

Dedicated to restoring the American



PA-TACF:

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Chestnut Tree

VOLUME 18, ISSUE 1

MARCH 2013

Spring Growers Meeting Saturday, April 6



Dr. William Powell, Director of the Council on Biotechnology in Forestry at SUNY-ESF and the Co-Director of the NY State American Chestnut Research and Restoration Program.

After 23 years of research, the transgenic approach to enhancing blight resistance is meeting success. But the research isn't yet completed. This presentation will briefly describe the journey, give an update on the current successes, and describe what needs to happen next, including how the transgenic approach can complement the breeding program.



Tina Alban, Forest Nursery Operations Manager, Penn Nursery and Wood Shop

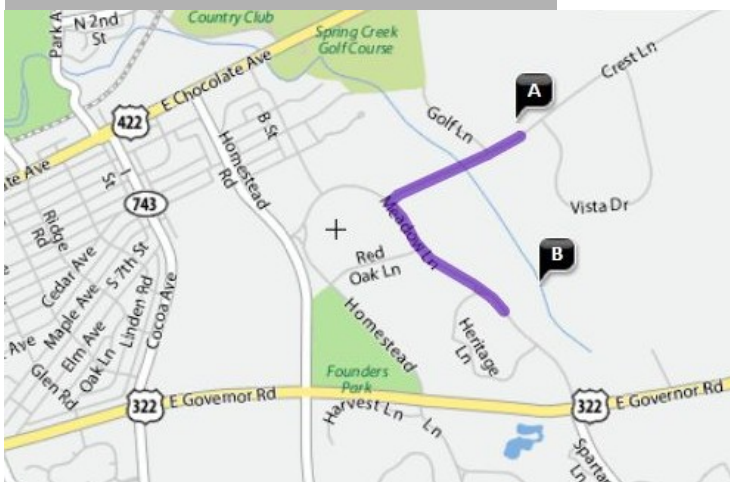
Tina served as a reforestation specialist working on strip mine reforestation for 16 years. After which she held the positions of Watershed Coordinator, Assistant District Manager at Rothrock State Forest and finally her present position. When she's not working, you can find her gardening, biking or pretending she's a wildflower photographer. Tina will be talking with us about her work in mine land reclamation.



Su Ann Medford, Environmental Review Specialist, PA-DCNR

Over the past five years, Su Ann has been working in one of the world's rarest ecosystems: the longleaf pine-wiregrass ecosystem. A keystone species of this system is the red-cockaded woodpecker, *Picoides borealis*, which is now endangered because of its extremely specific housing requirements. This lecture will give you a glimpse into the dynamic management practices that sustain and conserve the Sandhills ecosystem.

Details and Directions:



Place: Milton Hershey School Environmental Center, Hershey, PA

Time: 9 a.m. to 3 p.m., registration at 8:30 a.m.

Registration fee: \$10 at the door pays for lunch and snacks

1. From US 322, turn north onto Meadow Lane (TWP Hwy 755)
2. Continue on Meadow Lane to for .05 mile to Crest Lane
3. Turn right to the Environmental Center

*Below: A = Environmental Center.
B = Supply Pickup location following meeting.*

President's Corner



PA-TACF's new President, Don McCann, at his home woodlot in Lancaster County, PA.

As I write this, I've just finished volunteering at the PA-TACF stand at the Farm Show. It was a great event with a lot of folks stopping by; our own members and a lot of folks who are not members but are keenly aware of our efforts and stop by each year to ask, "How you doing, do we have a disease resistant chestnut yet?" It's fun to answer their questions, tell our "story" and stay in touch with the public perception of PA-TACF.

Each year there are always some new faces volunteering to help out. I would encourage readers to give some thought to volunteering at one of these outreach events. It's easy and also a remarkable learning experience. Perhaps you've thought about volunteering but were hesitant because you thought, "What do I know? How can I explain what we do?" Well, the good news is we work to pair new volunteers with those who have done it before so it's really quite easy to pick it up.

