Issue #94 - Summer 2025
Newsletter of the Canadian Chestnut Council

http://www.canadianchestnutcouncil.ca

Council Mission - to help restore the American Chestnut to the areas of Canada it once occupied.

Current Priorities

1. Breeding resistance
2. Breaking Isolation / Establishing Gene Pool Nodes
3. DNA Analysis
4. Survey of existing Chestnuts in the wild

Front Piece - American Chestnut Leaves (Photo: John F. Foster)

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Canadian Chestnut Council
Annual General Meeting
Sunday, Oct. 19, 2025

- For In-Person Attendance ... the reception of in-person attendees will begin at 12:00pm.
- For Virtual Attendance via ZOOM the meeting will be open beginning at 12:30 pm.
- The formal business meeting will begin at 1:00pm.

Meeting Agenda

1. Call to Order @ 1:00p
2. Land Acknowledgment
3. Approval of the Agenda
4. Approval of the AGM Minutes of Sunday, Oct. 27th, 2024

5. Canadian Financial Statements for the year ending Sept. 30th, 2025
6. Approval of Actions of the Directors
7. Nomination of Directors
   a. Election of Directors for 2025/2026
   b. Affirmation of Officers for 2025/2026
8. Business Arising
9. Adjournment of the Formal Business Meeting

Following the formal business meeting there will be a short break, followed then by:

- A Message from our Chair – Ron Casier
- Guest Speaker Presentations
  Dr. Dragan Galic
  Dr. Brian Husband
  Dr. Sophia Stoltz
- Field Tour of Research Plot
  Led by Dr. Dragan Galic

Vetting for Possible New Board Directors
By Greig Garland

At the upcoming AGM with the call for new Directors, the Canadian Chestnut Council wants to acknowledge the vetting of individuals under the Article 4 of the By-laws. The appropriate article follows for your review. At this AGM, two (2) Directors will stand for re-election and two (2) Interim Directors from the previous AGM will stand for election. Currently, fifteen (15) Directors sit on the board who provide specific skill sets to Canadian Chestnut Council.

The constitution states that Board shall have a minimum of five (5) directors and a maximum of twelve (12). In the future, the Board could benefit from additional individuals with backgrounds in specific expertise's: biology/horticulture, accounting, fund raising, and legal. If you are considering joining the board as a Director, please fill out the application at vetting site:

https://forms.gle/xKwE8Rm5nJDeuPwj9

You will be contacted prior to AGM to consider your nomination as an Intern director.

Article 4: Board of Directors
Section 4.1. Number, Tenure and Qualifications

1. The Board of Directors shall consist of nine (9) members including the chairperson, with a minimum of five (5) members and a maximum of twelve (12) members.
2. A Director shall be elected for terms of three (3) years, or for a shorter term if vacancies are to be filled.
3. A Director's first term of office shall be a period of one (1) year on an intern basis.

4. A new Director must sign a statement that acknowledges that they have been advised of the Constitution, Bylaws and Policies of the Canadian Chestnut Council and will abide by those documents.
5. At the end of their term a Director may stand for re-election.
6. A minimum of two (2) Directors and a maximum of five (5) Directors shall stand for re-election annually, on a first elected – first re-elected basis.
7. To stand for election as a Director, an individual must meet the following qualifications:
   - be a member in good standing;
   - be 18 years of age or older;
   - be interested in the American Chestnut and committed to its restoration; and
   - have no conflict of interest or pecuniary interest regarding the interests of the Canadian Chestnut Council.

Section 4.2. Selection of Directors

1. Directors shall be elected by a majority vote of members in attendance at an annual meeting, or a meeting held for the purpose of electing Directors.
2. A Director:
   - shall have no ethical or financial conflicts with the Council constitution, bylaws or policies;
   - must attest to acceptance of the Canadian Chestnut Council's constitution, bylaws and policies;
   - shall attend at least 75% of Board meetings each year;
   - will participate as able in one or more committees;
   - comply with the Canadian Chestnut Council's code of conduct; and
   - comply with the Canadian Not-for-Profit Act.

