

PA/NJ Chapter of The American Chestnut Foundation
2018 Spring Growers Meeting

Penn State Mont Alto

April 14, 2018

By Jim Searing, PA/NJ-TACF

Here are my notes from the Spring Growers Meeting. It was a great experience, especially to learn from the experts and see the living experiments involving chestnut trees on campus.

We deeply appreciate the great work of Clark Beebe, Mary Ayres and Louise Aucott who made the registration, greeting, fund-raising, auction and merchandising all happen; Jean Najjar who organized the event; and TACF Director of Restoration Sara Fitzsimmons. Kudos to all our speakers (noted below), and Penn State Mont Alto Professor Elizabeth Brantley who hosted the event and led an inspired tour of the campus chestnut testing site, and all the other guides and students from Penn State. Your support and enthusiasm for our cause is inspiring.

Kindest regards,

Jim Searing

PA/NJ TACF Board Member

1. Jean Najjar announced that there would be **no fall meeting**. Instead, members are urged to attend some of the other events scheduled for fall:
 - a. 11th Annual West Virginia Chestnut Festival on October 7, 2018
 - b. TACF National Annual Meeting in Huntsville Alabama on October 25-27
 - c. The First PA-TACF tailgate and Huddle with Faculty at Penn State on November 10th
2. Mark your calendar for the **2019 TACF National Annual Meeting in Gettysburg on October 17-19, 2019.**
3. Chapter President Clark Beebe announced that he is planning to move to Arizona. He thanked everyone for their support over many years. He indicated that VP Mary Ayres will become the next President.
4. Sara Fitzsimmons presented ***Strategies for Hunting American Chestnuts***
 - a. We have a new project to find new and unique sources of American Chestnut
 - b. So far, TACF has found a total of 1,075 trees that have been officially identified and conserved
 - c. 197 of these trees are in PA!
 - d. TACF wants to find 3,000 more over the next 5 years
 - e. In PA and NJ, our task is to find 250 new trees in the next 5 years. We have a particular interest in flowering trees; these will help us collect pollen and nuts

- f. Sara urged us all to use the TreeSnap app to record any trees we find. This was developed by the University of Kentucky for citizen scientists to log endangered tree species. Log both large and small trees. (Note: I also use it for any new trees we plant—great app).
- g. Alternatively, use the PA-TACF Tree Locator Form available on the internet (in paper format)
- h. Sara noted that chestnuts love disturbances, and we are finding more in clear-cut sites used for lumber sales. Often, chestnuts are the first to sprout up and take off quickly before being overtaken by slower growing maples, oaks, etc.

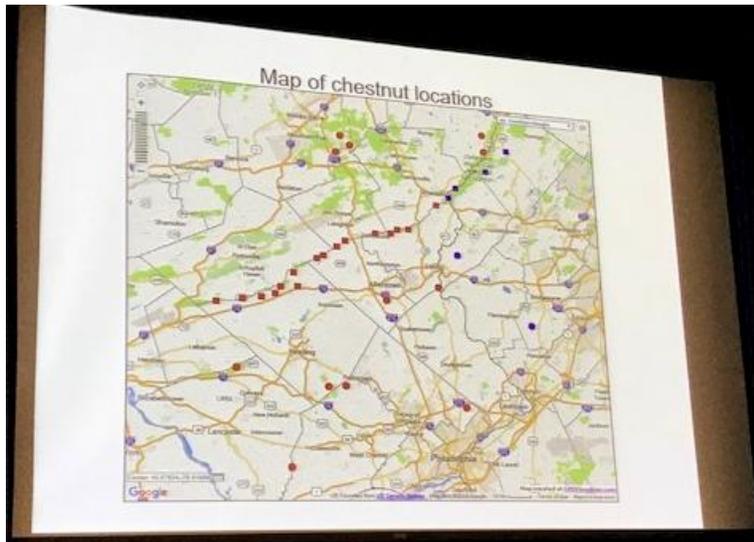


Figure 1 Yes PA and NJ, There Are Chestnuts Out There!

- 5. Next up was Mike Aucott on ***Finding American Chestnut Survivors***
 - a. Mike led a project to find chestnuts in the Allegheny National Forest
 - b. His suggested approach:
 - i. Target your search for promising sites
 - ii. Plan your expedition
 - iii. Key in on what you are looking for
 - iv. Keep careful records and data

Targeting your search for promising sites

- Do some work on Google. For example, take a site and add the word 'chestnuts' (e.g. "Allegheny National Forest chestnuts")

- Often, you will find individuals or organizations that have already found chestnut trees and talked about it on the internet. He cited the Eastern Native Tree Society as one such source.



