could, destroying all the whiskey, turning all the white liquor traders off Indian lands, and fighting only as an earnest and inspired man can fight."

Pauline Johnson recalled how the effectiveness of her father's patrols resulted in death threats. While the 1865 incident hit when she was only three, Pauline was 11 years of age at the time of the second attempted assassination. Her father had been left for dead in the middle of the road after being beaten, in an effort to conceal the crime to appear as if it was a collision with a horse. George Johnson was able to stagger home five miles, where he was successfully cared for by his loving wife, Emily. Pauline was age 16 and attending the Brantford Collegiate when another ambush attack of a timber smuggler was made on her father in 1878. This roughing up took place after he was leaving a meeting of the Confederacy Council.

The rise of Pauline Johnson as a great Canadian performance artist was inspired by her own father's sense of drama, which rose to great heights when he took on the task of protecting forests. A Canadian anthropologist, Horatio Hale, recalled how Johnson made a formidable show of strength against the "timber plunderers who belonged to a somewhat higher class". This was done "as if the spirit and temper of twenty generations of the great chiefs, his ancestors, had been concentrated in his tone and manner."

Regarding her parents' marriage, Pauline explained that the chasms of cultural and ethnic divisions (her mother was white) were overcome by a mutual love of trees, the Grand River and birds. She recalled how, "groups of trees bridged the fleeting differences of opinion or any slight antagonism of will and purpose; when these unresponsive moments came, one or the other would begin to admire these forest giants, to suggest improvements, to repeat the admiration of others for their graceful outlines - in fact, to direct thought and conversation into the common channel of love for those trees." Pauline viewed this love of trees as akin to the "tone of children for a flower - simple, nameless, beautiful and powerful beyond words."

Pauline's sister Eva later recalled how her father developed Chiefswood (Figure 2), his home on the Reserve, as a bird sanctuary and that one of the species he attempted to protect, the Passenger Pigeon, later became extinct (Johnson 2009). She also recorded how Chiefswood was carefully designed to take advantage of the beauty of gigantic old-growth black walnut trees - the most majestic of which was 120 feet (11.5 m) in circumference.

Figure 2: Chiefswood, the estate built by George Johnson. Photo used with permission of Chiefswood National Historic Site.

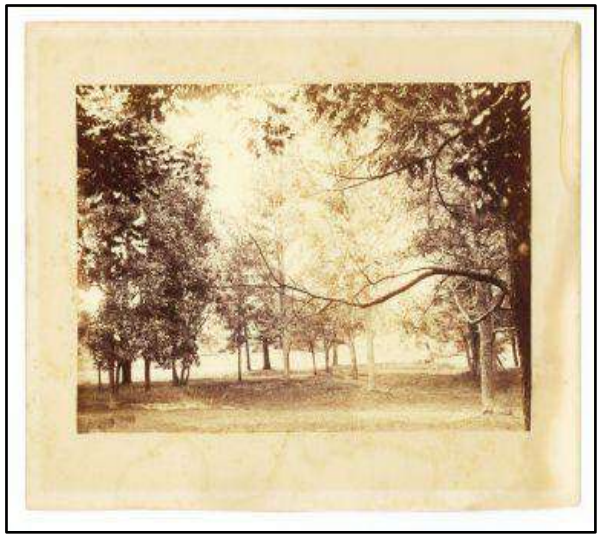

Figure 3: Nut trees planted by George Johnson on his estate, Chiefswood. Photo used with permission of Chiefswood National Historic Site.

George Johnson's aesthetic delight in trees was combined with an appreciation for their economic value. Between 1853 and 1856, he carefully built the home, Chiefswood, for his wife from black walnut timber from trees found on his 225 acre (91.5) ha estate (Anona n.d.). Although it was operated as a commercial farm, producing annually 500 bushels of wheat, the majority of its acreage remained in forest and managed meadow. The native trees that Johnson planted included black walnut, butternut and hickories - all had important commercial value, for timber as well as their edible nuts (Figure 3).

When Johnson was planting his walnuts, butternuts and hickories, these species had vanished from Ontario as commercial sources of lumber because of over-harvesting and land clearance. This is apparent from the accounts of these species in the report of the Ontario Agricultural Commission in 1883 (OAC 1883). The Commission noted that walnut for a time had held on in the Niagara peninsula, "but all that has been cut down." Walnut wood used in Ontario now had to be imported from Indiana. It also quoted the then Secretary of the Fruit Growers Association, Delos Beadle, who noted that the hickories were doomed because of the predations of

the “ax-helve hunter.” These ruthless agents paid farmers to sell hickories as soon as they were “six inches in diameter”.

By 1878, according to an admirable account in a February article in the Hamilton Spectator, Johnson had grown 800 Walnuts, 300 butternuts, and “about 200 hickories of various kinds.” The account also indicated that he sold the nuts commercially - butternuts were 50 cents a bag (Anonb n.d.).

The beauty of Chiefswood and Johnson’s pioneer experiments in reforestation resulted in significant attention from fruit growers from across Ontario (Anonb n.d.). They embarked on pilgrimages to this shrine of forest care, then issued calls for OAC to join in the mission. One of the first reforestation efforts in the province, a walnut plantation started in the 1870s in Simcoe County, appears to have mimicked his example.

Figure 4: Walnut and hickory trees from original plantation created by George Johnson at Chiefswood. Photo used with permission of M.L. Bacher.

Provincial funding for the forest-conserving Ontario Fruit Growers Association was provided by the Commissioner of Arts and Agriculture. In 1878 this office issued a “Report on the Nut-bearing Grove of G.H.M. Johnson” (Arnold and Freed 1878). Here, after touring the restoration nut grove, they smoked a peace pipe with Johnson. Johnson’s impact in fostering forest conservation can been seen in the account of the 1879 meeting of the Ontario Fruit Growers Association, published in the Ontario Sessional Papers (Anonc 1881) . The significance of this meeting in Ontario history was fully appreciated by Edmund Zavitz, then Chief Forester of Ontario, as highly significant. He noted, in a literature review written in 1939 on Ontario forests published in the Forestry Chronicle, that it was a major turning point in provincial history towards respecting forests (Zavitz 1939). Figure 4 shows one of Johnson’s original plantations today.

In the 1879 Fruit Growers Association meeting, two growers recalled how they had travelled to Chiefswood and were inspired by Johnson’s walnut plantation. One was the Vice-President of the Fruit Growers, William Roy. In response to Beadle’s doubts about the merits of planting walnuts, Roy explained how he had journeyed from Owen Sound to Chiefswood to see “the fine walnut grove at Chief Johnson’s at Tuscarora.” He was impressed with “the new luxuriant grass beneath the shade of the tree.” (Anonc 1881).

Another fruit grower who journeyed to Chiefswood and was inspired to dream of the reforestation of Ontario was P.E. Bucke of Ottawa. From his testimony it appears that Johnson was subsidizing the reforestation with walnuts of forests around the province. He indicated that, “We believe that anyone wanting to obtain nuts of the black walnut or butternut, or young trees, may get an almost unlimited quantity at trifling cost from Chief Johnson of the Six Nations Reserve near Hamilton.” (Bucke 1878).

Bucke told his fellow fruit growers that he believed that OAC should follow Johnson’s example and establish a tree nursery as a demonstration project to inspire the public. He felt this would “show the general public how readily they can be grown, and with what rapidity the denudation of our forests can be restored.” Later in the session, William Brown, the Professor in charge of forestry at OAC, indicated that the school had undertaken a modest half-acre walnut demonstration. This he felt served as “a promising start.”

