

The Canadian Sweet Chestnut

-Newsletter of the Canadian Chestnut Council-

Issue # 78 – December 2020



<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

In this issue:

- Breaking Isolation – A Woodlot Owner’s Venture into Citizen Science. (Neil Dunning)
- A Genetically Engineered American Chestnut Tree (Chuck Beach)
- Reminder - Membership dues for 2021 (Terry Anderson)
- Reminder 32nd Annual General Meeting – Rescheduled

A Woodlot Owner’s Venture into Citizen Science (Neil Dunning) - “Reprinted from Issue 99 of the Ontario Woodlander, courtesy of the Ontario Woodlot Association.”

My wife has rural roots and I have always loved country life, but having a young family we appreciated the convenience of living in town with proximity to so many urban amenities. In 2002 we had the opportunity to do the next best thing which was to purchase a 17 acre woodlot in Brant County. This woodlot is part of the Oakland Swamp complex, and while the mosquitoes would make it pretty hard to live there, it’s a great place to do all kinds of activities that woodlot owners love to do—and it’s only 20 minutes from home. During frequent weekend walks in the first months of ownership I enjoyed identifying a wide variety of trees— hemlock, beech, red and bur oak, yellow birch, white and black ash, sugar maple, red maple, and more. The kicker was when I saw a tree with

long lance shaped leaves, in a shape much like I would imagine a spear head, with hook-like bristles where the veins meet the leaf margin. When I say long, the leaves were very long, up to nine inches. Consulting my copy of Native Trees of Canada. I was delighted to learn that we had a native American Chestnut in our care. Most of my woodlot walks since have included a visit to see how our chestnut is doing. Fortunately, it's well beyond the size at which the many local deer can cause damage and is now about 35 feet tall and eight inches dbh. I also enjoy showing it to visitors. It's pretty much our woodlot pride and joy.



Dr. Dragan Galic planting saplings

Over the years, I have been aware of the work of the Canadian Chestnut Council. Much of their work is locally based, with a research orchard at the Tim Horton Onondaga Farms Camp and a research facility at the University of Guelph Simcoe Research Station. The Council has a long-standing research program aimed at developing resistant native stock. While attending the Brant Rod and Gun Club's 2019 Eco Conference I heard about the Breaking Isolation Project (see sidebar) from the Chestnut Council Chair, Ron Casier. Since American chestnuts are not self-fertile, and their pollen does not spread far from the tree, many of Ontario's remaining specimens are not able to breed. This told me that the tree in our woodlot was in some respects a very beautiful museum specimen, but with more chestnuts planted in close proximity could become an important contributor to the continuation of the species in Ontario. It was exciting to think that our tree could become part of a scientific endeavor. The risk was that by planting young stock nearby we could be introducing the blight to our tree, but we were also aware that blight would eventually reach our tree even in its isolation. After deliberation Kathy and I decided to offer our tree for the Breaking Isolation Project and it was accepted. In September of 2019 Dr. Dragan Galic, research lead for the chestnut breeding for the University of Guelph, visited my woodlot to plant five chestnut trees. One was a grafted native tree

and four were also native saplings on their own rootstock. Grafted trees have the potential to flower sooner, but trees on their own roots are more shade tolerant. We planted and mulched each tree, and placed a tree guard around it. Fabric softener sheets have also been tied to the top of each tree to help repel deer from eating leaders. Each tree was also recorded with its own number linked with a GPS coordinate for future identification and study purposes. We look forward to nurturing our group of chestnut trees over the coming years and hopefully having some viable nuts produced to add to the population of this endangered species. While recognizing that this citizen science venture has some risks, the potential benefits far outweigh those risks.

The Genetically Engineered American Chestnut Tree and the Controversy it presents. (Chuck Beach)

The **American Chestnut Foundation** is taking a number of approaches to combat the chestnut blight. Their strategic effort is summarized in what they call the 3-BUR approach: Breeding, Biotechnology and Biocontrol. The Biotechnology approach is described briefly as follows. According to the American Chestnut Foundation website, “In 1990, the New York Chapter of The American Chestnut Foundation (NY-TACF) and the State University of New York’s College of Environmental Science & Forestry (ESF) began a collaboration to take a complementary approach to traditional breeding: transgenically add new genes to the American chestnut to enhance the tree’s ability to withstand blight. The most effective gene tested to date is a gene from wheat called oxalate oxidase, or OxO. The OxO enzyme breaks down oxalic acid, which is one of the primary “weapons” the blight fungus uses to attack chestnut trees.”

The genetically engineered Chestnut tree does show resistance to the Chestnut blight. Researchers at the College continue to conduct research to demonstrate efficacy, human health and safety and environmental health and safety of their GMO tree. Data has been submitted to the U.S. Federal Government for the approval which is needed before the tree can be distributed. The vision is to distribute the tree widely so it can cross pollinate with remaining native trees and transmit the gene for resistance.

More information can be found at: [Biotechnology to Combat Tree Blight | The American Chestnut Foundation \(acf.org\)](https://www.acf.org/biotechnology-to-combat-tree-blight)

The concept of a genetically engineered entity being released into the natural environment has created a considerable amount of controversy amongst researchers, scientists, the public and politicians. Once the engineered tree is widely distributed, there would be no controlling the cross pollination to unmodified native stock. There are a number of organizations in the United States and Canada that are steadfastly against an engineered tree being released into the environment.

A discussion paper entitled *Biotechnology For Forest Health?* and more information on the opposition to the engineered to may be found at: <https://www.stopgetrees.org>

The **Canadian Chestnut Council’s** approach to creating a blight resistant stock has been based on breeding of naturally occurring blight resistant stock. The Council was recently asked to take a stance

on this issue. The Council does not support the release of a genetically engineered tree into the natural environment

Chair Ron Casier has submitted a letter to the U.S Dept. of Agriculture outlining the reasons for the Council's concerns. This document is attached for our electronic readers and will be posted on the Council's website.

Membership Drive – we need your help in recruiting new members. Please feel free to forward this newsletter to those that might be interested in assisting with the restoration of the American Chestnut and encourage them to join the CCC.

Reminder - Membership Dues (Terry Anderson) – a reminder that membership dues for 2021 are due. It is the Foundation's policy to remove members from the mailing list after three years in arrears. Dues can be forwarded to our Membership Secretary, Terry Anderson. His new address and contact information is below. The fee is \$25.00 and your cheque should be mailed to **Terry's new address**.

Make cheques payable to: the Canadian Chestnut Council.

Please send to:

Terry Anderson

**261 Sandy Brook Way,
Kingsville, ON. N9Y 0A4**

32nd Annual General Meeting 2020 (postponed)

Unfortunately, the decision has been made to cancel our usual fall meeting because of the Covid-19 health concerns.

At this time, we are looking to hold an online zoom meeting with the option of joining by regular telephone on Saturday, **March 6th at 10:00 a.m.**

Further details to follow. **Please reserve this time on your calendar**

Want more information:

Website - www.canadianchestnutcouncil.ca

Contact - Mr. Ron Casier

Phone - 519-631-5279

Email - ronjcasier@gmail.com

Membership Secretary - Terry Anderson

Address - 261 Sandy Brook Way, Kingsville, ON. N9Y 0A4

Email - andersonterry419@gmail.com

Council Directors – Chuck Beach, Ron Casier, Tim Casson, Gord Chinnick, Doug Fagan, Stan Furman, Dragan Galic, John Hill, Nathan Munn, Christine Vey.

Interim Directors – Pete Smith, Ken MacGillivray