Figure 2 Mike Aucott and Field Team

- Ask TACF's Sara Fitzsimmons!
- Ask local foresters or park rangers

Plan your expedition

- Scout the area in advance: Is it findable? Accessible? What kind of terrain or special access might be needed?
- Check on cell reception: Often you will be in places with no cell service



Figure 3 Beech to the Right of Me; Chestnut to the Left!

- Get maps, e.g. USGS for elevations; Park maps etc.. Another source is Google Maps—use the menu that lets you see the Terrain (“Terrain view”)
- A few essential items to pack: Bug spray, bear spray, noisemaker, analog compass, water, walking stick, BINOCULARS, camera
- Mike introduced his and Louise's granddaughter Sandhya Surti, whose enthusiasm for finding chestnut trees gave us all hope that we can pass the legacy of our work to a new generation.

Key in on what you are looking for

Get chestnut patterns in your mind (Sounds like a good song title~)

- Leaves
- Catkins in sunny locations, spent catkins on the ground
- Burrs
- Bark
- Leaves in winter (Chestnut, like beech and oak, tends to hold their leaves through the winter)

Betsy Murtha shared her experience in hunting chestnuts. **“Widen your vision.”** You will often find chestnuts off the side of your attention. They can be right next to you, along paths because they like sunshine.

Keep careful records

- Use TACF Tree Locator Form
- TreeSnap (it can upload information later, after you are back in cell range)
- The Lat Long app is usually accurate even without cell coverage
- Photographs

- c. Next steps/Future of locating chestnuts
 - i. Drones or airplane searches
 - ii. We need to consider if we want to pollinate some of the trees we find
 - iii. Determine whether the trees we find are just lucky, resistant, or possibly using some type of hypovirulence
 - iv. Many chestnut trees are along the Appalachian Trail. If you do find them, record how big they are, are they flowering, presence/absence of blight. Take a sample, press it and send it to Sara.
6. PA/NJ-TACF's Consulting Representative Dave Anderson discussed ***Tree Hunting in Michaux State Forest (MSF)***, near where we were meeting
- a. In MSF, we have been finding trees and harvesting nuts for many years
 - b. Often find chestnuts in clear cut timber sale areas.
 - c. If you live near a state forest, check out where timber sales occur and take a look
 - d. There is a tree, Kelley Amhurst (spelling?) that is moderately resistant. In nut season, it needs to be visited every other day before animals take everything. We can harvest 6400 nuts from 60 trees in season. Amhurst tree is pure American; Kelley is American with some hybrid (European?).
 - e. I learned a new acronym: LSA = Long Survivor American
 - f. There will be a workshop in late July/early August on LSA care
7. Mike Manes: ***"Where there be mountaines, there be chestnuts"*** From a member of Hernando DeSoto's 1540 expedition
- a. Mike amended this to be 'Where there be ridges or hills, there be chestnuts!'
 - b. He once hiked 75 miles on the Appalachian Trail from the Schuylkill to the Delaware River. They sampled all American Chestnuts along the ridge line which forms both the trail and represents the very edge of a glacier's advance. The sampled trees had to be over 3' tall and within 15 feet of the trail. They found **4,600!** (Yikes!)
 - c. Mike studies topo maps and mentioned PASDA on the Penn State website as a good source.
 - d. Also, Penn Pilot on the Penn State site has historic aerial photographs
 - e. He noted three interesting sites with Americans
 - i. Appalachian Trail near Route 501. Mike thinks hypovirulence is working here
 - ii. Palmerton Environmental Reclamation Site: chestnut grows well at a former zinc mine site, even with heavy metal in the soil
 - iii. Merrill Creek NJ: near a reservoir site is a tree he calls the "Merry One" that is 17" diameter
 - iv. Mike's wife (sorry I missed her name) noted that in late fall, they look for chestnuts' golden leaves, which stay golden longer than other species.

