Forest History Society of Ontario

Forestory

Volume 10, Issue 2, Fall, 2019

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The Forest History Society program at the Canadian Institute of Forestry Annual General Meeting in Pembroke, Ontario.

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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.

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Chair's Message: A Cold and Snowy Fall

By: Rob Galloway, R.P.F. (Ret.)

Well, we have had some wonderful events through this summer and early fall as you will see inside this *Forestory*.

Special mention to the innovative and fun tour repeat of the **"Forest and Conservation Tour in 1939"; this year's tour, the "80th Anniversary Forestry Tour of Northumberland and Durham Counties: The Rewards of Planting Trees".** All that I have heard and seen indicate that this was a very fun and rewarding time to see all of the results and trees growing.

Thanks to Terry Schwan, R.P.F. and his team for all of the work and the great result as you will see inside in their write-up. [Editor's Note: The tour write-up begins on page 7.]

"A person of the Forest planting trees for the future that they may never see believes the forest will be there for others to share in the future." (borrowed and recreated by me)

We are continuing our interest in many histories brought to us by many people and continue to follow up on them and to pass on the valuable information in our *Forestory* issues.

To share a moment, in Guelph I met a 93 year old lady who asked me if I knew of Oliver Korpella of Sudbury and his sawmills in Chapleau. I did, as I worked with those sawmills and many of the staff that were there. So you never know how **forest history will sneak up on you and that is always an interesting experience. Enjoy.**

Thanks as always to all of those sharing in this edition and please continue to share your stories in the future.

Enjoy this edition of our *Forestory*, and share it with others far and wide and if you have any ideas for potential stories or items you would like to bring forward please let us know.

Mark Your Calendars!

Forest History Society of Ontario Annual General Meeting

February 13, 2020
3:00 pm

Nottawasaga Inn
Alliston, Ontario

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 Caroline Mach, R.P.F. at carolinemach@hotmail.com. Deadlines are April 1 and October 1.

FHSO at the York Region Forest Festival

By: Ken Reese

On Saturday, September 21, Ed Borczon, R.P.F. (Ret.) and I manned the FHSO booth at the York Region Forest Festival.

We had about 100 people come by our booth, about half we actively engaged. The weather was perfect. We were well housed in their shed/building that served as their outdoor classroom. We were one of some 20 booths. The York Regional Forest crew seemed pleased with the turnout for the day. Our panels were most helpful. A nice flow of info from the start of the forest to the present. The audience could look outside and view the actual forest and see the transition from conifer to hardwoods.

The panels suited the adult traffic. They did not suit the children. Fortunately, we had a post card for National Forest Week, which had a nice picture on the back and we gave these to the young ones. I brought five forest history books, they did not attract much attention. Ed brought a binder of old photos and they were useful. With us in our building was the Whitchurch-Stouffville Archaeology Museum. They had a few artifacts on the table that the children were attracted to. We might consider having a collection of foliage for tree identification or some pine cones on a lanyard or some small container seedlings, maybe a forest pencil as handouts.

Most people were unaware of the blowsand history, even though they lived just down the road. Maybe half of our audience were recent arrivals and had no knowledge of the history of the area or of the forest they were standing in. We have a piece to go to tell our forest story. A few asked what we did, in most cases, as people stopped to view our panels, we would approach them. We had a steady flow of traffic, helped as our spot was the horse wagon ride starting point and people were waiting for a ride. It was a rewarding day for Ed and I. Glad we were able to help the Society.

From left, Ken Reese, Ken Armson, R.P.F. (Ret.), and Ed Borczon, R.P.F. (Ret.) at the York Region Forest Festival.

Forest History Session at the CIF AGM

On October 7, 2019, the Forest History Society of Ontario hosted a forest history session at the Canadian Institute of Forestry Annual General Meeting in Pembroke, Ontario. A diverse audience of about 50 attended. The presentations are listed at right, and some comments from attendees follow.

Comment on Forest History session at CIF-AGM, Pembroke, 2019—Ken Armson, R.P.F. (Ret.)

The CIF and Jim Farrell in particular are to be commended for organizing the Ontario Forest History Society session. Not generally known is that shortly after the founding of the Society, Jim as ADM in the Canadian Forest Service was responsible for each of the four provincial forest history organizations (British Columbia, Alberta, Québec and Ontario) receiving a significant grant in support of their activities. The four speakers were well chosen with Bill Thornton's introductory, "Why Forest History isn't just for Old Guys" followed by Professor Mark Kuhlberg's account of the decline of Canada's newsprint sector in "Where have all the Abitibi's Gone?". This sequence of a broad look at why forest history is important followed by a specific historical example, which was placed in the international context of the newsprint industry was continued with the next two speakers, Dr. Anne Koven's "Evolution of the Green Forest Policy in Ontario" followed by Gord Cumming's account of 40 years of forest management by the Algonquin Forestry Authority in the Park. This last during a period which has seen an example of how forest management can take place and provide for economic benefits and still retain, if not enhance, other environmental values.

Comment on Forest History session at CIF-AGM, Pembroke, 2019—Fraser Dunn

I quite enjoyed the forest history presentations this year. They fit in well with this conference which certainly had a strong history flavour running through it. As part of the small group that set up the program, I thought the presentations, which tried to focus on items that would in turn, speak to subjects of a national, regional and local interest, were generally well received by an interested and quietly appreciative audience. It was also helpful, we hope, in perhaps at least incrementally, raising awareness of the FHSO. We are most thankful to the speakers who put their time and energy into the event.

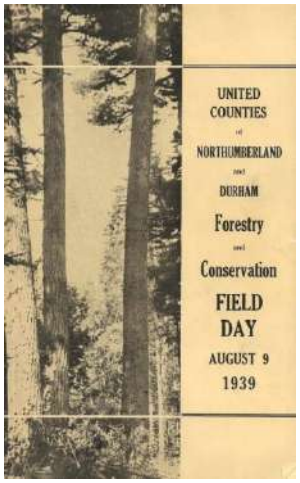
As with much historical content however, it would have been beneficial to have had more time to explore the subjects a little more and engage in generating more questions and reflection around the session's theme question: are we learning the lessons of history? One, that of course can't be answered definitively at a single conference or maybe at all. It may be, rather, an on going perspective we need to continue to more mindfully take to all our engagements with the stories of the past as we consider them in light of today's challenges and tomorrow's histories. In sum, a good session, I was happy to attend.

80th Anniversary Forestry Tour of Northumberland and Durham: The Rewards of Planting Trees

By: Terry Schwan, R.P.F.
Ed Borczon, R.P.F. (Ret.)
Glenn Mcleod, R.P.F. (Ret.)

In 1939, The United Counties of Northumberland and Durham held a Forestry and Conservation Field Day. It involved a driving tour to various forest and tree sites in and around the Oak Ridges Moraine of these two Counties.

In 2019, after 80 years, the Forest History Society of Ontario, with the support of Forests Ontario and the Southern Ontario Chapter of the Canadian Institute of Forestry, organized a tour that retraced, as closely as possible, the original route to view how land restoration efforts with trees changed the landscape. Thirty eight people took part in the tour on October 3, 2019.



1939 Tour Guide

80th anniversary tour organizers, foresters (left to right) Terry Schwan, R.P.F., Ed Borczon, R.P.F. (Ret.) and Glenn McLeod, R.P.F. (Ret.) holding the 1939 tour directional road sign (Photo A. Harjula).

Background of Forestry and Conservation Field Day Tours

In the early 1900s it was widely recognized that clearing the forest for agriculture and the agriculture practices themselves caused great damage to landscapes and economic loss to all. The Department of Lands and Forests was providing trees to farmers and supporting private land and municipally owned demonstration woodlots and plantations.

The significance of the damaged landscape from forest clearing and the blowsands caused the government to establish two nurseries in Midhurst and Orono in 1922 to support the St. Williams nursery in operation since 1908.

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Conditions on farms were worsening. Nineteen thirty-six was an exceedingly dry season, with wells and springs drying up. Watson Porter, editor of the *Farmer's Advocate*, railed against all level of government and farmers for the deforestation and floods.

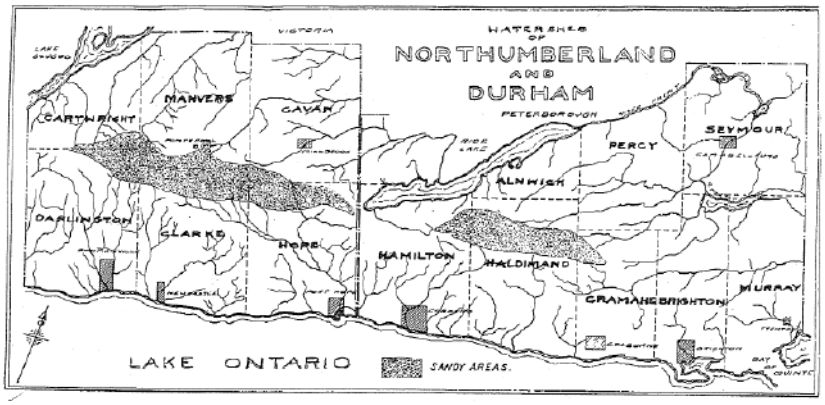
Through various meetings in southwestern Ontario it was noted 'real progress could be made only when municipalities all over the province united in a forward-looking conservation policy actually put into effect.' Porter organized a series of meetings. The first meeting in London on Dec. 17, 1936 resulted in a draft of programme and policies of the new organization. In a short time, meetings in Guelph and Bowmanville in January 1937 and in Kemptville in April of that year completed the organization plan. A governing committee was developed and the organization became known as the Ontario Conservation and Restoration Association, staffed entirely by volunteers, with membership open to all, but with support of the Departments of Lands and Forests, and Agriculture and widely approved by local governments. The press was consistent and most generous in its advocacy of conservation.

A.H. Richardson described the activities from 1938 to 1940 with various meetings, planting efforts and field days in all regions where there were blowsands and areas in need of reforestation. The Northumberland and Durham Tour was one of these field days.

The 2019 Tour

The restoration forestry tour stops included Northumberland County Forest, a blowsand (barren sand) area, demonstration sites (a woodlot and two windbreaks), Ganaraska Forest, a 1905 private land tree plantation and the former site of the Orono Provincial Forest Station.

Northumberland County Forest



Map c. 1910 showing watershed of Northumberland and Durham in relation to sand lands where most of the tour took place.