George Johnson was an active participant in the meetings of the Fruit Growers Association as they became a conservationist force in Ontario. One of his suggestions was that maple trees provided the best shelter for fruit trees. He also advised that grapes grew well if planted in bone, which served as excellent fertilizer (Anonc 1880).

Johnson vigorously built up the strength of the Fruit Growers Association during its time of conservationist mission. At one point in the 1879 Fruit Growers meeting its minutes recorded, “Two of the Six Nations Indians had entered the room while the discussion was going on, were then introduced by Chief Johnson, and cordially welcomed by the President. They were heartily cheered on taking their seats on the Board.” Beadle thanked Johnson for the “deep interest in the welfare of the association.” among the “Indians on the reservation.” He reported that, “There were no less than sixteen of the Six Nations Indians on the membership roll.” (Anonc 1881).

George Johnson died as a result of an attack of erysipelas, a condition brought on as a result of the second attempt of his life. In tribute Hale (1985) wrote that this was a case where “Indian civilization stood at bay before White savagery.”

Hale’s 1985 tribute to Johnson being a champion of civilization versus barbarism shows the remarkable impact he had on the province of Ontario. By being an iconic symbol of forest conservation through his enforcement activities and by his vivid demonstration efforts in reforestation he helped change attitudes in Ontario away from the anarchic burn and run attitudes of the past. This built up support among the rural elite of the

province for the conservationist reforms that Edmund Zavitz was able to realize after his public service career was launched in 1904 with the help of OAC alumni.

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Erik Jorgensen M.F.

Erik Jorgensen, the First Urban Forester, passed away May 25, 2012 in Guelph, ON in his 92nd year. He was born in Haderslev, Denmark. Erik and his family, at the invitation of Canada Department of Agriculture, immigrated to Canada in 1955 where he pursued a long, passionate, and distinguished career as a Forest Pathologist. At the University of Toronto, Shade Tree Research Laboratory, his lab discovered the first cure for Dutch Elm Disease; at the Ottawa Forest Management Institute he created a national Urban Forestry program; at the University of Guelph he was Director of the Guelph Arboretum. During his life in Canada. He authored over 60 articles and scientific papers on tree diseases and urban forestry; founded the Ontario Shade Tree Council; was a Life Member of the Ontario Professional Foresters Association and a Fellow of the Canadian Institute of Forestry. He always advocated the planting of native species to regenerate Canada's natural heritage.

The information above is from the online website of the Guelph Mercury, Lifetimes.ca: http://www.lifenews.ca/guelphmercury/profile/282248--jorgensen-erik .

Stanhope Museum

The material for this article was obtained from information on the museum's website as well as a personal interview by telephone conducted by the Journal Editor, Sherry Hambly, with Carol Moffatt, on September 17, 2012.

Introduction

Stanhope Museum is one of the smaller museums in Ontario but has one of the largest archives of pioneer history and records (from the museum's website, Anon n.d.). The museum was created after a research project to celebrate the 125th anniversary of the pre-amalgamated township of Stanhope highlighted the interesting history of the area. The museum (Figure 1) is located in an old schoolhouse on North Shore Road approximately 10 km from the town of Carnarvon in Haliburton Highlands.

Figure 1: Photo of the Stanhope Museum, near Carnarvon, Ontario. Photo is owned by the Stanhope Museum and is used with permission.

The museum was originally created to collect local pioneer history. In the late 1990s the town councillors decided that a project to rebuild a local historic treasure, the Hawk Lake log chute (Figure 2), was worth pursuing. After obtaining a SuperBuild grant made up of joint federal and provincial funds the chute was painstakingly restored between 1999 and 2005 (Figure 3), and now forms a large part of the museum's focus.

The chute* is associated with the Hawk Lake dam, which is part of the extensive water management system for the Trent-Severn waterway. It was originally built in 1861 to carry pine logs, and was in regular use by various logging companies until the 1930's. It was rebuilt in 1947 and repaired extensively in the 1970s. The last run of logs went through the chute in 1952. This chute is the last one of its kind in Ontario.

Figure 2: The oldest photo of the log chute, taken in 1929. Photo is owned by the Stanhope Museum and is used with permission.

There is extensive information on the chute at the onsite kiosk, and the museum maintains the same information on their website making the information on this aspect of forest history available to a wider audience. Onsite and website visitors can learn about the local environment and ecology, the Trent-Severn Waterway, logging history, logging tools, river drives and log chutes, logging music and words and the restoration project.

Figure 3: Photo showing reconstruction of the log chute over nine days in 2005. Photo is owned by the Stanhope Museum and is used with permission.

The log chute is located approximately 16 kms northeast of the town of Carnarvon, and is open to the public from spring through fall. There is no admission fee. The museum receives approximately 8000 t0 10000 visitors a year and is one of the best-kept tourism secrets in Ontario according to Carol Moffatt, the current Reeve of Algonquin Highlands.

Ms Moffatt was the supervisor of the restoration project, which is well documented on the website. Carol emphasizes the huge volunteer effort, by local organizations and individuals, in the restoration of the chute. Those who contributed to the project are listed on the website.

Carol is still involved with the museum as a volunteer. As part of her ongoing efforts related to the history of the chute, Carol has obtained all of the records related to the dam from the Library and Archives Canada and the Trent-Severn Waterway. The museum proper, which contains several logging artifacts and photographs, is open from mid-June through mid-October on Tuesday, Wednesday, Thursday and Saturday from 11 am to 2 pm, and is open year round to email inquiries.

Museum Website: http://www.stanhopemuseum.on.ca/index.php

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*The first log chute in Canada was built at Chaudière Falls in Quebec in 1829.

The Last Log Drive

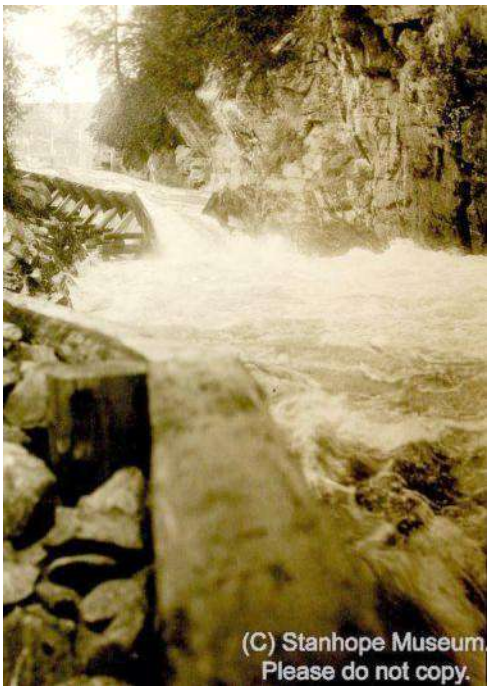
In the story below Michael Connelly is a fictional character created for a performance by a local actor at the grand opening of the Hawk Lake Log Chute in 2005. The narrative is based on an interview with a local senior who worked the last log drive in 1952 at the age of 19. While much of the story is true, some of it is "enhanced" to flesh out the detail.

The Story

My name is Michael Connelly, and I was on the last log drive that went through this chute (Hawk Lake chute near Carnarvon ON)*. I signed on with C.W. Hodgson when I was 21 – back from the Second World War. It was hard work, but satisfying. The pay wasn't great but the work was steady. In the winters I worked in the bush camps, in the spring I worked the log drive, and in the summers and fall I worked at Hodgson's mill on Halls Lake.

Now the kind of logging we were doing was very different from the big pine days. Some of the old fellas in the camps were great tale spinners. Jack Madill, Sam Whitteker and Ed Mitchell. They kept you spellbound. We heard tell of their adventures and of the logging times before, when loggers and farmers clashed over timber rights and keeping roads clear.

