



Forestory

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Contents

Chair's Message.....	3
Victor Gilbert B.A., B.Sc.F: He Wasn't Just a Name in an Accident Report.....	5
The Unsung Story: Frank A. MacDougall and the Kirkwood Forest Plantation	13
The Rewards of Planting Trees: A Forest and Conservation History Tour through Guelph and Area	22
Frederick Stone, William Brown, and the Beginnings of Forest Conservation	41
Arkell Springs—City of Guelph. An Early Example of Reforestation to Protect a Municipal Water Supply	46
The Crow Creek Settlement	52
Conservation by the People	59

Guelph and Area Forest History Tour and Lots More



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"the twentieth century counterpart of the
Renaissance man"

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Contact Information

Forest History Ontario 416-646-1193 or 877-646-1193

15 Maple Ave., Unit 103

Barrie, ON L4N 2N6

Website: www.ontarioforesthistorystory.ca

Facebook: www.facebook.com/forest.history.society.of.ontario

X: <https://x.com/FHSONtario>

General Email Address: info@fhso.ca

Journal Editor: Caroline Mach, R.P.F. editor@fhso.ca

Webmaster: Amy Howitt, amyhowitt@hotmail.com

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, websites or other items that would be suitable for inclusion in the newsletter? Do you have a comment about something you read in a previous issue? If so, contact Journal Editor, Caroline Mach, R.P.F., at editor@fhso.ca. Deadlines are April 1 and October 1.

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Chair's Message

By: Jim Farrell

While not over, 2024 has been a year of fierce extreme weather events, from severe wildfire in the BC interior and western Alberta, including the tragic losses suffered by Jasper, to the damaging flooding in Southern Ontario and Quebec. As I compose this, our US neighbours are waking up to the impacts of yet another brutal hurricane that hammered the southeast, particularly Florida, while other US regions saw severe flooding, a barrage of damaging tornadoes, and ongoing wildfires in the west. From a historical perspective, these events not only alter landscapes, destroy infrastructure and damage livelihoods, they ramp up human anxiety and erode the mental health of all those affected. While history has always been a reliable guide for the future, it may not be the case in a changing climate, but it is absolutely essential that history be recorded...even in the face of such overwhelming adversity and I salute those who continue to chronicle it.

After our successful panel at the February Forests Ontario conference, we hosted our fifth forest history field tour, this time in the Guelph, Ontario area. A full description of this tour is posted on our website [Guelph Area Forest and Conservation History Tour - June 14, 2024 \(fhso.ca\)](https://fhso.ca), in the September issue of The Ontario Woodlander [Woodlander-116.pdf \(elfsightcdn.com\)](https://elfsightcdn.com), and in this issue of *Forestry*, starting on page 22. In summary, it was both educational and fun learning about a number of the small gems of remnant (almost) forests carefully protected across the south that our tour leader and organizer, Terry Schwan, R.P.F. (Ret.) has explored over his many years practicing forestry in the region.

The FHO has played a role in encouraging Annual Meetings/Conferences of the Canadian Institute of Forestry to include some forest history elements and this year in St John's in September was no exception. We contributed to a very high-level overview presentation of the history of forest protection across Canada...a topic that warrants an entire book...or two.

Over the summer some of us members worked with the OWA and Forests Ontario to draft articles for a special edition of The Woodlander magazine entirely dedicated to forest history. Our package of six articles includes: a history of the Ontario Provincial Air Service which celebrated its 100th anniversary this year; a history of federal forestry celebrating 125 years in 2024; a history of the Canadian Forestry Association; and, a special feature on the history of the first honorary lifetime member of the OWA...you will have to wait until the publication comes out to learn who this is.

Work is progressing well on the drafting of The Tembec Story with a writing team led by Mark Kuhlberg at Laurentian University. One of Mark's graduate students has authored a paper in this issue of *Forestry*...check it out on page 13. We are in the process of updating our website to make it more user friendly and facilitate the inclusion of more material. A number of members are exploring the treasure trove of pictures and related records from the former Ontario Forest Insect and Disease Survey, stored at the Great Lakes Forestry Centre in Sault Ste Marie.



The Forest History Society, headquartered at Duke University in North Carolina, is joining the Canadian Forest Service (CFS) to help celebrate its 125th anniversary by holding its national Board meeting in Ottawa from October 24-26. They are hosting a reception as part of this and FHO is invited to join and make a short presentation. I will provide a brief overview of FHO as well as the other forest history organizations in Canada and provide a very brief overview of CFS history. The last time FHS visited Ottawa was in 2006. Expect to see a short report and some pictures on our website shortly.

Planning is just getting started for our virtual Annual Meeting 2025 and

(Continued on page 4)

(Continued from page 3)

our presence at the Forests Ontario conference on February 20. Our next Forest History Field Tour is planned for Dufferin County in June, 2025...more to come on this.

As you know, this is an entirely volunteer organization, and nothing would happen without them. Thank you to all of you, particularly Caroline Mach, R.P.F., our dedicated and productive editor of this journal, who recently retired but remains fully engaged. I invite you all to settle in and enjoy another great read.

Facebook: <http://www.facebook.com/forest.history.society.of.ontario>

X: <https://x.com/FHSONtario>

Victor Gilbert, B.A., B.Sc.F.: He Wasn't Just a Name in an Accident Report

By: Alastair I. Reeves

In the late afternoon hours of August 16, 1924, the newly formed Ontario Provincial Air Service (OPAS) suffered its first two fatalities in an aircraft crash. One of their lumbering Curtiss HS-2L flying boats — Number 6, registered as G-CAOC — crashed on approach to Lac des Mille Lacs in the vicinity of Savanne, Ontario. Two crewmembers, the air engineer and a forest observer died from injuries suffered in this crash.

As often is the case with aviation historians, the life history of the pilot is researched in exacting detail while aircrew and others tend to be overlooked. With this in mind, what do we know of the forest observer who was killed?

Memories fogged by the passing of decades have even given this gentleman an erroneous name, a name that should be corrected before it is accidentally passed down through research papers and books. In his book **Firebirds**, the story of the Ontario Provincial Air Service, Bruce West lists the name of the forest observer as Dick Gilbert.¹ In reference to this 1924 crash, Jack C. Dillon in his booklet **Early Days** has his name recorded as N. Gilbert.² Fred McClement in his book **The Flaming Forests** names him Norman Gilbert.³ Even an editorial note of explanation added to George H. R. Philips' article An OPAS Legend Tells His Story in the **Journal** of the **Canadian Aviation Historical Society** (Vol. 41 No. 2 Summer 2003, page 49) lists this gentleman with the wrong initials.

The forest observer's name was actually Albert Victor Gilbert, "Vic" to his friends.

As one of five children born to Albert and Margeret (sic) Todd Gilbert, Vic came into this world on June 22, 1889.⁴ Although born at Seeley's Bay on the Rideau Canal he attended his public schooling in Kingston, Ontario. By 1911, he had graduated with a Bachelor of Arts degree from Queen's University, Kingston. To refresh our memories, forestry was only accepted as an academic science in Canada in 1908 with the establishment of Faculties of Forestry at the University of Toronto and the University of New Brunswick. L'Université Laval instituted their Faculty of Forestry in 1910.

It was during his summer vacations while attending Queen's University that Vic began his association with the Dominion Forest Service working under the direction of such notable Canadian foresters as:



Clyde Leavitt, H. R. MacMillan, George H. Edgecombe and Roland D. Craig. These foresters were at the cutting edge and shaped the future of Canadian forest policy.

In his days at Queen's University, Vic was known as an athlete. He excelled as a hockey goaltender and played goal for the Queen's University Allan Cup winning team of 1909. The Allan Cup is to amateur hockey what the Stanley Cup is to professional hockey. Reputed to be the best amateur goaltender of his time, he played for Queen's University *Gaels* (1908 - 1910), *Cliffsides* of Ottawa (1911 - 1912), and the Toronto *Argonauts*

The Tête Jaune Forestry Office in 1913. (Source: Tourist Book for Prince George and District)

(Continued on page 6)

(Continued from page 5)

(1914 -1916).⁵ Although he stood only 5 foot 7 inches tall, he was also an outstanding basketball and baseball player.

Upon graduation in 1911, Vic joined the ranks of the Dominion Forest Service working out of Ottawa. At this time, the Dominion Forest Service was responsible for the protection and administration of all federally controlled land that contained forests. This included: the National Parks and the vast Dominion Forest Reserves held within each province of Canada; the CPR Railway Belt running through British Columbia, all of the Northwest Territories and the Yukon; the prairie provinces until 1930; North Ontario, or the land to the north of Lac Seul – Albany River system; and, the North-East Territory which was Québec north of the height of land for the St. Lawrence River drainage system.

When Harold R. MacMillan — later to form the international lumber giant, MacMillan Bloedel Ltd. — left the Dominion Forest Service to organize the British Columbia Forest Service, Vic Gilbert was handpicked to accompany him. Gilbert was assigned to work in the Tête Jaune District and — in a forestry context — this became his baptism by fire. Situated at the western opening of the Yellowhead Pass through the Rocky Mountains, Tête Jaune

District was a hive of activity and the enforcement proving ground for the fire prevention regulations enacted under the newly promulgated *British Columbia Forest Act* (1912).

Clyde Leavitt in his 1912 report as head of Fire Safety for the Railway Board of Commissioners, Dominion Commission of Conservation, stated: "It is a truism that railways are the most frequent cause of fires in any timber areas through which they pass".⁶ Vic Gilbert found this statement true for he found himself embroiled in enforcing these new fire prevention regulations on the right-away clearing and construction work of the Grand Trunk Pacific Railway. Due to a careless attitude towards fire prevention practices previously demonstrated by this company, massive forest fires were caused in the Tête Jaune – McBride section of the railway during the 1912 fire season.⁷ Rigorous enforcement of the Fire Prevention Regulations under the *British Columbia Forest Act* (1912) and also the federal *Railroad Act* (1903) dramatically reduced these man-made fire occurrences during the 1913 fire season.



Area around Tête Jaune Cache, British Columbia, near the western opening of the Yellowhead Pass through the Rockies. Photo shows massive burns in the background. Year of photo was 1912 or 1913. (Source: www.prairie-towns.com Tête Jaune Cache Images)



End of steel, 1913, McBride, British Columbia on the Grand Trunk Pacific railway. This was the northern limits of the Tête Jaune District in which Victor Gilbert worked. Note the burned mountain slopes as a result of escaped fires during the construction of the railway. Gilbert was tasked with enforcing the fire prevention regulations in this area. (Source: www.prairie-towns.com McBride Images)

(Continued on page 7)



Recruiting poster for the 238th Canadian Forestry Battalion, Canadian Forestry Corps, First World War. (Source: www.mccord-museum.qc.ca/scripts/large.php?Lang=1&accessnumber=ANC-C95386&imageID=292236)

During the off-season for fires in Tête Jaune District, Vic conducted land assessment along the proposed right-of-way of the Grand Trunk Pacific Railway — from the B.C./Alberta border, following the Fraser River down the Robson Valley to Fort George (later to be renamed Prince George). In this role he assisted the Dominion Forester, George H. Edgecombe.⁸ Although yet to be realized to this day, it was at this time that the controversial flood reserve for a 'future' hydroelectric dam in the Longworth Canyon on the upper Fraser River was established. If, or when, this dam is established, water from the Upper Fraser River system could be easily diverted into the Columbia River system and thus southward to supply badly needed water to Southern California.⁹

In the fall of 1913, Vic Gilbert left employment with the BC Forest Service to enter the Faculty of Forestry, University of Toronto. He graduated in 1916 with the degree of Bachelor of Science in Forestry. While studying forestry at U of T, his summer vacations were again spent working for the Dominion Forest Service, this time in charge of crews conducting forest reconnaissance in Northern Manitoba and Saskatchewan.¹⁰

With the First World War raging in Europe, Vic became a member of the Canadian Officers Training Corps (C.O.T.C.) while at the University of Toronto, where he secured the rank of a provisional Lieutenant with the 36th Peel Regiment of Ontario.¹¹ Hospitalized with an attack of appendicitis during his final semester in 1916, Vic missed the scheduled military training course before shipping overseas. Here the trail goes cold as to why he didn't continue on with this Army regiment.

On August 8, 1916, Vic enlisted in the Canadian Overseas Expeditionary Force.¹² On his enlistment papers, his trade is listed as 'graduate forester'. With a Regimental Number of 1036464, Victor Gilbert was given the rank of Quarter Master Sergeant and assigned to the 238th Battalion, Canadian Forestry Corps.¹³

At this point one is given a pause to ponder; on trying to enlist, Vic was apparently rejected by *both* the Artillery and the Infantry for failing to pass the required medical exam.¹⁴ Remember, he was a star athlete and a competent field forester used to wilderness camping and hard physical work. Speculation is that the examining doctors detected respiratory problems, possibly the early stages of tuberculosis, a common but deadly disease of the day.

After enlistment, he sailed immediately for England as part of the contingent of 44 officers and 1082 other ranks from the Ontario region that made up the 238 Battalion, Canadian Forestry Corps.¹⁵ He served with the Forestry Corps in Northern England until October 1917.

In October of 1917, Vic was successful in obtaining his transfer into the Royal Navy Air Service (RNAS).¹⁶ The University of Toronto, Roll of Service, states that as of January 1918, Victor Gilbert was a 'Provisional Flight Officer' with the RNAS.¹⁷ An unreferenced newspaper clipping in Vic's student file at the University of Toronto indicates, as of March 14, 1918, he was still in the RNAS.

Thus, it is recorded that Vic entered training as a pilot with the RNAS, but it remains unclear as to

(Continued from page 7)

whether or not he completed all of his pilot's training. From the remembrances of George H. R. Phillips (1931 McKee Trophy winner and later, the 'Flying' Superintendent of Ontario's Algonquin Park), in 1924 Vic was — like himself — *both* a forest observer and a student pilot with the Ontario Provincial Air Service (most likely classified as a "Junior B pilot — under instruction").^{18 & 19} Thus, based on Phillips' recollections, and the guidelines presented in endnote number 19, it is speculated that Victor Gilbert successfully completed his initial RNAS pilot training course and had embarked on the advanced training course on flying boats.

Another mystery creeps into Gilbert's file. Sometime in the spring or early summer of 1918, he was invalided to Canada and discharged as 'unfit for further military service'. Doctors gave him six months to live.²⁰ Often a diagnosis of 'six months to live' indicated a severe case of tuberculosis. A 1922 article in the *British Medical Journal* indicated that the survival rate for severe cases of tuberculosis in 1917, even when the patient was under direct medical care in a sanatorium, was less than 20%.^{21 & 22}

Vic proved the doctors wrong.

By the summer of 1918, Vic's health improved enough for him to again commence work as a forester with the Dominion Commission of Conservation under the famous Canadian forester, Clyde Leavitt. His direct supervisor at this time was again (Major) George H. Edgecombe, the man he worked under in Tête Jaune District of British Columbia.²³

1920 found Vic Gilbert working directly with Roland D. Craig and George H. Edgecombe conducting a forest survey of the Temiskaming area of Ontario.²⁴ It was at this point that these progressive foresters pushed for the use of Civil Air Board aircraft to conduct aerial timber reconnaissance, and

where the first documented aerial timber sketch mapping took place.²⁵ It is a known fact that both Craig and Edgecombe sketched timber types and the extent of a spruce budworm insect infestation from a Dominion government's Curtiss HS -2L flying boat. With the sketching of this insect outbreak, Canada entered the record books as the first country to use aircraft in order to delineate an insect infestation.²⁶ From the information available, it is speculated by the author that Vic flew as an observer on at least one of these flights.

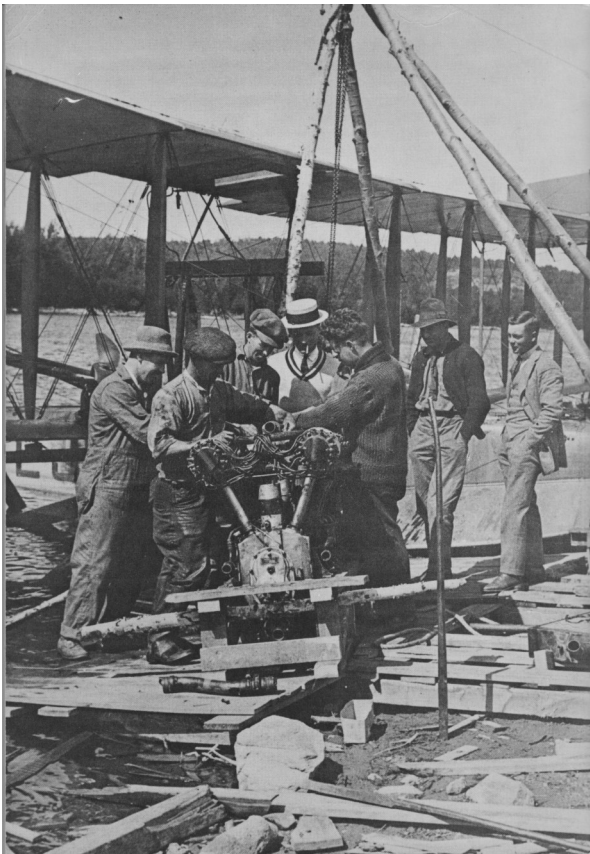
Roland D. Craig and George H. Edgecombe were two of the Dominion Foresters who were instrumental in the push to have the Ontario Department of Lands and Forests form their own air service to carry out aerial forest operations within the province. Subsequently, in 1924, the province formed the Ontario Provincial Air Service (OPAS).²⁷

In February of 1921, Vic Gilbert resigned from the Commission of Conservation to accept a three-year post as Reader with the Christian Science Church in Kingston, Ontario.²⁸ Although no longer practicing forestry, he kept in close contact with former colleagues. The allure of 'the bush' was always there and Vic took the opportunity in 1922 to write an article for *The Illustrated Canadian Forest and Outdoors* on forest fire protection in Algonquin Park.

Over the years Vic gained a reputation in the forestry world as a man of integrity with a keenness to see a thing through to the end for its own sake.

On formation of the OPAS, Vic was again enticed back into

(Continued on page 9)



An engine overhaul on one of the Ontario Provincial Air Service Curtiss HS-2L aircraft at Whitney Air Base, Algonquin Park, 1922. Victor Gilbert stands on the far right. (Source: *The Early Days* by J. C. Dillon © 1961. Photo from the back cover.)



OPAS staff at the Sioux Lookout base, 1924. Victor Gilbert stands on the lower wing, second from the right. Pilot Ed Burton sits directly below him on the fuselage. George Philips is on the fuselage with his arms around Shelbourne. The author speculates that Ken McBride stands to the left of Vic Gilbert in the photo. The aircraft pictured is one of the OPAS's Curtiss HS-2L, commonly referred to as an "H-Boat". (Source: An OPAS Legend Tells His Story by George Phillips, *The Journal of the CAHS*, Vol. 41 No. 2, Summer 2003, page 48.)

the forestry world. It is not difficult to see why Vic — with his broad forestry knowledge, fire suppression experience and key associations with prominent and influential foresters — was chosen to be part of the original contingent of 16 forest observers assigned to work with the OPAS.²⁹ The majority of the original OPAS forest observers, in addition to their degree in forestry, had wartime flying experience and many of them went on to become pilots with the OPAS.