The tour began in Northumberland County Forest (north of Cobourg) where the planting of trees (mostly conifers) started in 1924 with the purchase of 409 hectares (1,011 acres) and eventually expanded to the purchase and reforestation of 2,225 hectares (5,500 acres) under Ontario's Agreement Forest Program. The lease agreement terminated in 1994 whereby the County took over management of their forested lands.

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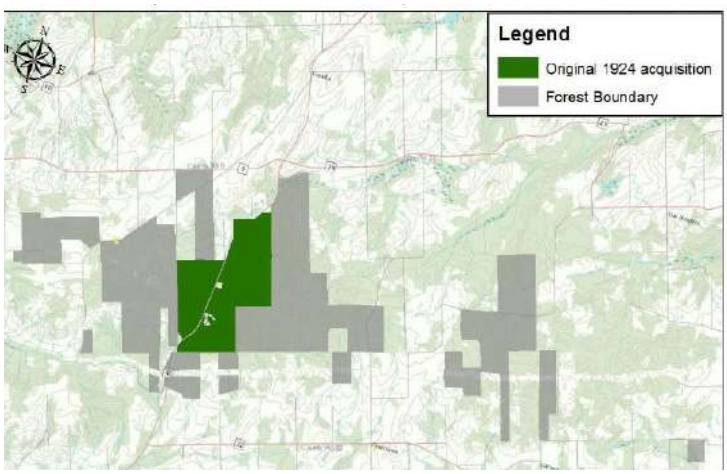

Northumberland Forest located along the Oak Ridges Moraine, north of Cobourg.

The planted trees changed the previously eroded and sub-marginal farmlands into forest. Over time management objectives evolved from restoration, to tending operations that produced forest by-products, to multiple use management including environmental site protection, recreation, and wildlife habitat as well as the protection of ecologically sensitive sites. An extensive trail system exists today, including a Universal Trail System at the Carstairs Memorial Forest Tract that encourages barrier free recreational use of the forest.

Northumberland County Forest c. 1927 sand barren planted with trees (Photo E.J. Zavitz)

White and red pine planted in 1924 as they appear today. (Photo E. Borczon).

The tour stopped at a site where red pine trees were severely damaged by an ice/snow storm in December, 1977. Moderate and severe damage occurred to 400 acres of plantation. The trees in the damaged areas were salvaged and seedlings were planted on the severely damaged sites. Today there is no evidence of the once damaged trees.

Al Beckwith, Forest Researcher, studying tree damage to 50 year old pine (Photo E. Borczon, 1978).

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Sand Barrens (Blowsand)

Next, participants explored a sand barren to the west of Northumberland Forest on the Hazel Bird Nature Reserve owned by the Nature Conservancy of Canada (NCC). It was an example of the type of eroded soil conditions foresters had to contend with in the 1920s when trying to restore eroded sites with trees. The objective of the Hazel Bird Nature Reserve is to protect tallgrass prairie, sand barrens, oak woodlands and Black Oak savannah habitats which are characteristic of this area. Once a dominant feature in the landscape, these significant ecological systems are now rare in North America. This property also provides significant habitat for grassland birds, tiger beetles and Eastern Hog-nosed Snake.

Participants exploring sand barren area. (Photo K. Reese)

Val Deziel (NCC) and Glenn McLeod, R.P.F. (Ret.) (Photo E. Borczon)

Arthur Hubert Richardson

During the lunch break, Ken Armson OC. R.P.F. (Ret) gave a historic and informative talk about Arthur Hubert Richardson who is considered to be the "Father of Conservation Authorities". Richardson, along with E. J. Zavitz (Father of Reforestation), were two of the main driving forces in restoration of the "wastelands" of southern Ontario, establishment of tree nurseries, promotion of watershed studies, and the eventual establishment of conservation authorities.

Ken Armson talking about A.H. Richardson. (Photo S. Prince)

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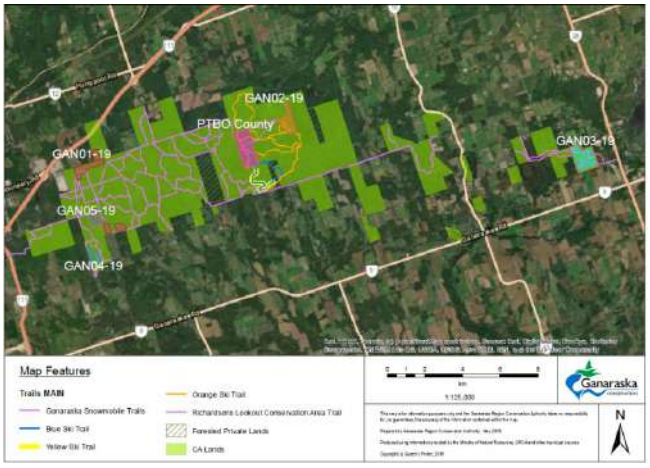
Demonstration Sites

The tour involved driving past three demonstration sites which were originally established following development of the Agreement Forest (or concurrent with it). The Government, through the Ontario Forestry Branch (OFB), saw the need for smaller, accessible demonstration areas with both plantations and natural woodlands. There were three entities established that evolved in their definitions over time. They were Municipal Forests, Demonstration Plots, and Demonstration Woodlots. As well, there were highway and windbreak plantings.

Honey locust windbreak on 1939 tour as viewed in 2019. (Photo T. Schwan)

Ganaraska Forest

During the afternoon, the tour ventured into the Ganaraska Forest which had its beginnings as the Durham Forest. In the early years over eleven hundred acres (440 ha) of land were acquired by the United Counties of Durham and Northumberland. The first plantings were in 1928 under the Agreement Forest Program. By 1939 just over a million trees had been planted.



When the Ganaraska Region Conservation Authority (GRCA) was formed in October, 1946 it assumed the County lands under the Agreement Forest Program and continued to add to them until that program ceased to exist in 1997. The GRCA is the third oldest conservation authority in Ontario. The Forest is now 11,400 acres (4,560 ha) in size.

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Contour ploughing prior to tree planting.

Red pine (planted in 1926) selection harvested for poles. Pam Lancaster (GRCA) describing the operation. (Photo D. Krahn)

Tour participants viewed the change in the forest that originated largely as coniferous plantations of red pine and white pine. Following a silvicultural regime of regular thinnings the oldest plantations (90 plus years) of red pine are reaching maturity and have been thinned to such a degree that the red pine is now a minor component and the understory of hardwoods such as red oak, along with white pine, are converting the stand to a mixedwood composition. The planted trees did their part in rehabilitating the fragile sites while also providing revenue for the Conservation Authority so that the forest can continue to be managed for a variety of uses. Recreation is a major use of the forest.

1905 Tree Plantation On Private Land

The next tour stop was north of Bowmanville (Con 3, Lot 7, Darlington Township), one of the first plantings on private land inaugurated in 1905 under the free distribution of trees program. This planting was administered personally by E.J. Zavitz (Provincial Forester) since the property belonged to his uncle Francis Squair.

Conifers (white pine, Norway spruce and later Scots pine on severely eroded failed sites) were planted over a four year period with shovels; an axe was also used in 1905 to make planting slits in sand when there was a shortage of shovels. Red oak acorns were also dibbled in on the better sites. After 114 years, the plantation now has some magnificent trees and looks like a natural forest. The opportunity to be in this exceptional white pine/red oak stand was the pinnacle of the tour.

1905 planted white pine on eroded sand. (Photo E.J. Zavitz)

Francis Squair amongst planted trees in 1908. (Photo E.J. Zavitz)

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White pine in 1953. (Photo W. Steill)

Son of Francis Squair, who as a boy planted trees in 1905 with his father. (Photo E. Borczon, 1979).

White pine and red oak viewed on tour. (Photo K. Reese)

Pine and oak stems (Photo E. Borczon)

Orono Provincial Forest Station

The final tour stop was at the former Orono Provincial Forest Station which was shuttered in 1995. Land for the establishment of the Orono Nursery was acquired in the late summer of 1922. This nursery was about 147 acres (59 ha) in Clarke Township just west of the village of Orono. The site was selected because railways were close by, there was a community labour force, a creek (water supply) flowing through part of the property, and utility services.

In 1923, work continued into full nursery production. Windbreaks were planted, permanent roads were established and fences repaired. By December 31, just over 400,000 hardwood and over 3,000,000 conifer seedlings were stock on hand. The headquarters house was built, consisting of seven rooms and an office. One of the older houses on the property was renovated to accommodate the sub-foreman.

In 1927 an irrigation system was finally installed. Related infrastructure included a cistern, pump house, heater house, and 5,775 feet of four inch main line were installed underground. Over the

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years other buildings were constructed and demonstration plantations were added on the property. One of the buildings added was the Bunting Tree Improvement Centre. Along with nine greenhouses it supported the white pine tree improvement grafting program, the spruce juvenile cutting tree improvement program, and produced greenhouse transplants for nursery production.

Most of the property has been sold to private interests, but the core stream valley lands and seed orchards have been retained. Management of the 63 acres (23 ha) is carried out by the Orono Crown Lands Trust, a community not-for-profit organization.

George M. Linton was Nursery Manager from 1922 – almost 1960. Bill Bunting was Nursery Manager from ~1960 – 1982. Glenn McLeod was Nursery Manager from 1982 – 1995.

Orono Forest Station with Superintendent's house, 1923.

Superintendent's house, 2019. (Photo G. McLeod)

The Rewards of Planting Trees Tour Participants

Tour participants were made up of various professions (forestry, ecology, education, writing), including representatives from government and conservation organizations.

Comments

The people attending probably represented upwards of a thousand person-years of forestry

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experience. They brought out the history (a particular focus for me), displayed their quiet professionalism, made some frank comments, but did not hesitate to display both pride and nostalgia. For me, the tour could hardly have been better. Seeing how the planted forest had developed, and what the blowsand areas must have looked like, complete with professional commentary, was priceless. (Keith Weaver - Author and Writer)

I loved the stories and seeing history in today's successional status. (Pam Lancaster, Ganaraska Region CA)

Forestry is, by its nature, a practice of taking one's turn rather than taking the reins. We are all standing on the shoulders of those who have come before us and hoping only that we can continue their legacy with the careful and informed management of a resource that will far outlive us. We are stewards, simply taking our turn, and we plan and hope that those who come after we are gone will have the same commitment. (Fraser Smith - Forestry Consultant)

Wish we had a shovel to see how much soil profile had developed, certainly a healthy leafy humus layer in the Squair Plantation. (Ken Reese - Forester and former Nursery Manager)

Between 1978 and 1998 I had the opportunity to study the growth and development of the trees that were planted in the Squair plantation in 1905. Since the trees were planted on an eroded sand site it was not surprising that the measured site index (SI 60 - i.e. tree height of 60 ft. at age 50) for the white pine was average. The trees looked healthy at that time, however their height and form was not outstanding. Twenty years later, on my return visit for this tour, I saw a dramatic change. The trees looked magnificent! I can only speculate what this site will look like in the next 80 years? (Ed Borczon - Forester)

I think the idea of recreating these historical tours should continue as it can't help but inspire participants to see the forest stands that have developed from tree planting efforts 50 to almost 100 years ago. The opportunity to hear stories about southern Ontario forest history, especially from retirees who have lived it should encourage those of us still working. (Silvia Strobl, Forester - MNRF)

Register at www.forestsontario.ca.