You see, there was free land here, so they came. They were told the land was good and easy. Well, it was good to look at, but no good for farming. They could barely grow enough to eat, let alone sell. So to make enough money to buy tea and sugar, they turned to logging. It was a hardscrabble summer and in the fall, as soon as the crops were in, they hired on to one of the lumber companies. At the time half of all the abled-bodied men in Canada cut lumber in the winter, leaving wives and babies alone on the farms.



Hawk Lake log chute. Photo is owned by the Stanhope Museum and is used with permission.

There was lots of lumbering going on here. Mossom Boyd had crews here in the County. So did Gilmour and the Hay Company, and Gull River Company. The biggest outfit by far was J. R. Booth's. He was the lumber baron. One winter he had over 5000 men in the bush up near Algonquin.

They were all after one thing; pine. Pine was king. Not these little sticks you see now. What they cut then gave logs that were 75, 80 even 100 feet long with a 2-foot diameter at the top. And it was clear wood, no knots.

Yep, in them days, they were cuttin' all across the Ottawa Valley and beyond. Trees were cut down and squared off with axes. In the spring runoff, they were run down the lakes and rivers to Montreal where they were loaded into ships and taken to England. That's why they squared the logs; they'd be easier to pack in the holds of ships.

Why England, you ask? Well, in the early 1800s, Britain got its timber for shipbuilding from Russia. Then Napoleon cut off the supply with a blockade. Remember the war of 1812? Neither do I. It was before my time. But Britain had to find a new supply of wood. And she just happened to have a colony that was ripe for the picking. Remember, back then, everything, from crates to houses, wagons to ships, was made of wood.

Them cutters made their way across Canada from Nova Scotia through Ottawa, and by 1850 they were right here in the Haliburton Highlands. Weren't nobody here then, mind you – just the land, the water and mighty big trees. Even the farmers weren't here yet.

It was in the Ottawa Valley that some fella invented the logging chute to get them big timbers down the rivers. Changed the industry, and log chutes popped up all over the place.
They built 'em here. Haliburton, Minden, Norland, up here (point upstream) at Crab Rapids and down there (point) at Kushog and Boshkung. And right here, of course. There was nothin' like the crash and bang of a log drive to get the blood pumpin'.

Problem was, back in the old days they thought there was no end to the big pine. An inexhaustible resource, they called it. No one replanted what they cut. By the 1870s more folks settled in more places. Sawmills were built and the little trees they passed over were needed for building barns and houses. So the areas they'd already cut were gone over again, and the trees that hadn't been good enough for timbers were taken as sawlogs. Wasn't long before there was nuthin' left.

(thoughtful pause)

Life in the camp was a little different back then, too. There were 50 men living in a 40 x 40-foot log shanty. They slept two to a bunk with a single blanket each and a coat for a pillow. That's the only thing a coat was good for. If the foreman saw you wearing your coat in the bush he'd say, "If you're cold then you aren't working hard enough".

In the middle of the shanty was what was called the camboose, a six-foot square, raised hearth where Cookie made the breakfast – salt pork and baked beans, bread and tea. Well, you could have tea if you paid one dollar a month for it. They'd be out on the trails at dawn and cut 'til lunch, where they'd break for tea and bread. When they'd finished cutting for the day, when it was too dark to see, they went back to the shanty for dinner – salt pork and baked beans, bread and tea - if you'd paid your dollar a month for it. Then it was bed by 8 and back at 'er at first light.

Most of the men came to the camps carrying what they had to wear on their backs. That means they lived in the same clothes for the better part of six months. Imagine 50 men wet through come in to eat their dinner after they'd been cutting trees all day. And there weren't no maid, neither.

In '47 when I started, the old days were gone. Sure, we still lived in the camp during the drive, but we had it pretty good. We had terrific food in that camp and there was a choice meal every day. Not like the old days. I don't know how the cooks did it with just an old cook stove. Stewart Dawson used to cook at the Wigamog Inn in the summer and would come and work for the logging camp in the winter. His food was unbelievable. It was like he created it out of thin air. My favourite was his raisin pie.

Jack Madill was the camp boss. He was a character and a great lumberman. The word was that Jack Madill could spear a log at in Crab's Rapids and ride 'er down to Hall's Lake in time for dinner.

During the winter we cut the timber then piled the logs into huge skidways at the edge of the lakes. At spring break-up we slid them into the lake and then towed the logs through Big Hawk and Little Hawk lakes to the dam. There were skidways all along the shore of the lakes. The skids were kept in place with what we called a butt log. It was like a wedge. As the log drive came down the lake we would yank the butt log out and the skid of logs would roll into the lake.

I remember one skid that was piled behind tree and the only way to get the logs was to get that tree out of the way. Three fellows, Jack Madill, Jack Stoughton and Floyd Mitchell, went over in a skiff to examine the situation. They decided the only way to do it was with a stick of dynamite. They put the dynamite at the base of the tree, lit the fuse and pushed off. Wouldn't you know it but one of the fellows had tied the boat to the shore and there they were stuck 30 feet away from a tree about to explode. Jack reached for the axe to cut the rope but he'd left his axe on shore!

The air was coloured blue with Jack's cursing; then we heard the explosion. A shower of bark and splinters covered 'em in the boat, then they were drenched by a wave of water from the splash made when the load rolled into the lake. The boys were none the worse for wear, but had to put up with a lot of ribbing for the rest of the drive and for years after that.

(pause, laugh, as if remembering)

When we drove the logs here we got 'em up at Crab Lake we had to put them over the Crab Lake dam. Then we'd catch 'em in the booms in Hawk Lake and take 'em down to here. It wouldn't take but a couple of days to do; it was the cutting and skidding took all the time. We'd get 'em into Hawk and just roll that boom around and tow it down in just a few days.

When we got the drive to this dam, (point to the Hawk Lake Log Chute) we pulled the timbers out to let the water rush through and carry the logs down the chute. At the end of the day we put the timbers back in the dam but left a few out to keep a steady flow. There would be logs stranded all along the both sides of the river.

I was part of a crew of twenty men that did the tailing down the river – getting those logs back in the water. The first day after the logs were through the dam, I was working with my cousin, who was my age, and old Sam Whitteker – he was the head of us. He might have been all of 40 but he was old to us then. My cousin and I were green and asked Sam, "How the hell are we going to get all of these logs that are stuck on the banks out into the water." – we'd never done it before.

He just gave us a look over his shoulder and walked right into water up to his neck – he was as tough as shoe leather. We just followed him like pups. I tell you the water was ice cold – but we went to it and never said a word – how could we? – there old Sam looking like he was going for a stroll at a Sunday picnic. We used our peaveys to pry and pull the logs back into the river.

The wood in that drive was almost all hemlock. Huge hemlock. You shoulda heard it comin' down that chute! The mill cut 'em into timbers. At that time they were starting to build the subway in Toronto and that is where that lumber was headed after it was milled - to shore up the trenches for the subway construction.

On the second drive I was on – that was the last drive through this log chute. We started below the dam at Red Pine Lake – mostly pine and spruce we got on that drive. I worked with Doug Hodgson that spring. You remember Doug - he ended up being the superintendent of education - He was just back from university but he loved to work the drive. I remember Ed Mitchell, he drove the team of horses in the woods. Ed ended up breaking his leg that year. We got it all splinted and then had to get him out by boat and portage. When we finally got him to the hospital in Lindsay the doctor didn't even have to set the leg. Seems we had done it up just right at the camp.

(pause)

It was quite an experience, working in the camps and on the log drives. If I had my life to live over I wouldn't want to have missed it – especially the stories the old timers told around the wood stove in the bunkhouse at night. Old Ed would say "It ain't nothin' what I ever knowed of …" and away he'd go with them stories.