John Hill Award Fund Appeal

By Ron Casier

Dear Members:

To honour the late John Hill, who was the quintessential American Chestnut enthusiast and supporter of the work of the Canadian Chestnut Council, the council initiated the John Hill Memorial. The memorial will perpetuate his legacy at Glenn Morris Public School[1] by recognizing a graduating student with an agricultural or environmental passion.

John took great pride in his work for the Canadian Chestnut Council and established the main research plots for the American Chestnut at Onondaga Farms and Tim Horton's Children's Camp. Starting in 2002, with the help of many volunteers, John planted and maintained numerous chestnut plantings which number over 20,000 to the present. His oversight of the plots and enthusiasm for the species was contagious.

John incorporated the history and importance of the American Chestnut into the learning of the children attending the camp so that they appreciated the importance of restoring the species. As an ambassador,

John did extensive outreach to inform the public, promoted the species through fair booths, gave public presentations, and lead tours. He was an active director on the Board of the Canadian Chestnut Council for twenty-one (21) years and was a faithful navigator who believed that blight resistance was possible.

John was generous with his hobby of woodworking and provided many chestnut wood prizes for the AGMs as well as for fund raising campaigns. He was unselfish in his contributions to the Canadian Chestnut Council and was focused on the mission to restore the American Chestnut.
The Memorial is administered by the Brant Community Foundation who hold the $10,000 endowment and provide the annual award money. We are asking our membership to donate to the memorial fund to achieve the endowment amount pledged.

Here is how to donate:

- Donate on line at: www.brantcommunityfoundation.com. Click on the "Donate Now" button at the top of the page. A drop-down menu under the Fund section lets you chose the "John Hill Award Fund".
- A charitable receipt will be issued for all donations.
- For further information please contact the Brant Community Foundation at (519) 756-2499.

1 - Glen Morris Public School is located at 522 Glen Morris Rd E., Glen Morris, ON N0B 1W0 in the County of Bant.

Inoculation Process of the American Chestnut

By Ron Casier

(All photographs by David Darrach)

To test the American Chestnuts growing in the research plots for their tolerance to an infection of the Chestnut Blight (Cryphonectria parasitica), we deliberately puncture the bark to the cambium layer and insert a plug of a known strain of Chestnut blight. This procedure by passes the protective layer of the outer bark which normally would protect the tree from natural infections by alighting blight spores. The deliberate wounding and presence of the fungi will trigger the defensive measures that are encoded in the genetic make-up of the individual tree. The response of the tree at the inoculation site is then measured to determine the resistance to the spread of the infection and to determine the defensive response of the tree. The trees that respond with the strongest tolerance to the infection are then selected for the next generation breeding partners to continue the selection for blight tolerance.

Figure 1

Each tree in the research plot is examined to determine its suitability for testing which involves removal of the original tree guards. The trunk diameter must be 15cm or greater in diameter and the tree is examined for natural blight infections which may have occurred earlier.

If the tree is suitable, the trunk is cleaned off and a permanent marker is used to indicate the position of the inoculation. The north facing side of the trunk is the preferred location of the site to diminish any effects that the sun may have on the inoculum getting established.

Using a 5mm cork bore tool, a puncture is made through the outer bark, at the indicated mark to the cambium layer. The cambium layer is the very active mitotic layer of the trunk. It produces the new xylem cells to add to the inner annual rings and the new phloem cells to add to the inner bark layer of the trunk.

Figure 2

Figure 3

The cambium layer, once infected, triggers the chemical and physical defense mechanisms to find fend off the invasion. Oxalic Acid, which is a by-product of the blight, crystalizes in the xylem cells and plugs the cells. This makes them nonfunctional, resulting in the starvation and death of the cambium layer. The cells of the cambium layer will respond if they have the genes for blight resistance and will fight to isolate and limit the spread of the blight infection with a sealing callus.

A petri dish of nutritional agar with a living colony of the chestnut blight prepared by the pathologist two weeks prior; is punctured into multiple 5mm plugs by a sterile cork bore tool. Each blight infected plug is then inserted into a corresponding hole in the trunk of the selected trees. This transfer is carried out with a needle probe. The fungal side of the agar plug is inserted first into the bore hole so that there is good contact between the living blight and the cambium layer. This will improve a successful infection.

