PANJ

Dedicated to restoring the American

Chestnut Tree

VOLUME 28, ISSUE II SEPTEMBER 2023

2023 FALL CHAPTER MEETING

Saturday, November 4

8:30 AM to 2:30 PM

Berks Campus Penn State University
Perkins Student Center | Reading PA

Purchase your ticket online:
https://patacf.org/2023-fall-meeting/
Or
RSVP by Thursday, November 2
mail@patacf.org | (814)863-7192
and pay at the door

Special Guest Speaker

"Forests Adrift: Ecological Legacies and Modern Currents that Will Shape Eastern Forests"

Charles D. Canham, Ph.D.
Senior Scientist, Emeritus
Cary Institute of Ecosystem Studies

"Drawing from his recent book *Forests Adrift*: *Currents Shaping the Future of Northeastern Trees,* Charles Canham will sketch both the ecological legacies and modern currents that will shape the future of eastern forests. It is not possible to understand where our forests are headed without accounting for the legacies of centuries of changes in land use and forest management. And while the impacts of climate change rightly dominate headlines, the effects on eastern forests will take place in the context of the many other currents that will determine the future distribution and abundance of eastern tree species. Those include both the intrinsic process of forest succession, and many human threats, including air pollution, invasive species, and the ever-expanding list of introduced forest pests and pathogens."

Charles has a PhD in Ecology and Evolutionary Biology from Cornell University, and Bachelors and Masters degrees in Botany from Montana State University and the University of Wisconsin-Madison, respectively. His primary research interests have focused on the ecology and management of temperate forests, particularly in the Northeastern U.S.

Perspectives on Land Protection and Easements — Panel Discussion

Amanda Burkard-Sell

Agriculture Program Manager
Berks Co. Dept. of Agriculture |
Leesport, PA

The Berks Co. Agricultural Land Preservation Board, assisted by staff of the Berks Co. Dept. of Agriculture, is responsible for administering the Agricultural Conservation Easement (ACE) Program — permanently preserving farmland to ensure the future of agriculture in Berks Co. through the purchase of agricultural conservation easements.

Jack Stefferud

Senior Director of Land Protection
Natural Lands | Media, PA

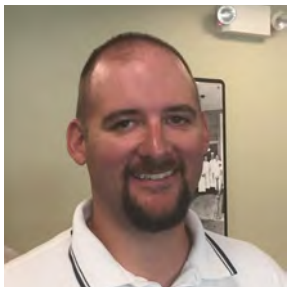
Natural Lands is a non-profit organization that saves open space, cares for nature, and connects people to the outdoors in eastern Pennsylvania and southern New Jersey. Natural Lands has been protecting open space since the early 1950s, completing hundreds of conservation projects.

Representative
from Berks Nature

A Non-profit based in Reading, PA

As a 501(c)(3) non-profit conservation organization, Berks Nature has been serving the Berks County community since 1974. Land preservation, water protection, trail management, community gardens, education programs, State of the Environment , Eco-Camp and our valued partnerships are at the center of Berks Nature's work every day.

More meeting information on page 7



President's Corner

Greetings,

Greetings!
Like many of you- autumn is my favorite season of the year. Nights are cooling, colors are starting to creep into the landscape, chestnut burs are starting to "smile" and crack open to release their annual bounty. And of course the clock is ticking on pesky summer bugs! As the season of harvest begins, months of work and a year of planning fall together for a bounty of whatever crop is being grown. Our beloved harvest of chestnuts may end up feeding your forest critters, roasted over an open fire, stored in a cooler to plant in the spring or sent to a lab to get poked and prodded for OXO testing. Either way, natures bounty is always a delight. TACF is celebrating its 40th anniversary this fall. That milestone is a bounty of hard work, determination, and generosity of the members of this organization. I look forward to seeing you at our fall meeting as we celebrate the bounty of the past 40 years, and begin the planning for another exciting year. See you soon!

Rick Hartlieb
President
PA/NJ Chapter of TACF

Many Thanks to Ron Farr for a decade of Board Service

Please join PA/NJ TACF in thanking Ron Farr for his ten years of service on our Board of Directors. Ron provided a unique perspective based in his professional experience as an environmental scientist and Forester. He was the first New Jersey representative on the Board, starting in 2013. All the best to you, Ron! And we'll see you at a member meetings in the future!