With the Curtiss HS-2L pilot fully occupied in mastering the idiosyncrasies of these temperamental flying boats, the forest observers sitting out in the exposed front cockpit handled the technical forestry details in-flight as well as the navigation of the aircraft. The forest observers were not along just for the ride. Safety aside, it was the foresters who directed the pilots in their assignments — and authorized the payment of the bills, including the pilots wages.

On fire patrols the forest observer was expected to obtain all pertinent details of any fire spotted: exact location; size; probable rate of spread; direction of spread; timber type the fire was burning in;

availability of water for fire pumps; distance from water to the fire; size of suppression crew required to contain the fire; quickest access for ground crews; and, the probable cause of the fire.

The other tasks these early forest observers undertook while flying were: general forest reconnaissance; assessment of hydroelectric potential; timber type mapping; daily fire progress mapping; insect surveys and mapping; and, aerial photography. It must be remembered that at this period, foresters were required to do a full resource inventory during this forest reconnaissance. As is clearly seen in a review of the yearly reports submitted by the Ontario Department of Lands and Forest for the period 1915-1920, these reconnaissance reports included not only an assessment of the forest resources and logging potential, but also wildlife assessment for both recreational hunting and trapping of fur bearing animals, basic geological assessment and potential, agricultural potential, hydroelectric potential and, tourism potential. Placed directly under the supervision of the future OPAS Director, R. N. 'Reg' Johnston — himself a graduate forester and First World War pilot — the forest observers were to: "carry out their jobs in such a manner that there could be no criticism from any ground staff".³⁰ Neither the pilot nor the air engineer were qualified to carry out any of the tasks of a forest observer; so, as they say, each to their own specialty.

In the late afternoon of 14 August 1924, two OPAS H-boats (a name commonly applied to the Curtiss HS-2L flying boat) were undertaking a search for a third OPAS H-boat, piloted by Duke Schiller, that was overdue on a return flight from Sioux Lookout that took him southeast to Pakashkan Lake, then in a southerly direction towards Savanne.³¹ The OPAS H-boats, with their temperamental 400 hp Liberty engines, had a dismal record of forced landings with many crews destined to spend miserable days discussing the facts of life with the clouds of black flies while trying to repair the aircraft's engine. There is a lot of truth in Wade Hemsworth's *The Blackfly Song*.

Just prior to the take-off of the two search planes, Victor Gilbert asked to switch places with George Phillips, the forest observer in the other aircraft: the switch was made.³²

Thus, the two search planes were crewed as follows: Ed Burton, pilot, with a crew consisting of air

(Continued on page 10)



Curtiss HS-2L flying boat, registered as G-CAOC, number 6, moored at Orient Bay on Lake Nipigon during the spring of 1924. This OPAS aircraft crashed on August 16, 1924, killing Kenneth A. McBride and A. Victor Gilbert. (Source: *An OPAS Legend Tells His Story* by George Phillips, *The Journal of the CAHS*, Vol. 41 No. 2, Summer 2003, page 49.)

engineer and pilot-under-instruction Ken McBride and forest observer, Victor Gilbert; the other OPAS search aircraft was piloted by Pat Moloney with a crew of E. (Bill) Billington as air engineer and George Phillips as forest observer. The plan was that one of the flying boats would search the shoreline along the eastern side of Pakashkan Lake for Schillers downed aircraft while the other would cover the western side of the lake, with both aircraft eventually ending their search at Savanne. All lake shores along a wide route were to be systematically searched for Schiller's missing aircraft.



The wreckage of G-CAOC in the bush near Savanne, Ontario. (Source: *The Firebirds* by Bruce West. © 1974 page 80.)

Nearing their landing at Lac des Mill Lacs, George Phillips spotted a crashed aircraft but was unable to communicate this information to the pilot until after their landing. It was the Curtiss HS-2L, G-CAOC, in which Victor Gilbert was the forest observer, that had crashed on the landing approach to Lac des Mille Lacs. It was dark before the rescue crews reached the wreckage of the downed H-boat. Both Gilbert and McBride were unconscious; pilot Ed Burton was barely conscious.³³ The injured men were taken to Savanne in forest-made stretchers. Ken McBride died in Savanne. Albert Victor Gilbert, aged 35, died on the train that was taking him and Ed Burton to medical facilities in Port Arthur.

In the subsequent crash investigation of the OPAS HS-2L, G-CAOC, it was determined that: "Flying conditions were still unfavourable and a strong gusting wind was blowing. The pilot had shut off his engine (power) and was gliding down towards the surface of the lake when he lost control of his machine in a violent bump, side slipping and fell, reaching the ground before he could regain control."³⁴

The air engineer and pilot-under-instruction, Kenneth A. McBride, aged 20, was from Brantford Ontario.³⁵ Ken McBride was the son of Morrison M. McBride, Mayor of

Brantford and a longstanding M.P.P. (Conservative-Labour) for the Brantford riding.³⁶ Although severely injured in the crash, pilot Ed Burton survived and lived to fly again. Albert Victor Gilbert, B.A., B.Sc.F., is buried in Kingston, Ontario.

Endnotes and References:

- 1) West, B., *Firebirds*, Ontario Ministry of Natural Resources © 1974: Page 75.
- 2) Dillon, J. C., *Early Days*, Ontario Department of Lands and Forests, ©1961: Page 29.

(Continued on page 11)

- 3) McClements, F., *The Flaming Forests*. McClelland and Stewart Limited, Montreal, ©1969. Page 119.
 - 4) Attestation Paper: Canadian Over-Seas Expeditionary Force, No. 1036464. Gilbert, Albert Victor.
 - 5) The Late Victor Gilbert, B. Sc. F. in *The Illustrated Canadian Forest and Outdoors*, Vol. XX No. 12, December 1924. Page 739.
 - 6) Leavitt, Clyde, *Forest Protection in Canada, 1912*. Commission of Conservation, Canada. Ottawa, Canada © 1913. Page 5.
 - 7) A common notation on the early survey maps of the Tête Jaune – Dunster – McBride area of British Columbia lists the vegetation as “Brulé: 1911-1912”. There are also extensive areas of old burns covering the mountain slopes on both sides of the Robson Valley that are attributed to these 1911-1912 fires created during the construction phase of the Grand Trunk Pacific Railway (GTP). Related from personal experiences of the author who was an Assistant Forest Ranger in the McBride Ranger District.
 - 8) *Canadian Journal of Forestry*, Vol. 8 No. 5., September-October, 1912. Page 139.
 - 9) The Rocky Mountain Trench reservoir: “The reservoir will impound 693 cubic kilometers of water . . . the transfer rate of water to the arid south will be 136 cubic kilometers per year.” Foster, H. D., and D. R. Sewell, *Water: The Emerging Crisis in Canada*, James Lorimer & Co., Publishers, Toronto, © 1981. Page 31.
 - 10) *Canadian Journal of Forestry*, Vol. 8 No. 6., November - December 1912. Page 163.
 - 11) Personal letter dated April 13, 1916, from Albert Victor Gilbert to Dr. B. E. Fernow, Dean, Faculty of Forestry, University of Toronto.
 - 12) Attestation Paper
 - 13) Ibid.
 - 14) The Late Victor Gilbert, B. Sc. F. in *The Illustrated Canadian Forest and Outdoors*, Vol. XX No. 12, December 1924.
 - 15) Internet: History of the 238 Battalion, CFC.
 - 16) The Late Victor Gilbert, B. Sc. F. in *The Illustrated Canadian Forest and Outdoors*, Vol. XX No. 12, December 1924.
 - 17) Prior to August of 1916, pilots entered the Royal Naval Air Service with the Royal Navy rank of Flight Sub-Lieutenant, although they had the effective status of a midshipman until their training at Cranwell was successfully completed and their commission Gazetted. Air Observers entered service as a RNVR Sub-Lieutenant and, like the pilots, were effectively midshipmen until their training was successfully completed. Admiralty Weekly Order 2027 dated 25 August 1917 introduced the new ranks of ‘Probationary Flight Officer’ for pilots-in-training and ‘Probationary Observer Officer’ for observers undergoing training. Again, the rank for aircrew-in-training was that of a lowly midshipman until training was successfully completed. (Ref: Observers and Navigators and other non-pilot aircrew in the RFC, RNAS and RAF. C. G. Jefford, Airline, England, ©2001, 274 pages. Page 67)
 - 18) West, B., *Firebirds*, Ontario Ministry of Natural Resources © 1974: Page 75.
 - 19) Under the 1924 guidelines established by the Ontario Provincial Air Service, potential pilots were tested by senior staff and graduated “according to their commercial flying experience” and if they had “flying ability sufficient to justify further instruction”. Thus successful applicants were classified into the following categories:
 - 1) Senior Pilots,
 - 2) Junior A pilots
 - 3) Junior B pilots – under instruction
- One of the major obstacles for potential pilots seeking a flying position with the OPAS was their lack of previous experience on flying boats; before to 1929, all air operations with the OPAS were exclusively conducted with flying boats, either the lumbering Curtiss HS – 2L or the short-lived Leoning Air Yacht. (Ref: *Report of the Minister of Lands and Forests of the Province of Ontario, 1924*. The Legislative Assembly of Ontario. ©1925. Page 96.)
- 20) The Late Victor Gilbert, B. Sc. F. in *The Illustrated Canadian Forest and Outdoors*, Vol. XX No. 12, December 1924. Page 739.
 - 21) Burton-Fanning, F. W., and W. J. Fanning, The End-Results of Sanatorium Treatment of Tuberculosis, in *The British Medical Journal*, Vol. 1, No. 3192 (Feb. 25, 1922) pp. 306 – 308.
 - 22) **George Vézina** (1887 – 1926) winning two Stanley Cups for the Montréal Canadiens, George Vézina is best remembered for the trophy named in his honour and given to the NHL goalie with the lowest goals against record for that season. As a goalie for the Montréal Canadiens, Vézina played 327 consecutive games — as well as 39 playoff games — during his 7 seasons. Vézina was the first NHL goalie to have a shutout and the first goalie to be awarded an assist on helping to score a goal. Cool and composed in goal, he earned the nickname “Chicoutimi Cucumber”. But, what we often fail to recall is that Vézina collapsed during a game, vomiting blood; he never played again and died four month later consumed by Tuberculosis. (Ref: Internet)
 - 23) **Dominion Commission of Conservation** was a federal body set up in 1909 by the Sir Wilfred Laurier government (constituted under “The Conservation Act”, 8-9 Edward VII, Chapter 27, 1909). The intent of this Commission was to address pressing environmental issues and provide advice on conservation of human and natural resources within Canada.
- The Commission dealt with seven broad areas: forests; fisheries; game and fur bearing animals; minerals; agricultural lands; inland waters and water power; and, public health. Many unique natural environments were identified and set aside through the work of the Commission. These areas now make up the bulk of Canada’s National Parks system.
- Progressive awareness of the environment and establishment of resource-oriented management organizations within the federal and the provincial governments led to the eventual disbanding of the Commission in 1921. The financial collapse of 1929 and the resulting world-wide depression, coupled with the onset of the Second World War, effectively wiped environmental concerns from both public minds and the government agendas.

(Continued from page 11)

The Commission of Conservation was: "in retrospect, a brilliant flash of national insight anticipating by more than 60 years the environmental departments set up by the federal and provincial governments in the 1970's." (Carver, H. S. M., *Compassionate Landscape*, University of Toronto Press, Toronto, © 1975, page 32.)

24) *Canadian Forestry Journal*, Vol. 16, No. 11, November 1920, Page 516.

25) Annon. Flying Studies and Insect Damage, in *Canadian Forestry Journal*, Vol. 16, No. 10, October 1920, page 467.

26) Yuill, J. S., and C. B. Eaton, The Airplane in Forest-Pest Control, in *The Yearbook of Agriculture*, 1949. U. S. Department of Agriculture. Washing D. C. © 1949. Page 471.

27) Halliday, Hugh A. The First 25 Years, in *The Journal* of the Canadian Aviation Historical Society. Volume 12, Number 3. Page 70.

28) The Late Victor Gilbert, B. Sc. F. in *The Illustrated Canadian Forest and Outdoors*, Vol. XX No. 12, December 1924. Page 739.

29) Dillon, J. C., *Early Days*, Ontario Department of Lands and Forests, ©1961: Page 7.

30) *Ibid.*, Page 6.

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About the Author

A writer/researcher, Alastair Reeves holds a Dipl. of Tech. (Renewable Resources), B. Sc. (Resource Management) and a M.Sc. (Dendro-ecology). With his keen interest in both Canadian aviation and forest industry histories he enjoys writing articles on related topics and has many publications to his credit. He was the President of the Montréal Chapter of the Canadian Aviation Historical Society from 1995 to 2006. He is a recipient of the 1999 Mac MacIntyre Research Award for excellence in a researched paper, Wood That Could Fly, published in the *Journal* of the Canadian Aviation Historical Society.

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The Unsung Story: Frank A. MacDougall and the Kirkwood Forest Plantation

By: Chelsea Clingen

Frank A. MacDougall, also known as the “Flying Superintendent,” has been well-recognized for his pivotal role in developing aerial forestry in Ontario. From 1922 to 1966, MacDougall served the province in various roles. He first made his mark patrolling Algonquin Park for ten years as the first Flying Superintendent.¹ Then, in 1941, he acted as the Deputy Minister of the Department of Lands and Forests (Ministry of Natural Resources and Forestry today) for twenty-five years.

MacDougall is especially well known for his many aerial accomplishments. For example, in 1964, he was awarded Canada’s highest aviation honour, the McKee Trophy. It recognized the central role that he had played in developing and expanding the Ontario Provincial Air Service, which has long been recognized as a world leader in the field of aerial firefighting. MacDougall was also inducted into the Canadian Aviation Hall of Fame in 1974, with 6,000 hours in his pilot’s log by the time he reached the age of 70.² In 1973, MacDougall was named Companion to the Order of Flight in Alberta, and the next year he was appointed to the Brotherhood of the Silver Wings of the Northwest Territories.³

As impressive as these accomplishments are, however, one of his achievements has often been overlooked, namely the reforestation project he undertook in the “Kirkwood Prairie.” It was a remarkable operation, and it helped kick-start his career. Between 1928 and 1931, he oversaw the planting of approximately two million seedlings each year. The massive role MacDougall played in re-establishing the woodlands in this part of Ontario was a feat that should be celebrated. MacDougall deserves recognition for each of his accomplishments, but especially for his work to re-establish the Kirkwood Forest.

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Frank A. MacDougall was born in Toronto on 16 June 1896, and was raised in Carleton Place, Ontario. In his youth, he became an expert paddler as a member of the Carleton Place Canadian championship war canoe team in 1913 and 1914. MacDougall then served in the Great War with the 9th Battery in France. He fought in the Battle of Vimy Ridge and the Battle of Passchendaele, returning to Canada on 16 June 1919 after suffering the effects of a gas attack.⁴

With damaged lungs, MacDougall was advised to seek a career that would keep him in the fresh air, and forestry turned out to be his calling. He began working for Ontario’s Department of Lands and Forests, first stationed at Pembroke as an Assistant Forester until he was sent to work in James Bay. While on that assignment, he observed the Great Fire of 1922 around Haileybury, which killed over 40 persons. The experience also gave MacDougall his first taste of aerial forestry, as he was a member of the ground crew on the province’s inaugural combined ground and aerial survey of the James Bay region in 1922. It was while resting one day among the mosquitoes and the blackflies on the caribou moss that MacDougall gazed up at a passing HS2L flying boat. In doing so, he remarked to a companion, “I’m going to fly one of those damned things some day.” MacDougall began to train as a pilot, convinced that forestry and flying were complementary activities.⁵

MacDougall secured a permanent place on the Department’s payroll after he earned his Bachelor of Science in Forestry from the University of Toronto in 1923. Initially assigned to be the Assistant District Forester in the Algonquin District, in 1926 he was transferred to Sault Ste. Marie, where he would serve for seven years as its District Forester. This was a match made in heaven for MacDougall, as the Ontario Provincial Air Services (OPAS) had chosen the Soo for its headquarters. MacDougall began using the OPAS’s aircraft for fire patrols and considering the possibilities of its fleet of planes for more aerial forestry. This was revolutionary, as previously, forest fires had been detected by ground patrols or by persons in canoes and boats. MacDougall’s time at the OPAS also allowed him to become a skilled pilot, gaining his commercial pilot’s licence in 1930. He earned it at the perfect

(Continued on page 14)

(Continued from page 13)

time, as in 1931 MacDougall was appointed Superintendent of Algonquin Park and District Forester of the area. This led to a new approach to administering the park, as MacDougall began utilizing bushplanes to patrol his 2,700-square mile domain. He flew almost daily, all year round.⁶

For his first plane, MacDougall flew in a Fairchild KR-34, an open cockpit biplane that is on display at the Canadian Bushplane Heritage Centre in the Soo. According to MacDougall, the use of the aircraft had “shrunk the park area ... to about the size of a good big farm.”⁷ His flying patrols over the park domain drew considerable attention to the Superintendent because of the variety of activities in which he was engaged while flying. For instance, his aerial patrols helped spot forest fires and direct personnel to battle them. His flights to track poachers from the air were a bit more sensational, as he effectively eliminated the poacher problem that had plagued the park since its inception in 1893. As one report put it, he made the park “too hot” for illegal trapping.⁸ Poachers were skillful at eluding park rangers on the ground but did not know just what to make of the new, high-flying Superintendent. MacDougall roamed over the wilderness at a height from which his eagle eyes could readily spot a set of snowshoe tracks.⁹

In terms of his interest in flying, he was truly dedicated to honing his skills. Even though he was already an expert flier, MacDougall always looked for ways to improve his craft. He kept track of new developments in the Royal Canadian Air Force’s equipment, taking up subjects such as blind flying and meteorology, although they were not actually required in his daily work.¹⁰

In 1938, MacDougall acquired a more powerful, enclosed cabin airplane, the Stinson Reliant SR-10.¹¹ He used this plane for many years until corrosion problems were discovered in it and it was retired. For the remainder of his flying days, MacDougall piloted a De Havilland Beaver. In fact, MacDougall assisted in writing the design proposal for the aircraft and had the opportunity to fly the first ever Beaver.¹² MacDougall continued to use the Beaver even after being promoted by Premier Mitchell Hepburn to Deputy Minister of Lands and Forests in 1941. Stationed in Toronto, MacDougall was inclined to fret a bit at his large and busy Queen’s Park desk. Although his firm hand and executive abilities in the office were highly respected, he was basically a man of the bush. As a result, he seldom missed an opportunity to get out into the field in his trusty DH Beaver airplane CF-OD0, which he always kept handy in Toronto Bay.¹³



MacDougall and his DH Beaver

As Deputy Minister, MacDougall was able to use his experiences from the field to help his department pioneer in developing the use of airplanes for fire protection, including bombing forest fires with water.¹⁴ He was also put in charge of overseeing the absorption of the Game and Fish Department into Lands and Forests in 1946.¹⁵ Furthermore, MacDougall was involved in environmental research and worked alongside John R. Dymond, a University of Toronto zoologist, from 1931 to 1954. The two worked together to fashion a framework for formal scientific research in Algonquin Park. These collaborative efforts resulted in a more protectionist policy for the Park, including the establishment of fisheries, wildlife, and forestry research facilities, the first nature reserves, and an innovative interpretive program.¹⁶ MacDougall was also influential in obtaining government support for “Project Regeneration” in 1956 and the tube seedling program of 1966. After a remarkable career, MacDougall retired after the planting season in 1966,¹⁷ but continued to enjoy flying until he passed away on 27 June 1975.