Figure 4

Figure 5

Here is the blight infected agar plug securely inserted into the bore hole in the trunk. The clear surface of the plug visible indicates that the blight infected face of the plug, which off white, is facing and contacting the cambium.

To secure the agar plug in the bore hole, masking tape is used. At least two wraps are made around the trunk to seal the plug-in position. Not only does this prevent the plug from dislodging, but also seals the wound to prevent drying out or secondary infections. This is to improve the odds of a successful infection.

Figure 6

Figure 7

A completed inoculation with sealed inoculation site. Each tree that is inoculated is recorded according to its row and tree number in that row, i.e., R6T124. This tree's pedigree (parent sources) had previously been recorded at planting. It will now be revisited three times in the next 18 months and measurements and observations of the tree's response to the inoculation recorded. This will be added to the statistic data collected on each inoculation. The response to the inoculation will become part of the permanent record for the tree and be used to determine whether this particular tree is maintained for use in the blight tolerance breeding program or abandoned as not tolerant.

About the American Chestnut
By John F. Foster

(All Photos by John F. Foster)

Once the American Chestnut (*Castanea dentata*) was a great part of the Eastern Deciduous Forests of the United States centred on the slopes of the Appalachian Mountains. The species also grew in abundance in Southwestern Ontario where it is known as the Northwestern Chestnut. But, in 1904, American Chestnut trees were found dying at the Bronx Zoo in New York City with a bark blight.[5] That bark blight was accidentally introduced on wood from China.

Chestnut Bark Blight

The blight is known today as the Chestnut Bark Blight (*Cryphonectria parasitica*).[5] The Blight went on to infect the American Chestnut throughout its entire range. By 1950, Chestnut Bark Blight had killed off 4 billion American Chestnuts and rendered the species functionally extinct.[9] This kind of extinction means that although the top part of the tree has been killed off by the Blight, the roots have not.[9]

In the last hundred years or so, the still extant roots of many American Chestnuts send up sucker growth. The suckers rarely reach 15 years old which is when the species starts to produce the burrs containing 2 to 3 nuts.[2] The Chestnut Bark Blight kills off the suckers most of the time, hence, the functional extinction because the tree cannot reproduce. The suckers provide energy to the live roots, but if they keep getting killed off by the Blight, then the roots die off. American Chestnut does not have an immunity to the Chestnut Bark Blight.[8] In its native range in East China, the Chinese Chestnut has enough immunity to be protected from the Chestnut Bark Blight. It has existed with the Blight for a long time and so developed its immunity to the fungus.[7] A separate Chestnut species exists in Japan, and it, too, has immunity to the Blight. In Europe, as in North America, the European Chestnut has also been decimated by the Chestnut Bark Blight.[8]

Am. Chestnut Bark – Young Tree

Chestnuts in Europe are showing hypovirulence.[3] Efforts are being made there, too, to instill immunity into that species by backcrossing with Chinese and Japanese Chestnuts.[7]

American Chestnuts once grew up to 30 metres tall with diameters at breast height of 3 m. They were often called the "King of the Forest".[1] The tree is recognized by its very long narrow leaf that has many hooked teeth along its edges. When young the bark of the tree is very smooth and gray. As the Chestnut tree ages, the bark becomes furrowed. If the tree grows in the open, the crown spreads up to 30 metres wide. In forest conditions, the tree has a narrower canopy. It reaches upward for the light to great height.[8]

The leaves appear on the Chestnut in April. In the Autumn they turn a brilliant yellow. The landscape once looked firry with their colour.

When the leaves have detached from the tree, they blanket the ground, later rot, and provide sustenance and cover to the plants and animals living there.[8]


American Chestnut Leaves

Flowering season for the American Chestnut is the middle of May to the beginning of June. The long narrow white flower spikes are found on the top half of the tree. Chestnuts once made up a third of the forest on the Appalachian slopes.[8] When their flowers bloomed, they gave off prodigious quantities of pollen. From the flowers, burrs develop, and drop to the ground in great abundance. Young trees grow from the nuts that developed in the burr. The American Chestnut relies, heavily, on mammals and birds to carry the nuts away for dispersal.