Left to right: Sara Fitzsimmons, Randy Santoro, two members looking at the trees, and Ron Farr.

The Leffel Center at Penn State University Has Moved!

New Address:
Pennsylvania State University
PA/NJ TACF
108 Research Unit A Modular Lab
University Park, PA 16802

ISSUES WITH OUR NEW ADDRESS SHIPPING LABELS and USPS

Please note: Penn State University is in the process of reverifying all of the addresses at the University Park Campus. We are receiving mail but if you are attempting to create a label for a package, through the USPS website or other metering platform, the address will be rejected because it hasn't been verified by USPS. Similarly, your local post office may at first reject a package. If this happens, please ask them to defer the verification of the address. We have been assured that they are able to defer verification but if they refuse, please call our office. Once the package reaches University Park the campus post office will deliver it.

Remembering Bob Summersgill

June 25, 1935 — May 16, 2023

Bob was an active volunteer and dedicated advocate of our restoration mission, serving as Secretary of the PA Board starting in 1998 before moving on to serve for six years in the *hierarchy of the Presidency* (consecutive 2 year terms serving as Vice President, President, and Past-President) in 2002. Members who knew him and who in many cases he had recruited, describe him as a pied piper. He drew people in with his passion and enthusiasm, spreading the gospel of American chestnut restoration. Straddling his home in New Jersey and his family farm in Pennsylvania, he provided the perfect bridge to connect our Chapter members across the Delaware.

In the February 2004 issue of this Newsletter, Bob noted connections made with the New Jersey Conservation Foundation (NJCF) and NJ Forestry Service and plans for the first BC3 orchard in New Jersey along with Cytoplasmic Male Sterility Program (CSM) planting. Bob had originally hoped to start a New Jersey Chapter with these partnerships that he forged. That plan didn't come to fruition but the relationships he established led to the melding the states into one chapter.

John Kresbach, Bob Summersgill, Chestnut, and Merv Haines at Schooley's Mountain orchard

Due in large part to his efforts, TACF recognized our Chapter in its membership report as the PA/NJ Chapter in its December 2011 Membership report. This is the first official recognition of our chapter as a two state partnership.

Bob was a pied piper, dedicated leader, and bridge builder. He played a critical role in growing TACF membership and fostering the melding of the PA/NJ Chapter. He will be missed.

Check your 2023 Fall issue of the Chestnut Journal for more remembrances.

Staffing Changes at the Leffel Center at PSU

Congratulations to **Stephen** "goes by Hoy" **Hoy**, who after a decade as our Penn State Orchard Manager, he is stepping into his new role as the TACF North Central Regional Science Coordinator. He has been gradually moving into this role while training his replacement and overseeing the move of our Greenhouse facilities. He will continue to work at the Leffel Center here at Penn State and no doubt with his decades of experience, play a vital role in our restoration research. But now he will be working at the regional level covering Ohio, New York, Indiana, as well as the Pennsylvania and New Jersey Chapters of TACF.

Stephen Hoy

Noah Vincent

Please also join us in welcoming **Noah Emerson Vincent** to the Leffel Center team. Noah was hired this past July to fill the Orchard Manager position, arriving in the middle of a greenhouse move and the beginning of pollination season. Like Hoy, Noah is a Pennsylvania native. He graduated from Susquehanna University with a degree in forest ecology and has worked for several years for commercial tree care companies in Lancaster and Centre County.

Lastly we want to acknowledge our 2023 Summer Orchard intern, Elijah Wade. A rising Junior at PSU, majoring in Agricultural Science with a minor in Horticulture, Elijah is another PA native who transferred from the Berks Campus last year. We hope that he will stay engaged with our restoration mission and wish him well in his future endeavors.