The Ever Growing Legacy of the Petawawa Research Forest

By: Dave Lemkay and John Pineau

There can be no debate that 2018 was a truly remarkable and milestone year for the Petawawa Research Forest (PRF), with many celebrations being held in recognition of its 100th anniversary, and an ever growing legacy of systematic study that began with the establishment of Canada's first Permanent Sample Plot (PSP1) in 1918. The hallowed ground of PSP1 was initially measured tree by tree and its data recorded a century ago; it continues to be measured after numerous partial harvests, planned thinnings and various treatments by scores of forest scientists, to this very day!

As well as PSP1, over 500 designated research plots have been established over the decades since 1918 throughout the 100 square kilometre forest estate that is the PRF. The data that has been gathered, used, and archived from this regime of study is truly invaluable – a treasure trove that offers today's forest scientists with tangible insight into how this tract of the Great Lakes - St. Lawrence forest region has weathered the vagaries that Mother Nature has brought. It is a prime example of the vision and leadership that is essential in taking a long-range approach to understanding forest dynamics and ultimately achieving the successful and sustainable management of forests in Canada.

The notion of systematically observing and assessing the forest at Petawawa was really first conceived in 1917, coinciding with the military activity at Base Petawawa and its role in preparing troops for the battlefields of Europe during WW I. Imagine this expansive base, wholly dependent on wood for its basic heating and cooking, situated on the Petawawa plains, fully clad in pristine forest. In this milieu, the Dominion Forestry Service, a precursor to the Canadian Forest Service of today, was invited to undertake a survey by the base's military brass.

Citing a report of the Deputy Minister of the Department of the Interior dated 1919, "The only survey carried out during the year (1918) was that on the military reservation at Petawawa. Owing to the late date at which the appropriation for the survey became available, and to the difficulties in getting a party organized, the survey did not begin until August 1, 1918. As a consequence the survey was completed on only about one-third of the tract but, with a full season's work during the coming year, it is hoped to have the whole area covered." This report provides fascinating insight into the state and condition of what was to become the PRF and goes on to say: "This is not a virgin stand, being largely natural reproduction following extensive logging operations of 30 to 50 years ago. There is little mature timber and few pure stands and the reproduction has a rather large predominance of hardwood species. Ash, elm, oak, maple, birch and other hardwoods occur, and white and red pine, jack pine and spruce among the conifers. There

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are some pure stands of pine of the different species occurring over small areas. The forest cover as a whole is very typical of the vast areas of cut-over lands now existing in the provinces of Ontario and Quebec; hence the district presents an admirable area whereupon experiments may be made and theories tested and worked out to conclusions which may solve the problem of the best methods of utilization of such lands which are now over large areas producing little or nothing of value."

A follow up report from the Canada Department of the Interior in 1920 provides additional exciting detail on the actual establishment of a formal research program: "During the season several sample plots were set apart on the Petawawa forest experiment station, measured, mapped, and recorded for special study. These plots were marked and mapped to the latest methods adopted by forest research institutes, and covered some of the principal types of stands, including white pine, red pine, and white birch, in various mixtures. Experiments in thinning were inaugurated on permanent sample plots. Continuous and careful observations and measurements on these plots will give valuable information in regard to the growth and yield of individual trees and of stands under differing conditions of soil-moisture, density, light and composition." It is generally acknowledged and understood that the formalization of the Petawawa Forest Experiment Station occurred in 1923, according to observations by the late Will Stiell. During these early years, the station was a seasonal operation with work being carried out by visiting scientists who camped in tents spring, summer and fall. However the establishment of PSP1 with its first measurements is considered to be the official start date of all scientific activity at the PRF, and thus 2018 is designated as the PRF's centennial year, even though it has had a number of monikers over those 100 years…

There is an abundance of excellent written material chronicling the various areas of study in the PRF since those early days. Apart from the many high quality peer reviewed published papers, Dr. I.C.M. (Cam) Place captured the breadth and depth of this activity in the book *75 Years of Research in the Woods*. It is a handy and insightful read for those wanting to understand the enormity of Petawawa's contribution to advancing forest science, and following are just a few of the many highlights.

Fire hazard pioneer J.G. (Jim) Wright presented his theory in an article in 1925 entitled "Relative humidity and forest fires" and began to apply his important work at Petawawa. His eagerness to do so met with certain push back by then Director E.H. Finlayson, who took umbrage with the notion of setting hundreds of small fires on a test basis, even if it potentially meant the development of what would become a vital forest fire management tool throughout Canada; fortunately Wright was able to proceed with his work. Wright also succeeded in enlisting the support of the Canadian Meteorological Service in establishing an up-to-date weather station. Quoting Cam Place from *75 Years of Research in the Woods*: "In the summer of 1929, Wright began correlating the moistness of fine fuels under red and white pine both with weather factors and the performance of small test fires. Wright's very gifted student, H.W. (Herb) Beall was instrumental with helping to build this research into a system of fire hazard forecasting, later added to and improved upon by C.E. (Charles) Van Wagner and others. This work is recognized today as the Canadian Forest Fire Danger Rating System. Weather data has been recorded from spring to fall at PRF since 1931. By 1953 data was collected throughout the year and along with weather parameters collected from partnering agencies."

Unfortunately, the outbreak of World War II thwarted all research activities at Petawawa with the exception of

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Herb Beall

Charles Van Wagner

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the tree breeding program. However researcher Art Bickerstaff was able to continue until early 1942, reporting on projects in thinning in red pine plantations, and a first in North America, de-budding trials on red pine in the attempt to grow clear wood without pruning. Following the war Art wrote a new management plan for the Station that placed emphasis on providing satisfactory areas in the forest for research. He continued as a strong advocate from Ottawa as Director of the Forest Management Institute until semi-retirement in 1974, when he was appointed CFS Director of Special Studies.

This writer once again will defer to Cam Place's excellent and comprehensive account of the significant progress in the various fields of study that emerged at Petawawa in the ensuing post-war years, including Forest Genetics, Forest Ecology, Applied Silviculture and Forest Management and Forest Protection. In addition, partnering with the Canadian Department of Agriculture, supported research in forest entomology and pathology to study the effects of spruce budworm and white pine weevil. A partnership with Atomic Energy of Canada also developed, ensuring a supply of radio isotopes that allowed ecological study of birch dieback and rusts in hard pines and needle dieback in white pine.

Further highlights at Petawawa up to and during the 1950s and 1960s included research that was largely devoted to provenance trials and tree breeding. In this vein, important names that certainly deserve mention include Mark Holst who in 1950 followed Carl Heimburger in tree breeding and genetics research and established scientifically designed provenance trials in spruce and hard pines from Newfoundland to Alberta. He raised awareness with foresters from coast to coast of the importance of forest genetics and the potential of tree breeding, training a generation of capable and successful tree breeders. The late Kris Morgenstern picked up when Mark Holst was compelled to retire due to poor health.

Following in the 1960s with high-yield silviculture research were Will Stiell and associates Adam Berry, Lorne Brace and Jim Kayll, applying thinning, pruning, spacing and crown development in red pine and white spruce plantations. Dr. Peter Rennie specialized in soil studies to measure tree growth through nutrient uptake, a science that was not considered important prior to Rennie's pioneering work that he originated on the Yorkshire moors in England, before arriving at Petawawa. Dr. Don Fraser's work during this time in the study of the physiology of flowering in spruce was important to tree breeding and seed production for reforestation. Work was carried out in growth chambers and the nursery. This work was further developed by Donald Durzan, who came on board to conduct research on the biochemistry of tree tissues.

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In 1968 Dr. Jock Carlisle headed up a new Tree Biology Section that merged forest ecology and tree breeding and genetics. Also, studies of forest tree seeds were elevated to project status headed up by B.S.P. (Ben) Wang, a name synonymous with Petawawa, who developed the National Tree Seed Centre. Ben worked tirelessly nationally and internationally until retirement in 1994, but continued in Emeritus status until his final retirement in 2017. Tree breeding under the leadership of Dr. Kit Yeatman evolved into Biotechnology and Tissue Culture headed up by Dr. Bill Cheliak and later Drs. Kristina Klimaszewska and Pierre Charest.

After a monumental battle in 1979 to save the Station from closure, the tide turned and the Petawawa National Forestry Institute (PNFI) was formed by assimilating the Forest Management Institute and the Fire Management Institute. Another part of the move from Ottawa established Forest Statistics and Systems Branch as part of PNFI. Research was organized under programs of Forest Management Systems, Forest Fire Research, Forest Fire Behaviour and Fire Suppression Systems with Technology Transfer. The fire occurrence prediction modelling work at PNFI was tested with operational fire centres in Maniwaki, QC; Dryden, Timmins and Thunder Bay, ON; and Victoria, BC. Peter Kourtz and his team of “the three Bernies” (Todd, Roosen and Mroske) were instrumental in this far-reaching program.

Digital Remote Sensing was a good fit at PNFI as during the 1960s and 1970s researchers at the Forest Management Institute had tested the new photographic technologies on the land base. Subsequent developments with the team of Don Leckie, Francois Gougeon and Susan Yatabe focused on interpretation of high resolution airborne and satellite imagery. This initial work formed a vital foundation of research, and has catapulted today’s PRF into a new regime of measurement as it enters its second century.

The above really only superficially captures and summarizes the wonderful and vital work that has been undertaken at the PRF over the last century – so much more could be written herein. An apt slogan that was coined at the time of the publishing of Cam Place’s book rings with accuracy and truth: “The world came to the Petawawa Forest and Petawawa shared its science with the world”.