And now I've told you.

(pause, look at chute)

The lives and the living of thousands of men across this land are being kept alive in this here chute. There not much left but photos and folklore. A few songs and a lot of stories of men who lived and died by the rasp of the saw.

This rock here and these trees have seen it all. There's thousands more stories to tell. You just got get up close and listen. Listen now… I'm sure that's Ed and Jack and Sam right now swapping stories on how the old log chute came back to the river.

*The history of Hawk Lake chute is described on the Stanhope Heritage and Discovery Museum website (http://www.stanhopemuseum.on.ca/).

Forest Inventory – "After the Storm"

By Ken Plourde

On October 15, 1954, Hurricane Hazel came ripping ashore in South Carolina, and proceeded up the American coast, through Ohio, Pennsylvania, and into Southern Ontario, with winds gusting from 50 to 100 miles per hour (Figure 1). It caught Toronto completely unaware, causing the Humber River to flood its banks. This washed away whole neighbourhoods and destroyed infrastructure. Eighty-one people were killed during this disastrous night.

Figure 1: Path of Hurricane Hazel. Photo is from the online site of the National Weather Service (http://www4.ncsu.edu/~nwsfo/storage/cases/19541015/ .

Where did Hazel proceed thereafter to spread its fury, as it touched down at will and spread destruction?

While attending the University of New Brunswick, I was hired in the summer of 1958 as a student to take part in an operational timber cruise for the Ontario Paper Company at Heron Bay, ON. Initial reconnaissance showed that Hazel had caused extensive damage to prime timber in the Manitouwadge, Heron Bay, and Hornepayne areas. Using the Black and Pic Rivers as main arteries, we were to conduct an inventory/ operational cruise of the areas affected by Hazel.

Ontario Paper was a well-established company, having been incorporated in 1912, under the leadership of Col. Robert W. McCormick. It was part of Tribune Corporation; a sister company to the Quebec North Shore Paper Company at Baie Comeau, Quebec. The division I would be working for had its pulp mill at Thorold, ON. Interestingly, both divisions transported their pulpwood to major waterways, for further transport to the mill. In this case, a large wooden flume transported the four foot bolts to Lake Superior, where they were loaded on ships for transport to the mill at Thorold. Special harvesting equipment was developed to automate the four-foot system, as this was needed to facilitate flume transport of wood to Lake Superior.

I was one of six cruisers hired by the company to spend the summer measuring surviving timber for potential harvest. In addition to the cruisers, we were fortunate to have a cook, little fellow named Valentino from Italy – we called him "Val". We lived in two-man tents, and had an additional tent as a cook-tent/dining area. Val's main equipment was a light portable cook stove, and a few pots and pans. Our main equipment was square stern canoes with small motors for power. Working from canoes usually meant starting the day with wet feet as we struggled to get ashore.

The first morning on the job started with five inches of snow on our tents. It was June 5th! What a way to start the season! On the positive side, we saw lots of wildlife, especially moose in the rivers, as we went by. It was neat to see a huge head emerge from the water with a mouth full of water-lily roots, and water running off the antlers! On at least one occasion, a cow moose would rush from the trees, with her ears back, and threaten us by running alongside the canoes. Obviously, she had a calf or two hidden in the black spruce swamp.

The most prominent wildlife were the insects, including wasps, ever present mosquitoes, black flies, deer flies and huge horse flies. All of these had ample opportunity to attack us as we proceeded awkwardly through the tangle of blow down, brush, and raspberry bushes, all of which had had a few years to grow up since the huge spruce over story had been blown down.

Cruising conditions were very tough, but the consolation was the beauty of the lakes and rivers, and the abundance of wildlife. One would wonder what these majestic animals did during the severe storm, which must have threatened their very lives, and caused panic! The huge conifer timber types on the uplands were obviously the hardest hit, and we observed extensive signs of wood boring insect attack. The thought was that this timber would be most suited for pulp – thence the interest of a pulp

mill, rather than direct it to some of the local sawmills. Sawlogs would be out of the question! I am assuming that there would be substantial stumpage concessions in order to have this timber salvaged.

We had hearty breakfasts in camp, and packed sandwiches for lunch. Fresh food was flown in weekly. Lunches consisted of canned meat or fish, and cuts off Val's roast. One of the crew refused to make sandwiches from canned or leftover meat, so he made the same sandwich every day: peanut butter with a huge slice of Spanish onion! We all wondered how it would taste, but nobody gave it a try! On the very last day, I decided to satisfy my curiosity, and made myself one. To my surprise, it wasn't too bad, as the peanut butter and onion seemed to cancel each other.

With good water access by freighter canoes (square stern) (Figure 2), we did line cruises from rivers and lakes, transecting the timber types. They were a continuous cruise line, with breaks for timber type changes. Our party chief was Frank Bucik, a graduate of Lakehead University. The remaining "cruisers" were myself and Eldon Cumby from UNB. One compass man was from the University of Toronto, and the remaining two were from Quebec.

Some smaller areas of interest were cruised from a "fly camp", where two of us would be dropped off by plane for the required period, usually a week. On one occasion involving myself, the weather socked in, and the plane was unable to fly for a couple days. By the time the plane was able to pick us up, we were down to a couple cans of sardines, a jar of marmalade, and soda crackers!

At one location, we noticed that we were within walking distance to Hornepayne, to the north of us, so we decided that two of us should navigate our way there and bring back some much-missed refreshments. I was elected to take a partner, and head up the trip. By using high level (10,000 ft) aerial photographs, the very prominent geographical features became clear. There were sand eskers with no underbrush, and game trails at the top, which made the trip very easy walking, so we were able to walk the eight or so miles to Hornepayne and back. The area was a geomorphologist's dream, with all the prominent features, (terminal moraines, eskers and drumlins) being left by the receding glaciers.

Figure 2: Freighter canoes provided access for the cruises.

Doing line transect cruising of the timber resource left in the wake of Hurricane Hazel was a tough assignment, but, looking back, we mostly remember the beauty of the lakes and rivers, and the amazing geological features, and abundant wildlife.

The author sporting his summer-with-hazel beard.

I often wondered what portion of the huge devastated area was salvaged, and how fire fit into the natural progression of a forest in that condition. Millions of cubic metres of prime timber were lost to the ravages of Hurricane Hazel.

My memories are of a very tough summer, but with a sense of accomplishment for a job well done. The crew deserved a lot of credit for tackling the adversity so willingly. I never heard a word of complaint throughout the summer.

Looking back, one remembers the opportunity to spend the summer in a beautiful environment that existed outside the areas touched by Hurricane Hazel.

All photos except the first one were supplied by the author.

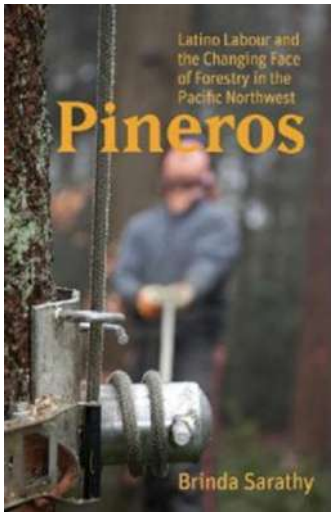
Books / Articles / Web Sites or Other Resources

Book Review

By Mike Commito

"Pineros: Latino Labour and the Changing Face of Forestry in the Pacific Northwest"

By Brinda Sarathy. Vancouver: University of British Columbia Press, 2012.208p.



