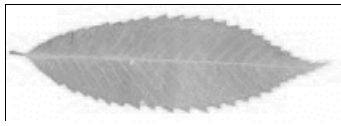


The



# Canadian Sweet Chestnut

- Journal of the Canadian Chestnut Council

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<http://www.canadianchestnutcouncil.org>

In this issue: - AGM.....Research Reports...Outreach update.....and more!

## CCC Holds Successful AGM

The CCC Annual General Meeting was held Saturday, October 23 at the Tim Horton Onondaga Farms. Approximately 50 adults and children attended the meeting and participated in the activities in the Eco-Center in the Creative Arts Room or the Living Laboratory.

A new Director was elected. Mr Scott Parkinson from The Grand River Conservation Authority was welcomed by the membership.

Dr Adam Dale updated activities in the nursery including inoculation results, F2 planting and new F2 crosses at both nurseries.

Guest speaker, Ms Karine Beriault, MNR, Biodiversity Species at Risk Biologist, presented a talk on the importance of the SAR legislation. She explained the concept and importance of the legislation and clarified the terminology of the Act. She also provided examples of each category of endangered species: i.e. extinct, extirpated, endangered, threatened, special concern and not at risk. She pointed out that species are generally at risk because of competition for habitat which may come from other plants, animals or human activity. Of approximately 200 species at risk, 162 are from southern Ontario where human activity is greatest. Even though some species may be numerous in certain limited areas their status is determined by their declining numbers in the province or country as a whole. All species make a contribution to the environment and all are necessary to keep the

environment balanced even if they are in conflict with human activities. The snapping turtle which is endangered is a pest when trying to raise geese but helps to reduce an increasing population of Canada geese in other areas. Ms Beriault's presentation was greatly appreciated by all those present.

Everyone enjoyed the bucket draws and 3 members, Henry Drieger, Joe Hickson and Karen Alward won multiple times.

The wagon tour was cancelled because of inclement weather but many took the short walk through the pine grove to the chestnut nursery with Dr Adam Dale and Dragan Galic for a hands-on update.

The meeting was considered very successful by all those in attendance.



Attendees at the 2010 AGM at the THF center

### **The Canadian Chestnut Council**

*The CCC is a scientific and charitable organization with the mission to restore the American chestnut. All its officers volunteer their services both in the field and at the desk. The CCC annual meeting, the web site and this Newsletter dispense information to generate support for saving and restoring this once-important forest tree.*

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## **Editorial**

### **Secretary and Newsletter Editor Duties to be divided**

After many years as Secretary and Editor, Charles Hooker finally decided to step down. His dedication and consistency will be missed by the administration of the CCC. Charles was honoured with a plaque consisting of salvaged chestnut wood at the recent AGM. He will dedicate more time to home duties and planting more trees on his rolling property near Orangeville. Thank you Chuck, for a job well done. We will be in touch. In the future the duties of Newsletter Editor and Secretary will be divided between Terry Anderson, Newsletter Editor and a new Recording Secretary. The Editor will accept comments, questions and general information suitable for publication and the Secretary will record minutes and accept new memberships and donations as in the past as well as directing questions from the membership to appropriate resources.

## **Correspondence**

Mr David Ladd, Winnipeg, has informed me that he hopes to grow a few American chestnuts this spring. We will follow his progress over the next few years with great interest. Although the CCC has had reports of chestnuts surviving in the west, Winnipeg will be the ultimate test for cold tolerance. Good Luck David!

Mr Tom Welacky reports that the chestnut germplasm deposited with the Canadian Clonal Gene Bank at the Agriculture Canada, Harrow Research Center is in good condition. Seedlings have been transplanted to the field and smaller seedlings are overwintering in the screen house. The Gene Bank serves as an additional repository for the germplasm used in the CCC breeding program.

Please send comments and reports to Terry Anderson for inclusion in the next Newsletter.