Steve D’Eon, a long-time member of the staff at PRF, provided an excellent summary of its continuing contribution and living legacy in a 2018 Canadian Institute of Forestry e-lecture: “a critical mass of extremely smart technical people got to play in decision support systems, biotechnology, computer modelling, tissue culture, remote sensing – this combination of brainpower and technology in the woods created some truly inspiring innovative solutions to problems the forest sector faced and some the sector didn’t even know it faced.” To put this in perspective, he goes on to state: “in 1987 Jim Harrington published the first article on climate change in the Canadian Journal of Forest Research. It wasn’t the first climate change article from Petawawa as Dr. Doug Pollard drafted an article for the Journal in 1971 estimating forest carbon budgets as a contribution to global warming under a 2 degree C rise in global temperatures.”

On October 2, 2018, the Canadian Wood Fibre Centre (CWFC) convened a special celebration to officially mark the centenary of the PRF as well as its designation as Forest Capital of Canada for 2018 and 2019. It was attended by many partners, neighbours and PRF alumni. NRCan Chief Scientist Donna Kirkwood outlined the optimistic and proactive prospects for ongoing forest research including investigation into silviculture and tree improvement for climate change adaptation; remote sensing for enhanced forest inventory and decision support; and biomass supply to fuel the bio-economy. In reminding the audience that the 10,000 ha Petawawa Research Forest is Canada’s longest continuously operated research forest, she made the exciting announcement that the PRF is now officially NRCan’s Remote Sensing Super Site and Innovation Incubator! During the celebration’s field tour component, a demonstration of a portable LiDAR sensing unit was

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given in PSP1, a monumental juxtaposition highlighting this state-of-the-art technology "Light Detection and Ranging" (LiDAR) and the tree by tree tape measure procedure performed only 100 years ago on the same plot! Murray Woods, a technology development and transfer specialist at the Canadian Wood Fibre Centre (CWFC), part of the Canadian Forest Service, put this development into layman's' terms: "For decades, gathering data about the forest has been painstakingly carried-out by hand, or in later years captured from above using digital sensors on planes flying over the forest or from satellite data. Now, 3-D scanning technology can put data immediately and directly into the hands of scientists, allowing them to digitally map forests more quickly and precisely, and with much more detail."

The recent installation of an engineered wood bridge on the PRF's Meridian Road – the first such design and construction of a forest access road bridge in Ontario, was also visited and formally recognized during the celebration. Attendees gathered on the structure, and Guy Smith of the CWFC explained that the concept, and now reality, of an engineered wood bridge at PRF was a perfect fit with its forest science mandate. In 2016 the Federal Infrastructure Program responded with funding toward the construction of the bridge. The plan built upon operational experiences and best practices shared by Algonquin Forestry Authority, FPInnovations, and other NRCan partners. Said Guy: "Wooden bridges are engineered to last just as long, if not longer, than conventional steel/concrete bridges. And the use of wood, a renewable resource that captures and holds carbon, is a sustainable choice."

Indeed, 2018 was a milestone year for the Petawawa Research Forest, and for all who have dedicated or will dedicate their professional lives – past, present and future - to the rigorous, innovative and vital science that it facilitates. While the PRF's legacy is without doubt sacrosanct, the continued growth of this remarkable legacy also seems to be assured, as the copious research undertaken and data collected in the past are still being used; we are building on this legacy and delving into so much of what is today relevant, timely and needed to ensure the future sustainability and viability of Canada's forests, and all that they provide.

The Friends of the Petawawa Research Forest, a support group that was formed in 1999 shortly after the demise of PNFI, continues to support visitation and outreach activities in the PRF. Programs are managed to host students from the Canadian Ecology Centre, Sir Sanford Fleming and Algonquin Colleges and the University of Toronto Masters of Forest Conservation Winter Field Camp, as well as teachers' tours. The Friends organizes events such as a bird watching hike, the traditional CIF Algonquin Section International Night and through CIF the Batesville spring tree plant with local Scouts. There's ongoing maintenance of cross-country ski and snowshoe trails, and a growing tree arboretum that boasts 76 species to date, a regular stop for students, as well as activities that have been hallmarks for the PRF and continue to engage area residents – the spring Maplefest that is sponsored by the Chalk River Lions Club and the fall hunt, courteously manned at the main gate by long time forest steward Ian Miller.

The Reverend Peter Jones: First Defender of Canada's Terresterial Ecosystems

By: John Bacher

Echo Villa, home to Reverend Peter Jones. (Photo: Mary Lou J. Bacher)

The Objway Minister and Chief, the Reverend Peter Jones gave birth to efforts to defend terrestrial ecoystems in Canada. This was launched by his mission to protect from tree plunder the New Credit Reservation in 1847, when it was drawn up from the southwest corner of the Six Nations territory. He continued his brave struggle against Euro-Canadian timber poachers and arsonists, until his death in 1856 at the age of 54.

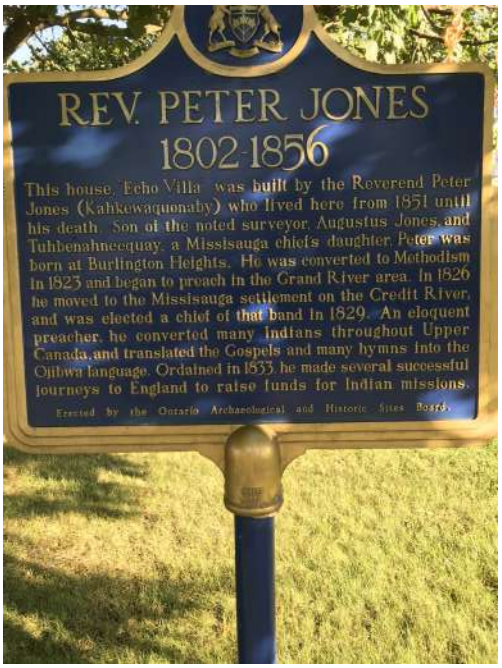
Protection of aquatic ecosystems by Euro-Canadians predated Jones' struggle to save forests. The Upper Canadian legislator Charles Fothergill for instance, who was also a magistrate, appreciated Lake Ontario's status as the most extensive habitat in the world for Atlantic Salmon. Fothergill used his authority to have a poacher arrested and subsequently imprisoned. [1]

Before Jones began his pioneering efforts to protect forests there was already a federal fisheries service. It was led in Canada West by the brave and determined Samuel Wilmot. Despite his zeal, however, his narrow approach to a major ecological threat of his era failed. By the 1890s Atlantic Salmon had totally vanished from Lake Ontario due to temperatures being too high as a result of the stripping of forests that had lined its spawning streams. [2]

Jones was influenced by many factors in becoming a pioneer conservationist, motivated by both economic reasons and a sheer love of trees. Although a fervent Methodist Minister, he appreciated and recorded the empathetic bonds with forests held by the traditional Ojibway spirtual leaders whom he called "Pow Wows." He recorded their lamentations over the cries of the forests of Canada West as they were burned out. Unlike the traditionalist leaders, however, he could, and did, write in English to the Department of Indians Affairs. He was the first Native person to write such a letter. [3]

Jones' persuasive English literacy skills were assisted by the care of his father, Augustus Jones, a Crown Land Surveyor. He developed literacy skills at a day school near his father's farm in Stoney Creek between 1816 and 1817. In 1824 he converted from Anglicanism to Methodism and became a Minister. In 1829 he was elected as Chief of the Objibway band located at the mouth of the Credit River flowing into Lake Ontario. [4]

What sparked Jones' path to becoming a conservationist was the arrival of the newly apointed Lieutenant-Governor of Upper



Historic Plaque at Echo Villa commemorating Reverend Peter Jones. (Photo: Mary Lou J. Bacher)

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Canada, Francis Bond Head, in 1836. Bond Head wrested massive cessations of Native lands and announced a policy to relocate all Native communities, including Jones' Credit River band, to northern Ontario. [5]

Jones' successfully toured Great Britain to reverse Bond Head's policies and secure his recall as Lieutenant-Governor of Upper Canada. Several English churches were so packed that people had to stand outside to hear his words. The largest such assembly, at St. Ives, drew 5,000 people. After Bond Head was recalled, the new Lieutenant Governor, Sir George Arthur, pushed through the first *Indian Act* of 1838. [6]

Arthur's *Indian Act* provided stiff penalties for trespasses onto Indian reservation lands. It developed a system of land tenure for reservations known as the location ticket. Regulations under the Act were developed to protect reserve communities from timber poaching. The basic framework of the *Indian Act* remains in place today. [7]

The major negative modification to the *Indian Act,* which Jones' lobbying had created, came in 1857 a year after Jones' death. It stripped status Indians of their political rights. That this was done after his death is a tribute to Jones' influence, especially in Great Britain. He was the only Canadian who could pack the pews and assembly halls. Conventional politicians such as George Brown and Sir John A. MacDonald never dared to try. [8]

While Jones could not, as hard as he tried, become Superintendent of the Indian Department, he had influence to prevent policies that would erode Native rights. This took place in 1857 when band members lost the right to vote in Canadian elections and seek office. While these rights in Eastern Canada were briefly restored in 1884 they were abolished in 1896 and not restored until 1961. [9]

Jones understood the importance of trees and forests to the prosperity of the New Credit community. The Grand River was not as rich in fish as the Credit, and its hard clay and floodplain soils were more suited for wetland trees than wheat, the dominant agricultural crop of the era. One valuable tree that flourished here, the black walnut, Jones understood could be the basis for a sustainable economy. From his youth Jones had a passion for wood carving. He submitted a bowl and lathe to the Canadian Provincial Exhibition and won a substantial cash prize. He made a walnut bookself and later built a matching table. [10]

As part of his vision of prosperity based on careful use of forest products Jones had a sawmill built. It was seen as a threat by timber poachers to their schemes to get Natives to sell valuable trees for cheap whisky. The whisky dealers destroyed the sawmill by arson. It was rebuilt, however, partly since Jones had the prudence to have it insured. [11]

Jones carefully gathered evidence to document deaths caused by the crimes of the whisky pedlars. Coroners' investigations documented deaths from "intemperance and exposure to cold." One cause of death was falling while drunk from wagons during cold winter nights. [12]

Sign on Chiefswood Interpretative Trail shows how the combined New Credit-Six Nations Reserve is the largest block of native Carolinian forest habitat in Canada. (Photo: Mary Lou J. Bacher)

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Jones' conservationist passions helped nurture those of a Mohawk friend and chief, George Johnson. Jones' home, Echo Place, three kilometres west of Brantford, was close to the farm of the father of George Johnson, John Smoke Johnson. The closest friend of Peter Jones and his English born wife, Eliza, were George Johnson and his English born wife, Emily. Both marriages were bonded by a deep love of trees. [13]

Peter Jones' bond with trees was shown in writings a few months before his death by comparisons of himself on the verge of death to an "old oak tree". He saw himself like it to having its top branches fading while its "whole trunk" bent "towards the earth." [15].

