

Chestnut Tree

The Pennsylvania Chapter of
The American Chestnut Foundation



PA-TACF Contact Information:

Penn State University
206 Forest Resources Lab
University Park, PA 16803
Phone: 814-863-7192
E-mail: mail@patacf.org
Website: <http://www.patacf.org>

Volume 17 Number 2

Printing of the *Chestnut Tree Newsletter* is courtesy of NPC, Inc. of Claysburg, PA

Fall Meeting Scheduled for Saturday, October 27

This years Fall Meeting will be near Altoona, PA at Barneywood, a facility owned and operated by the family of H.A. (Barney) Barnhart, one of the founding members of PA-TACF. There will be speakers, a tour of the facility featuring a lifetime of collected chestnut items and time for member sharing.

Please RSVP by calling 814-863-7192 or e-mail, mail@patacf.org. We hope to see you there!

This years highlights:

We will have a tour of Barneywood by a member of the Barnhart family.

Virgil Wilford, from NRCS, will give a talk on various programs of interest to land owners.



Dave Armstrong will be speaking about the execution of the Recurrent Selection Timber (RST) program as developed and outlined by Dr. Leffel. The objective of the RST program is the development of a blight resistant timber type chestnut tree (learn more about this program on page 4). This is accomplished by a series of selections at

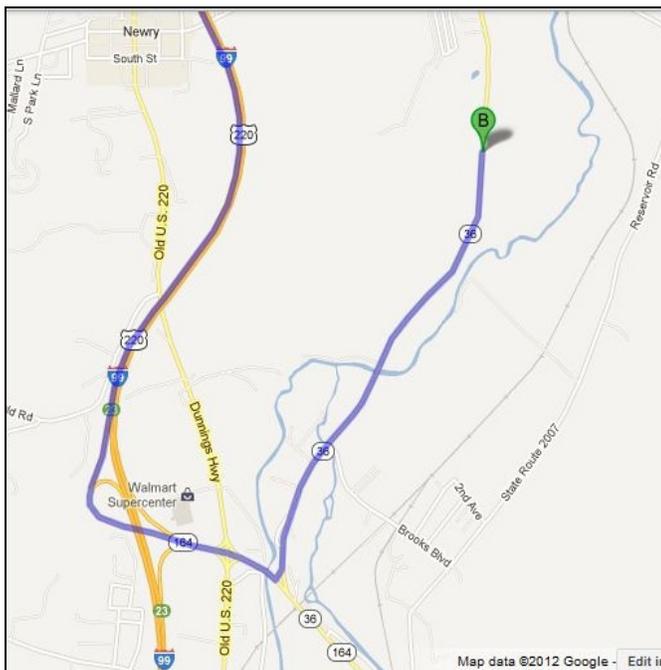
various stages (F1, F2, F3 orchards, etc).

The presentation will also focus on orchard practices, management and maintenance, and current and future needs for volunteer growers.

Dave was mentored by Dr. Bob Leffel and Ann Leffel, who taught him the details of tree breeding as well as chapter operations. He was the PA-TACF administrator until the current office was established at PSU in 2005. Dave manages five chestnut orchards totaling over 1200 trees.

DIRECTIONS to PA-TACF FALL MEETING

1. From I-80: Take exit 158 to I-99/Rt.220 South. Go 57 miles to Exit 23, the exit for Route 164. Take a Left onto Route 36 and travel 1.7 miles to the Farm. There will be a sign on your left for Barneywood.
2. From the PA Turnpike: Take exit 146 to I-99/ Rt. 220 North. Go 23 miles to Exit 23, the exit for Route 164. Take a Left onto Route 36 and travel 1.7 miles to the Farm. There will be a sign on your left for Barneywood.





President's Corner

Tim Eck

Greetings once again from the president's corner. This will be my last message as president as Don McCann will be wearing the cape next year.

I would like to talk briefly about a new orchard we will be starting next spring and what you can do to help. The purpose of this orchard is to preserve American chestnut diversity and do so in close proximity to the cytoplasmic male sterility (CMS) orchards to facilitate practical breeding. This orchard will be established and maintained by the Lancaster County Solid Waste Management Authority (LCSWMA) at their facility adjacent to the Turkey Hill Dairies in Lancaster County.

Preserving local diversity is one of the three main science (breeding) goals of PA-TACF.

The theory behind establishing this orchard is that much of the genetic diversity is distributed geographically, either through local adaptation or genetic isolation. In order to capture this diversity in the breeding program, it needs to be available to the other breeding populations containing the blight resistance sources. Our intent is not really to mix all the genetics together but rather to send locally adapted seed back to the original locality augmented with blight resistance genes.