- f. Mike inspired us all with mention of persistence. He urged us to see the film *Guerillas in Our Midst*. After searching and searching with no success, the naturalist falls/steps in poop; she realizes that it is guerilla poop. A Eureka Moment!
 - g. When you find a chestnut tree, it is like finding gold!
 - h. He has spotted many near Hawk Mountain, *with* nuts
 - i. Even Bushkill Falls, with a deep valley and lots of shade, has chestnuts growing on the edge of rocks with very little soil.
 - j. Don't think they can't be where you are...they can fool you.
8. TACF's Mid-Atlantic Regional Science Coordinator Tom Saielli presented ***Phytophthora cinnamomi* and the American Chestnut**. (Tom joined us despite being a new father and having to drive from Charlottesville, Virginia on his way to a tree planting in Kentucky on Sunday. Many thanks Tom!)
- a. In the south, *P. cinnamomi* (PC) is known as Ink Disease. It was introduced to America in the late 1700s or early 1800s
 - b. Problem is centered in the south, but moving north
 - c. Trees started dying in 1800s with widespread death at lower elevations; not present at higher elevations
 - d. PC likes clay soils and wetness
 - e. Often found in soil mixes and nurseries
 - f. Was well established long before blight killed chestnuts
 - g. Chestnut blight may have diverted everyone's attention away from PC risk
 - h. PC confirmed as pathogen in 2003
 - i. How to identify:
 - i. Chlorosis (yellowing) and wilting of foliage
 - ii. Dead and decaying roots
 - iii. Necrotic lesions advancing from root crown
 - iv. No re-sprouting; roots killed
 - j. PC as plant pathogen
 - i. 60-80 species identified; could be 800 (another Yikes!)
 - ii. This is an amazing group of organisms
 - iii. Responsible for some of the most devastating destructive disease outbreaks worldwide
 - 1. Potatoes and tomatoes
 - 2. Cucumbers, melons, squash
 - 3. Sudden oak disease
 - 4. Cacao and tobacco
 - 5. Irish potato famine
 - 6. Citrus gummosis
 - k. Particularly serious in or following wet years
 - l. Not a fungi, more closely related to plants, but it is a fungi-like organism

- m. Steve Jeffers at Clemson is an expert, does soil testing but only with strict protocols
- n. Once established in the soil, it is nearly impossible to eradicate
- o. Important to **disinfect shoes and tools daily**; put clothes and gloves in washing machine
- p. What can be done?
 - i. PC does not move very fast
 - ii. But we move it to new places!
 - iii. IS in PA, and will move North
- q. Some fungicide can stop symptoms but not eliminate them
- r. Suggest before planting orchards or big plantings, take soil test (send to Jeffers at Clemson) and do small initial planting to see if PC present.
- s. Plant chestnuts in well-drained soil, not wet spots, not low lands
- t. Mulching can lower pathogen in soil (interaction between decomposition and PC?)
- u. **A phosphate based chemical can work, such as Agri-Fos**
 - i. Use this in orchards
 - ii. Foliar, bark penetrant, soil drench options
 - iii. Typically, a foliar spray application every month or month and a half
- v. PC is a problem but when we plant restoration chestnuts in higher elevations, may not be a problem.
- w. TACF is actively breeding PC resistant chestnuts
- x. Yes, we are advancing sources of PC resistance at TACF's Meadowview Farm as well as finding new regional sources of resistance. Doing progeny testing of hybrid chestnuts. As we screen trees at Meadowview, we will use recurrent population resistant to blight *and* PC
- y. Transgenic program...OXO may not provide resistance. Resistance will come from backcross program. We are finding trees resistant to both.



Figure 4 TACF's Tom Saielli with PA-TACF members

9. There were three programs after lunch—a tour of the campus chestnut test site; a tree tour of the arboretum and a visit to a clear cut site with chestnut sprouts. I toured the chestnut test site, which was incredible. Penn State Mont Alto planted rows of 30 trees each in 2000. The rows were 100% American, 100% Chinese, 50/50, 75/25, 7/8s, and 15/16s. 18 years later...the Chinese look great. The 100% American is just about all gone. It vividly illustrated our challenge while providing a comprehensive way to compare and contrast the differences. We also saw evidence of the Chestnut Gall Wasp. Churchill's maxim is recalled: *"It is the courage to continue that counts."*



Figure 5 Prof. Beth Brantley leading tour of Chestnut orchard experiment



Figure 6 Rows of the Chestnut orchard with different resistance at PSU Mont Alto