(Continued on page 15)

(Continued from page 14)

MacDougall's legacy lives on in so many ways. Memorials to MacDougall can be seen in many places across Ontario, including Highway 60 in Algonquin Park. The section of the road between the east and west gates is designated as The Frank MacDougall Parkway. There is also a memorial fellowship in his name at the University of Toronto. The Canadian Bushplane Heritage Centre's exhibit in partnership with the Forest History Society of Ontario's Frank A. MacDougall Memorial Project also aids in sustaining his legacy. Finally, the Forest History Society of Ontario launched the Frank A. MacDougall Forest History Trust Fund, which it established to support research into and endeavours to publicize Ontario's forest history.

MacDougall is also remembered as a dynamic individual and as the twentieth century counterpart of the Renaissance man. Aside from his talents in forestry and aviation, he had many hobbies and other interests, most connected with natural resources. He took up photography, and his colour-slide collection was often used for wildlife lectures. His other hobbies included angling and hunting, carpentry, gardening, and cooking.¹⁸ He also took up violin-making to see if Canadian woods were suitable for these instruments.¹⁹ In the evenings, MacDougall often put on concerts for his personnel after the official business was over, always having a fiddle handy in the back of his Beaver airplane. MacDougall was also blessed with a photographic memory, cultivating his scholarly side by reading widely, especially studies in military history, biography, and natural resource management. He was particularly interested in Napoleon Bonaparte and saw him as representing the model administrator.²⁰

MacDougall lived a dynamic life that was defined by varied and significant accomplishments. From forestry and aviation to violins and photography, MacDougall was a remarkable man. His passion for the environment and his colleagues and friends is evident throughout his archival documents and correspondences. His colleagues admired and respected him, and rightfully so. MacDougall might be most famous for being the first (and only) flying Superintendent of Algonquin Park, but he was also critical to the establishment of the Kirkwood Forest. Much has been written about MacDougall, but precious little has explored his connection to the Kirkwood Forest, particularly the depths of his

personal commitment to launching the project and supporting it during its nascent stages. Articles about MacDougall's career in prominent newspapers like *The Globe & Mail*, for example, do not mention these subjects, nor do most of his obituaries and biographies. Therefore, it is to the subject of the Kirkwood Forest that we turn to in the next part of this article.

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Frank MacDougall's vast professional accomplishments have been widely acknowledged. Alongside his achievements as an aerial forester, he was known to have a heart as big as the wide outdoors in which he spent so much of his life.²¹ MacDougall's big heartedness was also demonstrated in his work creating the under-recognized Kirkwood Forest Plantation (it would be named after the township within which it was established). His environmental devotion enabled him to transform what was once referred to as the "Kirkwood Prairie" into one of Ontario's most important woodlands. MacDougall truly impressed his superiors by promoting reforestation on such a major scale.²²

Arguably the project's most prominent legacy was the Giant White Pine of Thessalon, a 350-year-old tree in the Kirkwood Forest. The 162-foot tree was said to have sprouted in 1642 but was blown to the ground during a windstorm in 1997.²³ As a young child, my family visited the Giant White Pine Historic Site on 28 July 1992. With boardwalks and informative signs guiding the way alongside the thick Kirkwood Forest, it was quite the experience. When revisiting the site thirty years later, an overgrown monument and remnants of the Historic Site are all that can be found; the place is practically inaccessible.



**Giant White Pine,
Thessalon, 1991**

(Continued on page 16)

(Continued from page 15)



The author and her family at the Giant White Pine Heritage Site, 1992.

Erected by the Town of Thessalon and the MNR in 1989, the monument stands on the side of a gravel logging road that is not maintained by the Town of Thessalon. There are also no signs to guide you to the

monument. As a result, many visitors are probably enjoying the beauty of the Kirkwood Forest without knowing its extraordinary history. The state of the Giant White Pine Historic Site is validation that MacDougall and the unsung story of the Kirkwood Forest

Plantation have been ignored for far too long, and it is time to revisit the product of his hard work and dedication that combined to transform completely a barren landscape into a thick, coniferous forest.

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The late 1920s was a period of great forestry activity both in government and industry.²⁴ The end of the First World War coincided with the availability of professional foresters, and major government and pulp and paper industry initiatives resulted in the beginnings of forest management in the north. The *Reforestation Act* of 1921 was a kickstart, providing the opportunity for the Minister of Lands and Forests to enter into agreements for reforestation, managing, and developing lands held by municipalities. The Minister also appointed a Forestry Board in 1927, comprised of graduate foresters, including MacDougall.²⁵ Nevertheless, the tree planting efforts focused on re-establishing tree cover in areas in southern Ontario that had been suffering from the ill effects of wanton deforestation.²⁶ Although the onset of the Great Depression in the 1930s sent these reforestation efforts into a tailspin, the mid-1940s saw a shift in the regeneration focus to northern Ontario. In the late 1950s, the combining of the regeneration and timber management functions into a single administrative body within the Department of Lands and Forests and the introduction of mechanized site preparation laid the foundation for reforestation in the north. The introduction of the Forest Management Agreements in the 1980s truly set the effort on strong footing, one that continues to this day.²⁷

Luckily enough, the Kirkwood prairie benefitted immensely from Ontario's first era of reforestation. By 1928, northern Ontario had been organized into Districts with Foresters in charge of them.²⁸ Fire protection had reached a stage where some suitable areas existed in which demonstrations could be tried to restock areas that, through fire or clearing or some other type of disturbance, had no chance of reproducing naturally.²⁹ This was especially true of sandy plains that existed in many districts.³⁰ The Kirkwood prairie was a prime example of this type of terrain, as the land had been cleared at the turn of the century to grow grain and hay to support the logging camps north of Thessalon. When the soft, sandy soil was depleted of its nutrients and cattle grazing replaced crop production, the settlers tried burning their fields to improve pasture yield. Unfortunately, the soil quality continued

(Continued on page 17)

(Continued from page 16)

to decline until the Kirkwood prairie was abandoned in 1920. When a circular letter went out the districts to suggest suitable areas for demonstration planting, MacDougall suggested the Kirkwood desert after spotting it from his gypsy moth plane while conducting a fire patrol in 1928. After eight years of abandonment, MacDougall's aerial work was responsible for Kirkwood's rediscovery. That same year,³¹ MacDougall convinced fellow forester Jack Simmons to begin a large-scale planting program.

MacDougall and Simmons wasted no time creating a rehabilitation plan. It began in the summer of 1928, when conifer seedlings were planted on the site to bring the prairie back to life. It was agreed that Simmons would largely oversee the practical aspects of the operation alongside J.A. Gillespie, Chief Fire Ranger in the Blind River region at the time, who played a key role in the effort's success (along with hundreds of planters, foresters, and local residents). MacDougall and his team chose coniferous species due to the aptitude of these species to thrive in the prairie's sandy landscape. Red pine, white pine, jack pine, and white spruce were the chosen conifers. Seedlings were brought by rail and boat from nurseries in southern Ontario, such as St. Williams and Orono.³²

By November 1929, a budget was in place along with a plan for fireguards to be completed and a cabin to be built for the increasing number of workers in the area. A total of 970,000 trees were planted in 1929,³³ leading MacDougall to push for the Kirkwood area to be designated a Provincial Forest. In December of that year, he wrote to Frank Sharpe, a long-time government forester and newly-appointed supervisor of Provincial Forests, and stressed his wish that the Kirkwood section be separated from the Mississagi Provincial Forest.³⁴ MacDougall ensured that the former area was surveyed beginning in March 1930, as a team of officials was organized to locate the boundaries of the township and establish its central points.³⁵

After the area was surveyed and designated a Provincial Forest, the season of 1930 was the largest yet, with 2,170,000 seedlings planted.³⁶ Simmons and MacDougall prepared for this major increase in production by taking steps to hire 100 men and have sufficient supplies delivered long before the work began in May.³⁷ The season was a smashing success, with a report from December providing a summary of the work to date in glowing terms.³⁸ It stated that the 100 men that Simmons had requested had been employed for a period of six weeks beginning in May 1930. More fire guards were ploughed in early May, with the annual \$500 cost covered by the *Forestry Act*. The update also noted that the trees were doing well and the total area planted in the young plantation was now over 3,000 acres.³⁹ Fire rangers also did meaningful work in the Kirkwood area in the spring of 1930. If the fire hazards were low, the fire rangers were put to work on removing trees and stumps from fire guards, work that had started a few years earlier.⁴⁰

Letters and statistics from 1930 suggest a highly successful planting season, but this success was almost compromised by the death of some of the planting stock on the way to Kirkwood. Luckily enough, replacements were sent quickly. On 10 May 1930, MacDougall wrote to the Deputy Minister of Forestry thanking him for "the speedy way in which replacements were made of the planting stock."⁴¹ MacDougall also informed the Deputy Minister how the project was attracting considerable attention in the environs of Thessalon, and shared an idea for making future operations even smoother. MacDougall suggested to the Minister that "most of the planting stock in future [should] come up in the fall before planting begins and be heeled in at the planting sites." Simmons had experimented with this practice, and it had proved successful.⁴² MacDougall's extraordinary work was not going unnoticed. John Roble from the Department of Health was acutely aware of the work that MacDougall had been doing. Roble wrote to commend MacDougall on 18 December 1930 and ended his letter by applauding MacDougall's efforts: "Your forest planting at Thessalon is a credit to yourself and the Department and I only hope it will continue."⁴³

Despite the onset of the Great Depression, and the major budget cuts that the Ontario government implemented, the year 1931 was one of continued success for the project. Before the season began, Simmons and MacDougall had decided to connect the Kirkwood Plantation to the Bridgland Prairies,

(Continued on page 18)

(Continued from page 17)

where another planting operation was located. Bridgland Township, located right beside the Kirkwood Plantation, was also home to a plantation in progress, so the decision to merge the plots made sense. The two reforestation efforts were only separated by a handful of lots that had never been located or patented.⁴⁴ Simmons had discovered plenty of planting land on the lots along Shaw Road, which was in the middle of the plantations,⁴⁵ so MacDougall requested the reservation of the sections located in Bridgland Township.⁴⁶ This would allow the plantation to occupy both sides of the road, thereby connecting the Kirkwood planting grounds with the Bridgland planting grounds. The extended planting grounds meant an increased number of seedlings were needed. In March 1931, Simmons sent MacDougall the list of trees reserved for planting that spring at the site: 1,550,000 red pine, 250,000 white pine, 100,000 jack pine, and 100,000 white spruce, for a grand total of 2,000,000.⁴⁷ Stock was also utilized from the Abitibi Power & Paper Company's nursery near the Soo, with 170,000 spruce trees shipped by rail to Thessalon.⁴⁸ These impressive numbers paired with the connection of the Bridgland and Kirkwood planting operations made for an extraordinary planting season for MacDougall and Simmons.

After 1931, the Great Depression began to affect the continued expansion of the Kirkwood Forest, however, it did not halt its overall progress, and it enjoyed renewed growth during and after the Second World War. The volume of planting was cut in half during the 1932 season, as only 500,000 seedlings were planted.⁴⁹ In 1933, reports indicated that the established plantations at Kirkwood were progressing favourably, but no new ones were established.⁵⁰ Planting ceased from 1933 to 1939 and started back up in the spring of 1940, when 1,005,650 conifers were planted at Kirkwood.⁵¹ The 1942 season saw that number cut in half,⁵² but by Order-in-Council on 2 November 1943, the Ontario government created the Kirkwood Forest Management Unit. It encompassed the townships of Kirkwood, Bridgland, Lefroy, Rose, Wells, and Haughton.⁵³ Maps and plans were made for a preliminary survey of the area and to operate it on a sustained yield basis.⁵⁴ By the end of the season of 1943, a total of 6,000 acres had been restocked.⁵⁵ Thereafter, half a million trees were planted annually,⁵⁶ and by 1959 the plantation had grown to over 20,000 acres.⁵⁷

The year 1959 also saw the publication of John Edmund Zavitz's *Fifty years of reforestation in Ontario*, which included a special report on the Kirkwood Forest. Zavitz, known as Ontario's "father of reforestation,"⁵⁸ commented on Kirkwood's impressive yields. Other Crown Land plantations for demonstration purposes were being created in the Parry Sound, North Bay, and Pembroke districts, yet Zavitz cited the Kirkwood example as being outstanding.⁵⁹ At the time, it was felt that the Kirkwood Forest Management Unit would prove to the people of Ontario that the forests could be managed as a crop that could be a source of significant and perpetual revenue.⁶⁰ In the Kirkwood Unit, for example, periodic thinnings for pulpwood and poles were beginning to generate revenue. Moreover, by 1959 over 15 million trees had been planted on the Unit.⁶¹ Zavitz's report demonstrates the extended success of MacDougall's efforts alongside his forestry team.

The project was just the start for MacDougall, but it was one of the most significant accomplishments of his career. Today, no evidence of the Kirkwood prairie remains. The once vacant farmland has grown into one of the finest, well-developed coniferous tree plantations in Ontario. In



Kirkwood Forest Monument, Shaw Road, Thessalon

(Continued on page 19)

1990, the MNR named the Kirkwood Forest "Ontario's Forest of the Year" in recognition of its "outstanding achievements in forest management and to all the people whose efforts created this important resource."⁶² The MNR's monument also commemorates the success of MacDougall and the Kirkwood Forest:

We pay tribute to the incredible changes that man and nature can make in a lifetime. Bare lands that parched in summer and lay desolate in winter are now green the year round. Kirkwood has returned to its true destiny – the production of a forest – a living promise of better things to come. This forest fittingly demonstrates how the work of forestry staff and local residents can rebuild our forest heritage.⁶³

The story of how MacDougall transformed the Kirkwood prairie into the Kirkwood Forest is a prime example of his devotion to and affection for the environment. But for now, Kirkwood remains an unsung Historic Site, awaiting further exploration.

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The Rewards of Planting Trees

A Forest and Conservation History Tour through Guelph and Area.

June 14 2024 9:30 to 3:30

The City of Guelph and more particularly the Ontario Agricultural College properties have had a long history of innovative reforestation projects. We will see examples of these early plantings. We will visit the Arkell Springs site where there is an early example of using the forest to clean drinking water. We will visit a site where brook trout has been able to access the Speed River, as well as other sites of interest.

This year is the 150th anniversary of the Ontario Agricultural Collage and the 50th anniversary of the University of Guelph Arboretum

Terry Schwan, R.P.F. (Ret.)

Doug Larson, Emeritus Professor, Department of Integrative Biology, University of Guelph
Martin Neumann.

Other contributors to this program include:

Karen McKeown, Landscape and Yard Program Coordinator, Environmental Services
City of Guelph

Larry Halyk, M.Sc in aquatic ecology

Naresh Thevathasan, Ph.D. (Envi. Sc.) Adjunct Professor (Retired Associate Professor)
School of Environmental Sciences, University of Guelph

This tour is hosted by Forest History Ontario, and made possible by the generous support of our sponsor the City of Guelph. Proceeds go to support the activities of Forest History Ontario.



Agenda June 14, 2024

9:30 meet Parking Lot The Arboretum

Brown's Woods

Dairy Bush

These two sections are found elsewhere in this issue under the title **Frederick Stone, William Brown and the beginning of forest conservation**

Marden Creek,

12:15 Symposium Café, lunch

1:15 Arkell Springs tour

This section is found elsewhere in this issue under the title **Arkell Springs – City of Guelph. An early example of reforestation for to protect a municipal water supply,**

2:15 Former Agroforestry intercropping site

2:30 Zavitz Pines,

Victoria Woods.

University of Guelph Arboretum,

3:30 Finish.

Ignatius Dam Removal Project – Marden Creek

Larry Halyk, Aquatic Biologist

Marden Creek is a 10 km long 2nd order stream that enters the Speed River just north of Guelph, Ontario. Native brook trout are currently present in the upper reaches, but are less common downstream of Wellington County Road 7 (Elora Road). The Wellington County Stewardship Council (WCSC) adopted Marden Creek in 1999 with the goal of extending the range of the existing brook trout population downstream to the Speed River. The main challenges to achieving this goal were identified to be high summer temperatures, barriers to fish movement, and degraded spawning habitat.

Between 2005 and 2009, the WCSC and their primary partner, the Speed Valley Chapter of Trout Unlimited Canada (TUC), had removed or modified ponds, dams and blockages at several locations to narrow the stream channel, lower stream temperatures, and allow fish to move freely within the stream. The Ignatius Dam, was removed in October 2010.

This 2.1 m high dam was located on property owned by Ignatius Jesuit Centre of Guelph (IJC). The IJC lands are separated into east and west parcels by Highway 6, which also transects the impoundment created by the Ignatius Dam. To the west of the highway, the property is an organic farm, over 200 hectares in size; to the east, roughly 40 hectares. The property is used as a religious retreat and is visited by thousands annually. One initiative currently being led by the IJC, on the east side, is the *Plant an Old Growth Forest Project* which seeks to convert much of the valley lands along Marden Creek and the Speed River on the IJC property back to a more natural condition.

The IJC dam removal converted a shallow 2.9 ha impoundment into 1.5 km of meandering stream channel. To minimize the risk of downstream sediment movement, the pond level was lowered slowly using siphons prior to removal of the dam structure. This technique allowed the stream to find its own channel through the accumulated silt sediments and avoided the need for channel design or construction work.



The Ignatius Pond looking upstream (west) of highway 6 on June 2003. This portion of the pond had a uniform depth of 30 cm or less and was subject to frequent algae blooms.



The Ignatius Dam during a snowmelt event in February



Looking upstream (west) of the dam site on September 25, 2010. The gradual drop in pond elevation had allowed a meandering channel to form.

The exposed silt flats were seeded with annual rye grass immediately following the lowering of pond levels, but germination was not sufficient to establish a complete vegetative cover prior to the end of the growing season. An estimated 1,500 kg of carp were captured during and after pond removal. These fish were humanely destroyed and buried on site. The remainder of the fish community (primarily bass, sunfish, and minnows) were either captured and transferred live to nearby ponds, or allowed to escape downstream to the Speed River. One brook trout was captured in the formerly impounded area on October 30, 2010.