In July 1856 George Johnson spoke at the unveiling of a stone memorial to Jones. He described how their friendship had evolved over thirty years. Johnson recalled that he had "greatly profited by his example and advice, and how his loss was deeply felt by the Indian tribes." [16]

Johnson's distinguished career as a conservationist was made possible by laws and regulations against illegal cutting on reservation lands that Jones had prepared. The first assassination attempt on Johnson in 1866 was revenge for his lobbying. It had resulted in a coroner's investigation into a death brought on by a whisky dealer. [17]

Black Walnut Staircase at Chiefswood. Peter Jones was an accomplished wood worker with black walnut. His heir in forest protection George Johnson used black walnuts near from his estate grounds extensively in construction and interior decoration of his home, Chiefswood. Walnuts still thrive there today. (Photo: Mary Lou J. Bacher)

Jones' Native disciples in forest protection, including Johnson and his dozen forest wardens, had a major impact in changing Ontario's attitudes towards forests. They took part in the 1878 Annual General Meeting of the Ontario Fruit Growers Association. Edmund Zavitz, whose grandfather Edmund Prout was in attendance, marked this meeting as a positive turning point for attitudes towards forests in Ontario. [18]

Healthy old growth forest at Chiefswood (estate of George Johnson) today. (Photo: Mary Lou J. Bacher)

Endnotes

1) Michael S. Quinn, entry on Charles Fothergill, in "Biographical Dictionary of Amercan and Canadian Environmentalists and Biologists,", Richard Harmond Edited, Greenwood Publishing, 1997, p. 282.

2) A. B. McCullough, "Wilmot, Samuel", Dictionary of Canadian Biography, University of Toronto/ Universite, Laval, 2008.

3) Anthony J. Hall, "The Red Man's Burden: Land, Law and theLordinthe Indian Affairs of Upper Canada 1791-1858" (Phd. Thesis, University of Toronto, 1984), pp. 100-200. Donald B. Smith, "Sacred Feathers", (Toronto: University of Toronto Press, 1987), 43-51.
54)

4) Smith, loc. Cit. pp. 68-169

5) Ibid., pp. 162-171.

6) Ibid, pp. 173-197

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7) Edward S. Rogers, “The Algonquin Farmers of Southern Ontario, 1850-1945” in Edward S. Rogers and Donald B Smith, edited, “Aborginal Ontario: Historical Perspectives on the First Nations”, pp. 122-152.

8) Jones, loc.cit., p. 143.

9) When the political rights of status Indians were restored in 1884 one of Peter Jones, sons the physician Dr. Peter E. Jones wrote that, expressed thanks “in the memory of his father”that his family had long advocated this measure. After political rights were stripped away in 1857, a conference to protest was held in the newly built home of George Johnson, Chiefswood. Smith, loc.cit., 143, 144; Evelyn H. C. Johnson, “Memoirs”, (Chiefswood: Chiesfwood National Historic Site), p. 54.

10) Smith, loc.cit., p. 216.

11) Ibid, p. 219.

12) Ibid, p. 220.

13) Ibid, p. 216; E. Pauline Johnson, “My Mother”, Redbook online, Pauline Johnson’s My Mother and “Her Majesty’s Guest” are both short stories based onthe heroic conservation work of her parents. Orginally articles, in 1913 shortly before her death, they appeared in the book, “The Mocassion Maker” p;ublished in Toronto by William Briggs. The Mocasin Maker is now a Project Gutenberge. E.Book. (http://www.gutenberg.org/ebooks/6600.

14) Jones, loc.cit., p.234.

15) Ibid., p. 220.

16) Ibid, p. 247.

17) “Diabolical Outrage” Brantford Expositor, January 30, 1865.

18) Annual Report of the Ontario Fruit Growers Association, 1879; Annual Report of the Commissioner of Agriculture and Arts for the Province of Ontario, Toronto: Hunter, Rose and Comapny by Order of the Legislative Assembly of Ontario, 1879, Appendix, D. 305, 306. Edmund Zavitz, “The development of forestry in Ontario”, Forestry Chronicle, 15 (1939,36-43).

The Sweet Canadian Chestnut

By: Dolf Wynia (5T7)

What follows is a transcription of a recorded reminiscence of Bert Newman, (1897- 1992) who grew up in Tillsonburg and after Grade 7 started working on a farm nearby for $6.00 a month. He developed a garden and flower business and sold radios for a time. Thanks to his incredible memory he was able to record his life and the history of Tillsonburg in his last years when he had become blind. As well as a good story on the demise of the sweet chestnut, he also paints a good background of the early conservation movement with Dr. Sherwood Fox as a leader. Four books of his memories have been published.

THE SWEET CANADIAN CHESTNUT

This story goes away back to my early boyhood days. If you go down around Mabee's Corners, South Middleton, Eden and Straffordville and all down through the south country in that sandy land, where there were literally thousands of chestnut trees growing in the woods and out in the fields. The value of those trees was not really appreciated at that time. The lumber was not considered for much, only fence posts and railroad ties, as they had a long life from deterioration and the only thing they ever got out of them was the chestnuts themselves. Farmers have told me that they used to be able to pay half their taxes with their chestnut money, which would not necessarily be much. They would not pay their taxes today by a long way.

I believe a long time ago, there was a poem called "The Blacksmith Under The Spreading Chestnut Tree". In my early days if you went down the side roads, you would find a spreading chestnut tree. In the woods, where chestnuts were growing, they did not spread so much. They went straight up and in the spring these chestnuts had big blooms on them and you could smell them all over the neighbourhood. After the flowers had all fallen, they started to grow burs with sharp things sticking out.

These burs, if they were left on the tree long enough, until they got ripe, they would open themselves and the nuts would drop out onto the ground. If you wanted to get them a little bit early and if you could not climb one of those trees, you would throw some clubs and knock down some of these burs. You had to stomp on them with your heel to break the burs. Inside the burs was lovely white satin and inside that were these beautiful brown chestnuts. These shells were covered with a kind of glossy sheen. They were fairly hard. You would have to take a jackknife to cut them open.

We kids on our way to school in chestnut time would stop at the corner grocery store and get a big tumbler for five cents, or you could get on your bicycle and go down in the south country and pick them up for nothing providing the farmer did not chase you out of his field. In those days they could sell them.

You could eat them raw or you could put them into an oven and roast them, or you could put them into a bonfire and they would explode and go off like a firecracker. Roasted chestnuts and marshmallows was quite a favourite at a bonfire.

About the first job I had was working in the grocery store for R.M. Teal. In those days Mr. Teal bought all the chestnuts and the farmers would bring them in by the bag full. We would weigh them up at so much a pound and we would pile those chestnuts up in a pile until he got enough to ship a carload. I do not know where he shipped them, but he sold all the chestnuts the farmers could bring

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in.

One time I worked for a farmer down near Maybee's Corner for $6.00 a month. I was there at chestnut time and I remember out in the field there was a big spreading chestnut tree. We would go up that tree and shake the branches and my, those chestnuts came down like rain. It was quite a simple matter to pick them up but it was not so easy to get them out of the burs, because those burs had sharp pickers on them.

Then something quite mysterious happened, unbeknownst to anybody. First the leaves started to turn yellow and drop off and then the trees started to die and the bark would fall off and just leave the stark naked trunks of the trees. What was happening to our native sweet chestnut?

It took them a long time to find out, but when they found out it was too late. They discovered I believe that it was called the Japanese beetle. Wherever they came from, they were so small that nobody knew they were around. These tiny beetles settled on the chestnut trees and they liked the taste of that sap and they just simply pulled all of the life blood in the sap of these trees until they just withered up and died and no more new ones started to grow. They would come up but they would die until there were no more Canadian chestnut trees left.

When I built my two stores and three apartments at 27 Brock Street, in the hungry thirties, I furnished the entire three apartments upstairs with chestnut for two reasons. The grain on it was beautiful. It was soft and easy to work with and it was cheap. I think it was about $30.00 per thousand. I notice that the house in which I live in the upstairs there is a lot of quarter cut oak trim with chestnut. It was built back in 1919 and 1920 when they moved the Gospel Hall over behind the Town hall on Queen Street. Now it is called the Bible Chapel. They discovered that the entire church was practically all chestnut even to the joists and all the heavy timbers in it. The man that was overhauling it told me they could save all that chestnut and make it into lumber and make a lot of money out of it. Today we find our sweet chestnut has gone the way of the dodo bird and the passenger pigeon, never to return.

Now, so far my story has been the last of the Canadian chestnut. Now I am going to tell you about my adventure with the Canadian chestnut. In the early fourties, my wife had some relatives living over in Freemont, Michigan and we went over to have a visit with them. My cousin, who was a farmer had a huge chestnut tree growing back by the barn. It always had chestnuts on it, but there was nothing inside of them and he said that the chestnut tree could not bear chestnuts because there was only one tree. He said, Mike Smith, a neighbour of mine over on the other road has two chestnut trees and he has lots of chestnuts. We went over and visited the Smiths and we became lifelong friends. They all came over and stayed down at Long Point one summer and Mike gave me a basket full of sweet Canadian chestnuts and I brought them back to Tillsonburg.

I felt so enthused about it that when I got home, I went down to "The News" and would they put it in the paper and then I wrote to Ottawa, to the Department of Agriculture. I told them down there that I had Canadian chestnuts and could they use them. I never got a reply. In the news office I was told by Harv. Johnston or one of the fellas in the office that I should write to Dr. Sherwood Fox. I believe he was at the time President of Western University in London. I wrote a letter to Dr. Fox and in a few days he was on the telephone. He said that had just got my letter and he was coming right down to see me. He said: "Are you going to be there? I will have someone from the University drive me down and I will be there shortly".

I told him to come out to my greenhouse. I pictured him as a highly polished, immaculately dressed, sophisticated gentleman, but when he came to greet me, he wasn't dressed anything like that. It

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must have been an awful day at the University because he was not dressed like any university professor, he had a suit of clothes on and a slouched hat on his head. He came up and shook hands with me and called me by my first name. It seemed he had known me all my life. He talked my language and I took and showed him all around through my greenhouse. He was very enthused and congratulated me on the greenhouse and what good shape everything was in. He said: “you must be very clever to have a place like this”. I said: “Well I am not that clever, I don’t know very much but I hire other guys that know more than I do”.