Volunteering is what makes PA-TACF tick, whether it is staffing our display at the Farm Show or at AG Progress Days, working in one of the orchards planting, pollinating, inoculating, harvesting, shucking burs or helping rogue an orchard. Each of these endeavors goes quicker with many volunteers, and it's all fun! So join in. For the reluctant volunteer taking the first step has two parts, the first is mental, say to yourself "I can do that," and the second, "I will do that," is physical—raise your hand, click "respond" to one of our emails, or pick up the phone and call us. If you'd like to know when we are looking for volunteers and you are not already on the PA-TACF email list, call our office or email a request to mail@patacf.org, to get on the list.

My own experience was that I joined TACF a decade ago and enjoyed following the organization via the TACF Journal and the PA-TACF newsletter. I told myself getting involved was something I'd do when I retired. Well that day came and I challenged myself to raise my hand. I began volunteering in the field, getting dirt under my fingernails—what a good feeling in the springtime! And now, several years later, having served my two years as vice president, I begin serving as your president, as Tim Eck has completed his two year term as president. I bring no special scientific skills to the position, no formal training in forestry, just a love of the forest and two grandkids, who I hope will someday see chestnut trees up in the canopy. And most importantly I bring a willingness to raise my hand and say, "I can do that." I hope you all think about raising your hand in this New Year—it's what makes PA-TACF tick.

Raise *your* hand...PA-TACF seeking a Treas\$urer

We are currently looking for a Treasurer. Our current Treasurer, Jim Egenrieder, has served for five years and has expressed a commitment to training, supplying documentation, and supporting the new treasurer and administrator both before and after the transfer of duties is complete.

If you have an interest in serving PA-TACF as Treasurer, please contact our office at 814-863-7192 or



Chestnut enthusiasts in the wild!

PA-TACF Volunteers Mike and Kieu Manes led a chestnut hike at the Mariton Wildlife Preserve on September 15 last year.

Mike and Kieu will be doing more hikes in 2013! This is a great pair to show you how to look for American chestnuts in the wild. Keep an eye on the PA-TACF calendar to find out when they will do their next hike.

Here, Clark Beebe explains the TACF breeding program as onlookers observe a “restoration chestnut” planted onsite.

Photo (right) by Mike Manes



2012 Fall Meeting at Barneywood

Last September, we went back to where it all began. Some of the earliest PA-TACF meetings were held at Barneywood, so for Ann and Bob Leffel, Tom Pugel, Chris Ditlow, Blair and Mary Carbaugh, Dave Armstrong and Tracey Coulter, being back was a trip down memory lane.

We had a series of great speakers and a wonderful lunch provided by Barneywood. Members, new and old, came together to tell stories and ask questions. A good time was had by all!

Pictured: Leila Pinchot gives a talk on her research on chestnut restoration.
Photo by John Hempel

Save the Dates!

March

5: Talk on the American Chestnut, Altoona, PA

April

5: Chestnut Grower School, Gettysburg, PA

6: PA-TACF Spring Growers Meeting, Hershey, PA

13: Chestnut Grower School, East Finley, PA

20: Chestnut Grower School, Erie, PA

24: Forest Restoration Specialist Training, Penfield, PA

May

TBD: Raystown Restoration Branch event

10: Private Forest Landowner Conference, Altoona, PA

10 & 11: Chestnut planting, Force, PA

July

27: Chestnut ID and Hike, Kempton, PA

November

2: PA-TACF Fall Meeting, Media, PA

Visit our calendar or call our office for more details.

Be sure to keep track of PA-TACF events by regularly visiting our calendar at www.patacf.org

My Chestnut Story



PA-TACF member Ethan Hollamby next to a pure American chestnut he planted in Olean, NY

We want to hear how you came to have a relationship with the American chestnut and the American Chestnut Foundation. Please mail your story to us at Penn State or e-mail to mail@patacf.org.

The following story was submitted by 11 year old member, Ethan Hollamby. Ethan has displayed a great interest and curiosity in the American chestnut and is supported by his family in his pursuits. It was great to hear how he got involved. Enjoy!