Following the dam removal, rehabilitation work focused on restoring wetlands and other riparian features in the vicinity of the former reservoir. This included two major tree planting initiatives in 2012 and 2013, bioengineering and instream structures (sediment mats) to narrow the stream channel, and physical controls (tarpaulin placement) to discourage colonization by invasive *Phragmites*.

This project has contributed significantly to the overall program restoration goal of range expansion of native brook trout downstream to the Speed River. The direct financial cost of the dam commissioning activities in 2010 was approximately \$100,000 with an additional in-kind contribution valued at approximately \$25,000.

Larry Halyk



Community tree planting events like this one upstream of highway 6 were hosted by the IJC, TUC and WCSC, and were held in the springs of 2012 and 2013.



A Marden Creek brook trout captured upstream of highway 6 at the site of the former Ignatius Pond on October 30, 2010. This is likely the first trout to inhabit

Intercropping trees and crops

Introduction

The University of Guelph intercropping plots were established in 1988 on 30 ha of degraded agricultural land (Figure 1.) with the aim of investigating the effects of intercropping trees with agricultural crops. A variety of spacing, crop compatibility and tree growth and survival experiments were initiated at that time, using trees such as spruce, pine, walnut, ash, sugar and silver maple, black locust, red oak and hybrid poplar. Tree rows were spaced 12 or 15 m apart and trees within each row were spaced 5 or 6.25 m apart (Figure 2.). Three agricultural crops (soybeans, corn and winter wheat), were grown between the rows under normal rotation.



Figure 1. University of Guelph Agroforestry Research Site: a) before introducing trees.



Figure 2. University of Guelph Agroforestry research site 32 years after introducing trees.

Why introduce trees to agricultural fields?

Southern Ontario has an average of approximately 7% tree cover. Introducing trees to fields is one way of increasing this percentage. With the careful selection of tree species and crop combination, numerous positive interactions with field crop growth can be obtained.

Benefits obtained from trees

- Maintenance or increase of soil organic matter.
- Improved nutrient retention on site.
- Reduced soil erosion.
- Reduced nitrate leaching
- Crop protection against wind.
- Maintenance or improvement of soil physical properties.
- Modifications of extremes of soil temperature.
- Increase in earthworm populations.
- Long term revenue.
- Increase in biodiversity.

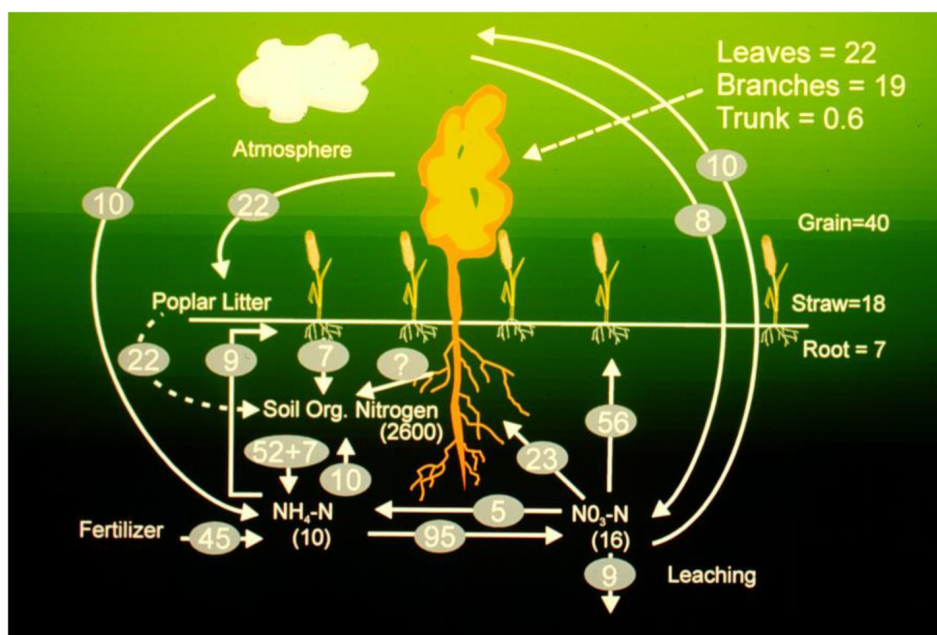


Figure 4b. N cycling in a tree/crop intercropping system.

Research findings

- Trees add organic matter to the soil through litter fall and root decay. The contribution of intercropped trees may increase soil organic matter by 30% over a period of 8-10 years. Increases in soil organic matter also improve soil physical and chemical properties that can result in increased crop yields. The value of the land can also potentially rise due to better topsoil.
- Tree roots act as a pump, obtaining nutrients from lower soil horizons and depositing them on the surface where they are available to the crop.
- Tree rows prevent soil runoff and also help to prevent wind erosion. Tree rows significantly reduce wind speed within the crop rows and therefore lessen moisture losses due to transpiration and evaporation.
- Earthworm numbers increase. This improves soil structure, porosity and nutrient status of the soil.
- A cost/benefit economic model developed at Guelph has found that the intercropping system demonstrated at the research site is profitable, given even a modest positive interaction between the trees and crops (e.g. reduced fertilizer N-inputs next to the tree row can be realized as leaf drop will provide some N input).
- Intercropped fields are much more diverse in bird species than monocropped fields. The tree rows can also provide wildlife corridors between other habitats.

Intercropping concerns

- Tree roots clog tile drains.
- Competition for light.
- Competition for nutrients.
- Competition for water

Remedies and solutions

- Disk ploughing the cropped area on either side of the tree row will eliminate the potential for large tree roots growing near the surface. The roots are forced to grow to a deeper depth and obtain nutrients that are unobtainable to the crops. Some of these nutrients are released to the soil during the fall.

- At the stage when competition for light is a factor, crops of a higher shade tolerance should be grown (i.e. corn should not be grown). With appropriate tree management (i.e. pruning, spacing, and species selection), the onset of this stage can be delayed.

Thinking about Intercropping ?

- Can be done on prime as well as on marginal lands
- Attention should be given to the selection of the components (trees and crops)
- Short term and long-term goals have to be defined (economic and environmental)

Between tree row spacing can range from 15 m to 30 m and within tree row spacing can range from 6 m to 8 m. Important management strategies (e.g. disk ploughing, pruning etc.) must be carried out to minimize competitive interactions.

For further details please feel free to contact:

The Agroforestry Research Division

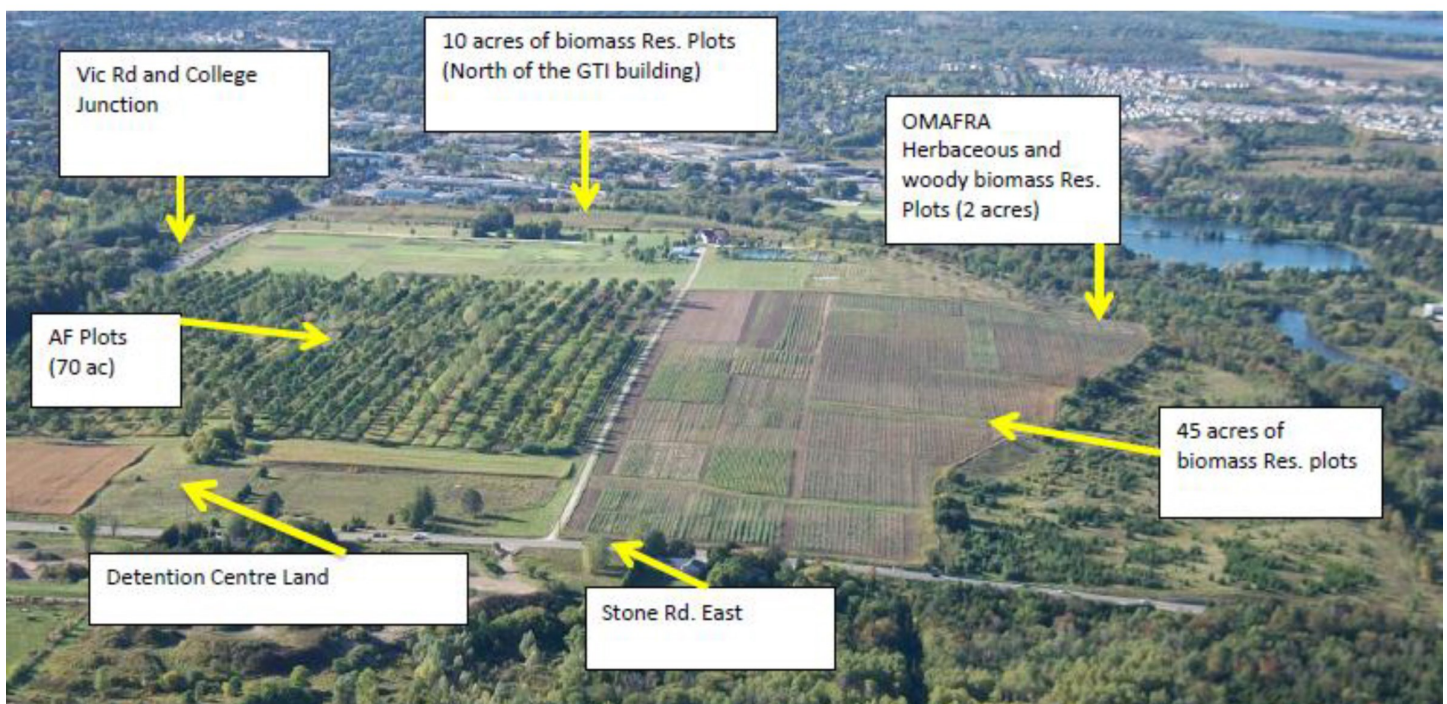
School of Environmental Sciences

University of Guelph

Guelph, Ont. N1G 2W1

Phone: (519) 824-4120 (Ext. 52565)

E mail : nthevath@uoguelph.ca



Zavitz pines and Edmund Zavitz

Terry Schwan

When Edmund Zavitz came on the scene in 1904 the forests of southern Ontario were in a terrible condition. He commented on this situation in his report *Reforestation of Wastelands in Southern Ontario in 1908*.

“The disappearance of the forest and woodlot throughout this region is a topic which has been widely and frequently discussed. Early in the 1880’s we find reports which were compiled at the instance of the Ontario Government, calling attention to the necessity of preserving and replanting forests in this region. Little heed was given to these reports so far as the adoption of any policy was concerned.

To a large extent the only woodlots left in the settled portion of the province is the farmer’s woodlot. At least 45 townships, have as low as 5 per cent of Woodland. In 1904, the municipal assessors’ returns gave less than 15 per cent of woodland for all the settled Township.

It is practically impossible to buy, in any district in Ontario, commercial quantities of any of the more valuable hardwoods such as white ash, rock elm, hickory, etc. Through severe culling, and opening the wood to cattle, much of the remaining woodlands are only remnants, with either detect, defective or undesirable trees left.

The forest problem on private lands includes the better management of existing woodlands along with the replanting of waste portions of untillable soils. This will always be a most difficult problem. Private management of small parcels of forest land in older countries, as France and Germany, where the science of forestry has long been practiced, is still very unsatisfactory. Owing to the longtime element in maturing wood crops, private management is often weak and uncertain.”

Further to this Judson Clark, Provincial Forester, stated;

*“During the fall term a course of lectures having special reference to farm forestry was given at the Ontario Agriculture College in Guelph. The interest taken by the students both within the classroom work and in the frequent excursions to woodlots and plantations in the neighborhood was all that could be desired. **Unfortunately, the woodlots in the neighborhood of Guelph having in recent years become so badly deteriorated through unwise cutting and by grazing by livestock that it was impossible to show the students any examples of the results of wise management** (my emphasis). Consequently, the practical demonstrations were necessarily largely limited to the showing of what should not be done and why “*

Ontario. Annual Report of Bureau of Forestry. 1904. Sessional Paper 4 1904. p. 7.

The urgency to protect orchards and woodlots and replant wasteland and other poor agricultural land was advocated first by the Ontario Fruit Growers Association, the Ontario Agricultural College (as previously mentioned) and later by the Ontario Agricultural Experimental Union. The Experimental Union was formed in 1879 by officers, students and ex-students from the OAC with the objective of establishing a system of cooperative experiments throughout the province. However the Experimental Union did not

benefit forestry until 1900, when at the annual meeting a forestry committee was appointed. No decisive action occurred until 1902 when a resolution moved by Nelson Monteith (later Minister of Agriculture from 1905 to 1908) and seconded by E. C. Drury (later Premier from 1919 to 1923), asked the Department of Crown Lands provide seedlings to reforest the large areas of wasteland.

The next year, 1903, another resolution was presented demanding, in short:

- Establish a school of forestry
- Collect accurate information from municipalities on the amount of lands unfit for agriculture
- Undertake reforestation of large areas
- Adjust taxation to encourage preservation of farm woodlots



Fig. 4—Woodlot to the left of the fence has been protected from stock.

Both Minister of Agriculture, John Dryden, and Commissioner of Crown Lands, E. J. Davis were receptive of the ideas presented. The immediate result was to appoint Judson Clarke a graduate of OAC and Cornell forestry school, as the first Provincial Forester in the in the Crown Lands Department with responsibility for forestry in southern Ontario. In 1905 the position was moved to the Department of Agriculture as the Bureau of Colonization and Forestry. Clarke resigned in 1906 and moved to British Columbia.

Meanwhile in 1904, Minister Dryden took immediate steps to starting a forest tree nursery at the OAC. And who did he hire but Edmund Zavitz. In the spring of 1904 Zavitz took a job at OAC Guelph and was offered \$50.00 a month. That summer he started a small nursery of two acres where forest seedlings were produced to furnish land owners with planting material.

Edmund J. Zavitz

Edmund Zavitz was born on July the 9th, 1874, at Ridgeway in Welland County. As a school boy, he roamed the woods in his neighborhood collecting moths, butterflies and other insects. But at 14 he dropped out of school and went to work for a summer on his uncle's farm. Then he worked for in Ridgeway variously as a clerk in the general store, as a plumber's helper, in the flour and feed mill, painting and in the village bakery. In 1894 at age 19, he went to Buffalo and took a business banking course and returned to Ridgeway to work as an assistant bookkeeper in Cutler's general store. In 1895, he attended St. Catherine's Collegiate and a year later, Woodstock College, a boys' boarding school.

In 1898, he entered McMaster University and received a BA degree at the age of 28 in 1903. At the time he was not sure where he was going to go unless it was teaching. One of his professors gave him a pamphlet where he discovered the forestry profession. At the time the only schools were in the United States. In the autumn 1903, he attended Yale Graduate School. In the following spring. He visited George Creelman, president of the Ontario Agriculture College (OAC), and found out there was considerable interest in forestry.

During these times Zavitz became acquainted with a number of prominent individuals interested in forestry, among them Judson Clark, who graduated from Cornell College School under Bernhard Fernow. He also met Thomas Southworth, the Clerk of Forestry in the Bureau of Forestry, in the Department of Agriculture. Southworth had been reporting on forestry issues since 1896 in his annual reports. He was advised to spend his second graduate year at University of Michigan with Dean Roth. There he saw that forest conditions and problems were much the same as in Ontario.

So it's the spring of 1905. He's 31 years old, and he graduated from Michigan with the Master of Science of Forestry. In May of that year, he was appointed lecturer in forestry at the Ontario Agriculture College in Guelph. His duties were:

- to give lectures in forestry,
- develop nurseries to supply trees for reforestation,
- attend Farmers Institutes and
- begin a survey of the larger wastelands of southern Ontario.

In his first report to OAC Zavitz described the state and condition of the woodlots and plantation on the OAC property as well as the nursery he started in 1904. See the Appendix for a description of the forests at OAC.. The first nursery behind MacDonald Hall off College Avenue was only two acres and was filled to capacity. He was able to get land on the Homewood property in the north end of Guelph. It was sandier soil and better for growing conifers. At first seedlings the pine were imported from the United States and had been previously imported from a German nursery.

Two plantations of white pine were planted in southern Ontario. The first plantation was made on a farm just north of Bowmanville, on the land of his grandfather Edmund Prout. And the second was made on the property of Nelson Monteith in Perth County the following year. That same year he married in late 1905 to Jessie Dryden whose father John Dryden was the Minister of Agriculture in from 1890 to 1904.

Zavitz reported the improvement work was done in all the College woodlots. Trees were pruned. Norway spruce was planted around the woodlot perimeter. Part of the Dairy bush was cleared (probably as a result of poor survival from Brown's planting effort) and planted with white pine. Woodlots were fenced. He also promoted leaving a small portion of woodlots for shade for cattle.

While at the OAC, he was called numerous times to Toronto by the Department of Lands, Forests, and Mines to make trip of inspection or reports on forestry matters. This included various national conference and tours to Northern Ontario.

By 1908 the nursery at OAC was limited by lack of suitable space. During his tour in southern Ontario to document the wastelands he became aware of the blowsand areas in Norfolk County. He received letters from persons in Norfolk concerned with the situation there.

He found suitable farms to establish a nursery and develop plantations to control the blowsands. However he had to convince the Minister, of Lands and Forests Frank Cochrane – a doubting Thomas. Finally a tour with the Minister convinced him of the need and within days Zavitz obtained the money to buy the first property and many others to follow.

In 1909 he moved the nursery to St. Williams in Norfolk County on recently acquired blow sands areas. This was Ontario's first Forestry Station. He convinced his two main staff at OAC, George Lane and

Scotty Tedford to leave the relative luxury of Guelph and move to the wasteland area of St. Williams, to run the nursery and reforestation efforts. In the autumn of 1912 forestry operations were transferred to the Department of Lands, Forests and Mines from Agriculture and with it a move to Toronto. He was concerned with the administration of the Norfolk Forestry Station, in charge of fire protection along the railways in Ontario. He also carried out various forest investigations and lectured on forestry the students at the OAC. There were over one million trees in the ground at the NFS for distribution to farmers.

In 1921, the Counties Reforestation Act was revived by the Drury government. The Act allowed Counties to purchase land and enter into agreements with the Province for the administration and development of such areas. The County of Simcoe was the first to enter the program



He was appointed the Provincial Forester and later Deputy Minister of Forestry in 1926. He went on to develop the Department programs, including forest surveys programs, an efficient forest fire fighting organization and extension of reforestation programs.

He retired in 1949 although he was given a consultancy for five years. He died December 30 1968 at age of 94. He is buried in Hillcrest Forestville Cemetery near the Turkey Point Forest.

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Victoria Woods - History and Management

In 1905 this area was mainly a pasture field, with young elms on the wet land and a few other scattered hardwood saplings on the higher land. Conifer trees were planted in the corners of the area where the land had been fully cleared. After planting, the livestock were kept out of the area and the patchy woodlot regenerated to the to the main hardwood stand now present.