So how can you help? Go out and find American chestnuts! Be sure to send us a leaf and twig sample, along with a completed Tree Locator Form, and send them both to our Penn State Office. You can find more information about how to collect the sample, along with the form, by calling the Penn State Office (814-863-7192), e-mailing the Chapter (mail@patacf.org) or going to this website: <http://www.patacf.org/patacfree.htm>

- We will identify the sample to ensure that it is an American chestnut.
- When we receive your form, we will put your contact information in a database so that we may contact you during harvest season to get nuts from the tree (when and if it flowers)
- Let us know whether the trees are from planted or wild sources (as far as you can tell).
- Seed will be planted in the LCSWMA orchard and identified by locality and remain accessible to all indefinitely.
- If you would like to receive seed from these orchards to plant, please contact Tim Eck:

717-684-2078 or e-mail at teck11@embarqmail.com



This is your chance to capture the local genetics from your hunting camp, hiking trail, or nearby forest and help us better fulfill our mission to restore the American chestnut to the PA/NJ woodlands.

The local American biodiversity reservoir project will mesh well with another Lancaster County project in support of another PA-TACF science goal – establishing (and backcrossing) multiple resistance sources (MRS) using cytoplasmic male sterility (CMS) as proposed by the Leffels. We have twenty different Asian blight resistance sources represented at the BC1 stage in the orchard shown in the picture above.

We are extremely fortunate to have a few dedicated volunteers to mow on a regular basis and numerous

volunteers to help with the plantings. The Lower Susquehanna Restoration Branch was established to help raise money for materials and supplies and a professional grade mower which is sorely needed.

PA-TACF 2012 Board of Representatives

Officers:

President, Tim Eck
 Vice President, Don McCann
 Past President, R. Alex Day

Board Members:

Ken Allshouse	Susan Smith
Blair Carbaugh	Alan Tumblin
Jeff Krause	Jim Walizer
Robert Lingenfelter	

Appointed Members:

Tracey Coulter, DCNR Representative
 Jim Egenrieder, Treasurer
 Ron Farr, NJ Representative
 Sara Fitzsimmons, Science Coordinator
 Stephanie Bailey, Secretary

If you are interested in a Board position or would like to nominate someone contact Alex Day at fforaday@aol.com

PA-TACF says Goodbye

Sue Oram moves on after 6 years of service



Shown are Rachel Oram, Sue Oram, Grace Oram, Rich Oram, and Tracey Coulter

In 2005, Tim Phelps, Dave Armstrong, and Sara Fitzsimmons interviewed Sue Oram for the position of PA Chapter Administrator. As soon as she left the room, we all turned to each other and said, "She's the one!" We knew immediately that she would do a wonderful job for us. And, since October 17 of that year, she helped hold the Chapter together.

Sue and her family will soon be moving to southwest PA, a move that will allow her to spend more time with them. While we will certainly miss her and all the great work she does, we wish her all the best in her future endeavors. And, hopefully, we'll all see Sue at an upcoming Chapter event, volunteering her time and knowledge back to the Chapter.

Meet the New Chapter Administrator

While we say goodbye to one great Administrator, we also get to welcome a new one! Please meet Stephanie Bailey. Stephanie started in May with the Chapter and has been working tirelessly to keep up with all the tasks that the Chapter administrator must handle.

Don't miss your chance to meet Steph at the Chapter's Fall Meeting on October 27.



In the picture: Steph and her fiancé, Mark, are atop Mackinnon pass on the south island of New Zealand, winter 2010. Their newest adventure begins September 29 of this year, when they get married in the mountains of Tennessee.

The Recurrent Selection Timber (RST) Program

(Formerly known as the F1- F2- F3- F_n Timber Program)

By Dave Armstrong

The focus of this program is to produce a blight resistant, timber-type chestnut tree by a process of recurrent selection - growing, testing and selecting at each generation. After the first cross of C or J x A, we allow each generation to intercross naturally eliminating the need for hand pollination. No backcrossing is done in the RST program. Only seed orchards of F1, F2, F3 and F_n are maintained.

The RST Program was outlined by **Dr. Robert Leffel**, retired Research Agronomist, Agriculture Research, USDA and PA-TACF Science Advisor. Dr. Leffel presented this program at the meeting of The International Union of Forest Research Organization (IUFRO) in 2004. Dr. Bob Leffel and I began this program in 2003 by hand pollinating fifteen Asian (Chinese and Japanese) trees with American chestnut trees in York County.



F1 orchard.