I told him that I had sent some chestnuts down to Ottawa and I never heard anything from them. He said I would probably never hear from them. He was so pleased to get some chestnuts. He asked if there was any chance to get more and I gave him Mike Smith’s address. He corresponded with Mike and I do not know if he went over there but he got a sample from Mike’s farm and analyzed it. He sent a sample down to Washington to the Department of Agriculture and he did a lot of research on Canadian chestnuts growing in northern Michigan. He sent chestnuts across Canada to all Universities to see what they could do with chestnuts. I tried to plant them and Stan Wagner, who was very interested tried to plant them. We could get them to grow but they would not live. Around, throughout the County there are some second growth chestnut trees but they never amounted to anything.

So, through the medium of chestnuts I had become good friends with Dr. Fox and his wife Irene and I used to go to London to visit them in their beautiful home. He was quite an author of books and he was one of Canada’s outstanding naturalists. He wrote many books of which I have autographed copies. He spent much of his life fishing up in the Bruce Peninsula and he knew every square foot on that peninsula. He discovered some rare ferns and orchids that had never been known to exist there. He attended many Universities before coming to Western as President and also as Dean. He came from John Hopkins University where he taught classics in Baltimore. He also taught at Princeton University.

One of Dr. Fox’s books was called *T’aint Running Anymore*. That was the Ausable River and where he got the idea was when he asked an old timer what happened to the Ausable River and the old fellow said: “t’aint running anymore”. Another book is *The Great Bruce Beckons* and also *Silken Threads and Sulphur Hooks*. He gave this to me and wrote in it: “To my good friend Bert Newman, enthusiastic lover of forests and stream”. I have the last one called *Sherwood Fox of Western*.

Sherwood had a daughter who was in her twenties who was paralyzed and she typed a lot of his stories. After his wife died, it was the last time I saw Dr. Fox, he passed his last days in Parkwood Hospital. Today our Canadian chestnut has long gone from the landscape. Our mighty elms have gone the same way, although I believe I saw some of the yellows down in New Brunswick a few years ago when I was down there.

Postscripts
1: Bert had a son, Bill, who graduated in Forestry (5T8) with me and had a career as a secondary school teacher. He still owns a tree farm on the Bruce Peninsula.
2: The chestnut blight (*Cryphonectria parasitica*) was brought to North America unintentionally about 1904 and has spread across the entire natural range of the species.
3: A large amount of research on native chestnuts has now been completed and under the auspices of the Canadian Chestnut Council reintroduction of genetically modified specimens has started. A review of the progress is planned for a future edition of *Forestory*.

Nursery and Early Plantings (1917 – 1927) of the Abitibi Power & Paper Company Ltd., Iroquois Falls, Ontario

By K.A. Armson[1]

The first report of nursery development was in 1917. At that time two acres were prepared to receive 500,000 seedlings for transplanting. Presumably these were purchased from a nursery in the United States although there was no record in the files of the source. A start had been made in 1916 on preparing seedbed land but there is no further mention until 1919 either of nurseries or planting. In that year 9.3 acres were cleared near the Twin Falls power dam and in 1920 four compartments were laid out and seeded on May 18, to yield 1.3 million seedlings. In addition 100,000 white spruce seedlings and a small number of Norway spruce, ponderosa pine and Scots pine were purchased from the D.Hill Nursery, Illinois, U.S.A. These trees were 21 days in transit and although they were heeled-in in a storage cellar on arrival in Iroquois Falls they were essentially dead.

The choice of the site of the Twin Falls nursery was based on the logic that it should represent the typical soils and conditions of the Clay Belt, i.e. cold wet clays. This proved a costly error! By the end of the spring of 1921 the seedling losses due to damping-off and frost heaving were extreme. The problem was summarized euphemistically as due to “lack of congenial soil”. A new nursery site was selected a few miles north in the Camp #30 area on sandy acid soils that had supported jack pine and had burned in 1916. This nursery was developed in 1923 and in that year 110,00 seedlings from Twin Falls were set out and new seedbeds sown.

The original plan of reforestation was to have the Twin Falls nursery produce three million transplants (2+2 stock) by 1923-24 and seeding rates had been set accordingly. Because of the large seedling and transplant losses that were occurring, purchases of seedlings from nurseries in the United States continued from 1920 through to 1923. In total the two Abitibi nurseries (Twin Falls and Camp #30) produced 4.361 million seedlings but the mortality rate from the first year on was 90 per cent, so that only 455,125 transplants were actually planted out. To which should be added 12,300 trees that had been purchased. The nurseries were abandoned in 1928.

A characteristic of the nursery operations was the diligence of the manager in keeping detailed records, especially costs, but also of the operations: seed, seedbed records and daily diaries. The supervisors of the nursery work and outplanting were Messrs. F.Oliver and H.D. Jewett. H.D. Schanche was the company’s Chief Forester and Manager of the Forestry Department at Iroquois Falls. Interestingly, the Annual Report of the Minister of Lands and Forests lists Mr. Schanche as a member of the newly-formed Forestry Board, created under the *Forestry Act* of 1926 for the purpose of studying, “all questions dealing with the problems of making the forest industries of this province permanent by the securing of continuous forest crops.”

Outplanting was necessarily on a small scale and considered experimental, although given the original planed production of over four million trees it was envisaged as of operational magnitude. All the outplanted areas were relatively close to either Twin Falls or Camp #30 nurseries and were on areas burned in either 1916 or 1921. In 1922, 11,000 Norway spruce were purchased from the United States and in 1923 the first stock from Twin Falls was planted, all of which died. The main outplantings by species and amount were in 1924 to 1926 as shown in Table 1.

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Table 1. Summary of Outplanting by Species and Amount, 1924 to 1926

Species	1924	1925	1926	Totals
White Spruce	15,000	66,138	106,000	187,138
Norway Spruce	47,788	47,650	21,550	116,988
Jack Pine	41,304	5,050	48,400	94,754
Scots Pine	23,216	421	16,050	39,687
Totals	127,308	119,259	192,000	438,567

Small numbers of other species were tried: ponderosa pine, Sitka spruce, eastern larch, balsam fir, eastern white pine and red pine, but only the eastern white pine survived the first years of outplanting. What is really surprising is the total lack of any mention of black spruce, the abundant local species, and the one which Abitibi used as feedstock for the mill.

During the period 1924 – 1926 assessments of the planted trees were made in the spring and fall of each year and a summary report was prepared in 1927 of the results. This was the last formal survey of the plantations until 1948 when they were resurveyed by O.G. Larsen. His report showed that in 38 separate plantations where 467,000 trees had been planted, only 60,766 in 1948 were considered to be in “satisfactory” condition. The reasons for the low rate were given as: frost heaving, competition from ground vegetation, heavy browsing on the pines in 1924 and 1925 from varying hares which were at a population peak in those years, damage from horses at Twin Falls and lastly, weevil damage on both eastern white pine and Norway spruce. Mr. F. Oliver noted that white spruce seemed to be performing best and that seedlings, other than transplants were not successful because, “their roots are not so compact and well-formed as transplants”. It was also noted that in a very dry growing season white spruce appeared to survive better than jack pine. Because of the loss of seedlings in the seedbeds to frost heaving they tried band or drill sowing the seed and they also attempted to produce seedlings for outplanting to reduce losses and costs, but as noted this was unsuccessful.

In 1924 the forestry staff posed the question: “Is planting a sound investment for the Abitibi Power and Paper Company?” Their answer is worth considering even today. They listed several basic factors as a basis: initial costs, annual costs, expected yields, expected stumpage costs at maturity, and interest rates. For these factors the assumptions were quantified in order to obtain estimates of costs, i.e. they constructed a model. Their assumptions and estimated costs are shown in Table 2.

Table 2. Factors and Values Used in Cost Calculations
(values have been converted to metric units for comparison)

Factor	Cost
Cost of planting stock ($35 per thousand)	$ 42 /acre ($104/ha)
Planting cost	$15/ acre ($37/ha)
Yield (in 1924 average was 10 cords/acre)	56 – 60 cords/acre (332 or 356m^3/ha)
Expected stumpage (in 1924 for spruce 80¢)	$ 5.50/ cord (2.4 m^3)
Rates of interest	3 and 5% compound
Land rental	1¢/acre (2.47¢/ha)
Fire protection	½ ¢/acre (1.24¢/ha)

(Continued on page 30)

(Continued from page 29)

The total cost of stock and planting at $57/acre ($42 + $15) was considered in two ways: First, as if it were totally borne by the Company. Second, if the cost were split 50:50 with the provincial government. The expected stumpage of $5.50/cord was based on current stumpage prices on private lands in the northeastern United States. Calculations using the above factors were that the costs per cord would range from $2.75 to $21.29 per cord ($6.60 to $50.40/$m^3$) at 60 years. Determinations were made for intermediate yields at 20, 40 and 50 years. The annual cut for the Iroquois Falls mill in 1924 was 120,000 cords (288,000m^3).

It was argued that plantation wood in the long run would provide other advantages, such as:

1. Reduced hauling distance;
2. Smaller inventory and associated reduced capital investments;
3. Reduced logging costs and the employment of mechanical felling, skidding, loading, landings and hauling; and
4. Cheaper protection.

The report saw the natural forest as a capital asset which depreciated as it was cut and suggested there were four ways in which this could be viewed:

1. Base the costs of the new forest on new capital raised specifically for that purpose, e.g. by stock or bond issues;
2. Use a depletion allowance, as is normally done for industrial plants and facilities;
3. Use a combination of the above 1 & 2; or
4. Use a depletion allowance as in 2. and also charge costs to the current production, i.e. logging costs. This was not recommended.

Another item of interest on the files is a letter, dated 26 June, 1925 from E.H. Finlayson[2], Director, Forestry Branch, Department of the Interior, Ottawa to Mr. Schanche. The letter is surely the first time the federal forestry agency looked at compiling national information on reforestation. In the letter, Mr. Finlayson states: *"For some time, an increasing interest has been shown by the public in the matter of artificial regeneration in this country…To meet this demand the Service is proposing to prepare a general statement in printed form which will cover the whole country…"*

In summary, these records constitute a fascinating and detailed account of a professional attempt at a forest regeneration program by a large pulp and paper company some 90 or so years ago. The lessons learned then are still relevant despite the major increase in knowledge and professional and technical expertise that has been acquired since. The speculation on mechanical harvesting was prescient and about 40 years early.