From 1940 to 1960, small amounts of fuelwood were removed and some of the lower limbs on the conifer pruned.

In 1960 the Department of Land and Forests assumed management. Because of the Dutch Elm Disease, the merchantable elm were sold. The buyer paid \$950 on the stump for about 35,000 board feet of logs of all grades. In 1962 the crop trees in the conifer stands were pruned of the side limbs to 17 feet. In 1963 cottonwood, a species of poplar, was planted on the wettest areas where the elm was cut.

In 1972 a further cut will be made of mature maple, basswood, ash and cherry timber. Also, the conifer plantation will be thinned.

The site was described as gently rolling with soil of variable depth, averaging 18" of loam till over medium to fine sand in layers. Moisture regime as fresh (2).

Describe forest

Adapted from Lands and Forests document, Growth studies in Hardwood Woodlots. Ontario Archives.

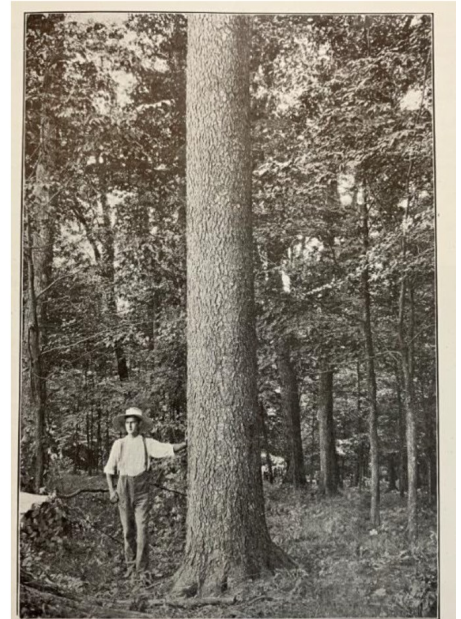


Fig. 2.

Black Cherry in the College woodlot with Ironwoods in the background.



Fig. 23.—Showing use of mattock in planting on rough ground with stiff turf.

Planting Zavitz pines. College Avenue in background.

The University of Guelph Arboretum

To trace the history of the land, one must look far past the official creation of The Arboretum, to the natural history of the land itself and the many occupants and users of the land over time. The Haudenosaunee, Anishinaabe and Attawandaron peoples lived on and cared for the land that now hosts The Arboretum, the University of Guelph and the City of Guelph. Through the 1792 Between the Lakes Purchase Treaty No. 3, the Mississaugas of the Credit ceded over 3,000,000 acres of land to the British Crown.

After the land was ceded, the British Crown divided the area into tracts and sold them to wealthy individuals for development. John Galt, a Scottish businessman, author, and superintendent of the Canada Company which was responsible for populating a part of Upper Canada Galt first began developing Guelph in 1827 to attract potential settlers.

A few years later, in the mid 1850s, William and Ellen Hamilton purchased a 400-acre tract of land in Guelph. The Hamilton family worked to clear much of the area and develop a farm on this plot. In 1910, the family sold the land to the nearby Ontario Agricultural College to use as a research farm.

The idea for an arboretum to be used as a place of learning, research and land restoration was part of the earliest beginnings of the Ontario Agricultural College. The OAC first proposed an arboretum on the front campus in 1882. The Ontario Fruit Growers and a Philadelphia landscaping firm began developing the on-campus tree and shrub collections. A plan for a small Arboretum in 1938 never came to fruition due to a lack of funding for the project.

Over the next several decades, the notion of an arboretum lingered in the minds of O.A.C. professors. Many instructors believed that there was an opportunity in the Botany, Horticulture, and Landscape Architecture curricula that could be filled by an arboretum. Several proposals for an arboretum were submitted during this time but were postponed or rejected due to a lack of funding.

In 1963, the Arboretum Study Committee was formed by Professor R.J. Hilton. The Ontario Agricultural College was moving towards University status, and with the creation of the University of Guelph in 1964, it seemed like a good time to propose a new arboretum. In December 1970, the University of Guelph's Board of Governors approved the master plan for The Arboretum. After years of dreaming, The Arboretum was finally going to become a reality.

The O.A.C. Centennial Arboretum Centre was opened in 1974 to mark the 100th anniversary of the Ontario Agricultural College. Staying true to the vision of The Arboretum, Architect Raymond Moriyama designed The Arboretum Centre to blend



into its surroundings to allow visitors' attention to be drawn to nature. Yet this building is constantly full of activity because it is the administrative headquarters of The Arboretum. This building holds Arboretum staff offices, a large auditorium, meeting rooms, a private garden nook and much more.



The first collection plantings took place in May 1971. A small group of employees using only a tractor and a crew-cab truck planted a collection of maple trees on the grounds. These trees mark the first official collection of The Arboretum.

- The Arboretum, 1977

During the next several years, The Arboretum slowly began to take shape. Arboretum employees and volunteers worked tirelessly to transform the farmland with trees and plants, establishing the beginnings of the gardens and collections. Trail systems were developed to encourage visitors to explore the grounds. The Arboretum's infrastructure was developed and the O.A.C. Centennial Arboretum Centre (1974), the J.C. Taylor Nature Centre (1978) and the R.J. Hilton Centre (1988) were opened.

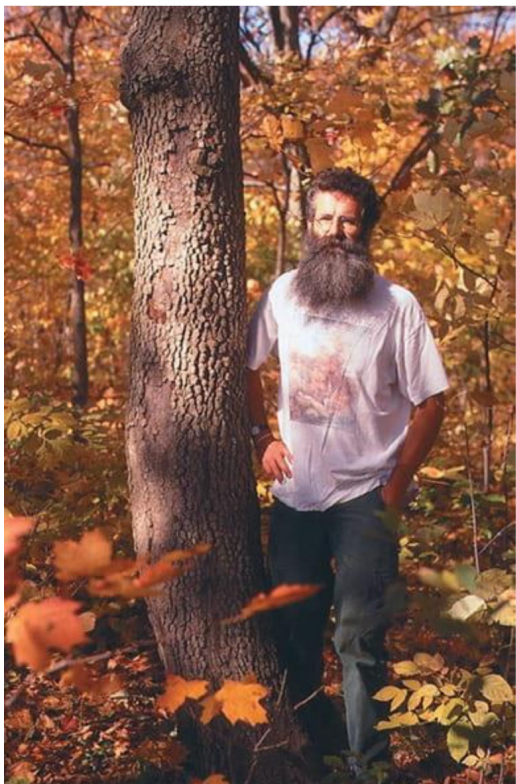


Over the past half-century, The Arboretum has grown in reputation as a place to learn about, research, and protect the natural environment. The Arboretum's various conservation, education, and research programs have allowed both the public and the academic community to engage with and learn about the natural world.

Aerial view of The Arboretum, 2004

<https://www.arbhistory.uoguelph.ca/>

Henry Hock



Henry Kock was one of the most influential employees in the history of The Arboretum. Henry was born in 1951 in Sarnia, Ontario and possessed a strong love for nature from a young age. He later moved to Guelph to pursue a degree in Horticulture at the University of Guelph. After completing his degree in 1977, Henry stayed connected to the university as an Interpretive Horticulturist at The Arboretum.

As an Interpretive Horticulturist, Henry was responsible for maintaining and developing The Arboretum's plant collections. This meant that Henry grew plants from seeds, cared for them in the nursery for 6 to 10 years, and later planted them in The Arboretum. He also designed many of The Arboretum's collections. The expert care and knowledge that Henry provided ensured that many plants, trees, and collections became well-established parts of The Arboretum today.

Henry's passion for the environment and conservation spurred him to initiate the Elm Recovery Project in 1998. This project was designed to promote and aid in the recovery of the white (American) elm (*Ulmus americana*) population after it was decimated by Dutch elm disease. This project received a large

amount of attention because of its success and use of citizen science. Henry later won the Governor General Award for Forest Stewardship (1998), the Forest Stewardship in Canada Award (1999), and the Bonnie McCallum Environmental Award (2003) for his hard work and dedication to White Elm conservation.

Alongside his work at The Arboretum, Henry co-founded Hillside Festival, an annual arts festival held in Guelph, Ontario. He was the site manager and planted many trees on the island that Hillside Festival is held, ensuring the restoration of the ecosystem and shade for future festival-goers.

After being diagnosed with brain cancer in 2004, Henry passed away in 2005 at the young age of 53. His legacy lives on in The Arboretum in a variety of ways. For instance, the Henry Kock Tree Recovery Endowment was gifted to The Arboretum to continue Henry's work on the Elm Recovery Project. A new greenhouse was also dedicated to Henry, bearing the name of the Henry Kock Propagation Centre.

<https://www.arbhistory.uoguelph.ca/>

Appendix. Zavitz 1905 annual report on OAC Woodlots, Plantations and the Tree Nursery

College Woodlots.

There are four woodlots on the College property, only one of which is near normal condition. The other three are in a very bad state, owing to pasturage and lack of protection. In these woodlots there is practically no reproduction, and the stand is composed of over-mature and defective trees with considerable undergrowth of iron wood. Sugar maple, cherry, basswood, rock elm, and soft elm compose the greater part of the stand in these woods.

The fourth woodlot, which lies at the northern end of the farm, is in better condition than the others (*Victoria Woods*). The soil has a good cover of leaf litter and vegetable mould upon it, and reproduction will take care of itself wherever allowed to enter. This stand is composed of soft elm, soft maple, white cedar or arbor vitae, yellow birch, hemlock, white pine, balsam fir, beech, sugar maple, and cherry. Improvement work is being done in these woodlots along practical lines. Spruce hedges are being placed about the boundaries, to give protection from winds, thus approaching more nearly forest conditions. Such conditions are very hard to obtain in hardwood areas of such small extent as the average woodlot. It is hoped by this border protection to obtain good tree growth over the entire area, whereas the usual woodlot has its borders full of grass and is in very poor condition for reproduction. A very large percentage of the trees in these woodlots are defective or overmature. These trees are being gradually removed and will be utilized as firewood and lumber by the other departments at the College.

College Plantations.

There are four plantations and a few clumps of trees, which were planted about twenty-five years ago. The nursery stock used in making these plantations was to a large extent composed of exotic species, and are of value in showing their adaptability to this climate and location.

A small plantation of Black Walnut, made in 1880, has acquired a height growth of about twenty-five feet and a diameter growth of about six inches. (*located where the stadium is now*) This plantation illustrates the mistake of planting black walnut in pure stands, without the protection of more densely foliated trees. It is subject to winds and so much light reaches the soil that grass has taken full possession.

In 1887, a plantation of European Larch was made to hide an old gravel pit from public view. These trees were planted in coarse gravel containing very little mineral soil and a spot which would be of small value for field crops.

In 1887, a plantation of mixed hardwood, (*Brown's Woods*) with a border of conifers, was made to hide another gravel pit. The coniferous border is composed of Norway Spruce, larch, and Austrian pine, the greatest part being of Norway Spruce. In connection with the above plantations, it might be well to mention one made about the same time and located on the brow of the hill to the southwest

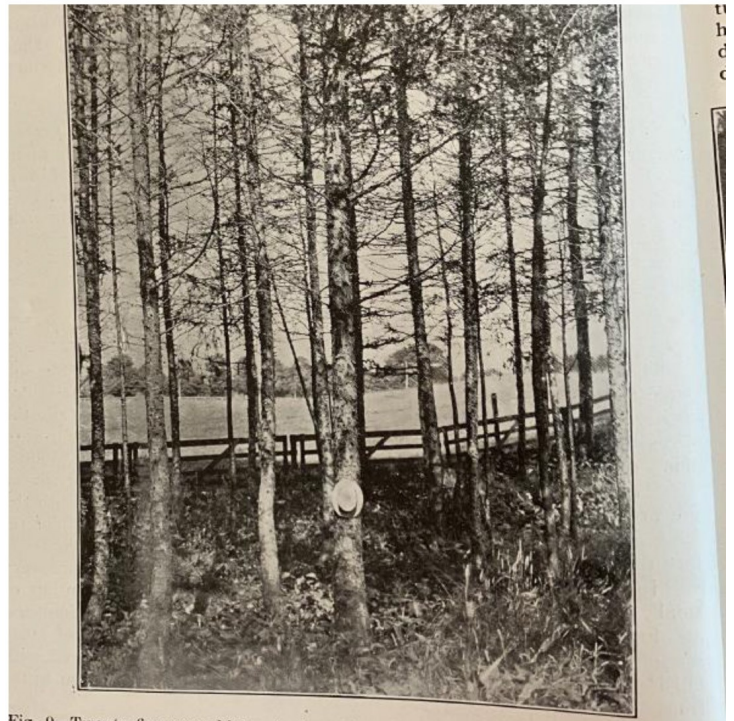


Fig. 9—Twenty-five year old Larch plantation, covering the site of an old gravel pit.

of the College buildings (*Dairy Bush*). I mention these as a whole, because they are of about the same age, and are chiefly composed of exotic species. These two plantations are composed of the following species : Norway spruce, scotch pine, Austrian pine. European larch, Norway maple, sycamore maple, sugar maple, Scotch elm, English oak, burr oak, catalpa, black cherry, European ash, black walnut and butternut .

These plantations cannot be considered of great value from the standpoint of wood production. Wide planting has given low scrubby trees and exotic species are in most cases inferior to our native trees. However, these plantations are of value from the experimental and educational standpoint.

The only exotic species that seem to rank with our native trees, in general development, on this site, which is for the most part gravel formation, are Norway spruce, European larch, and perhaps Scotch pine. This last species would probably have made better growth if closer planting had been followed. The larch has thus far made the best growth, and it is to be hoped that the enemies of the saw-fly will soon end its destructive work. Of the exotic broad-leaved species, none have shown results that would make them preferable to our native hardwoods. However, these conclusions are only for this soil and location and would not warrant a final opinion.

A clump of trees composed of American or soft elm and ash-leaved maple was planted about 1882 in a low lying part of one of the fields and is worthy of mention (*Wild Goose Woods*). They have made a splendid growth of from thirty to thirty-five feet in height and afford good shelter for the stock. This past summer the surrounding field has been pastured, and during the hottest part of the day the cattle invariably- sought the shade of the clump. Such planting made on dairy farms and in permanent pastures would undoubtedly pay for time and space given them.

College Nursery.

In the spring of 1904, a Forest Nursery was established at the College on ground north of the Macdonald Buildings. This land was underdrained and nursery plots and beds at once commenced. The soil of this



vicinity was not suitable for coniferous nursery work, but the location was used until a more suitable situation could be found. This spring extensive seed beds were made for white pine, white ash, locust, red oak, hickory, elm, and black cherry. There is in the nursery at present, one year old seedlings, about seventy-five thousand white pine, fifty-thousand soft or American elm, ten thousand white ash, six thousand red oak, ten thousand black locust, twenty thousand white wood, ten thousand red maple, and five thousand of species as black cherry, shag-bark hickory, white maple, and English elm.

Of two year old material, there is about eight thousand transplants of white ash, eight thousand transplants of soft elm, two thousand seedlings of Norway spruce, and five thousand seedlings of European larch. Besides the above, there is a mixture composed of three hundred white pine five years old, four thousand Norway spruce five year old, and other species in nursery lines, which are to be used in experimental and

decorative work on the College property. This ground is suitable for hardwoods, but we have lost many white pine seedlings through a "damping off" fungus, which is usually more troublesome on heavy soils. Another nursery site has been secured on the Holmwood* (*sic*) property, northwest of the city of Guelph. This location is within easy access of the city and College. It is also well protected from northerly winds by a slight ridge, has a soil of sandy loam, with a sandy subsoil, and is on the bank of a small stream, which ensures a water supply.



* Homewood Health Centre is one of Canada's foremost mental health treatment facilities. It is located in a 50 acre setting along the Speed River.

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Zavitz, E. J. 1905 report to Ontario Agriculture College

All old photos are attributed to E. J. Zavitz but obtained from various sources.

Frederick Stone, William Brown, and the beginnings of forest conservation

Dr. D.W.Larson, Emeritus Professor, Department of Integrative Biology, University of Guelph

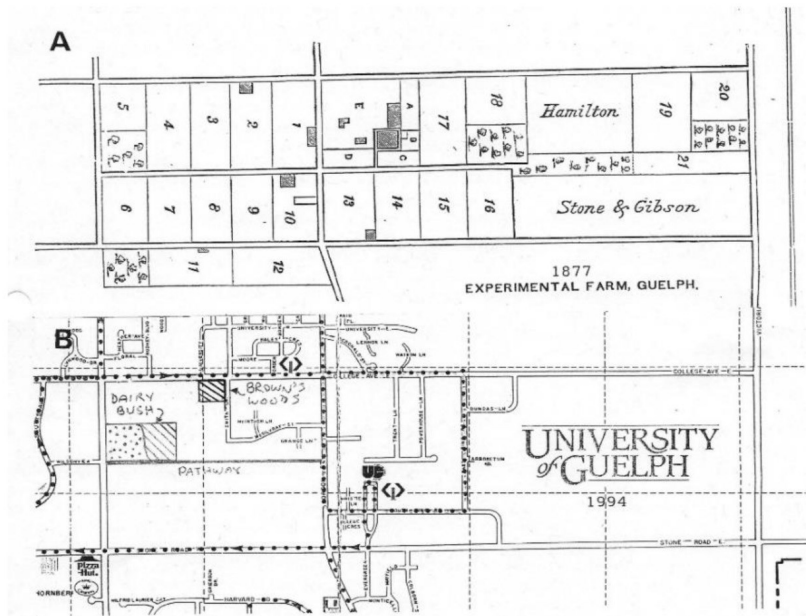
Well I guess we have to start with Frederick Stone. Because it was *his* farm that in 1874 was finally sold to the Ontario Government to allow the building of the Ontario College of Agriculture. Discussions and negotiations and battles had been going on for years in Toronto over the need to establish a scientific basis for agriculture. Various locations were considered close to the University of Toronto but for one reason or another, they were all rejected. Alex Ross's book *'The College on the Hill'* tells the story more completely than anyone else, but from an ecological point of view only one thing needs to be said.

Frederick Stone, like most other landowners, farmers and entrepreneurs of the time viewed land as a commodity to be exploited: either exploited to produce crops of plants and animals, or exploited as an asset to be bought and sold. Real Estate!! Stone had amassed a large collection of land holdings and when he had finally agreed to sell the main block of land in 1873- some roughly 600 acres - it was for \$40,000. This was an absolute fortune at the time. The land had been cleared of original forest with only one or two small stands of trees remaining. One of these stands was on the eastern edge of the property along Victoria Road and it can now be seen as the densely forested part of the *new* Arboretum called Victoria Woods, and the other part was a small 18 acre parcel (now known as the Dairy Bush) on the western edge of the property.