Elijah Wade

Science Report

Exploring Secondary Benefits of Darling 58

by Stephen Hoy TACF North Central Regional Science Coordinator

The summer of 2021 was a milestone for the PA/NJ chapter with the first round of controlled pollinations using Darling 58 (D58) pollen from trees produced at State University of New York—Environmental Science and Forestry (SUNY-ESF)& University of New England (UNE). The 1,000 pollination bags placed on thirty-five different mother trees yielded 1,487 positive seeds. These seeds were planted in the PSU greenhouse in January of 2022 and grown out over the year for use in various research projects. Toward the latter part of the summer some of the seedlings developed pronounced cankers on the stems not consistent with *Cryphonectria parasitica* the fungus responsible for chestnut blight (figure 1). Collected tissue samples were successfully isolated and confirmed to be G*nomoniopsis castaneae/Gnomoniopsis smithogilvyi* (further referred to as Gc) by Maryland chapter president, Bruce Levine. Bruce Levine and Sara Fitzsimmons hypothesized the presence of the D58 gene in the seedlings was causing the formation of swollen cankers in response to the Gc infections similar to the cankers formed around Cp infections.

Figure 1: Cankers forming on D58+ seedling 2022.

Gc is primarily responsible for brown rot in chestnut nuts but can also cause cankers similar to chestnut blight (Dobry, 2022). The pathogen was first discovered in the United States in Michigan in 2019 (Sakalidis, et. Al 2019). In 2020, Dobry collected stem samples from chestnut trees in the Penn State University Park research orchards and confirmed the presence of Gc. (TACF Chestnut Chat: *Emerging & Evolving Threats to Chestnut Health* — July 16, 2021).

However, infections had not been observed in any propagated seedlings in the greenhouses until growing the D58+ seedlings in 2022. The infected seedlings had active cankers of Gc, but they continued to grow through the 2022 season. These infections were concentrated in a single plot of trees from the arboretum orchard. Of the twenty seedlings with signs of infection the symptoms were consistent, with numerous small dark cankers surrounded by swollen tissue running up the main stem.

The infections did not spread to other seedlings and no seedlings planted in 2023 have shown signs of infection. To test the hypothesis set by Levine & Fitzsimmons a small sample of seedlings 40 individuals representing 10 D58+ and 10 D58- full siblings from two separate families in the Arboretum were inoculated using the small stem assay method in late July 2023. The seedlings will be monitored for the remainder of the growing season and photographs of the inoculation site will be recorded for all seedlings monthly to compare the response of the D58+ versus D58- as well as the response between the two families. (Photo 2) This project may provide evidence of the Darling 58 gene protecting American chestnut from other canker causing pathogens.

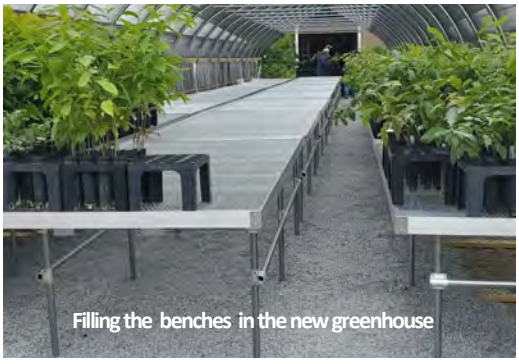
Comparison of D58-(left) to D58+(right) after initial inoculation with Gnomoniopsis castaneae.

Greenhouse Operations at Penn State

The Big Move — by Stephen Hoy

Since 2005 when the Leffel Center officially opened its door at 206 Forest Resources Lab at University Park the PA/NJ Chapter has used the greenhouse and shade house structures connected with the building. These facilities have enabled the chapter to propagate thousands of seedlings, harden them off in the protection of the shade-house and overwinter any remaining seedlings in the original glasshouse, constructed in the 1960's. Most of the supplies needed, from potting media and fertilizer to herbicides and sprayers (used in the orchards) were also stored in the greenhouse area.

Due to the impending demolition of the Forest Resource Lab and greenhouse area the search began for a suitable location to move the chapter's greenhouse operations. The new location would need to have adequate indoor space to start all the seeds for the various research projects, as well as ceremonial, demonstration, and GCO seedlings. In the process of this search staff realized FRL was the only location with an existing shade structure, a 20 ft by 60 ft metal frame with a woven black plastic cloth covering to shade plants 50% during their transition between the greenhouse and eventual planting in the field. The structure itself may not sound substantial but its importance for successful transplants cannot be understated.