## The Outreach Program

I am happy to report that our efforts to get the word out about the work being done by the Canadian Chestnut Council seem to be working. I have received numerous phone calls and emails inquiring about presentations to audiences interested in getting updated on chestnut recovery. Local groups booked for presentations in 2011 include: Halton/Peel Naturalist Club, Westfield Heritage Village, Kiwanis Club of Cambridge, Peninsula Field Naturalists.

A number of additional groups such as Lambton County Woodlot Owners Association, Essex County Field Naturalists and Grey-Sauble Woodlot Association have requested a copy of our documentary DVD to use at their meetings. This has proved to be a great way to share the message of our work and the plight of the American chestnut. The footage from this DVD can be viewed on the internet at:

<http://vimeo.com/19169625>

A link to the DVD footage is also available at [www.canadianchestnutcouncil.org](http://www.canadianchestnutcouncil.org)

Further outreach activities included our continued interest in setting up a display and talking to the public at meetings and special events. In February, we attended the Norfolk Woodlot Owners Annual meeting, which had a turnout of about 150 people. Our next display is scheduled at the Ontario Envirothon Provincial Competition at Tim Horton Onondaga Farms from May 4-8<sup>th</sup>. Since 2011 is “The Year of the Forest”, the Ontario Forestry Association and the Envirothon Steering Committee are inviting other groups with a message to tell about forest conservation to also set up their display during the conference at no charge. Please contact Kelly Schafer for more information. [schafer\\_kelly@timhortons.com](mailto:schafer_kelly@timhortons.com)

A further expanding area in Outreach is our interest in reaching young people to share information on species at risk and the American chestnut story – but also just to inspire them, along with their teachers and leaders, to get out and enjoy nature in their own backyards and schoolyards. Groups such as Young Naturalist Program/ Guelph Field Naturalists have also expressed interest in benefiting from this type of program. Workshops continue to be booked at local schools to test pilot some of the activities that will be featured in a *Natural Discoveries* Guide being created with thanks to the generous funding of the Ontario Trillium Foundation. The guide is scheduled for completion prior to the end of the funding term in June 2012.



If you know of an audience within the native range of the American chestnut that would benefit from a presentation, display or Natural Discoveries Workshop, please contact:

Kelly Schafer

[kellys@canadianchestnutcouncil.org](mailto:kellys@canadianchestnutcouncil.org)

Home: 519-823-1458

Work: 519-448-1264 ext.225

### CCC in the Media

In the media	Link
Edible Toronto Winter 2010/2011 issue	<a href="http://www.ediblecommunities.com/toronto/winter-2010-11/the-american-chestnut-in-canada.htm">http://www.ediblecommunities.com/toronto/winter-2010-11/the-american-chestnut-in-canada.htm</a>
2010: Alternatives Journal Biodiversity 36.6 issue	<a href="http://www.alternativesjournal.ca/articles/aliens-help-endangered-american-chestnuts">http://www.alternativesjournal.ca/articles/aliens-help-endangered-american-chestnuts</a>
2010: Tim Horton Children's Foundation Year in Review 2010	<a href="http://www.timhortons.com/ca/pdf/thcf-2010-yir.pdf">http://www.timhortons.com/ca/pdf/thcf-2010-yir.pdf</a>

### Call for volunteers

Members of the CCC and people interested in chestnut recovery are needed to act as outreach volunteers within the native range of the chestnut. We are especially in need of representatives in the areas of Chatham, London and Sarnia. Commitment is very flexible. We are looking for people that might be interested in doing occasional presentations or displays to share the basic story of chestnut recovery. Technical knowledge is not required – just enthusiasm for the American chestnut and sharing this story with the public.

## NE-1033 Technical Committee Meeting

The NE-1033 is a scientific committee based in the United States with a mandate to improve the survival of chestnut through technologies that involve: Management of the Species, its Pathogens and Pests. The project was initially established in 1982 as the NE-140 Technical Committee, in response to the discovery of hypovirulence in the fungus pathogen and its ability to slow the effects of blight on infected trees. The scope of the newly established committee was to understand the biology of hypovirulence and how to exploit it successfully.