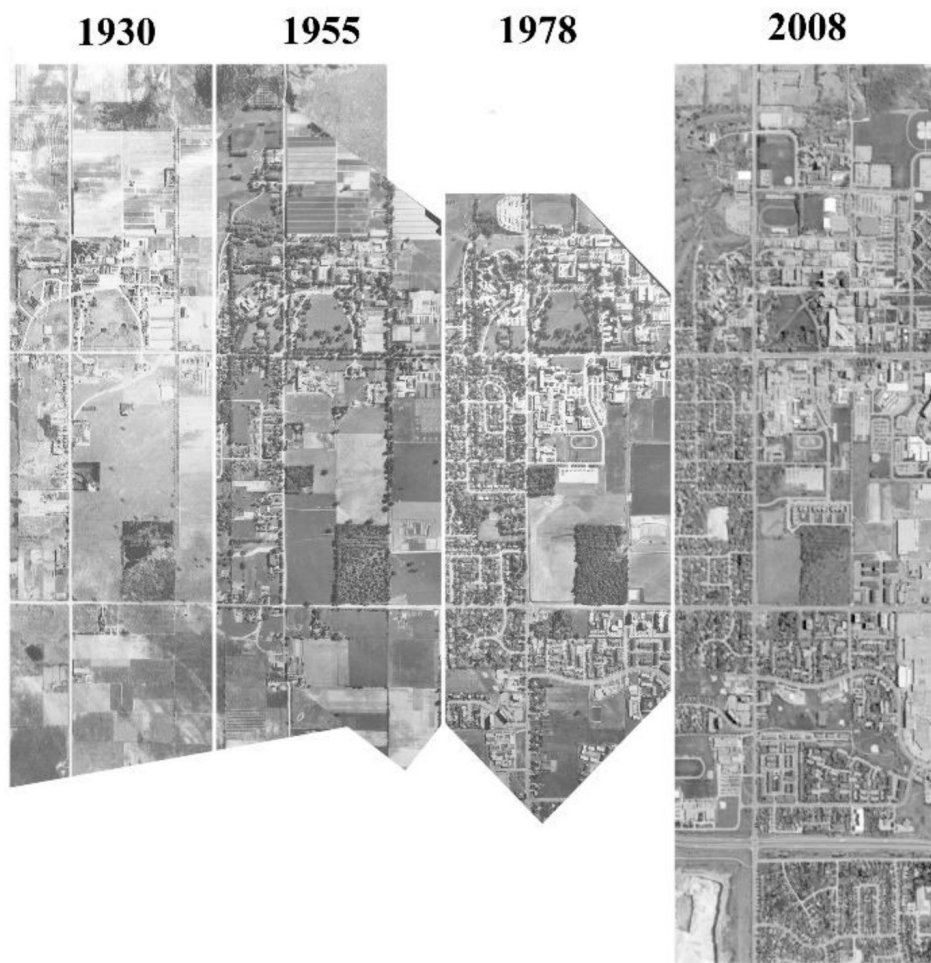
About
10% of
the maple

trees in the Dairy Bush are original growth with the oldest tree so far discovered estimated at 335 years and dating to 1687 (see graph and photo at the end of the text). The illustration below includes the only historical aerial photographs that exist showing the development of the Dairy Bush - or rather its constancy in the landscape - while the rest of 'southern Ontario' grows like an industrial/residential infection around it.



A: map of the college grounds in 1874. Building sites shown as squares, forests as sketched trees. The largest building is where Johnson Hall is now.

B: 1994 map of college grounds showing location of Brown's Woods and the Dairy Bush



Land clearing in southern Ontario has traditionally been viewed as *normal*. When Canada was first settled heavily by Europeans following the war of 1812, the extent of wilderness was almost complete. While farming by indigenous peoples had cleared some land in southern Ontario, the extent of tree canopy removal (to provide light and fertile soils for their crops) was vastly, vastly less than the canopy removal that was perpetrated by Europeans. Larson *et al.* (1999) shows that indigenous farming had probably removed 10% of the canopy in southern Ontario before contact with Europeans

about 1600. Contrast this with 50% of the original forest cover removed by 1880 and over 99% removed by 1987.

[citation: Larson, B.M., Riley, J.L., Snell, E.A., and Godschalk, H.G. 1999. *The Woodland Heritage of Southern Ontario*. Don Mills: Federation of Ontario Naturalists.]

For colonists from Europe natural undisturbed forests were unknown and dangerous. Two thousand years of agricultural and industrial 'development' had removed the forest cover of most of Europe and Great Britain by 500 A.D. so natural, self-sustaining forests were rare. The danger came from three sources: 1. forests were the habitats of wild animals that would *eat* your babies. 2. forests were the homes of scary pagan indigenous people and 3. forests sat upon land that could be used to grow food *for your babies* provided they were not eaten or killed first by the Indians or the wild animals. In other words, Europeans had absolutely no idea that forests were good and that they should be protected as important features of the landscape. They did not know the history of Prussia. They did not know that Frederick the Great had rescued Prussian farmers from starvation by extensive planting of forests on cleared land that had been drained of nutrients and then eroded because of the lack of forest cover. Most had never seen real forests and most had no idea that forests support agriculture by retaining moisture and nutrients in the landscape, by resisting the erosion of land, and by the buffering of climatic extremes.

So they burned, dynamited, ripped, hauled, cut, chopped, and assaulted the majestic forests of southern Ontario anyway they could in order to decrease the perceived risks and increase short-term

profits from the land. And Frederick Stone was no different. His land was cleared well after Guelph was founded in 1827, but by 1840 the land he owned was laid bare and stripped of its vitality except for two small parcels retained for fuel wood production. Photographs of our landscape taken in the late 1880's, and included in E.J. Zavitz' 1961 booklet reflect how bleak the altered environment was.

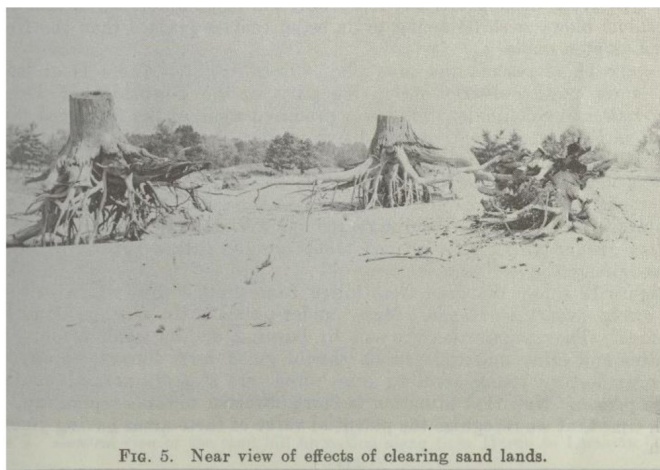


FIG. 5. Near view of effects of clearing sand lands.

[citation: Zavitz, E.J. 1961. Fifty years of reforestation in Ontario. Ontario Department of Lands and Forests.Toronto.]

To his credit, Frederick Stone tried to experiment with improvements in agricultural practice that would have the effect of reducing runoff and nutrient loss, reduce drought conditions and increase yields. But the calculation was always short term. So when the opportunity came to sell a large portion of his land holdings to the Ontario

Government, Stone jumped at it. Well perhaps jump is an exaggeration since the Province immediately began to quibble and argue and mess the deal up. In fact, at one point Stone was ready to sue the Government for breach of contract but eventually the entire deal went through and the Ontario government had its *land* for the Ontario School of Agriculture and Experimental Farm. *But no people.*

But a committee had already been formed and a Principal selected by 1874. There was great flux and confusion in leadership caused by illness and mediocrity but by 1874 William Johnston was in charge and a Scotsman by the name of William Brown was chosen as the first Professor of Agriculture and farm superintendent. Brown was a big man with a big appetite for scotch, owned a big buggy and had big ideas about what was wrong with Upper Canada. And he was right!! His father James Brown - no, not *that* James Brown - had written the first comprehensive and scientific account of the methods of forestry in 1847 (*The Forester* - a book that went through many editions even after Brown's death).

Brown the elder, along with son William had been responsible for the planting and reforestation of vast acreages in Scotland. Some 21 million trees were planted under their care. And this planting was done to service their shared underlying belief and hypothesis: that agricultural productivity could only be sustained at high levels if forests were part - and a large part - of the landscape. Forests were NOT the enemy. They provided goods and services that land needed if agriculture was to be carried out. Brown the elder had observed that the decline in the productivity of the land of Great Britain was reduced following land clearing by the Romans and that it stayed low unless forests were replanted. He knew well the work done by Frederick the Great in Prussia, and during the early to mid 1800's he and son William were trying to get Scotland to recognize its mistake and repair its landscape.

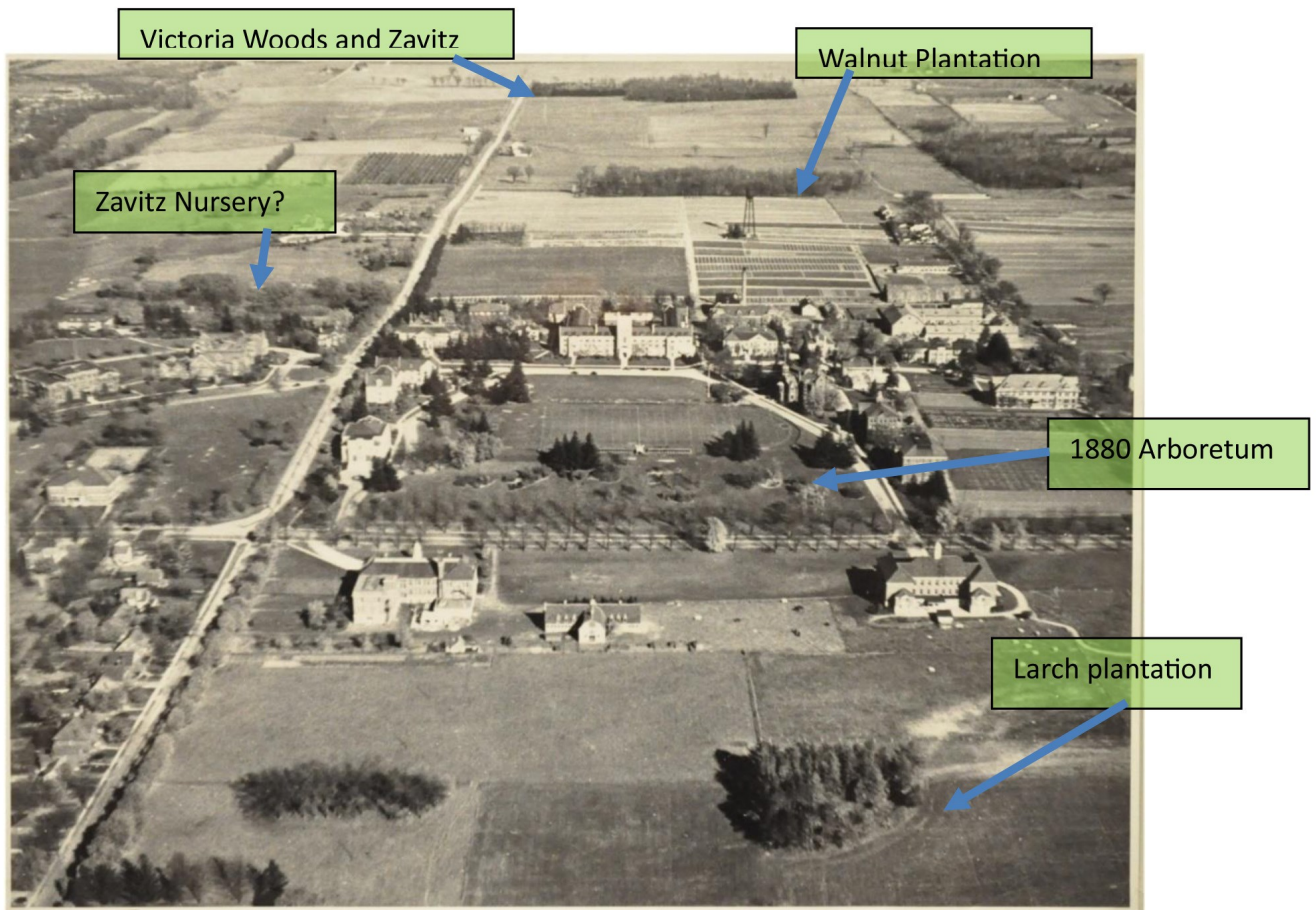


So when the 39 year old Brown arrived in Canada he saw a landscape being destroyed by clearcutting and land clearing using the same antiquated techniques that had undercut agricultural productivity in the U.K. And he wanted to stop it. While preoccupied with getting the "Farm" side of the "School" up and running, Brown must have been organizing teams to students to get ready for a series of large scale tree plantings on the campus. By 1880 only 5 seasons into the new school, and with the first graduating class already a year old, Brown initiated a series of single-species tree plantations, at least one multiple species plantation and lastly a formal 'arboretum' in the main area in front of the main school buildings to be used for teaching and research. In this arboretum was planted a wide variety of native and exotic hardwood and evergreen trees that had been grown by him in the college nursery north of College Avenue. The trees

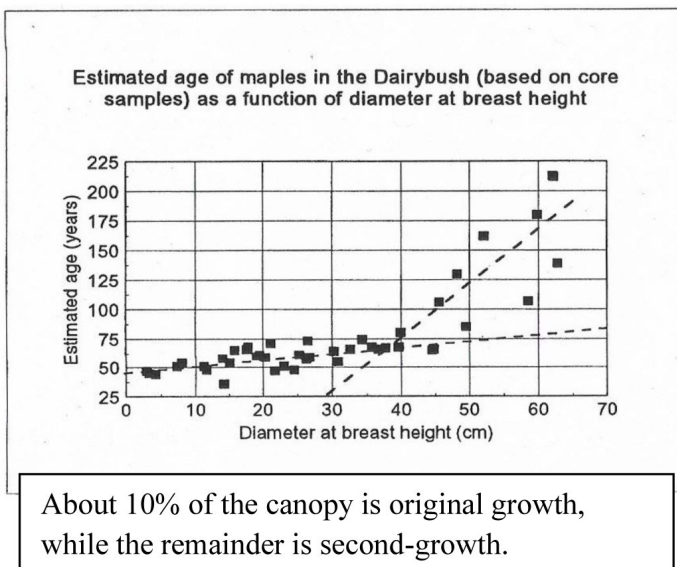
were about 5 years old when planted so it is clear that one of Brown's first missions when he hit the ground in Guelph was to start growing trees for shortsighted North Americans.

And plant trees he did. Black Walnut, butternut, hickory, sweet chestnut, European larch, English ash, birch, linden, elm, white ash, white spruce and of course, Norway spruce. As recently as 1954 you can see in some of the aerial photographs of the Guelph Campus, the thriving plantations put in by Brown and his students between 1879 and 1890. He always had fights with the then President Mills and he was eventually fired for insubordination in 1890. He died penniless in Australia in 1903. But his work lives on. All of the plantations shown in the above illustration are now gone: the big walnut plantation was removed when the stadium was built. The original Austrian pine and European larch plantation was destroyed in 2005 when an addition was placed on the veterinary science building. Luckily one of the remaining plantations bears his name: Brown's woods. It represents the oldest surviving experimental forest plantation in North America, and I wrote a research paper about the site in 1996. (<https://doi.org/10.1111/j.1526-100X.1996.tb00102.x>)

The naming of Brown's Woods in 1995 has saved it permanently from 'conversion' to a building site. Also, the Dairy Bush was a natural old-growth forest that was added to in 1893 by Brown's successor James Forsythe. Forsythe used the same broad array of both native and European species in the plantation. The dominant trees now in the plantation side of the Dairy Bush are sugar maple, white ash, and black walnut. Under the guidance of Forsythe and subsequent head Groundskeepers including the current head of grounds John Reinhart, it remains as the second oldest experimental forest plantation on the continent.



Aerial view of the east campus about 1940. Several of Brown's plantations are visible. In the foreground to the right is the larch plantation. To the left front is Brown's Woods. Towards the top of the photo is what is now called Victoria Woods. The walnut plantation is below that - now the site of the sports fields. The nursery for trees is north of College Ave on land that is now the Cutten Club. The original arboretum is in the centre of the frame.



48 cm cross section of sugar maple felled during windstorm May 2022. Estimated age: 335 years.

Arkell Springs – City of Guelph. An early example of reforestation to protect a municipal water supply.

Martin Neumann

Guelph is the largest community in Canada to be almost entirely groundwater reliant. Arkell Springs is the source of 60 – 70% of that water, and also hosts the largest forest owned by the City of Guelph – although not in Guelph (Welcome to Puslinch Township!). The various properties were acquired over the past century and returned to forest in an ongoing, century-long project. Perhaps not surprisingly, E. J. Zavitz got the reforestation ball rolling, and it is thought that his plantings at Arkell Springs constitute the earliest Canadian reforestation project undertaken principally to protect a municipal water source. The groundwater wealth around Arkell owes much to glacial deposits, described in this excerpt from the current forest management plan. *The landscape in the area is dominated by glacial influences, primarily gravelly glacial deposits associated with the Horseshoe Moraine and some nearby drumlins associated with the Guelph Drumlin Field to the north, and the glacial spillway valley (now occupied by the Eramosa River) that cut down through the till. Kettle lakes and depressions are common within the moraine area and the more level areas are fertile till soils that are still in, or recently abandoned from, agriculture. The City of Guelph properties contain examples of all these features.*

Like other cities or towns in southern Ontario, Guelph's origin story is built on tree removal. The best-known tree removal in Guelph is the large maple ceremonially felled to represent the founding of Guelph. John Galt, agent for the Canada Company, took the first couple of swings with the axe for the “photo op” moment and the historical credit, and then stepped aside for the designated woodsmen to finish the job. The date was April 23, 1827 – missing Earth Day by just one day. John Galt's own thoughts about the moment could be mistaken for a present-day Earth Day piece.

“To me at least the moment was impressive, and the silence of the woods that echoed to the sound was as the sigh of the solemn genius of the wilderness departing forever ... The tree fell with a crash of accumulated thunder, as if ancient nature were alarmed at the entrance of social man into her innocent solitudes with his sorrows, his follies, and his crimes. I do not suppose that the solemnity of the occasion was unfelt by the others, for I noticed that after the tree fell, there was a funereal pause as when the coffin is lowered in the grave.”

Not only do the words now seem prescient, but also it's surprising that he had the energy to articulate such insights, considering that on that same day he had walked well over twenty kilometers through the forest, and possibly a few extra kilometers when his group got lost in the woods. Serendipitously, he stumbled upon one Mr. Rife, practically the only settler between Galt (now Cambridge) and soon-to-be Guelph, and he helped John Galt find his way.

That felled maple tree was just the beginning: countless trees were felled thereafter, as first a trickle, and then a wave of European settlers swept in and carved farms and towns from the mostly continuous forest cover. So much so, that by the turn of the century, the negative effects of forest clearing were becoming evident and alarming, sowing the seeds of transformed perspectives. Forest cover by then may have reached its local low point, thought to be around 5%.