Filling the benches in the new greenhouse

The other aspects of propagation operations found a new home in the greenhouses near the Tyson building (less than 500 ft from the Berkey Creamery;) However, a portion of these areas would need to be modified by Penn State to accommodate the low temperatures necessary to keep seedlings dormant over the winter without expensive repairs for frozen pipes and pumps. Several meetings with project managers from Penn State, resulted in the decision to erect a new shade structure in the same area as the new greenhouse space, as well as modifying an existing heating and cooling system to use glycol enabling staff to run low temperatures without the risk of burst pipes through the winter months.

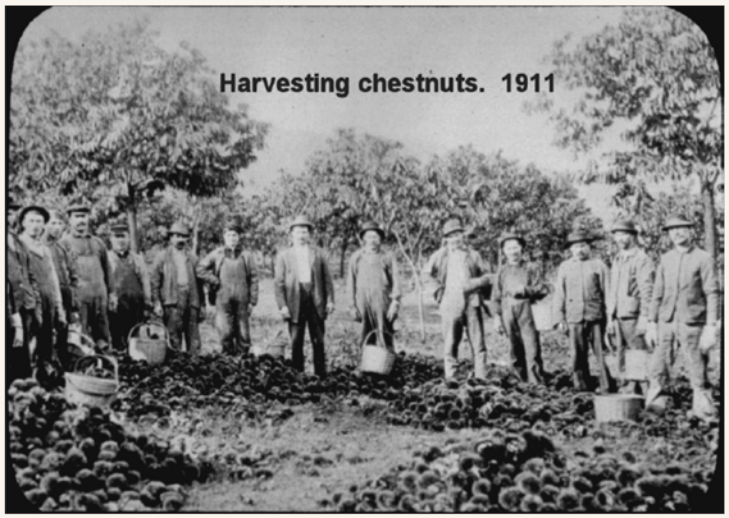
Construction began on the shade structure in April of this year and Office of the Physical Plant (OPP) signed off for use in early June. In addition to providing input to the project managers, staff also worked with other Penn State personnel to prepare for the actual move. There is a group within the OPP dedicated to moving supplies and equipment when departments relocate, and communication is key to having all items arrive at the right place and in good condition. The movers began by asking how many trees would be relocated to the new shade house and were surprised to learn the size of the chapter's operation of 5,000 seedlings. Fortunately, these were not individual pots, most were the small D40 pots, and twenty will fit in just over a square foot. The planner determined it would take two full days, possibly more, to get everything moved. Now it became a question of when. The field season begins in May at a fast pace, with a laundry list of orchard maintenance, training new interns, and spring planting. The pace steadily increases until the end of pollinations in early July most years — making it a challenge to find two consecutive days for the move.

Just after completing field inoculations and before the rush of pollinations the move was scheduled for June 7. Greenhouse tables were numbered in order of when the seedlings should be moved, and when the movers arrived, they carefully hand loaded every rack into a large box truck and drove the seedlings to the Tyson shade house. It took every minute of the two days to move all the seedlings and the new shade house is now packed full to capacity. The high light trees are in the new greenhouse producing more pollen for the 2024 season, and work is progressing for the modifications needed for overwintering. The rest of the summer will be spent updating planting processes and observing how the seedlings adjust to the new space. 2024 will be the first winter greenhouse planting in the new location and staff look forward to showing volunteers around the new space.

Commercial Chestnut Production

By Rick Hartlieb

The USA currently has about 4000 acres in chestnut production scattered on 1000 +/- farms. The majority of that production is outside of the native range of American Chestnut, with farms located in CA, OR, WA, and MI. This makes sense, as the commercial nut industry had to either adapt and move their operations outside of the blight range or were lucky enough to establish those orchards when big agriculture was developed in the western states. Orchards out west are primarily European x Japanese cultivars, selected for their big (somewhat bland nuts). Todays eastern USA chestnut industry is based on Chinese cultivars, due to its blight tolerance. Those nuts are smaller but sweeter.



Sober Farm chestnut harvest

So how influential was the commercial nut production of the American chestnut pre-blight? There was no ag census data collected then, so the measurements we have in old articles are in nut collection units of quarts, bushel baskets, inches of nuts on ground, and by the rail car! The commercial nut industry grew exponentially post-civil war, during reconstruction. Top producing states with chestnut as a farmed crop include PA, NJ, DE, and NY. Nuts were harvested by hand, often picked from closed burs, and pried open. A threshing machine was invented at the Sober Farm in PA to eventually do that work. Once the nuts were collected, they were often dried in the sun, stored, and rehydrated to roast and sell in the urban markets during the holiday season. Street roasters would often try to hold a 'strategic reserve' of nuts, so that prices would boost to five cents per cup of roasted nuts.