Endnotes

[1] The author was made aware of these records by George Stanclik at Iroquois Falls in 1992 and as a result catalogued 107 items and prepared a summary report in 1993 which was submitted to the Company and on which this article is based.

[2] Finlayson graduated in Forestry from the Faculty of Forestry, University of Toronto, in 1912.

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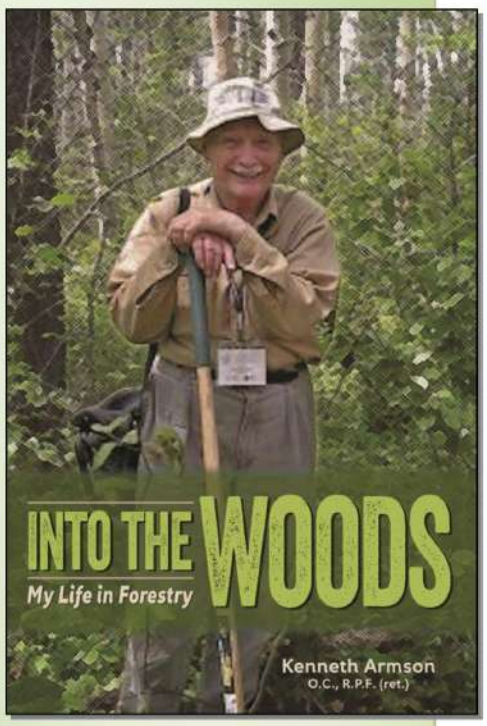

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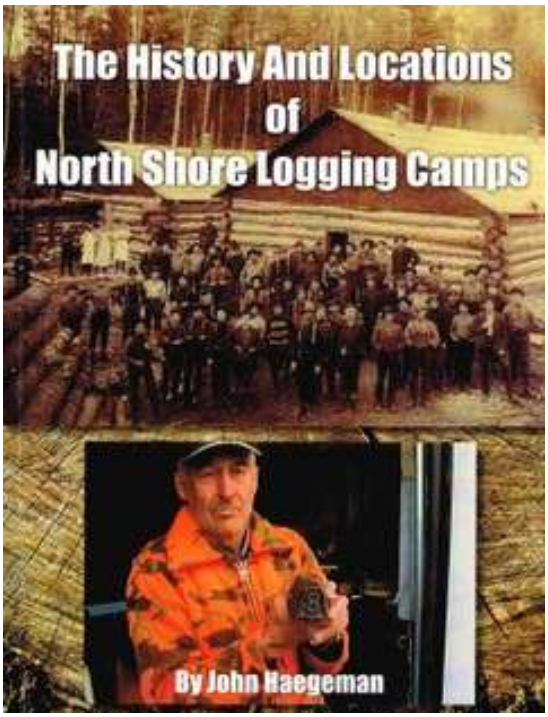
Book Review

By: Ken Armson, R.P.F. (Ret.)

Haegeman, John, 2019. **The History and Locations of North Shore Logging Camps**. 243 pages + illus. Available from John Haegeman, haegeman@cyberbeach.net . $40 + $15 postage.



Some of the most interesting and rewarding information on local or specific forest history comes from the diligent efforts of those with a local or personal interest in the subject. This book is the result of such an effort. John Haegeman's interest in logging camps began in early 1980, aroused by his acquisition of a log hammer. These were hammers with the mark of a lumber company's identification in the form of a symbol often comprising letters or numbers embossed on the metal end of the hammer so that the mark could be stamped on the end of a log, thus identifying the owner – akin to the branding of cattle or horses.

The North Shore in the title is that of Lake Huron; it and the hinterlands of the Georgian Bay in Ontario were a primary source of white and red pine logs in the late 19th and early 20th centuries This book describes each camp that John visited, sometimes more than once, with its location, often on a lake or river, the township, the Universal Transverse Mercator (UTM) number for the location and the date visited and what he found. At each campsite his focus has been on the location of the blacksmith's building where he used his metal detector to discover log hammers as well as more common metal items such as sleigh runners and horseshoes. Most of the camp sites were many decades old and some even a century; the buildings often rotted to the point where only the outline of their location could be identified. However, remnants of kitchen crockery and identifiable glass and other items suggested the period when the camp was used. Before John located them many of the camps had been visited by others such as trappers, hunters, fishermen and recreationists and many items had been carried off. The advent of ATVs made many sites more accessible, and they were used by John, along with aircraft, boats, and canoes, but much of the access still consisted of walking through the bush. On many occasions arrival at a camp site was disappointing with no tangible rewards, as he states about one, "It took me an hour to return to my ATV. One might call it a wasted day, but for me it was another camp documented." In some camps there was also evidence that the location had been used by different logging companies at different times.

Descriptions are given of the camps of forty-one companies as well as an additional more than eighty camps whose owners could not be identified. Some of the latter were of more recent logging and tended to be smaller yet others were large camps unidentifiable as to lumber company ownership but because of their location, i.e. township, could have been one of a major lumber company.

Detailed descriptions of the camps of the forty-one companies are usually preceded by information about the owner(s) and history of the company. Many of the owners were American, some originating in the northeastern U.S. where they had logged and then moved westward, continuing to log and establish sawmills in Michigan's pine forests in the early 19th century. After those forests had been

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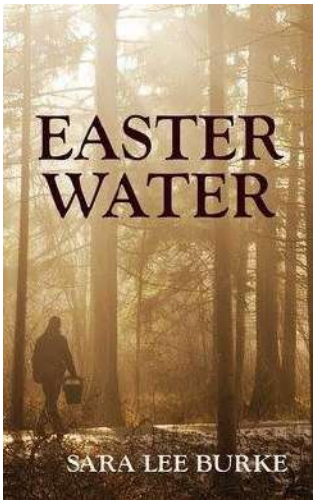
Easter Water



By: Sarah Burke

Easter Water is a work of historical fiction based on my mother's early years. As a child in the 1930s, she lived in the logging camps of Ontario and Quebec. The novel begins with her birth in 1925 in Maniwaki. Her father, unable to find steady work, relocates the family to Temiskaming. He secures a job in a lumber camp by offering his wife as the cook's apprentice, and the family moves into the bush.

Writing *Easter Water* required extensive research about life in the camps, the log drive, and the nature of the industry during the time period, all of which feature prominently in the novel. It gave me a new respect for our forests, and gratitude for the important work done by the Forest History Society of Ontario.

Sara Burke is a teacher with the Ottawa Carleton District School Board, a cancer survivor, and first time author.

An excerpt:

Soon after the Mission was in place, the riches of the forest attracted wood merchants, farmers and trade workers. The need for lumber was insatiable, building cities as far away as Boston, New York, and even London, England, as well as for a developing pulp and paper industry. Logging would come to be the area's bread and butter, the dense forest and the mighty Gatineau River affording the perfect conditions. Cut it down and move it out. The French and British who settled there, and First Nations who were always there, scratched out an existence that was in some way dependent on tree and water.....My grandfather took the opportunity to get a drink while the train was stopped in Mattawa, so he was in fine spirits for the last leg of the trip. The bush excited him. The timber was just about the perfect size, on account of it being a second growth following a fire a hundred fifty or so years before. This light timber was an advantage. You could maneuver through it, fell these trees fairly easily, and the roots did not yet have that cement grip in the soil, so the land could be stumped, cultivated and farmed sooner. Logging was possible here, for a man with a strong back, willing to do the work. An old growth forest is unyielding, solid as a stone wall. It will break a man not made of iron, but this was a kinder, gentler sort. Close to the Ottawa River it was clear cut, but as that train chugged along farther north, it was thick and filled with the promise of a future. Poplar, balsam, spruce, birch, balm of Gilead, tamarack, and the gem of the forest; pine. Pine was the treasure, perfectly created for its purpose, to meet first with men like my grandfather, and then with nail and hammer to grow the great cities of Canada and beyond. It was not too hard, so was easily cut in sawmills, and would float well on the log drives. It was strong and durable, and slow to decay. It was what the lumber companies coveted and the builders craved. If harassing in-laws were what pushed my grandfather from his home, these glorious pines were what pulled him.

A link for purchase:
To purchase Easter Water

Sara Burke
burkesaralee@gmail.com

Sylva Recap

The Ontario Department of Lands and Forests published for many years a journal titled "Sylva". The purpose of this journal was to highlight changes in policy, ecology facts, information about the activities of the Department, contributions of individuals and the comings and goings of staff. "Sylva" contains nuggets of Ontario forest history. One "nugget" from "Sylva" will be selected for each edition of the Journal. The following was provided by Sherry Hambly.

The Timber Management Manual - A Review by M.B. Morison Reprinted from Sylva Volume 5(3): 35-36, 1949

In an endeavour to give guidance to the staff of the Department of Lands and Forests in the interpretation of legislation and in the performance of their routine and technical duties, the Division of Timber Management has prepared a "Manual of Timber Management" in five parts which is now released for distribution. This manual will be distributed to the field staff according to the requirements of each District.

In view of the broad application of certain parts of the manual such as those dealing with timber estimating, timber marking and stumpage appraisal, additional copies have been printed for distribution outside of the Department at the following fees:
(a) $1.00 per set of 5 parts of 50 cents for one part.
(b) Fifty cents per set of 5 parts ordered in quantities of 25 or more.

Part I deals with legislation pertaining to the management of Crown timber. In it the important section, regulations and interpretations of the various Acts of the Legislature dealing with timber management are summarized. Reference to any subject is made easy by means of the alphabetical list of contents which not only gives the page number where the subject is discussed but also gives a cross reference to the Act or Regulation to which the subject is connected.

Part II deals with the procedures to be followed in the field in timber estimating projects undertaken by and for the Department of Lands and Forests. The forest survey methods described assume that aerial photographs and base maps constructed from aerial photographs are available. The introduction to this part outlines two basic purposes for timber estimating as follows:
"(a) to collect information required to regulate and manage the forest lands of the Province"
"(b) to collect information relative to the operation of the area", then the application of aerial photographs to forestry use is described and the sampling procedure outlined. The appendix contains valuable information regarding map legends, and the use of field forms and equipment.

Part III deals with the procedures to be followed in the compilation of the data obtained in the field. Not only does this part describe the technique of compiling a timber estimate but, owing to the broad usage of the field data, it goes further in describing methods of determining the allowable cut, outlining the requirements of management plans, operating plans, annual cutting applications and the system of classifying and summarizing forest surveys in order to meet the requirements of such plans. In addition, instruction in the preparation of volume tables is given special emphasis. Tables showing values for the Doyle Rule, the International Log Rule and the areas of circles are included as appendices.