F1 Orchard. We planted our first (F1) orchard consisting of 144 trees at Codorus State Park, Hanover, Pa in 2004. These trees were placed in eight blocks with representation from each of the fifteen families or crosses.

Multiple Sources of Resistance and Multiple American Trees. In our initial hand pollination of Asian chestnut trees with American Chestnut trees, we believe we captured the genetic traits of both parents.

Isolated Plantings. Isolated orchards are used to facilitate open pollination which is more natural and productive. It eliminates the requirement for dangerous, difficult and usually unproductive hand pollinations. To achieve orchard isolation, our planting sites are 1/4 mile or more from other chestnut trees to avoid unwanted pollinations.

Growers needed to plant additional F2 orchards.

The original F1 orchard was evaluated for the tallest, most robust, timber type trees and we removed the weakest, most branchy trees and retained 51 of the best performers.

The F2 Orchard. The harvest of 2009 from the F1 orchard yielded nuts for planting an F2 orchard at Codorus SP of 600 trees in 2010. These trees were placed in 37 blocks with representation from the various families and individual trees. In 2011 and 2012 we planted replacements for nuts that did not germinate or died over winter. Today, the F2 orchard contains 600 trees from each initial family and 37 separate trees from the F1 orchard. Based on my experience of losing several trees in the F1 orchard from deer browsing, I fenced the F2 orchard.

Testing and Selection. The F2 orchard will be tested for blight resistance at about their eighth year. Selection for timber quality will begin at about their 12th year. Most chestnut scientists believe timber type normally cannot be determined until a tree is 12 or more years old.

F3 Orchards. After this careful selection process, of F2 trees we will eliminate the unacceptable ones and allow open pollination and production of F3 trees for planting, testing and selection. Maybe we can start reforestation if all goes well and also continue to improve the trees with subsequent orchards. The harvest of 2012 should produce between 1,000 and 2,000 F2 chestnuts and we need several growers to plant additional orchards. Due to

(Continued from page 4)

the removing of the F1 orchard, we expect these F2 trees to be more robust and competitive.

We request that future growers plant at least 100 seedlings but 400 to 600 will provide better exposure to a variety of genetic material; have an isolated orchard location, fenced to prevent deer damage; in a reasonably well drained area. The trees should be placed in blocks that contain trees from each cross to allow open pollination exposure to various families. Interested growers can contact me as follows:

Dave Armstrong
691 Pumping Station Road
Hanover, PA 17331-8608
717-632-8669
darm2@comcast.net



Congratulations to our Spring Raffle winners!



Keith Crider—
Husqvarna Chain
Saw with protective
head gear and chaps
chainsaw safety les-
son with Mike Pow-
ell

Gary Micsky- Hand-painted Rain
Barrel and Accessories

Keith Ligenfelter- Hand-crafted
American Chestnut Stool

Lee Mott- Hand-Turned Chestnut
Bowl

Volunteer Spotlight: James Egenrieder



Jim Egenrieder is just seven decades old and is a life-long resident of the Harrisburg area. He is retired from AMP Incorporated and a career in systems engineering. Jim and Ann have four sons- Jim, Rick, Brian, and Tim.

Jim is the manager of the Boyd (chestnut) Orchard at the

Boyd Big Tree Preserve Conservation Area since 2002, a board member since 2004, and the Chapter's Treasurer since 2008. He has assisted at other orchards at PSU and in Dauphin, Cumberland, Lancaster, and York counties.

In addition to his PA-TACF responsibilities, Jim currently serves as a Penn State Dauphin County Master Gardener, and he also serves as a board member and volunteers on several committees for the Manada Conservancy.

Jim's current interests are keeping abreast of environmental issues, working (some say he is a workaholic), reverse engineering, thinking beyond the box, landscaping, visiting his grandchildren, and playing sports games with his border collies.



Peter and Juliet Lane with their dog, Roscoe, and Alan Palmer in front of an F1 tree producing burs. Peter planted the tree at The Westtown School in Westtown, PA in 2006.

Breeding Update

Sara Fitzsimmons

The breeding season of 2012 brought a lot of activity throughout the PA/NJ Chapter. While last year's heavy spring rains brought increased fungal diseases, especially at the time of planting, 2012 brought in more screwy weather. Record-breaking late winter highs gave way to late spring frosts and freezes, in many cases decreasing flowering potential on many chestnut trees throughout the Chapter. In addition, warmer than average winter temperatures appear to have pleased many insect populations. Severe dieback on mature Chinese chestnuts has been seen in many parts of the state (Figure 1). Currently, one diagnosis suggests mites are to blame, but we are working closely with entomologist, plant pathology labs, and growers to more precisely identify the cause.