How I first heard of chestnut trees, was my Uncle Mark during a walk in the woods. I think that we were talking about how old some trees are because it was a very old group of white pines, and

my uncle brought up chestnut trees. He told me that when he was younger, an older man that he knew told him about chestnut trees but he didn't say a lot.

After that I was interested in finding out about the "new tree" that was once so abundant but now is absent from our forests due to obliteration by a blight. Immediately, I wanted to know more, so I went on the computer and looked up the American Chestnut.

After I did my research, I wanted to see one in person so I went online again to see if I could find one for sale. After a long time of looking I found American Chestnuts at a greenhouse in Washington state called Raintree Nursery. A while later, my grandparents got me 2 American Chestnuts for my birthday in May. I've been growing them ever since.

One day while I was waiting for my birthday, I was going for a bike ride through the woods when I found an actual wild American chestnut tree with blight! I was excited because that was before I knew that sometimes wild chestnuts can be a common sight, but I think that was a major point in the development of my interest in this particular tree. Later in the summer, there was even more excitement because I found two huge fruit bearing American Chestnuts. One was pretty much dead and the other one seemed healthy at the time.(later I found out it was blighted too). Then there was the PA-TACF fall meeting to look forward to in October. When the day of the meeting arrived, my dad, my grandpa, my sister and I, all got up early(3 O'clock A.M.) for a 3 hour drive and went to the meeting. I had a good time. I got to meet some very nice folks and I got some chestnuts to grow. I got a lot of useful information. During all of that, whenever I had any questions, (and trust me, I had a lot of those) I just E-mailed Sara Or Stephanie and I always got an answer. That is my story of how I got interested in chestnuts.

Volunteer Spotlight



John Civitts grew up in upstate New York and lived for short periods of time in Mexico and Argentina when his father was employed there by an American company. He voluntarily joined the Army in 1965, served in Vietnam with the 173rd during 1967-1968, and was awarded the Bronze Star. He graduated from Juniata College in 1970. It was there he met his wife, Nancy, and they have been married for 42 years. They have two sons and two grandsons who live in the Seattle area. John spent most of his working life as a Production Manager at various companies. He sold automobiles for the latter part of his career and retired seven years ago.

John's involvement with chestnut trees started as a young boy when his father and grandfather talked about the blight and the number of trees they cut for firewood during the 1930's and early 1940's in Mifflin County, Pennsylvania. They always valued the wood in furniture and objects from the past. The interest was reignited when John attended a chestnut tree seminar presented at the local level about two years ago. At this point he decided he could go home and sit on the sofa or he could get up and volunteer to help. Since then, he has been quick to respond on most every call for help sent out by our office.

A HUGE Thanks to all our volunteers!

Don said it best, volunteers are what makes PA-TACF tick. Even in the slower months since the publishing of our last newsletter, we have made several requests for volunteers and we are so grateful for those of you that have answered the call. **Note the there are hundreds of other volunteers that helped at various orchard-related events as well. Many thanks to all of you, too!*

Representatives at festivals:

Joe Lankalis- Heritage and Bluegrass Festival

Vicki Brownell- Harvest Festival

Paul Loebecker- Green Fest

Helping out at PA-TACF events:

Alan Tumblin - big thanks to for selling merchandise at Fall Meeting

Speakers:

Beth Brantley– South Mountain Audubon Society

Mike Manes– South NJ Organic Gardeners Club

Farm Show:

John Civitts, Harry Senft, Annette Mathes, Dave Armstrong, Bob Summersgill, Tom Pugel, Tracey Coulter, Tim Eck, Bob Meiser, Jim Egenrieder, Don McCann, Kyle Stapp, Susan Smith, Alan Tumblin, Mike Waldron, Kathryn Vescio and Sheryl Schultz



PA-TACF Vice President, Dave Armstrong, shows off our American chestnut samples at the PA Farm Show

Photo by Annette Mathes

Chapter Breeding Corner

- Sara Fitzsimmons

Table I. A summary of inoculation ratings and survival across advanced backcross orchards planted as part of PA-TACFs backcross breeding program. Please see accompanying text for explanations of asterisked headings.