American Chestnut Burr

The American Chestnut had many uses pre-blight. It was a profuse producer of mast. The nuts were eaten by many mammals and birds in the forest. Farmers once grazed their cattle beneath American Chestnuts so they could eat the nuts that had dropped from the trees.

Bushels of nuts were transported to market where they were sold.[8] American Chestnut wood contains a lot of tannin which makes it rot resistant. The tannin was useful in the leather industry.[4]

American Chestnut wood was used for fence posts, panels, railroad ties, furniture, and cabinetry.[2] Today, the only American Chestnut wood available is from old barn panels, logs salvaged from rivers, and forests. The Chestnut Bark Blight infects the American Chestnut by gaining access to the tree's cambial layer through wounds.[2] The blight can be transmitted by airborne spores or carried to trees by birds.[8] It infects the point of contact and spreads, creating cankers which appear on the bark of the tree.[2] The infected areas have either sunken cankers or open ones that have bulged the bark outward exposing the infected area.[2] These Infected areas often appear orange in colour and have streaks of spores running down the trunk.[8] The blight girdles branches and trunks. Trees are killed when their trunks are girdled. The roots of destroyed trees remain intact.[2]


American Chestnut Nuts


American Chestnut Grove

Current efforts to provide the tree immunity centre around backcrossing with Chinese and Japanese Chestnuts which are immune to the blight.[7] In the USA, gene splicing and transgenic inclusions are being tried with varying success.[7] The American Chestnut trees being worked with in Southwestern Ontario are called Northwestern Chestnuts.[6] Studies by University of Guelph researcher – Sophia Stolz – have shown that there are two genetic populations of Northwestern Chestnuts in Southwestern Ontario.[6] There is hope that this work to give the American Chestnut immunity will eventually succeed. If nothing is done, the American Chestnut will become extinct.

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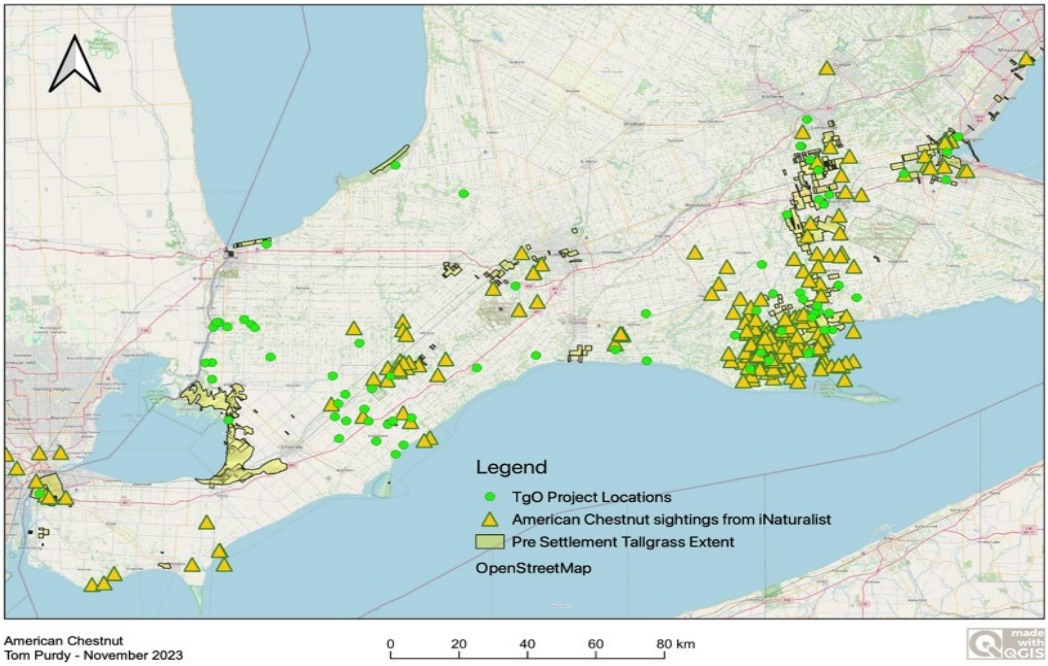
Current Range of the American Chestnut in Southwestern Ontario
(Map Courtesy of Tom Purdy – Tallgrass Ontario)



Progress Report to the CCC Board
By Dragan Galic

1. The season started with chestnut seeding in mid-February. We seeded 2500+ at the Simcoe Research Station with help from the CCC volunteers. This year we needed to change potting mix and fertilization protocol. Looks like there is no drawback from the change. Most of the plants look healthy with nice growth.