Of course, removing trees for settlements and fields was nothing new to the area. The agrarian Attiwonderonk (Neutrals), whose territories coincide closely with what is now commonly known as the Carolinian Forest, managed the landscape for their benefit until their violent dispersal around 1650. The largest indigenous village site yet studied by archaeologists in Ontario is just 5 km south of Arkell Springs, and is known as the Ivan Elliot site, near Badenoch. It was thought to house as many as 4,000 people. Villages were necessarily moved every ten to fifteen years as wood, soil, and wildlife became depleted, creating a patchwork of forests in various stages of succession.

The long-standing neutrality of the Attiwonderonk in hostilities between the Huron-Wendat to the north and the Five (now Six) Nations Iroquois Confederacy to the south failed to protect them from the latter in what became known as the Beaver Wars. Those Attiwonderonk who survived either fled or were assimilated. Famine, disease, and conflict had already brought them from an estimated population of 40,000 to 12,000. Consequently, the region was rapidly depopulating in the first half of the 17th century, and the catastrophic outcome of war suddenly reduced the established agricultural settlements and corn-bean-squash-sunflower fields to a much lighter presence on the landscape.

For that reason, when John Galt turned up some 175 years later, it's reasonable to imagine that indigenous village and field sites had regrown for long enough to look like primordial forest to the eyes of European settlers. Indigenous peoples frequented the area for hunting, and game was reportedly plentiful. As settlers became more numerous, the newcomers and pre-existing inhabitants developed reciprocal economies, with settlers trading potatoes, bread and milk for venison and fish. At this point, the Mississaugas of the Credit seemed to be the indigenous people most frequently using the forests between settlers' clearings.

The darkness of the forest so oppressed the collective settler psyche that John Galt set upon a scheme to make Guelph more enticing to would-be settlers: he cleared an extra-wide 40-meter swath for 11 kilometers to create a grand glade-like entry on the (only) road into town. It is said that this entrance to town rivalled Niagara Falls as a tourist attraction for a time, which, frankly, beggars the imagination, but it does give a sense of how much they appreciated a big gash in the otherwise (mostly) continuous forest cover.

By 1900, some provincial leaders were beginning to realize the need to counter the evident and growing damage caused by unfettered deforestation, such as desertification and stream flow extremes. The idea of planting trees began to grow, even as hinterland areas were still being cleared. In Guelph, leaders were getting serious about establishing a communal water source to eventually replace the collection of private wells. They found what they sought near Arkell, and purchased 98 hectares of land around the springs in 1908 (not all of these hectares were at the main tract that is the focus of this story). Once the clean spring water was piped to Guelph, it immediately showed benefits, including increased fire-fighting capacity and, according to Dr. H.O. Howitt, medical officer of health, an end to typhoid mortality.

E. J. Zavitz was then a forestry lecturer at nearby Ontario Agricultural College, and he began a multi-year reforestation effort for the protection of Arkell Springs. In 1910, 275,000 trees were planted, of Scots pine, white pine, white spruce, and tamarack. This was followed by 13 years of replanting 5,000 – 10,000 annually, and then 4 years of expansion plantings of 15,000 annually. That was the beginning of big

things for Arkell Springs and one of the early projects leading to big things for Zavitz [*more about Zavitz at The Arboretum stop*]. These are the trees that tower over the service road that begins our bus tour loop through this important groundwater-protecting forest.



The initial Zavitz push of reforestation was followed by an expansion push in the 1960s and 70s, after an additional 227 hectares was acquired in 1962. Today's total of City-owned land at the main tract of Arkell Springs is approximately 292 hectares. There are additional City-owned, Water Services-managed lands not covered by this story. These plantings were mostly undertaken by the Grand River Conservation Authority (GRCA), with technical support from Department of Lands and Forests. At least 332,000 trees were planted, with species selection from the familiar palette offered by provincial nurseries, similar to the initial species list, but adding a few, such as white cedar and black

walnut, and most notably, large numbers of red pine.

The City of Guelph pressed the GRCA to acquire additional lands to further buffer and protect the core Arkell Springs landholding. These properties are known as Starkey Hill (81 ha) on the south side of the complex, across Arkell Road, and to the north across the Eramosa River, the Smith Property (156 ha). The reasoning for the GRCA to acquire these lands, instead of the City, may have been a favourable financial incentive, as the province would cost-share 50-50 on eligible land acquisition by conservation authorities. The properties were acquired in 1971/72, and in the early years of ownership, GRCA reforested 43 hectares at Starkey, and 78 hectares at Smith.

Between 1995 and 2003, another big push saw about 180,000 trees planted by GRCA on the main tract of Arkell Springs. This initiative was mainly intended to eliminate the residual tenant farming. This was a turning point of sorts in the history of Arkell Springs, as it seems that the management style became more open to community engagement in several ways.

The property complex had been viewed as a well field with some trees, and trespassing was forbidden as a necessary groundwater protection tactic. The reforestation of the last cultivated fields on City property probably fed into the increased recreational access pressure. Between that pressure and a need to undertake a first forest management plan, a new era seemed to emerge: a community forest coexisting with the well field within it. Of course, Water Services, the land manager, continues to put water security

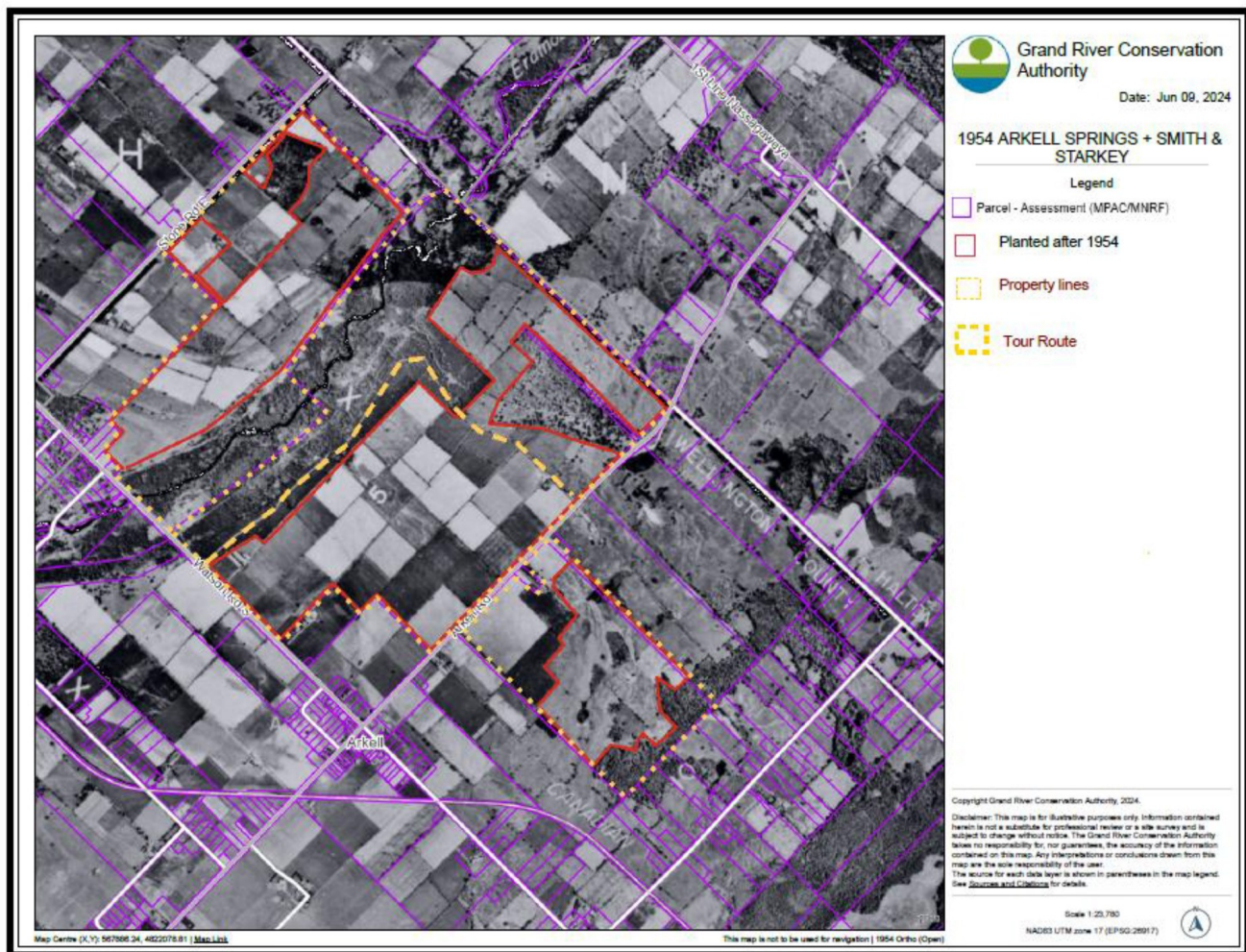
as the top priority, and rightly so. They must balance the risks and rewards, and in that context, decide how to handle recreation and forest management activities.

Both Starkey and Smith properties quickly became very popular for their walking paths of about 4 kilometers each. But the forbidden fruit behind the City's No Trespassing signs called out to some. Perhaps the percussive reports from the on-site City police firing range made the prospect even more alluring. Today, there are marked trails on the City land for the use of Guelph Hiking Trail Club members, and Guelph Off Road Biking Association trails for use by their members. About 10 kilometers of recognized trails now exist on the City lands, plus the extensive and separate service road system. The recognized (permitted) trails are laid out to avoid key operational areas of the well field.

The first forest management plan was produced by Williams and Associates (Pete Williams, RPF), in 2002. The renewal plan (2023 – 2042) was completed by Silv-Econ (Dave Puttock, RPF). Implementation of these plans has been contracted out to Bartram Woodlands Ltd. One example of a more public-facing approach is the partnership that has seen high school students in the Community Environmental Leadership Program (CELP) planting trees each year at Arkell Springs, since 2008. The plantings are meant to offset the greenhouse gas emissions of the school bus used for their program. The trees are provided by the Green Legacy Program, Wellington County's tree nursery and educational program. The species are selected to diversify the species mix in existing plantations. These plantings are on-going, having planted more than 30,000.

Other ongoing forest management activities include routine plantation thinning, red pine pocket decline and white pine blister rust mitigation treatments, and control of invasives, mainly European buckthorn. Generally, pesticide use is not permitted on the City-owned lands at Arkell Springs, but after a thorough review, the City is currently allowing the use of Garlon on a trial basis for buckthorn control. Also on a trial basis for buckthorn control, they are using Lalcide Chondro, a fungal plant pathogen.

There's a lot going on at Arkell Springs, both historically and currently. The property is such a large block of mostly publicly accessible land with one of the largest local forests and provides most of Guelph's renowned water supply. Our tour format will allow us to barely scratch the surface of this fascinating site. Luckily, we expect to have some very knowledgeable people on the bus who would be happy to answer questions about Arkell Springs, specifically, and Guelph's municipal forestry more generally. Karen McKeown, currently City of Guelph Landscape and Yard Program Coordinator, was the project



coordinator for land stewardship at Arkell Springs for 12 years. Bartram Woodlands has been active on the property for over a quarter century, and has been the main agent for implementing the forest management plans. Timea Filer, RPF, Urban Forester, can answer questions about Guelph's urban forest management plan and its implementation; she has been involved with Arkell Springs on an advisory level.

Dave Beaton is Program Manager for Forestry, Horticulture, and Natural Areas, and can answer questions in any of those areas, or even Trails.

[A couple of bonus tidbits for survey nerds: Those with an interest in early land surveys may be interested to know that the first survey line in the region, known as the Jones Baseline, was surveyed by Augustus Jones in 1792. Around the same time, the boundary of the Haldimand Tract along the Grand River was surveyed. Those two early surveys mark the eastern and western boundaries, respectively, of Puslinch Township. Jones Baseline also demarcates the eastern boundary of the Arkell Springs complex. A 30-meter high triangulation tower was built on the highest point of Starkey Hill by the Geodetic Survey of Canada in 1911. This was part of the necessary groundwork for systematic topographic mapping of Canada.]

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Reforestation files, Grand River Conservation Authority head office

Personal Communications, Dave Bartram

The Crow Creek Settlement

By: George Tough

This story began as one of a series of narratives, for my children, about my life in the prospecting business. I wrote the tale some years ago about our encounter, as young teenagers, with the residents of Crow Creek, but so many questions remained in my mind about the settlement that I eventually decided that we must find out more. The result is this essay, which could not have been written without the aid of Bill Nakashoji and his wife Doris, and many others in the Kapuskasing-Opasatika area.

There are, of course, many other experiences related to the settlement which ought to be recorded for the public to see, and I hope they are. Already, too few people, even in the area, are even aware that it – and the expulsions that lay behind it – ever existed.

I hope that I have done justice to the story, and that you enjoy it. The responsibility for any errors (and one or two typos!) is mine.

* * * * *

I had a good friend in Swastika, named John Merrell. He and I often went on bush trips with our respective dads, who had been partners in a prospecting company in the late '40s and early '50s. Later, however, Dad joined Freeport Sulphur Co. as their Canadian exploration rep, and Larry joined the Brewis and White organisation.

During a December (stretched) weekend in 1952, John and I got a chance to go with Dad, Jack Newman, and a crew of diamond drillers from Kirkland Lake to a property south of Opasatika, which is west of Kapuskasing, in northern Ontario, Canada. Dad and the drillers would be setting up the drill machine, while John and I were to do some chaining (measuring) of the picket lines on the grid surrounding the drill sites.

We drove to Opasatika from Swastika, and stayed overnight at the Opasatika Hotel, which was really a beer parlour with a few guest rooms. It had two-storey privy-style toilets, and I can still smell them.

An early breakfast, and we were off at first light to the Crow Creek property. It was very slow going – the road was rough, and there was quite a bit of fresh snow. The truck broke down several times, the worst of which was the result of a broken rear spring. John and I marveled at the ability of the drillers to make on-the-spot repairs, but still it was getting dark by the time we got to the camp. It's a good thing we didn't have to set up a tent ourselves.

Our quarters were satisfactory, and we had lots of good food – one advantage of winter work is that you don't have to worry about fresh meat spoiling. And the job we had to do was not too taxing, even for us teenagers. So I think we were a bit disappointed to see the trip's end approaching.

On the last day, John and I asked Dad if we could walk back to Opasatika, instead of waiting for a ride, which we already knew would be slow and rough. Dad had arranged for rooms at the hotel, and we would all meet up there. While the weather was cloudy, it wasn't too cold, and we thought it would be a great adventure to undertake the trek.

Dad gave his permission, though he would probably have preferred that we wait and go out with him. He warned me that the weather could change at any time, and told us to stay on the road – no wandering around. After a late lunch, we packed up our gear for the truck to bring out, and started out the road. I seem to remember that we wore our snowshoes, since enough snow had fallen and blown onto the road that it was too hard to walk without them.

It was good going at first, and we made it more than halfway to the village in an hour and a half. Then it started to snow, gently at first, and then heavily, the snow in big wet flakes. The wind picked up till it seemed that the snow was coming almost horizontally at us, the way it appears when you're

(Continued on page 53)

(Continued from page 52)

driving a car in a storm. At times, we had to judge where the road was by feel as much as by sight. It gets dark early up there in December, and it was clear now that we were soon going to be walking in the dark, in the snowstorm.

We pressed on, pretty sure we were staying with the road, but nevertheless worried that we might stray from it, and mindful of the fact that going back to the camp was out of the question at that point.

A while longer, and walking more slowly now, and totally covered with snow, we noticed off to our right, lights coming from the windows of a row of single-storey houses, banked with snow, just east of the road. They were quite unlike the big farmhouses that lay along the road south from the village.



View of Crow Creek Settlement (Photo taken from the Settlement school)

whole lives. What *they* saw was less exotic but still a source of surprise: two strange, tall Caucasian teenagers covered – head to toe, the works – with wet snow, emerging from the middle of nowhere.

One man came forward, and welcomed us in English, and asked where we were headed on such a night. We told him where we had come from, and where we were going. When he reported this to those assembled, there was a lot of oohing and aahing. He told us we were quite close to Opasatika now, but that we could, if we wished, use their telephone to call a cab, to take us to the hotel. This sounded like a good idea. He offered us tea, but as I recall we declined, being a bit intimidated by the unusual scene we had stumbled into.



Woodcutters from Crow Creek Settlement

But our curiosity drove us to ask who they were and what they were doing there. The man told us that they were Japanese-Canadian families who had been moved away from the West Coast, after the outbreak of World War Two, and that the men were working in the forestry operations in the area.

We left shortly thereafter by taxi, and

(Continued on page 54)

(Continued from page 53)

soon welcomed a bit of a bath and a warm bed at the hotel. We have talked many times since our meeting in 1952, about why those families were still there, in such an isolated spot, seven years after the end of the War. We learned, of course, that their British Columbia businesses and properties had been confiscated, and that they were prohibited for years from returning, but it was still a mystery – maybe, we thought, they were saving their earnings from the pulp camps to go back eventually to B.C. and make a fresh start.

A year or so ago, John and I decided to try and get some answers to the questions that have been in our minds for some time, despite the passage of more than a half-century since our meeting at the camp, which we know now as “The Crow Creek Settlement”.

There is much material in books (both fiction and non-fiction) and on the Internet about the expulsion of Japanese-Canadians from the west Coast in the early 1940s. However, it deals primarily with either the big picture or the people in the western part of the compulsory movement. There is brief mention of the relocation centres (and the internment facility at Angler), in Ontario; and brief reference to the thousands ultimately moving on to employment and business opportunities in Ontario, but no specific references to the Crow Creek settlement.



Aerial Photograph 1947

The only hard piece of information we located in this initial phase was from a set of aerial photographs, which confirmed that the buildings were there in 1947, and gone by 1960. This was welcome confirmation that, at least, we weren't making it all up!

We were also able, through friends, to speak to Japanese-Canadians who had been in one or more of the camps following evacuation, but no one was aware of Crow Creek. Nor did we receive anything specific from the National Association of Japanese-Canadians, in spite of getting in touch with them.

It was becoming clear that, if we were to have any chance of learning about Crow Creek, we needed to find the right people, Japanese-Canadian or not, still living in the area.

And, sure enough, this led to our big breakthroughs. First, we were able to get from Ms. Julie Latimer at the Ron Morel Museum in Kapuskasing a copy of a letter that a Michi Ide had written to a student seeking information about the Crow Creek Settlement. Ms. Ide had been a teacher at the settlement, and her letter answered many of the questions we had, and raised other interesting questions requiring research. Unfortunately, Ms. Ide has passed away.

It seemed plausible from her letter that there might be other Japanese-Canadians still in the area, who had lived in the settlement. This prompted a search by John of the telephone directory for the northeast Ontario region, involving some 36,000 names. This yielded only two Japanese-seeming names – both Nakashoji. But, as it turned out, this was enough to produce our second, and biggest, breakthrough. It has allowed us to piece together, in microcosm, the story from beginning to end, and beyond, of the Crow Creek settlement.