When people outside of the forest industry first think of lumberjacks, the image that comes to mind is often that of the traditional, rugged, folklore character embodied by Paul Bunyon. However, the lumberjacks you are likely to encounter in the United States Pacific Northwest forest industry are less likely to be the typical white loggers and more likely to be Latino workers or pineros, such as Juan Cabrera, an immigrant worker from Mexico without legal papers. In her book*, Pineros: Latino Labour and the Changing Face of Forestry in the Pacific Northwest*, Brinda Sarathy recounts and explains how Latinos have come to dominate large portions of forest work on federal land. For the most part scholars have focused their analyses on white loggers, company officials, and environmental activists without paying much mind to the immigrants in forest management industry.

The book is presented in six chapters, excluding the introduction. Chapter 2 examines the history of reforestation efforts on public lands in Oregon. Those interested in tree planting will find this chapter particularly rousing. Sarathy documents the history of reforestation in the Northwest starting with industry efforts in the prewar period to active government intervention in the early 1970s. She briefly examines the Hoedads, the first tree-planting co-operative in the Pacific Northwest, and more formalized reforestation efforts before ending the chapter with the rise of Latino workers in the early 1980s.

The third and fourth chapters take a step back as Sarathy delves into the Latinization of forest work in the Pacific Northwest. This analysis not only includes a brief history of how Latinos came to work in federal forests in Oregon and Washington, but also focuses on the firsthand experiences of these workers in the 1980s. Their initial arrival in the industry was difficult because of their vulnerable legal status and limited mastery of English, which contributed to their marginalization and exploitation.

The concluding chapters examine how Latino workers responded to the challenges of exclusion and exploitation through mobilization and kinship networks. In these sections Sarathy recommends ways of improving the working conditions of pineros, namely through better enforcement of both immigration and labour laws. In the end she calls for a revisionist approach to the history of forest work in the Northwest in order to accurately account for the social realities of the industry and more importantly, the acknowledgement of pineros themselves.

While this is indeed a history book, it also holds significant contemporary resonance as pineros are still "the most economically and socially marginal group of forest workers on federal lands." In Canada the situation is

much different, as the tree planting industry is still largely comprised of native-born university students. Nevertheless, the plight of undocumented workers is a pressing concern for all of us involved in or studying the forest industry and Sarathy takes considerable measures to ensure that her readers understand the core issues in relation to the industry and the workers themselves.

Pineros is based on considerable archival research in California, Oregon, and the Forest History Society in North Carolina, as well as an extensive collection of interviews with former company officials, Latino workers and their families. Given the book's relatively lean size, Sarathy's ability to concisely fit in so much history and information is an impressive feat. Furthermore, the book is very accessible, making it a great assigned reading for students while still pleasing specialists and general readers alike. For those interested in reforestation, labour issues, race relations or the United States forest industry in general, *Pineros* is highly recommended.

Brinda Sarathy received her PhD in Environmental Science, Policy and Management from the University of California, Berkley in 2006. She is currently an assistant professor of environmental analysis at Pitzer College in Claremont, California.

"Renewing Nature's Wealth"

(Lambert, Richard S. and Paul Pross. Toronto: The Ontario Department of Lands and Forests. 1967). The book cover describes this book as "the exciting story of Ontario's natural resources, and John Robarts, in his Foreword to the book as 'much more than a history of one of the Departments of the Government of the Province of Ontario: it is a vital component of the history of Ontario', reaching back nearly 200 years to the days of the first surveyor General of Upper Canada in 1794. The book describes the impact made by a civilized people upon the primitive forest that originally covered the land, and the development of its natural resources under public administration from an early state of confusion and waste down to the modern era of conservation and scientific management." We will provide a précis of one chapter of this book in each future edition of the newsletter.

Part II: Consolidation and Conservation, 1842-1900 - Chapter 6 (The Progress and Regulation of Land Settlement): The main thrust of The Lands Act of 1837 and the Durham Report of 1839 was to suspend free grants and instead to sell land with the intention to raise funds for government, while attracting a higher class of immigrants. For the next sixty years the government amended law and policy several times to try different approaches to make these ideas work, but most of them failed for a variety of reasons.

Competition for immigrants was strong, and with the United States offering land at much lower prices, Canada flip-flopped on the selling land approach.

Conflict between the timber industry and settlement was strong. Settlers did not like the provisions in their deeds that gave timber rights to companies and settlement and agriculture impeded access to timber resources.

Speculation and corruption still ran rampant, as did political involvement in the process of land disposition.

The government pushed to open up the north but often the land was described improperly and settlers were not able to succeed. The first area of land to be opened was the Huron-Ottawa tract, with Parry Sound, North Bay, Sudbury, Sault Ste Marie, Thunder Bay and Rainy River following. Settlement in these areas required

transportation and the government invested in roads and encouraged railways. Originally, railways were compensated through land sales but eventually large tracts of land were given to the railway companies.

There was conflict within government itself with immigration being managed by the Department of Agriculture and land disposition and settlement by the Department of Crown Lands. These two departments did not cooperate and often made different interpretations of the same policies. This administrative structure held for 30 years until 1899 when changes were made.

A significant change occurred when the Imperial Government in England enacted a law to allow Canada to have sole right to manage its land disposition process.

The role of the Crown lands department and lands agents seems not much different than today: they were responsible for selling land, collecting payments, providing statistics to government, dealing with squatters, writing numerous letters, making inspection tours, conducting land valuations and dealing with land-related conflicts.

In the 1800s oversight from head office was poor and since land agents were self-funded, speculation and corruption were rife.

The Results Are In! The Canadian Forest History Preservation Project

By David Brownstein

The Canadian Forest History Preservation Project is the result of a collaboration between NiCHE, The Canadian Forest Service, and The Forest History Society.

Our shared goal is to help facilitate donations of "at risk" forest history primary sources into Canadian archives. To that end, we undertook a national survey of archives, the results of which you can read in the report located at: http://niche-canada.org/files/final%20report%20-%20Cdn%20Forest%20History%20Preservation%20Project.pdf .

As discussed, the Canadian archival community is in a period of significant transition, so this snapshot makes for some interesting reading. Without healthy, well-supported archives, it is impossible to undertake engaging, provocative research.

Of those invited, 208 archives participated in the project, and 169 self-identified as holding relevant forest history collections, were enthusiastic about donations of new material, and wished to be kept informed of future progress. This listing appears in the report appendix, and it is intended to assist the four provincial forest history associations in directing future donations.

While the work of facilitating donations is ongoing, to date the forest history community volunteered five collections as requiring archival protection. We also produced English and French language brochures, now in circulation.

Please help us promote the project goals by sharing electronic versions of our brochure. You can find them here:

English:
http://www.foresthistory.org/research/Canadian_archives_brochure.pdf

French:
http://www.foresthistory.org/Research/Canadian_archives_Fr.pdf

Finally, if you know of any valuable forest history collections in danger of being lost or destroyed, please get in touch!

Events – Past

History of Forest Inventory in Ontario Display

"Seeing the Forest through the Trees", a history of forest inventory in Ontario was a coproduction of the Forest History Society of Ontario and the Canadian Bushplane Heritage Centre in Sault Ste. Marie. The display at the Centre ran from April to September of this year, and was a great success, with more than 16,000 visitors viewing the exhibit.

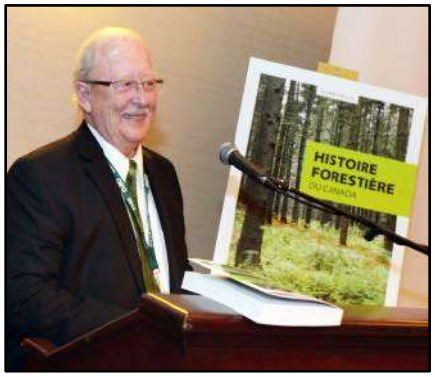
Lancement du Livre: *Histoire forestière du Canada*

Paillé, Gilbert. *Histoire forestière du Canada.* Cité de Québec: Les Publications du Québec, 2012. 452p.