Part IV deals with timber marking for partial cutting operations, outlining the underlying principles to be followed and describing in detail how to identify stands suitable for marking the volume of timber that should be removed, and the kinds of trees to favour for future stand development. It also

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outlines a standard procedure to be followed by a marking crew in their field work and gives an example of the cost of marking.

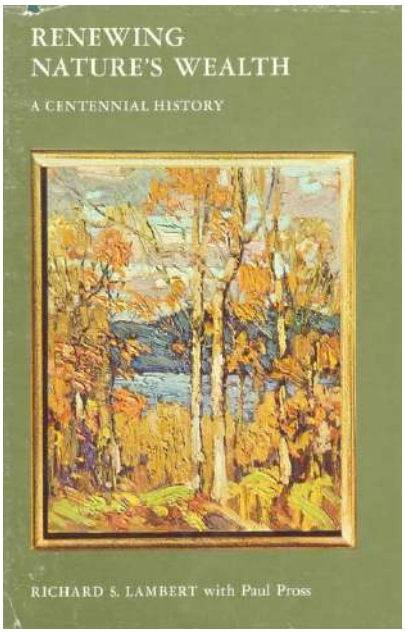
Part V deals with the methods of stumpage appraisal to be followed in the preparation of timber sales and at other times when the question of the value of stumpage requires a solution. This part was prepared by the late Professor D.M. Matthews in 1948 when he was employed by the Department as a consultant in forest management. Using case material as a means of illustrating the methods of appraisal, the text begins with a simple case of developing a stumpage value from average sale values and average costs, regardless of variations of values and costs according to size and volume representation of each in a particular stand. It then develops by stages a method of joint appraisal for pulpwood and sawlogs, which gives to the appraiser a reasonable understanding of the effect of various cost factors in timber productions and a sound basis for determining the value of stumpage. All through the text supplementary material is injected to assist in the appraisal development, such as: a classification of logging costs, forms of volume tables adapted to appraisals, equitable methods of setting piece rates, and other related information.

(Continued from page 32)

exploited they turned their attention to the pine forests in Ontario, particularly along the North Shore. In response to the introduction of the Dingley Bill in the United States and associated tariff on Canadian lumber exported to the U.S. Ontario lumbermen such as John Waldie and Charles Beck urged Ontario to respond and the Ontario government passed a law requiring that logs from Ontario's Crown forests be manufactured in Canada. As a result many of the American lumbermen moved their mills from Michigan to Ontario or built new mills, often where they were already logging pine, previously rafted to their mills in the U.S.

Haegeman's book provides us with an insight into the extent to which large expanses of the forests of the North Shore were entered by loggers, then left for many decades to grow back to "bush" until they were again the object of new forest operations or became used by trappers, hunters and during the second half of the 20th century, recreationists. A general map of the area in which many of the camps were located would have been helpful to readers, but John is to be commended for providing such a large amount of information about the companies and their camps in the exploitation of the pine forests in this part of Ontario.

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: "*Renewing Nature's* Wealth, the exciting story of Ontario's natural resources, is described by Premier 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 edition of the journal.

Chapter 19: Managing and Cropping the Forest

The new Minister of the Department of Lands and Forests, N.O. Hipel, and Deputy Minister, F.A. MacDougall, were committed to modernizing the Ontario forest service to create a more professional and decentralized organization and to manage the forest in a sustainable manner. Progress was steady but slow during the Second World War. External issues were also being tackled. It was no small task, as Ontario at this time produced about six per cent of the world's pulp production and demand for wood and new mills was significant.

Several actions were put in place to move towards the goal of sustainability. A limit was set on the number of new sawmills; existing sawmills had to have adequate supplies of wood; a standard scaling manual was developed; and, internal departmental communication was improved through the introduction of "circulars". Professionalism was increased through training provided at the Forest Ranger School in Dorset, which opened in 1946.

Managing woods operations was another key aim of the department. Operators pretty much cut what they wanted, and they were loath to share their limits with other operators, thus creating considerable waste. After a long and hard negotiations with Abitibi, an agreement was signed in 1945 that made the company responsible for forest management on their limits and required them to submit planned cuts for the following year. This agreement set the stage for a new approach that was subsequently applied to all companies and led to standards for negotiating pulp concessions. Wood was allocated through standardized 21 year agreements that were negotiated very thoroughly, with and input from all departments. Permits for small jobbers were decentralized to the districts. Competitive sales were made through tenders.

The 1941 government minority (Conservative) report on the administration of the department recommended the formation of a Forestry Commission to manage Crown forests to remove political interference. There were many pros and cons put forward on this idea from within and outside the government. During the 1943 election the Conservatives (who won this election) promoted this idea. Once in power, they approved legislation to form the Commission but it was not enacted. After the 1945 election, which the Conservatives again won, Premier George Drew stated the government's goal to improve forest management. But he was not clear on how to proceed so he formed another Commission to obtain further information. He appointed Major General Howard K. Kennedy, who

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was highly respected, to head the commission.

Initially, the department staff were reluctant to participate in the hearings. But Kennedy made an effort to visit the field and get input from department staff. He presented his report (referred to as the *Kennedy Report*) in 1947. The report resoundingly rejected the idea of a Forest Commission. Instead, he recommended the creation of an Advisory Committee. Other recommendations included more money for administration and oversight. He also noted key issues in the woods including lack of cooperation among woods operators, huge wood waste (saw logs used for pulp) and flooding caused by methods used in wood extraction.

The government implemented Kennedy's recommendation to form an Advisory Committee and Dean Sisam of the Faculty of Forestry, University of Toronto was appointed Chair. Kennedy was a member. This committee was not overly successful.

The Kennedy Report presented 72 recommendations in all including: modernization of forest management, more field control, more field staff, standardizing agreements and achieving sustained yield as the basic principle of forest management. He also recommended a complete change in forest/operations allocations, but this recommendation was rejected. Twenty years later Kennedy indicated that about 80 % of his recommendations were implemented. The most important result of the Kennedy Report was the publicly stated objective of sound forest management based on sustained yield.

It was recognized that the department needed better information on the state of Ontario's forests. J.A. Brodie, of the department, was tasked with developing a Forest Resources Inventory (FRI). Over several years the government committed to inventorying the forest from Kawartha Lakes to 60 miles north of the CNR trans-Canada line. Later, with financial assistance from the federal government, southern Ontario was also inventoried. Inventories were conducted by plane and summer field crews. It was recognized that the FRI would need to be conducted on a regular basis.

Professor D. Matthews, of Michigan State University, a world export on forest management, was engaged to provide guidance on the development of key forest policy.

Industry was still resistant to change. But the development of an agreement with Abitibi that took months to finalize and that required the company to submit management/operations plans, made it easier to induce other companies to comply.

In 1947 the Forest Management Act was enacted and formalized a standardized management approach with all companies. M.B. Morison, a forester with the Dominion Forest Service, was hired to develop a manual for forest management plans and supervise submission of the plans. The management process was eventually devolved to districts.

The Crown Timber Act was enacted in 1953. It revised and consolidated eight statues related to timber management. The licence agreements were replaced by 21-year Orders In Council, and simplified.

The Department published its first White Paper in 1954 titled *Suggestions for a Programme of Renewable Resources Development*. The paper depicted a depressing future for some branches of the forest industry – especially the white/red pine lumber and spruce pulp components. It included detailed data on the state of the forest, predictions for future yields and requirements for moving to sustainability. The paper recommended the following:

- Using FRI as the basis for managing and integrating conflicting land uses,

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(Continued from page 37)

- Prohibiting exports on various wood products,
- Improving wood operations and silviculture practices to utilize wood more efficiently, lessen wastage and improve productivity,
- Improving management and productivity on private and municipal lands.

A decade plus later when this book was written (1966), the chapter author notes that the yield situation was not as dark as envisioned – annual yields were higher than expected. The Timber Division was reorganized in 1957 to include reforestation. A pilot project – Project Regeneration – was instituted to test different silviculture methods. In 1957 a stand-alone Reforestation Section was established. It was noted that three significant issues remained:

- Moving to sustained yield,
- Helping the northern saw mill industry to transition,
- Creating a strong and competitive hardwood industry.

In regards to the last point, the federal government participated through a program (ARDA – *The Federal-Provincial Agricultural Rehabilitation and Development Agreement*) to cost share in the development of agreements to improve hardwood management, primarily on farm lands, in southern Ontario. In 1966, legislation was enacted to provide for the *Extension and Improvement of Privately-Owned Woodlands*.

The *Crown Timber Act* was amended in 1963 to take back responsibility for forest productivity and maintenance from industry.

In Memoriam: Bob Kennedy

Vancouver Sun
June 22, 2019
CLASSIFIED

KENNEDY, Robert W.
Sep. 13, 1931 - Jun. 17, 2019

Bob Kennedy, 87, passed away peacefully on June 17, 2019 in Vancouver from melanoma.

Bob was born and raised in Syracuse, New York, as the only child of Irene and Howard Kennedy. To see a bit of the world, he came to Vancouver in 1953 to pursue a Master's degree in Forestry at UBC, before completing a PhD at Yale. During his first years in Vancouver, he met Averil James on a blind date, who became his loyal and loving wife for 63 years. He is survived by Averil, their children Stephen, Sheila (Earl) and Susan (Murray), and three grandchildren, Evan, Cameron and Ella.

Bob taught and conducted research in Wood Sciences at both UBC and UofT. He was later Dean of Forestry at UBC from 1983-90, after which he and Averil enjoyed a lengthy retirement.

Bob was active in many international professional and scientific societies, and his volunteer service work took him to the Board of the Memorial Society of BC, where he was an executive member for more than ten years. He was also an enthusiastic (but less gifted) tennis player, and a 30-year member of the DITTA (Dunbar Irregulars Tennis Talent Academy). This revolving group of about 15 players became a prime social experience. He treasured this association, and will be eternally grateful for the lasting bond and friendship of the DITTA group, drawn from disparate personalities and a dozen nationalities.

Bob was also a communicant of Immaculate Conception church in Dunbar for 45 years, where a memorial mass will be held at 11 am on June 28, followed by a reception in the church's social centre (3778 W 28th Ave). Those who wish to may contribute to the church, or to the Robert and Averil Kennedy Forestry Graduate Scholarship at UBC at www.memorial.support.ubc.ca/bob-kennedy. Finally, thankful appreciation to a group of wonderfully compassionate ladies who attended to both Bob and Averil over the past several months, and to Dr. Brad Fritz for his kind attention over 35 years.

Forest History Society of Ontario

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