2. In spring we renovated F2 and F3 generations at Onondaga. After the renovation, all trees, particularly F3 generation plants, responded quite nicely. Now I am in the process of adding tree guards for trees with growth outside of guard protection within deer browsing height.

3. Inoculation sessions were done at Onondaga on the 24th and 25th of June (680 trees) and at Ron's Farm on the 18th of June 2025 (138 trees). In total, 818 trees were inoculated. The CCC volunteers and the board members helped. To date, all inoculation files are updated and have been forwarded to Dr Brian Husband for additional analysis. Files preparation for this year's inoculation recording sessions are in progress.

4. Pollination season started in late June with bagging of the Heist Street Tree, Fonthill. Niagara Region. This tree has been thriving for over 25 years due to known hypovirulence (only confirmed in Ontario to date). The tree is located in a housing subdivision and slated to be removed. We have three years to duplicate and establish three sites with 50 grafts from the tree at each site. For rootstock we will use the nuts from the tree to minimise delayed incompatibility. This year I attached 50+ bags for hand pollination. Unfortunately, last year we were not allowed to collect seeds and bag. The site maintenance crew simply cut off all branches with bags (all 186 bags). This "tree pruning" has substantially reduced nut potential for this season.

5. In the current season we continue with breeding of F3, Native, and Large Nut groups. The aim is to produce in total 2500-3000 nuts for all three groups. I have attached over 700 bags on 20 trees for Native and Large Nut groups and 5 trees For the F3 generation. We made about 80 different crosses plus 11 Native open pollinated trees at the Simcoe Research Station (SRS).

6. The trees at SRS continue to be looked after - seedlings and grafted trees.

7. Preparations were made to plant F3 at the SRS - planting date(s) were the week of 23 September.

8. Two trees are slated for possible breaking isolation for this year.

9. The survival of the F1 generation at Onondaga and Riverbend Farms was recorded - very few died over the course of the breeding program.

10. The harvest was planned to start in the first week of October.

About the Canadian Chestnut Council

Updated Canadian Chestnut Council Website

The Canadian Chestnut Council is testing a new website at: www.canadianchestnutcouncil.ca We invite you to have a look and explore.

Annual Meeting of the Canadian Chestnut Council

The annual meeting of the Canadian Chestnut Council is coming up. The meeting will take place both in person and virtually. Please mark your calendars.

Date: Sunday, **Oct. 19th**, 2025
Time: 1:00p with **In-person reception beginning at noon**.
Location: Tim Hortons Foundation Camp – Onondaga Farms Eco-Centre
264 Glen Morris Rd E, Brant, ON N0E 1N0

Annual Membership Fees

Membership fees for the Canadian Chestnut Council are due as of the Annual Meeting in October. Only members in good standing have the ability to vote at the annual meeting, be apprised of events and receive the quarterly newsletter.

2025/2026 Membership Fees – effective October 2025 - **$35.00**

By Mail: make cheque payable to "Canadian Chestnut Council" and send to:

Secretary, Canadian Chestnut Council
c/o Jeff Leader,18 Forbes St., Glen Morris, Ontario, N0B 1W0
or bring it to the next meeting or special event.

By Internet: Please **send your e-transfer to** ccc.membership17@gmail.com.

For More information Contact: info@canadianchestnutcouncil.ca

Membership: https://canadianchestnutcouncil.ca/membership-application/

Newsletter Editor's Note:

When one looks at the list of archived CCC Newsletters, there are several missing editions. If you have one of those in your records or even digitally, could you please let me know? I would like to see CCC's collection of Newsletters complete and filled out. Perhaps we could get in touch with former Board members and members.

John Foster, Editor

http://www.canadianchestnutcouncil.ca