L'information ci-dessous provient de ce site Web :
http://communiques.gouv.qc.ca/gouvqc/communiques/GPQF/Septembre2012/18/c7433.html .

QUÉBEC, le 18 sept. 2012 /CNW Telbec/ - Les Publications du Québec, avec la participation du ministère des Ressources naturelles et de la Faune, ont lancé aujourd'hui l'ouvrage intitulé *Histoire forestière du Canada* de l'auteur Gilbert Paillé. Le lancement de ce tout premier ouvrage en français relatant l'histoire forestière du Canada s'est déroulé à l'occasion du congrès 2012 de l'Ordre des ingénieurs forestiers du Québec.

Histoire forestière du Canada fournit une chronologie détaillée des principaux événements qui ont marqué le monde forestier canadien au cours des 150 dernières années. Il est notamment question des théories en aménagement forestier, des stratégies forestières nationales, de la gestion des forêts publiques et privées ainsi que du commerce intérieur et extérieur du bois. *Histoire forestière du Canada* est un outil essentiel pour les personnes désireuses d'en apprendre davantage sur le rôle primordial du bois et des forêts dans le développement du Canada.



Gilbert Paillé, lors du lancement de son livre. Photo fournie par Pierre Mathieu, un forestier du Québec, qui était l'organisateur de la cérémonie de lancement.

Un recueil remarquable à l'image d'un grand forestier M. Gilbert Paillé est ingénieur forestier, diplômé de l'Université Laval (1965) et de l'Université de Colombie-Britannique (1970). Il a été ingénieur résidant à la Forêt Montmorency, professeur de foresterie à l'Université Laval, ingénieur-conseil chez Blais-McNeil à Québec, directeur de recherches forestières à la Compagnie Internationale de Papiers du Canada à Montréal, directeur régional du Service canadien des forêts pour le Québec, sous-ministre associé au ministère des Ressources naturelles et de la Faune, délégué du Québec en Scandinavie et président-directeur général de l'Institut canadien de recherches en génie forestier (FERIC). Auteur d'un grand nombre de publications scientifiques et de rapports techniques, M. Paillé a prononcé une centaine de conférences sur la foresterie devant divers auditoires. Il a pris sa retraite en 2005.

Histoire forestière du Canada est en vente sur le site Internet des Publications du Québec à l'adresse www.publicationsduquebec.gouv.qc.ca au prix de 42,95 $. Vous le trouverez également dans les librairies. Rappelons que Les Publications du Québec ont pour mission de rendre accessible l'information gouvernementale à tous les citoyens. Vous pouvez aussi faire la demande directement par courriel à M. Paillé à l'adresse suivante : gilbert.paille@videotron.ca .
-30-

Note Re English Edition
The book has been translated into english thanks to a generous contribution from the Canadian Forest Service. But a further contribution is needed to publish the book. M. Paillé is currently working on finding a co-sponsor and an editor. He welcomes any interest in the project.

Canadian Bushplane Heritage Centre – New Website

You are invited to check out the newly revised and greatly improved bushplane museum website at www.bushplane.com.

10th Canadian Urban Forest Conference - "Back to the Forest"

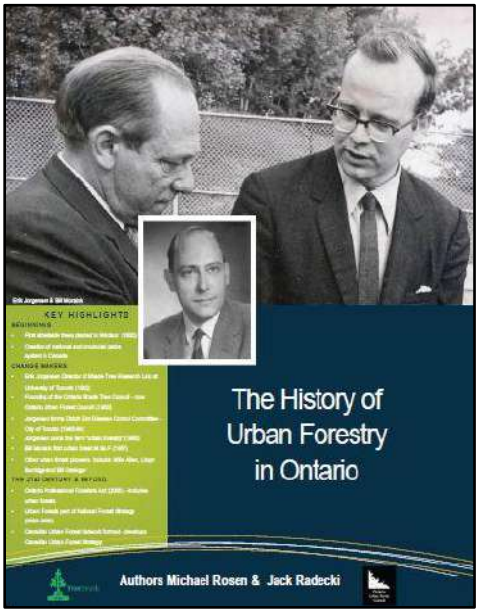
October 2 – 4, 2012

London, ON

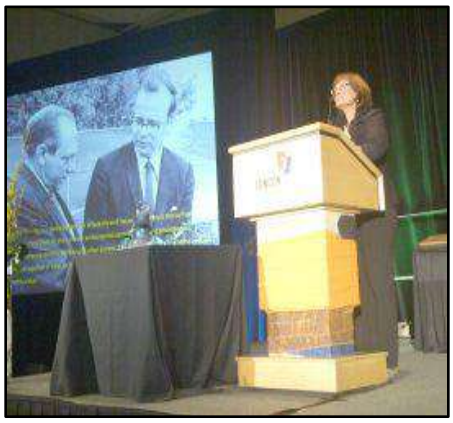
The 10th Canadian Urban Forest Conference hosted over 40 different speakers from across North America on a variety of topics. The agenda can be found at the conference website:
http://cufc10.ca/

"History of Urban Forestry" Poster

Mike Rosen, Tree Canada, and Jack Radecki, Ontario Urban Forest Council, presented a poster on the history of urban forestry in Ontario at Tree Canada's anniversary celebrations on the evening of October 3rd.



Poster on the history of urban forestry in Ontario created by Mike Rosen and Jack Radecki. Photo provided by Mike Rosen.



Marianne La Rose, daughter of Erik Jorgensen, saying a few words about her father. Photo provided by Mike Rosen.

Special Presentation on Erik Jorgensen

Professor Andy Kenney of the University of Toronto gave a presentation honouring Erik Jorgensen, Canada's first urban forester. Dr Jorgensen passed away in June of this year. His daughter, Marianne La Rose, also said a few words about her father.

Forestry Day - Bancroft

On June 7th, over 150 students from the Bancroft area gathered together to participate in Forestry Day. The Bancroft Area Forest Industry Association put the day on to celebrate the importance of forestry to the local community by having students participate in tree planting, orienteering, watch an active harvest and learn how to tree mark. The day was a great success, with the students taking away the message that **Forestry** is important to them and their families.

A video was put together about the day by the Ontario Forestry Association. Take a look here:
http://www.youtube.com/watch?v=6TojB5ER-vc .

John Somerville Honoured

Note: The information below came from an article in the Alliston Herald published on September 6, 2012, written by Brad Pritchard, as well as from an interview with John's long-time friend, Doug Drysdale. The information from the Alliston Herald is used with permission.

John Somerville of Alliston, Ontario, was recently presented with several achievement awards, including a special lifetime achievement award from the Canadian Institute of Forestry, for his contributions over the years to the forestry profession and landscaping industry. Mr. Sommerville founded Sommerville Nurseries in the early 1950s and has sold Christmas trees for over 60 years.

Tony DiGiovanni, executive director of Landscape Ontario, presents John Somerville with a plaque of appreciation for the contributions he has made to the tree industry during his lifetime. Photo by Brad Pritchard of the Alliston Herald; used with permission.

Close to a dozen representatives from associations and organizations across the province, including the Ontario Forestry Association, the Canadian Institute of Forestry, the County of Simcoe and Trees Ontario paid tribute to Mr. Somerville at an unprecedented special awards ceremony held in August, 2012, at the Riverwood Retirement Home in Alliston. Mr. Somerville received five accolades in the form of plaques and a service pin in addition to many messages of appreciation and heartfelt thanks.