And for this we are deeply indebted to Bill Nakashoji, for the information he (along with his wife Doris) was willing and able to provide, and the valuable local contacts he arranged – contacts like Alain Guindon, whose interest in local history and generosity in sharing it gave us valuable information and insights into the camp in its broader setting. And Bill and Alain led us to other sources, such as the 75th anniversary book published by the Municipality of Opasatika – a

(Continued on page 55)

(Continued from page 54)

magnificent tribute to the originating families of the area, and “recent arrivals” such as the Japanese-Canadians at Crow Creek.

The following is the story of Bill Nakashoji’s family’s experience, as he remembers it, and from what he was told by his parents and others: Bill is only 61 years old, and would not yet have been born when the expulsion process began. Alain’s information, Ms. Michi’s letter, notes from an earlier interview with Bill’s mother, and the municipality’s 75th anniversary book provided interesting and helpful supporting detail.

Bill’s father, Masaji (Joseph) Nakashoji married Chiyoko Yamada in 1941. He was a logger, and she was a household servant, in a town on the coast of British Columbia when the initial expulsion orders came from the government, under authority of the *War Measures Act*.



Bill Nakashoji at the Site of the Crow Creek Settlement

The family’s first move was to the Hastings Park “holding centre” in Vancouver, where thousands were assembled pending their distribution to “evacuation centres” in the interior of the province. Mrs Nakashoji tells what it was like:

We brought our personal belongings, but we didn’t have very much since we were newly married and just starting out. There were other Japanese people who had so much to lose – boats, houses, and businesses. The women and children were forced to stay at Hastings Park. I didn’t know where Joe had been sent and I spent most of the time worrying about him. There were guards and we weren’t allowed to go

anywhere without a pass. Later I found out that the government had sent the men to Slocan Valley and other locations in the Interior to build houses for their families. The wait was long and I was afraid.

Apart from what they could carry, the possessions and properties of those expelled were turned over to the Public Trustee, supposedly for safekeeping. These included hundreds of fishing boats and many acres of prime farmland in the Fraser Delta. However, these were all subsequently sold off under dubious circumstances, and the proceeds were, it was said, used to cover the cost of housing and feeding the evacuees!

In the spring of 1942, the family was reunited, and moved to an evacuation centre at Lemon Creek, a “ghost town” in the Slocan Valley. Although the first evacuees had to live in tents, the Nakashoji family was able to go into wooden buildings, some of which Bill’s father helped build.

This was their home until the war ended. When that time came, the people in the camps were given a choice: “return” to Japan (many of the people involved were Canadian-born; many others were Canadian citizens!); or move to locations in eastern Canada (returning to their homes on the Coast was not a permitted option).

Having decided to remain in Canada, the family was soon moved again, this time to a relocation centre at Neys (a former German prisoner-of-war camp), on Lake Superior west of Marathon, Ontario.

By now, the situation had changed enough that the Japanese-Canadians were much freer to make

(Continued on page 56)

(Continued from page 55)

decisions about where they would work and settle, as long as they remained east of the Rockies. With his experience in the forest industry, Bill's dad was naturally inclined to seek logging work, and he may have done so for a time near Pigeon River, Ontario, although it is unclear whether the family went there as well.

The big opportunity, however, came when recruiters from Spruce Falls Power and Paper Company, which operated a pulp mill at Kapuskasing, came to the Neys camp in the fall of 1946, seeking bush workers. Some twenty families accepted the company's offer. Bill's mother comments:

We were happy to go anywhere to get settled. It didn't matter that we'd never even heard of Kapuskasing. A large group of us [Japanese Canadians] were going together.

Some of the families were housed temporarily in a hotel in Hearst; others spent nearly a year at the Spruce Falls Camp 32, on the Opasatika River, some ten miles south of the village. Neither location was suitable for families (Camp 32, previously occupied by company bushworkers, was a group of



tarpaper shacks on stilts right on the shore of the river, which flooded every spring).

But the company provided schooling, at least at Camp 32, with Ms. Michi Ide as the teacher. And the company was building much better quarters for the newcomers, just south of Opasatika, in an area that had been settled in the 1920s by families coming from Quebec, reportedly under the auspices of the Catholic Church.

Thus began the settlement of Crow Creek in 1947: eleven dwellings housing two families each; and a primary school with Ms. Ide and Miss Foster (an Anglican missionary, who had accompanied the group from

Flood at Camp 32, Spring 1942

Lemon Creek) teaching the Ontario curriculum, in English. Nearby was a Catholic school and a small general store operated by Mr. Isabelle.

Two dug wells, privies, oil and wood stoves, and coal oil and Coleman lamps provided the household services to the inhabitants. There were two telephones in the camp, one of them in the Nakashoji house. There was a large playground and ball diamond – Hon. Rene Fontaine of Hearst remembers playing ball against the Japanese-Canadian boys from Crow Creek.

There were many good things about the settlement (if one sets aside the fact that its inhabitants were forced from their former homes in British Columbia!). The men had steady work and decent wages; the families were safe and warm, albeit somewhat crowded; the children had wonderful recreational opportunities, from baseball to fishing; and the relations with the area's francophone population were a pleasant surprise to the newcomers. There was a great deal of interaction between the



**Teachers at Crow Creek Settlement:
Miss Margaret Foster and Miss Michi
Ide**

(Continued on page 57)

(Continued from page 56)

local children and the Japanese-Canadian students – in fact, some local children attended the Crow Creek school, to help them learn English.

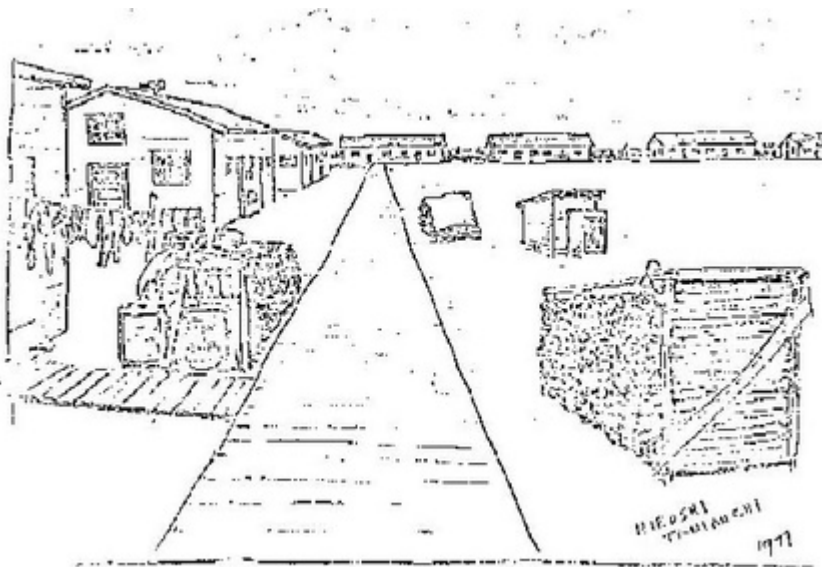
Over time, families began to leave the settlement. Joe and Chiyoko moved only as far as Kapuskasing (where they raised seven children). Several other families also remained for a time in the region.



View of Crow Creek Settlement (Photo taken from the Catholic School)

may still be seen in Opasatika and Kapuskasing, although they have since been modified so much that they are hard to identify.

Bill believes that he is the last of the settlement left in the region – a view borne out by John's search of the telephone book. His son Glen, married to a francophone, lives in Timmins; his mother, who is 86, lives in Kelowna.



Sketch of the Camp Building by a former resident of house no. 3 on the map on the next page.

Others left for opportunities in southern Ontario, and some moved back to British Columbia. Joe's father and mother moved to Kelowna, British Columbia – nearly a half-century after being forced to leave their home province. Some families from Europe came to the camp in its later years. Like the original inhabitants of the settlement, they had obtained work with Spruce Falls. One picture in the Opasatika book shows Alain Guindon's father teaching a European newcomer how to sharpen a swede saw!

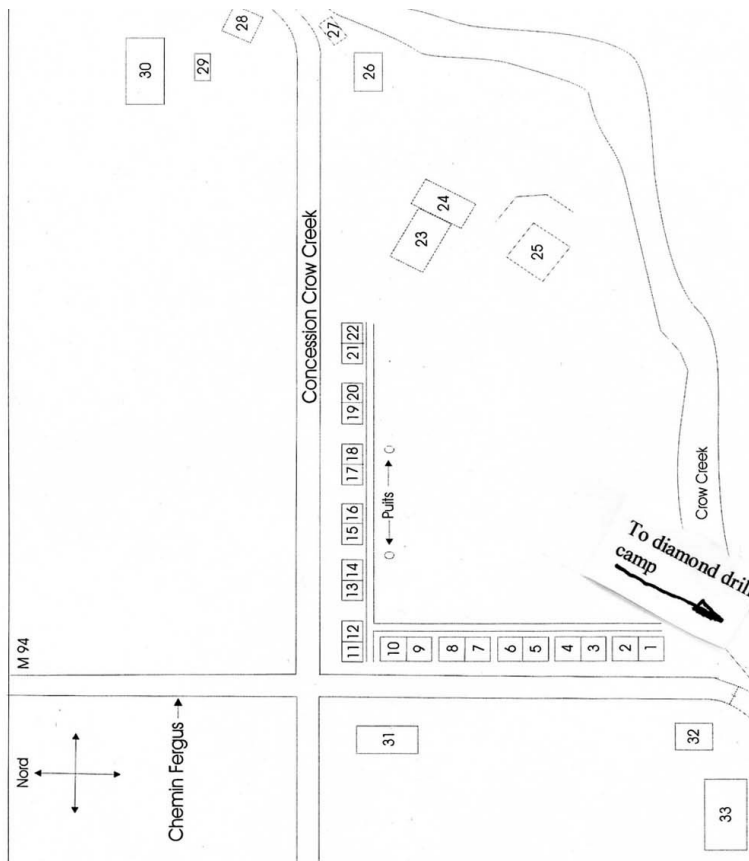
The settlement lasted until 1957, when the last resident moved to Kapuskasing. Spruce Falls removed the buildings, and some of them

Earlier in this story, we mentioned that we had used the telephone in 1952 at Crow Creek, and then noted that there was a phone in the Nakashoji house, and that we had met a boy outside the house, carrying pails of water. You guessed it – the boy was Bill Nakashoji; and it was a great thrill for the three of us as we slowly realized, as the story unfolded, that we shared that half-century-old link to that night at the Crow Creek Settlement.

Finally, we have already mentioned the positive local relationships that existed during the life of the settlement, and it was a pleasure to see that feeling prevail today. Partly through his 34 years with Northern Telephone, Bill seems to know everyone in the area, and the mutual

(Continued on page 58)

(Continued from page 57)



Noms des locataires/propriétaires de l'établissement japonais à Crow Creek en 1947

- | | |
|----|-------------------------------------|
| 1 | Non occupé |
| 2 | M. Ishikawa |
| 3 | M. Tanigushi |
| 4 | M. Hirano |
| 5 | non occupé |
| 6 | M. Nakashoji (station téléphonique) |
| 7 | M. Murata |
| 8 | M. Yamamoto |
| 9 | M. Horikawa |
| 10 | M. Maihara |
| 11 | M. Tsuyuki |
| 12 | M. Oikawa |
| 13 | M. Tamane |
| 14 | non-occupé |
| 15 | M. Takata |
| 16 | M. Inouye (station téléphonique) |
| 17 | M. Okada |
| 18 | non occupé |
| 19 | M. Kaiura |
| 20 | M. Sakai |
| 21 | M. Sakon |
| 22 | M. Oikawa Jr. (1949) |
| 23 | école |
| 24 | résidence des professeurs |
| 25 | Terrain de base-ball |
| 26 | Grange à M. Trudel |
| 27 | Maison à M. Trudel |
| 28 | Maison à Jules Guindon |
| 29 | Garage |
| 30 | Grange à Jules Guindon |
| 31 | École Notre-Dame du Sacré-Cœur |
| 32 | Maison d'Alfred Isabelle |
| 33 | Grange d'Alfred Isabelle |

Sincères remerciements à tous ceux qui ont participé à ce montage photo dont:

Mme Kiyomi Osawa Carrière et sa mère, Mme Osawa
M. Mark Stanley et sa mère, Mme Stanley
M. Yvan Tremblay
Marc, Alain et Yves Guindon

L'historique de l'établissement des Japonais fut tiré de La p'tite histoire d'Opasatika, Août 1986.

Map of Crow Creek Settlement and List of Inhabitants

respect and affection was very much in evidence.

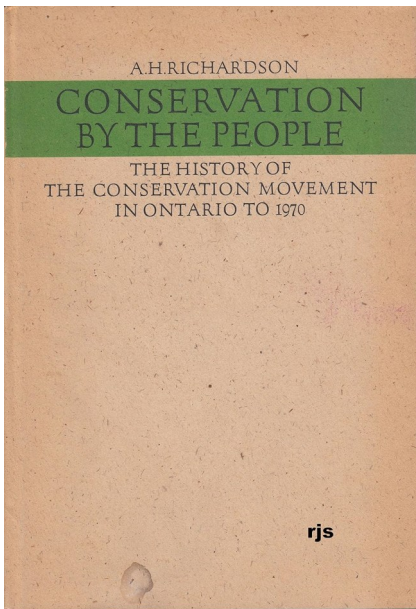
It has also been a source of wonder and admiration that in all our conversations with Japanese-Canadian sources, we heard not a word of anger or complaint about the treatment their families received during that unfortunate and unwarranted suspension of their civil liberties during and after the Second World War. They do, however, share our view that such a thing should never happen again in our country.

Many thanks to all who helped us in our search! Also, a special thanks to the Municipality of Opasatica, for making available illustrations from *75 ANS DE BONNS SOUVENIRS*.

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Editor's Note: The preceding article was originally published on the website www.discovernikkei.org, a website dedicated to Japanese migrants and their descendants, and is reprinted with permission.

Conservation by the People



Conservation by the People
Arthur Herbert Richardson
University of Toronto Press, Toronto, 1974

Precis of Chapter 3: ... and the Heavens Opened **By Sherry Hambly**

Flooding is a natural part of nature. Early Ontario records document various serious floods since immigration began. Most settlements were built along rivers. Flooding caused much damage to these settlements. As an example, the Humber River, from settlement times to Hurricane Hazel in 1954, flooded 78 times, of which 25 were classed as severe or very severe events.

Two of the largest rivers in southern Ontario, the Grand and the Thames, were regularly affected by floods. The people who lived along these rivers were the first in Ontario to plan for adequate flood control. These voices became more strident after severe flooding in 1912.

Leadership to this cause was provided by a group of engineers who agitated for better flood control, which led to local municipalities forming the Grand River Valley Boards of Trade in 1931. They requested that the Ontario government establish ways and means to control flooding.

In response the Ontario government asked the Ontario Hydro Electric Power Commission of Ontario to develop recommendations for the Grand River drainage area. The resulting Macintosh Report was presented to the minister of lands and forests in 1932. Representation was then made to the government to pass legislation to enable municipalities to proceed with the recommendations.

The government responded by passing the *Grand River Conservation Commission Act* in 1932. This act achieved virtually nothing and was repealed when it was replaced in 1938 by another act of the same name. This act authorized the study of, and resulting building of, dams and reservoirs by the eight municipalities that were part of the Grand River drainage area.

The first two structures built were the Shand and Luther Marsh dams with cost sharing of 37.5, 37.5 and 25 per cent among the federal, provincial and municipal governments respectively. This cost sharing formula was used over the next two decades for the completion of many other flood control projects.

An extremely severe flood along the Thames River in 1938 led to the same arrangement for this river system through the passing, in 1943, of the *Act to Provide for Control of Waters in the Thames River*. This act also authorized the creation of the Thames River Control Commission.

In 1944 the Ontario government created the Department of Planning and Control, along with the Conservation Branch. The *Conservation Authorities Act* was passed in 1946.

In October, 1954, Hurricane Hazel created havoc all across eastern Ontario. The greatest damage occurred in and around the Humber River causing the deaths of 81 people and high levels of damage in these categories: public properties and utilities, commercial and industrial properties, private properties, agriculture, parklands, flood fighting and clearing and emergency relief. The cost value of this damage was estimated to be 20 million dollars.

Subsequently, the Government of Canada appointed a Commission on Hurricane Damage in Ontario and the Ontario Government established the Flood Homes and Building Assistance Board of Ontario in 1954. The Board authored a report, which remained confidential, but essentially outlined the conservation programmes that Conservation Authorities could carry out related to water, land use,

(Continued on page 60)

forestry, wildlife and recreation.

The Board agreed with the use of flood plain lands for recreation but did not support the building of dams or other structures to control flooding, instead recommending the removal of properties within the flood plain and letting rivers flood. The latter recommendation was vigorously opposed.

The Board was authorized to assess damages and provide payments in recompense and to approve the purchase by the affected municipalities of certain lands affected by flooding. The Board was dissolved in 1955.

While Hazel left behind death and destruction, it also brought important advances in conservation, one of which was the recognition by the public of the importance of water conservation and flood control. Conservationists had been promoting these concepts for a long time and Hazel was the catalyst to get the public to accept the need.

Subsequently, three Conservation Authorities, the Upper Thames, the Ausable and the Metropolitan Toronto Region, launched corrective programmes that included the building of dams, river channel improvements and the acquisition of flood plain lands. Eventually reforestation and recreational programmes were included in the funding. Costs were shared on the past model among the federal, provincial and municipal governments.

The second advance in conservation was the recognition that the management of flood plain lands was an integral part of flood control and needed to be protected and managed. The third advance was the appointment of a hydrometeorologist to the Conservation Branch.

The work of the Conservation Branch included the following:

- Dam design and reservoir operation to meet the multi-purpose and often incompatible use of water including flood control, water supply, irrigation, pollution abatement, flow maintenance and recreation
- Flood forecasting supported partially through the establishment of over 100 stream gauges.

Canada established the *Water Conservation Assistance Act* in 1953. From that date to 1966, the federal government financially supported water conservation and flood control projects and programmes in Ontario through a defined process of assessment, documentation, project management and a specified financial commitment of 37.5 per cent. In 1966 the federal government withdrew from this arrangement, leaving Ontario and municipalities to foot the bill, creating financial hardship for both. Some dams in the process of being built were eventually funded by the federal ARDA program.

Between 1950 and 1970, 466 projects, large and small, were completed to support flood control and water conservation in Ontario. Seven of these projects were for large dams, 84 for small dams, several for small water reservoirs, channel improvements, river bank and valley slope stabilization and ground water recharging. This chapter provides a great deal of detail on the various projects that is not summarized here.

The chapter ends by noting that five Conservation Authorities in northern Ontario were part of these efforts to conserve water and manage flooding. The total value of all projects during this 20 year period is estimated to be 60 million dollars.

Note: The word "programmes" is used in this precis as that is the spelling used in the book.

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