| Farm Name | AVERAGE RATING by TYPE and FARM | | | | | Total Planted | Survival ** | Inoc'ed* |
|--------------------|---------------------------------|-------------|-------------|-------------|-------------|-----------------------------|-------------|------------|
| | American | Chinese | F1 | BC3 | TOTAL | | | |
| Dornsife | 4.68 | 2.38 | 2.88 | 4.13 | 4.01 | 430 | N/A | 35% |
| Kuhns | 4.38 | 2.56 | 3.33 | 3.94 | 3.88 | 1202 | N/A | 14% |
| Ober | 4.31 | 2.25 | 3.70 | 3.92 | 3.87 | 779 | N/A | 20% |
| Graves | 4.50 | 2.67 | 2.60 | 4.01 | 3.81 | 1689 | 64% | 18% |
| AVERAGE | 4.37 | 2.26 | 2.88 | 3.81 | 3.73 | 9301^{Total} | 51% | 19% |
| Brogue | 4.90 | 1.93 | 2.84 | 3.83 | 3.70 | 619 | 59% | 48% |
| Red Clay | 3.38 | 2.50 | 4.00 | 3.71 | 3.65 | 474 | 53% | 27% |
| Beech Creek | N/A | N/A | 3.25 | 3.66 | 3.64 | 403 | 43% | 10% |
| Pine Grove | 4.33 | 1.70 | 3.00 | 3.77 | 3.63 | 149 | 30% | 50% |
| Reigelsville | 3.50 | 2.13 | 2.83 | 3.57 | 3.47 | 168 | 65% | 49% |
| Codorus | 3.94 | 2.07 | 2.50 | 3.46 | 3.38 | 174 | 60% | 46% |
| Reels Corner | 3.50 | 2.00 | 2.00 | 3.40 | 3.32 | 214 | 58% | 22% |
| EXPECTED*** | 4.75 | 1.25 | 3.00 | 4.00 | 3.25 | ----- | | |
| Hummelstown | N/A | 2.00 | 2.80 | 3.29 | 3.07 | 238 | 30% | 15% |
| TNC | <i>Inoculated 2012</i> | | | | | 220 | 78% | 56% |
| Moshannon | <i>Inoculated 2012</i> | | | | | 462 | 31% | 36% |
| Blooming Grove | <i>Inoculate starting 2015</i> | | | | | 976 | 94% | X |
| Silver Ridge | <i>Inoculate 2013</i> | | | | | 269 | 61% | |
| Klingerstown | <i>Inoculate 2013</i> | | | | | 120 | 23% | |
| Smith | <i>Inoculation Year TBD</i> | | | | | 715 | 80% | |

Since the Chapter started breeding chestnuts in 1994, it has planted over 50,000 across 70 locations throughout Pennsylvania, New Jersey, Maryland, and Delaware. With its many partners and volunteers, the Chapter establishes and maintains several breeding, research, and outreach plantings. The largest percentage of plantings to date belong to the mainline backcross breeding program. A summary of most of those orchards may be found above in Table I.

The mainline backcross breeding program initiated by The American Chestnut Foundation (TACF), and followed by most of its licensed Chapters, takes a minimum of six generation to complete. Most often, TACF Chapters start breeding at the fourth generation, often referred to as the “BC3” generation. These plantings generally consist of 100 or more BC3 trees as well as “controls” that include “pure” American and Chinese chestnuts, as well as the first-generation hybrid (F1). These controls are planted in the orchards to help with the inoculation process, which is described in a bit more detail later.

At approximately five years of age, fourth-generation breeding stock is ready for inoculation. In this process, the blight is placed in wounds created along the stem, and left to grow for 12 months. The subsequent cankers are given a score between 1 and 5 where 1 is highly resistant and 5 is highly susceptible. This is where those control trees come in to play. The Americans should fall out around 4 and 5, the Chinese trees should fall out around 1 and 2, and the F1s should fall out around a rating of 3. These “expected” ratings

New insights into American chestnut history

PA-TACF Member, Bill Lord has written a 22-page history of the American chestnut, covering early classification, notes on the nature and ecology of the tree, blight introduction and impact, historical uses, and the origination of chestnut breeding programs.