However, using hypovirulent strains for disease control proved more difficult than originally conceived and to date it has not been as successful in North America as it has been in Europe. The complexity of the issue resulted in the need for a more integrated approach to chestnut blight control. Today, NE-1033 integrates research in several fundamental areas. The first is the selection and breeding of blight resistant trees for forest and orchard settings. Although the approach utilizes traditional breeding methods, one goal is to incorporate molecular techniques to aid in the selection of desirable trees. Successes in the breeding effort over the past decade have provided valuable genetic material needed to accomplish much of the genomic work that will prove instrumental in identifying the genes that impart resistance to blight and other organisms that threaten chestnut.

The chestnut breeders work in collaboration with numerous state programs and the CCC breeding program in Ontario.

NE-1033 also coordinates research on Asian chestnut gall wasp (*Dryocosmus kuriphilus*) and root rot caused by *Phytophthora cinnamomi*, two potentially significant threats to sweet chestnut.

This year's NE - Technical Committee meeting was held at Cataloochee Ranch, Maggie Valley, North Carolina, September 17-18, 2010. The progress reports on latest chestnut research were presented by more than thirty researchers from nineteen universities and institutes on various topics from highly technical chestnut genome projects to basic, applied research. Here, I will review a few, in my view, very interesting reports.

Tom Kubisiak, USDA, Southern Institute of Forest Genetics reported that a final integrated consensus genetic linkage map for Chinese chestnut has been constructed. Of the 1401 markers, 330 simple sequence repeats (SSRs) and 1071 single nucleotide polymorphisms (SNPs) were available for map construction. A similar project was undertaken by John Carlson and his collaborators at Penn State University. The primary goal for the Chestnut genome project is to produce a high-quality reference sequence for the genome of *Castanea mollissima* cv Vanuxem. To assist in the identification of genes associated with resistance to the blight, genome sequences will also be produced for



American chestnut and for other genotypes of Chinese chestnut.

Katie D'Amico, SUNY-ESF, a graduate student, work was on evaluation of ectomycorrhizal colonization of transgenic, hybrid and wild type of American chestnut trees. D'Amico used field soils (from lower shelterwood and upper shelterwood) as sources of inoculum. Preliminary results suggest that field soils are a good source for effective ectomycorrhiza. She will group colonized root tips by morphology and develop molecular markers to identify the ectomycorrhiza. She will also compare results from greenhouse inoculated to those of field inoculated seedlings.

Mark Double and Bill MacDonald reported results on the introduction of hypovirulent isolates at West Salem, Wisconsin. The project was to study the spread of hypoviruses to American chestnut trees outside the inoculated permanent plots. They reported that hypovirulent isolates have been recovered from 80% of the trees with longest treatment history and 8% of trees from most recently infected part of the stand.

Carmen Cedina-Mora, a graduate student from Michigan State University, reported preliminary results on pollination studies of commercial chestnuts in Michigan. Based on hand and natural pollination data, the best time for pollination in Michigan is from late June to early July. She concluded that commercial orchards need more than one pollinator cultivar (early, mid, and late flowering cultivars) and more pollen is better than less. Lynne Rieske-Kinney, University of Kentucky, provided an update on Asian chestnut gall wasp (*Dryocosumus kuriphilus*). Asian chestnut gall wasp

(ACGW) is a potentially devastating pest of the chestnut that causes round or globular twig, shoot, and leaf galls on actively growing shoots. Galling reduces tree vigor, prevents normal shoot development (which reduces yield) and can cause tree mortality. The pest is on our border and it is a question of time when it will appear in Ontario. Her group studied parasitic insects as a means to control population of ACGW. They have identified six parasitic wasps: one introduced *Torymus* species and five native. They will study the contribution of each species to mortality of ACGW. In addition, they will assess the effects of orchard floor management on ACGW populations to see if they can optimize the habitat for the natural enemies.