John Somerville was a pilot in the Second World War and afterwards attended the University of Toronto to obtain his degree in forestry. After graduation, Mr. Somerville joined the family business, Peter Thompson and Sons Lumber, as a forester managing their hardwood operation at Kearney, Ontario, near Algonquin Park. While the lumber business was lucrative and would continue for some years, Mr. Somerville decided it would be a good move to start growing and selling Christmas trees. After five years in Kearney, Mr. Somerville acted on his vision and joined the burgeoning Christmas tree business. Over the following decades, his business would expand into two more divisions: ornamental nursery stock in the early 1970s and seedlings in the early 1980s.

Much of the open land on properties acquired by Peter Thomson and Son Lumber for their timber values was ideally suited to growing Christmas trees and John added to these lands through purchases and various lease arrangements with private landowners over the years. Their holdings now comprise several thousand acres. However a key purchase was the former tobacco farm on County Road 13 south of Everett that became their tree seedling nursery and their company head office when they relocated out of the Alliston mill site itself about ten years ago

In the years after he founded his business, Mr. Somerville made important contributions to forestry, serving on several associations. He also helped to found the *Christmas Tree Farmers of Ontario* in the 1950s, an organization that continues to this day.

Over six decades, Somerville Nurseries has become one of the biggest names in the business, producing upwards of 250,000 Christmas trees, 25,000 landscape trees and five million nursery seedlings a year. The company has been heavily involved in reforestation and planting efforts over the years, providing trees and seedlings to conservation authorities and other groups across Ontario. Somerville Nurseries also works with the Trees Ontario Foundation, which has a mandate to plant 50 million trees by 2020. Somerville Nurseries has forested more of southern Ontario than any other business. And every day over a million people see a Somerville tree.

The original article from the Alliston Herald is posted here:
http://www.simcoe.com/news/article/1497702--forestry-profession-honours-john-somerville .

Events – Upcoming

Vegetation Inventory and Monitoring Workshop in partnership with the OMNR

The University of Waterloo, in partnership with the Ontario Ministry of Natural Resources, will host a Vegetation Inventory and Monitoring Workshop in Huntsville, Ontario, at the Waterloo Summit Centre for the Environment on March 20, 2012, from 9 am to 4:30 pm.

Workshop description:
This one-day course will provide a high-level background on vegetation inventory and monitoring in the contents of settled and developed landscapes. It will cover some examples of vegetation inventory and monitoring from Canada and other parts of the world. The course will specifically provide an overview of strategic, standard, and quantitative vegetation field efforts using plot based Vegetation Sampling Protocol (VSP) methods.

More information on the workshop can be found here:
https://uwaterloo.ca/waterloo-summit-centre/field-courses-professional-development-and-student-activity/vegetation-inventory-and-monitoring

Annual General Meetings

Forest History Society of Ontario
Thursday, February 7, 2013
Nottawasaga Inn
Alliston ON

Agenda will be posted here:
http://www.ontarioforesthistory.ca/

Ontario Forestry Association
Friday, February 8th, 2013
Nottawasaga Inn
Alliston ON

Agenda here:
http://www.oforest.ca/index.php/_conference

Ontario Forest Industries Association
Wednesday, February 27, 2013

For more information contact:
info@ofia.com

Ontario Professional Foresters' Association
April 10-12, 2012
Ottawa ON

Agenda here:
http://www.opfa.ca/new/agm-current.php

About the Authors

John Bacher PhD: Historian and environmentalist from St. Catharines, Ontario. John is the author of *Two Billion Trees and Counting*: The Legacy of Edmund Zavitz".

Dan Bissonette: Program Coordinator for the Naturalized Habitat Network. Dan has an education in horticulture and a keen interest in native plants.

David Brownstein PhD: Project Coordinator, Canadian Forest History Preservation Project, Vancouver, BC.

Mike Commito: PhD student in Environmental History at McMaster University.

John Hazlitt: Grew up in the Village of Benmiller where Sharpe`s Creek and the Valley of the Lower Maitland River became his playground and later his workplace. Starting in 2006, he began the identification and digital image documentation of the many dams for waterpower that were built on the Maitland River Watershed during the 19th Century.

Fred Johnson: An environmental planner who worked 27 years for the Ontario Ministry of Natural Resources. He was one of the chief architects in the development and implementation of the Oak Ridges Moraine Conservation Plan.

Ken Plourde: A forester who practiced Forestry in Canada for over 50 years, from Labrador to British Columbia, and is now dedicating his time to preserving the remarkable story of this great industry.

Malcolm Squires R.P.F.: Retired Forest Manager and Boreal Forest Artist, Thunder Bay, ON, who now spends his time wandering the forest that he loves, appreciating its beauty and checking on the development of the stands that are his forest management legacy.

Mike Puddister: Director of Restoration and Stewardship at the Credit Valley Conservation Authority.

Terry Schwan: Guelph District Forester, Ontario Ministry of Natural Resources.

Ted Turner: Co-author, with John Hazlitt, of the book *The Power of the Maitland*.

Victor Zsilinszky P. Eng.: Retired from the Ministry of Natural Resources in 1989, then continued in consulting and teaching for fifteen more years. Now he is exploiting the benefits of Golden Age!

Next Issue

For the spring, 2013, issue of the journal our theme is forest fire history. We plan to have articles on a wide range of topics related to forest fire history in Ontario including: the ecological history of forest fires, fire protection and firefighting, the role of technology, including airplanes, significant fires, legislation and policy development as well as stories on and about people.

If you have a personal story to tell, or a historical article to write or know of key documents or photos or other artifacts that would be of interest to include, please contact the editor (the editor's email is at the front of this journal).

Our series on forest inventory is not yet complete and we will have more articles in the spring issues on this topic as well.

If you have an idea for a theme or a topic for future journal issues, or if you can write an article for the journal, then send an email to the editor.

Sylva Recap

The Ontario Department of Lands and Forests published for many years a journal called "*Sylva*". The purpose of this journal was to highlight changes in policy, individuals and the comings and goings of staff. *Sylva* contains nuggets of forest history that will be selected for each edition of the journal. Several articles on forest resources inventory were published in *Sylva*. The one below provides a general overview of the program to 1954.

The Forest Resources Inventory (Sylva Vol. 10(2) (1954):4-8)

By J.A. Brodie

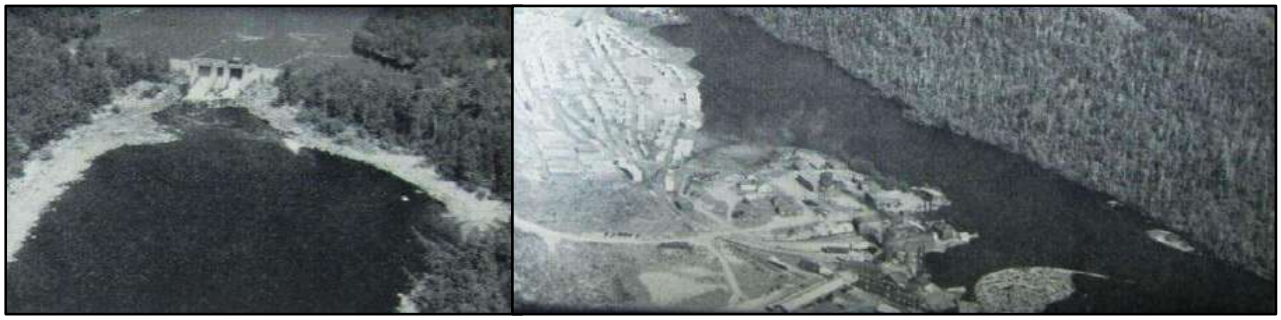
One of the material foundations of the Forest Resources Inventory, a scientifically sound system of management, is now rising whereby the forest areas will contribute – to their maximum capability – to raise the living standard of our people generally.

