The Canadian Sweet Chestnut

-Newsletter of the Canadian Chestnut Council-

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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

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34th Annual General Meeting 2022

The Annual meeting of the Canadian Chestnut Council took place on Sunday, October 23rd at the Tim Hortons Onondaga Farms near St. George Ontario. The event was also offered virtually to accommodate those who could not attend in person.

The Canadian Chestnut Council Chair, Ron Casier, offered a summary of the work completed by the Council over the past year.

Special guests, Dr. Brian Husband and Sophia Stoltz, provided updates on their research at the University of Guelph.

The meeting was followed by a tour of the CCC Chestnut Plantation.

Chair's Report (Ron Casier)

(Photo courtesy of Neil Dunning)

The thirty fourth year for the Canadian Chestnut Council has seen progress continue to be made in our goals to restore native blight resistant American Chestnuts to their ecological, cultural, and economic roles.

The formalization of the American Chestnut Stewardship Agreement with the MECP has been a long-term goal of the council since the enactment of the Endangered Species Act. Under the Agreement the CCC has permission to work on the American Chestnut both in the breeding of blight resistance and conservation of the species for the next 15 years! This formalizes the council's work on genetical analyze and preservation of the unique Canadian genome of the species, continuation of the establishment of seed gene colonies and breaking isolation to preserve and enhance the wild native population, and renew hypovirulence research and other biocontrol measures. Micropropagation and other mass propagation techniques as well as the survey of the native population and the environment analysis is to be continued. All American Chestnut whether native or *planted* and hybrids are now protected. The usage of genetic modification to the Chestnut's DNA is prohibited. The CCC sets its own protocols for all work and projects under the agreement. The Agreement endorses the work priorities of the CCC and formalises our work and provides advance standing in the applications for funding due to the government's recognition of our work.

Dr. Dragan Galic with his summer students and volunteers has successfully completed another year of germinating seeds, grafting trees, and getting them in the ground this autumn. Inoculations of the F2 generation had greater success this year and measurements were taken. Breaking isolation of select chestnut continues as does the establishment of Seed Gene Colonies. The completion of our first F3 Generation orchard of 600 trees is an important milestone in our breeding program for resistance. The anticipation of the production of F4 nuts from this orchard in a few years holds much hope for the desired resistance.

Dr. Brian Husband's lab continued their analysis of the genetic uniqueness and environmental characteristics of the Northwestern population of American Chestnut in Ontario and provided DNA analysis for submitted specimens for genetic testing.

Through our renewed social media presence on Facebook and Instagram, the American Chestnut and the work of the CCC is being promoted and our outreach program reinvigorated. This year has seen a return to over ten outreaches from virtual and in-person presentations and displays to the return of the interactive "Chestnut or Chest Not" to elementary students after the pandemic.

The Council continues it work on updating the constitution and By-laws of the CCC to meet new governmental requirements and formalize our structure. We continue our cooperation with the Canadian Biotechnology Alliance Network and with the Ontario Woodlot Association in the protection and promotion of the American Chestnut.

At this time, I wish to acknowledge the work, dedication, and support to the CCC by long term director: Tim Casson, and director Stephen Penney: whose resignations were reluctantly accepted by the council.

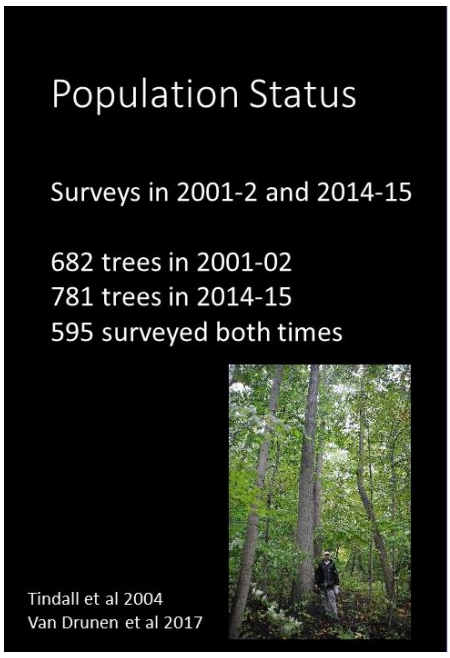
Gentlemen Thank you for your efforts.

Submitted respectfully; Ron Casier, Chair

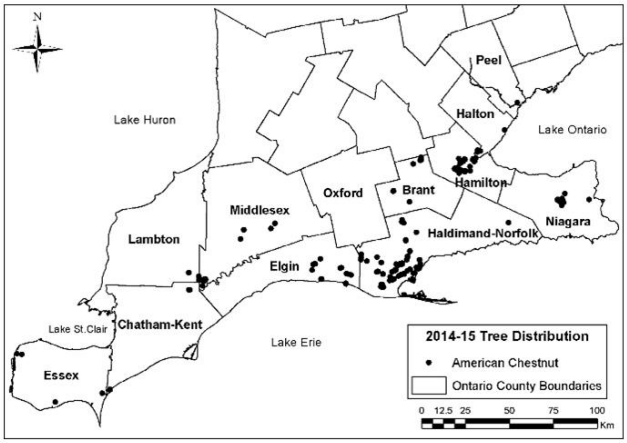
Reflections on the Recovery of American Chestnut in Canada: Research Progress and Priorities in the Husband Lab (Dr. Brian Husband and Sophia Stoltz)

(Photo courtesy of Christine Vey)

Based on surveys of trees in the wild in 2001/2002 and 2014/2015, Brian provided an overview of the current situation of American Chestnuts in the wild. The American Chestnut continues to lose its battle with the blight. Without intervention, the tree will likely become extinct.



33% >10 cm dbh 36% with blight 11% reproductive



Climate, soil and landscape affect the blight and tree health. Genetically speaking American Chestnut Trees in Southern Ontario do not differ that much from each other. However, they do differ considerably from those in Mid US.

Research continues to determine if there is a genetic basis for blight tolerance/ resistance in the Canadian tree population and if so, can DNA testing assist in the CCC breeding program?

	Sophia Stoltz provided an update on the "Think You Have an American chestnut – Want to check its Pedigree? Program operated by the CCC in conjunction with the University of Guelph. Under this program individuals can submit leaf samples of a tree to determine its genotype. Details of the program are available on the CCC website.

Latest Genotyping Results

As of summer of 2022, 85 additional samples have been genotyped

- 73 American chestnuts
- 8 misidentified chestnut trees
- 4 hybrid trees
- Total to date: 8 of 277 trees are hybrid

Chestnut Plantation Tour

Dragan Gallic, CCC Lead Researcher, provided attendees with a tour of the Onondaga Farms Research Plantation

(Photos courtesy of Neil Dunning)

Want more information:

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