Andy Newhouse, SUNY-ESF, studied early screening assay for chestnut blight resistance. In their experiments they inoculated detached leaves from young indoor plants and measured the length of the resulting lesion on the abaxial midvein. They concluded that leaf necroses correlates with pathogen virulence. However, Sandra Anagnostakis, Connecticut Agricultural Experimental Station, noted that in her work with leaves from an American chestnut tree growing outside did not yield any results despite several experimental attempts. For more details on these and other reports visit the CCC website [www.canadianchestnutcouncil.org](http://www.canadianchestnutcouncil.org) for a link to the complete report.

Dragan Galic,  
CCC Breeding Technician





Following discussions with Dr Adam Dale the CCC has made tentative plans for activities in the 2 chestnut nurseries for 2011. Tree growth has been very good in both nurseries and many trees will be ready to inoculate for the first or second time in the spring. It was decided that the CCC would continue to inoculate and select the most resistant F1 (first generation) trees for an additional 2-3 years after which efforts will be placed on F2 (second generation) trees. The CCC began selecting parents, crossing and planting the F2 trees last year. We will have 300-400 new F2 trees to plant in 2011 and this number should increase in the next few years. We are beginning to run out of space in our nurseries so we have started to interplant between the original rows, utilizing closer spacing between trees and plastic mulch to reduce weed competition. This system worked well at Riverbend Farms but we had mouse problems at Tim Horton Onondaga Farms that required treatment with mouse bait. We hope to begin testing F2 trees within 4-5 years by trunk inoculation as recommended by the American Chestnut Foundation. In 2011 we plan to inoculate and test 300-400 F1 trees in early June and determine results in early August. In addition, partially resistant trees selected in 2010, will be cross pollinated in late June and early July. Nuts will be harvested in the fall.



CCC members inspecting 1 year old, F2 trees planted with plastic mulch and 5 year old, F1 trees at Riverbend Farms during 2010 summer tour.



## AMERICAN CHESTNUT SITE RECORD

*Castanea dentata*

The CCC wants to know where the chestnut trees are. You can help by submitting any of the listed information you can provide.

Owner's name, telephone, e-mail:

Street or rural address, township, county, province:

GPS or other location data:

Number of American chestnut trees:

Other environmental data:

**Send to any CCC director. Thanks!**

## Volunteering with the CCC

### Terry Anderson

I have been associated with the CCC for about 10 years, during which time I have been a Director as well as a field volunteer involved in pollinating, planting, inoculating and evaluating resistance. Both jobs require a certain amount of free time. Our Directors' meetings are currently held during the week which suits the retirees and those with flexible work hours. Field work is conducted as a team also through the week. The unfortunate thing about fieldwork is that the scheduled date and time are always weather dependent. Generally it is scheduled over a 3 day period to accommodate for bad weather but the work itself is usually conducted in one day except pollinating and harvesting. This makes it difficult for volunteers to be available even though they want to help. I am aware of a number of people who have expressed interest in helping in the past but communications generally breakdown at the last minute because of rain or a sudden change in plans. If you wish to volunteer please send me an e-mail and I will do my best to keep you updated and I regret if you have been disappointed in the past. The rough schedule for field work at the 2 nurseries is as follows:

Planting seedlings and seed.....May 15-30th  
Inoculating.....June 5-10th  
Bagging and pollinating.....June 20-July 15th  
Rating resistance.....Aug 10-15th  
Harvesting seed.....Sept-Oct

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## Membership

Membership fees and donations are tax deductible. Please make cheques payable to the Canadian Chestnut Council

### Membership Renewal:

Annual subscription = \$20.00      \$ \_\_\_\_\_

**Donations** in excess of the annual subscription will be recognized in the Newsletter in the following categories. (Requests for anonymity will be honoured.)

Gold Leaf:      \$1,000 or more  
Silver Leaf:    \$500-\$999  
Bronze Leaf:    \$250-\$499  
Green Leaf:    \$100-\$249  
White Leaf:    Less than \$100

**Donation:**      \$ \_\_\_\_\_

**Total enclosed:**      \$ \_\_\_\_\_