Figure 1. Picture of Dieback on a mature Chinese chestnut at an orchard in Pine Grove, PA. The cause is currently un-established

INOCULATIONS

One of the more exciting activities this summer was the inoculation of one of the oldest orchards in the Chapter. The Moshannon State Forest orchard, located in Penfield, PA,

was first established in 1998 with BC2 trees from the Connecticut Agricultural Experiment Station (CAES). Then, in 1999 and 2000, Graves BC3 trees from the PA Chapter were established. But the harsh environment of the Allegheny Plateau, and some problems associated with having planted the trees in 5' tree shelters, soon weeded out many of the trees not adapted to the locale, and significantly slowed growth for many years. Of the 800 trees planted at the orchard, only 200 made it to inoculation (Table 1).

Tree Type	Planted	Alive	Inoculated
American	78	31	19
Chinese	27	9	4
F1	28	5	2
BC2	268	133	79
BC3	467	174	100
Grand Total	868	516	204

Table I. Total number of trees planted, living, and inoculated at the Moshannon State Forest Orchard. Trees were inoculated on July 3, 2012

These trees will be scored for resistance with initial ratings this November. Final selections will then be made in May or June of 2013.

Also inoculated this summer were 123 Graves BC3s across three lines at The Nature Conservancy's West Branch orchard. At this orchard, our inoculation crew was greeted by a rattlesnake only four trees in (Figure 2).

Finally, over 500 BC3F2 trees across 5 different plots were inoculated with the SG strain this summer. As above, selections will be made this fall and early next summer. Then, in the summer of 2014, those trees left will be inoculated with the stronger EP155 strain, leaving final selections on a given plot

to be made in the early summer of 2015.



Figure 2.

AMERICAN TREE LOCATOR PROGRAM

As Tim discusses in his President's Corner, the PA/NJ Chapter would once again like to put an emphasis on locating American chestnut parents, especially to the end of collecting open-pollinated seed from those trees in the fall. If you know of a tree that you think is an American chestnut, please fill out a tree locator form and send it in to the Chapter. Once we have verified the tree to species, you will receive a letter in the fall asking for your **help in harvesting nuts**, and sending them in for use in various research projects, including the LCSWMA American Germplasm Conservation orchard in Lancaster, PA.

To find out more about collecting and sending in a sample, and to find a copy of the Tree Locator Form, please call the Leffel Center at Penn State (814-863-7192), e-mail (mail@patacf.org), or visit this website: <http://www.patacf.org/patacftree.htm>

Chestnut Foundation Part of Duke Farms Grand Opening

Mark Banker

On May 19th, The American Chestnut Foundation was invited to be part of the Grand Opening of Duke Farms in northern New Jersey. Though Duke Farms has been around for over 100 years, the Grand Opening served to commemorate an extensive conservation make-over of the property. Previously, the property featured large tracts of impressive old trees and forests, but was plagued by infestations of exotic vegetation and excessive populations of deer and geese.

Currently, dozens of conservation projects and experiments are under way that are re-shaping the landscape and providing an opportunity for Duke Farms to serve as an example and resource for innovative ecological stewardship. One example is an experiment sponsored by Rutgers University where chestnut seeds are placed in forested settings where non-native species have been removed. Their goal is to see if these gaps present a viable option for reintroducing American chestnuts in the wild.

Duke farms is now open to the public, with a wide variety of options for involvement. Visit their website at www.dukefarms.org for more information.



Manuel Ovando from New Jersey answers questions at the TACF booth. He was assisted by Luke Banker and other staff and volunteers.



**Pennsylvania Chapter
The American Chestnut Foundation**

206 Forest Resources Lab
University Park, PA 16802

Nonprofit Organization
U.S. Postage Paid
State College, PA
Permit No. 234

RETURN SERVICE REQUESTED

The Chestnut Tree Newsletter



Summer interns, Brandon Hall (left) and Andrew Russell (right) pose in front of a small grove of American chestnuts at one of the Penn State Orchards. Andrew just finished his senior year and will be leaving the Penn State community. Brandon will begin his senior year in the fall and plans to stay on with PA-TACF part-time through the school year.

Chapter Calendar - 2012

SEPTEMBER:

9/4-8 International Chestnut Symposium
Shepherdstown, WV

OCTOBER:

10/6 Green Fest, Bristol, PA

10/18-19 TACF Fall Board and Cabinet Meeting
Asheville, NC

10/19-21 American Chestnut Symposium
Asheville, NC

10/27 Fall PA Chapter Meeting,
Duncansville, PA

JANUARY:

1/5-12 PA Farm Show

Check out the full event calendar
at www.patacf.org for more de-
tails