Aerial view of White River F.R.I. Photo

One of the important undertakings of the Department of Lands and Forests in recent years is a province-wide survey of forest resources. The survey, covering an area of 172,000 square miles, comprising the accessible forest area of Ontario, was authorized, and work started by the Division of Timber Management early in 1946. The accessible forest area of Ontario extends generally from the Kawartha Lakes and Severn River on the south, north to about thirty miles beyond the Transcontinental line of the Canadian National Railway passing through Cochrane, Hearst and Sioux Lookout. Within this area is concentrated practically all of the operations of the huge pulp

and paper and saw-milling industries of Ontario, an area from which nearly 400 million cubic feet of wood is cut annually, with a value of primary forest production of about 150 million dollars yearly. Commencing April 1, 1951, the Federal Department of Resources and Development, under the terms of an agreement with Ontario, pursuant to the provisions of the "Canada Forestry Act," has paid one-half of the expenditures incurred in forest resources inventory in Ontario. At the same time, the inventory was extended northward to cover the drainage area of the Albany River, an additional area of 70,000 square miles, and also a survey of the woodlots of southern agricultural Ontario on an over-all area of 30,000 square miles. The forest resources inventory, therefore, covers an area of 272,000 square miles which includes the land area of the Province north to 52 degrees North Latitude. The final reports will include practically the total timber resources of Ontario.

Forestry in Ontario took to the air in 1921, and it will probably surprise some to know that the first use of

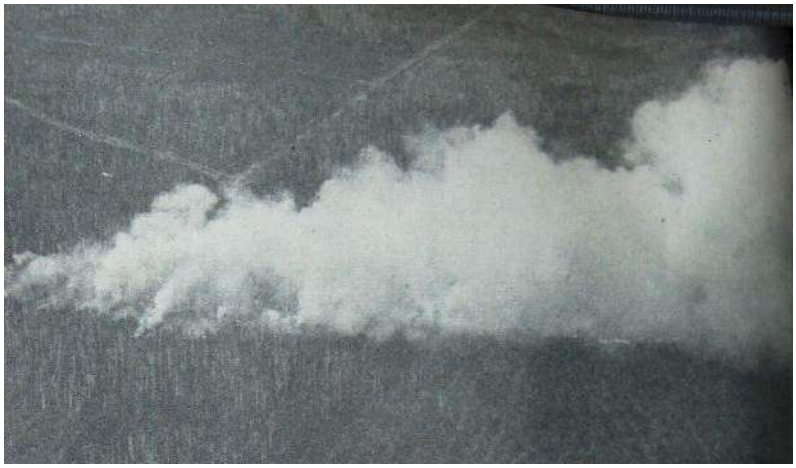


Potential hydro dam sites (left), industrial sites (right) and railway and highway routes can be pre-determined from F.R.I. photos. C.L. Hull

aircraft by the Department of Lands and Forests was for aerial sketching of timberlands. The first aerial photographs for mapping and inventory purposes were taken by the Department in 1926. Throughout the following twenty years the technique of forest resources inventory and mapping by the Aerial Photographic Method was gradually perfected to emerge as a full-fledged method in its own right after VVorld War II.

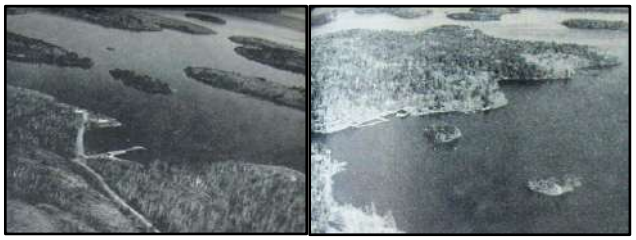
The Aerial Photographic Method of forest resources inventory is carried out in six steps:
(1) Aerial photography; (2) Preparation of planimetric base maps; (3) Forest typing on photographs; (4) Field checking of forest type maps and collection of volume and growth data by field crews; (5) Preparation of final forest type maps; (6) Compilation of quantities of timber and issuance of final reports.

The physical assets of the forest resources inventory – reports for the accessible forests of Ontario are now complete – consist of 150,000 aerial photographs of high quality covering the main forested area of the Province. These will be of value for many years to come for all branches of forestry work, and will also aid in mining developments, hydroelectric power and highway construction, and generally for all phases of the development of the natural resources of Northern Ontario. There are 1,600 sheets of planimetric base maps on a



Areas burned or cut over can be estimated from aerial photos and checked off against allowable depletion. A.N. Shrive

scale of four inches to the mile which will form the base for all published maps of the area. A second series of forest type maps, 1,600 in all, show forest conditions and all other features of value in planning and development of the renewable natural resources of the Province. The tabular statements accompanying the forest resources inventory shows the volume of timber by species, types and age classes in such a way that the total volume of merchantable and other timber on a township, watershed, district or for the Province as a whole can be obtained readily.



A.S.D. Photo **Callidine**

Areas to be opened for outdoor recreation use can be readily selected as well as for ranger stations, air bases, fire towers, etc., offsetting long-term ground surveys.

These physical assets of the inventory, useful in so many ways, find their greatest value in the use of the data, maps, photographs, etc., in laying the foundation for the management of the forest resources of the Province on a sustained-yield basis, and it is only in laying the essential background for this further development that the work and expense can be fully justified. Forests produce many benefits over and above those derived from the timber and forest products placed on the market. They are the habitat of game, and create an environment suitable for game fish in the waters of our streams and lakes.

Forests influence climate, help prevent erosion and rapid runoff of water, and in many other ways contribute to industrial welfare, and make Ontario a pleasurable place in which to live. Some of these benefits may be attainable by any tree cover, but all of them are served best by a healthy growing forest. Forest management, primarily the business of growing successive tree crops on the same ground to supply industrial requirements for raw materials, will, with careful planning, produce those other essential benefits of a forested land.

Forestry in Ontario, as in every other forested country of the world, began with a century of crude exploitation dominated by policies of immediate gain and short-term expediency. Now we enter a new era of forest management – forest crop production – of which the forest resources inventory is the initial phase.

From F.R.I. maps and aerial photographs, surveyors plan sawlog chances which are later released by public tender. K. Andresen.

Forest History Society of Ontario

Membership Form

Thank You For Your Support!

The mission of the Society is:

"To further the knowledge, understanding and preservation of Ontario's forest history" and to accomplish this with the following objectives:

1. To preserve forest and forest conservation history;
2. To encourage and further the development and recognition of forest history;
3. To support research and studies of forest history;
4. To support the archival preservation of records and materials relating to forest history, and
5. To promote the better understanding of forest history through public education.

The Society has two ongoing projects, both available on our website:

www.ontarioforesthistory.ca

The first is a catalogue of publications dealing with all aspects of Ontario's forest history. Members can submit contributions on our website.

The second is the identification and listing of collections and materials relating to Ontario's forest history. The Society works with established archives such as the Archives of Ontario and several university archives to facilitate the preservation of significant collections.

The Society publishes a newsletter, ***Forestory***, twice a year – Spring and Fall - containing informative articles on Ontario forest history.

(The FHSO has a privacy policy. Your information will not be shared or sold.)

You can initiate or renew your membership online by clicking on the link below:

http://www.ontarioforesthistory.ca/index.php/membership

Or, by filling out and submitting the form below, with your cheque, to the address listed below:

Name					
Address					
City		**Province**		**Postal Code**	
Phone		**Email**			

Membership Type – Please Check One
☐ FHSO Annual Membership - $45.00
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144 Front Street West, Suite 700
Toronto ON M5J 2L7

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