Travel back to the eighteenth century to follow early botanists in their explorations of the Eastern US. Learn who finally got it right when it came to classifying the American chestnut.

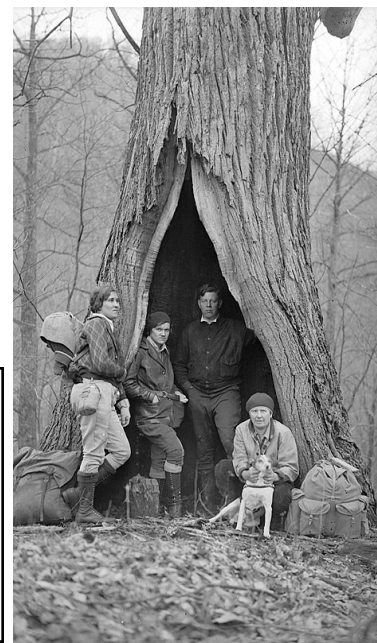
We are working to format sections of the paper to include in our newsletter. If you would like to read the whole piece, copies can be requested by contacting our office.

"Smoky Mountains Hiking Club enjoying the big chestnut tree stop. The day before the snowstorm."

March 5, 1932

Albert Gordon (Dutch) Roth

Photo from the University of Tennessee Great Smoky Mountain digital photograph collection



Chapter Breeding, cont.

are reflected in Table I in the row labeled **EXPECTED*****. The reason for the asterisks is that these numbers will almost never be realized in the field.

The cankers of chestnut blight are affected by environmental conditions. If the trees are stressed out for reasons such as drought or insect damage, the resulting cankers will be larger and deeper than if the tree was otherwise healthy. This is why blight-resistance is not blight-immunity. Even Chinese chestnuts can succumb to chestnut blight if they are severely stressed. And that's why we put in these controls. If the Chinese chestnuts show higher than expected ratings, i.e. more or less resistant than expected, then we can apply that handicap to the BC3s to that location for that year. Looking at Table I, the higher than average ratings may, in some cases, be explained by stressful locations, i.e. a pH that is too high and/or soils that are generally too wet for American chestnuts.

Keeping in mind the differences across planting sites, there are a few more things to note about this table. First, the **Survival**** column is survival to inoculation. Second, the **Inoc'ed*** column notes the percentage of planted trees that were actually inoculated. Even though an average of 50% of planted trees make it to inoculation age, they may not be inoculated for reasons such as being too small (runty) or having too much blight or other damage. As you can see, the Chapter inoculates an average of about 20% of the trees it plants in its fourth-generation orchards.



The inoculation crew challenges backcross trees at The Nature Conservancy's orchard in Hyner, PA. Photo credit: George C. Gress.

One thing these numbers don't show is the diversity in of pedigrees planted. There are almost 50 unique crosses that make up the BC3s shown in table I, as well as many different backgrounds of the controls. With that amount of diversity, and because we don't have replication of those backgrounds across orchards, the current numbers shown in Table I don't have much statistical strength for comparison across site. Even though statistically these numbers aren't strong, we can still make out some interesting trends. Hopefully as more data are accumulated from other Chapters that have the same BC3 pedigrees, we can start to present statistically sound comparisons, and some results that can better inform future breeding.

**Pennsylvania Chapter
The American Chestnut Foundation**

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University Park, PA 16802



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The Chestnut Tree Newsletter

PA-TACF Member photo



Photo of a selected BC3 tree at Red Clay Reservation in Hockessin, DE. Russ and several other volunteers worked to harvest over 1500 chestnuts from the Red Clay orchard this fall. *Submitted by Russ Hornung.*

Want to see your photo in The Chestnut Tree?
Please send your photos to mail@patacf.org

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