The orchards were not what you picture an orchard to look like today. There were rarely rows of trees planted in a field. A small chestnut orchard was an area on the farm that was logged, and mature chestnut trees reserved. Livestock and fire were used to maintain a clear orchard floor to harvest nuts. The larger commercial orchards were established on cheap, denuded, clearcut mountain ground. Again, the brush was cleared, and chestnut sprouts were reserved. These American rootstocks were used to graft European chestnut to, where nut production started in two years. The Paragon cultivar became the gold standard for commercial nut production, as it had large, sweet nuts, and could tolerate cold temperatures. It was selected by William Shaffer in the 1840's, and grown out in Germantown and Marietta, PA. The most notable Paragon orchard was at the Sober Farm in Northumberland County, numbering 75,000 trees on three hundred acres. This farm produced nuts by the rail car starting 1903. By 1913, blight had destroyed the business.

Sources:

Mighty Giants, an American Chestnut Anthology

The Paragon Chestnut, Dr. William Lord

https://centerforagroforestry.org/chestnut-improvement-network/chestnuts/

Wild American Update — Lake Graboski, Wild American Conservation Committee

There are currently two targeted missions described on our website. We invite you to review and join those missions if you have an interest in exploring uncharted territory. But we also encourage you to report any sightings of possible American chestnuts.

To learn more about wild American conservation, visit our website:

https://patacf.org/report-a-tree/

Committee reports continued on page 7

Chapter News

Outreach Committee

David Deaville, Outreach Committee

More than two generations have passed since the 1950s, and the last of our "Mighty Giant" trees was lost from its native habitat. ***Without energetic outreach, today's youth, and their parents, will never miss what they have never known.***. If this were a movie script, a hero would step in to save the day.

Be a hero! Outreach volunteers are the 'boots on the ground' providing direct, personal contact with the public. No experience or superhero cape, required.

There are two ways to be a hero:

> **Tabling at public events.** You will be provided with FAQs, handouts, physical samples as well as a storyboard that forms a reference to tell the American Chestnut story.

> **Speaking to interested groups** such as historical societies and garden clubs, etc., Suitable PowerPoint presentations are available to structure your talk.

The Chapter holds quarterly Zoom workshops to discuss all aspects of outreach including news updates, presentation ideas etc. As an Chapter volunteer, I've found that volunteering to help with outreach is really rewarding. It's amazing to see how much people care about these trees, and I've learned a lot from the stories and memories that people have shared with me. ***Get involved, contact Jean at mail@patacf.org***

Membership Committee
2023 Fall Member Challenge

Peter Reinhart, Membership Committee

Membership is a vital part of every organization. I tend to think more so for our Chapter because we are committed to one mission as citizen scientists — restoring the iconic American chestnut to its native range. We want to enlist your help in growing our member numbers, with two "membership challenges" for <u>current members</u>.

> **Recruit 5** new members before the end of the year and you will receive a free tee-shirt or cookbook. We'll send you membership brochures to help with recruitment.

> **Gift a membership** to a friend or family member before the end of the year and you'll receive a $5 discount off on your next renewal. Discounted membership renewals must be submitted through the Chapter office at Penn State.

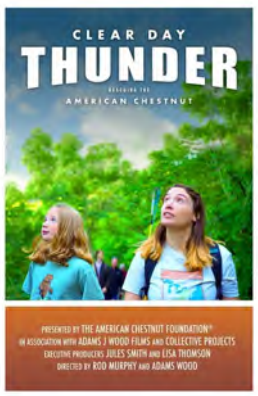
Bring prospective new members to our fall meeting on November 4. Meeting and experiencing the passion and dedication of our member community is a great way to entice others to want to join. ***Let's grow our Chapter!***

To act on either challenge please contact the Chapter Administrator: mail@patacf.org |814-933-6246.

Annual Meeting Program continued from page 1

Tour Castanea Farms Chestnut Processing Facility —Rick Hartlieb, Chapter President will lead a tour of the processing facilities at his chestnut farm.

Screening American Chestnut Documentary — Clear Day Thunder

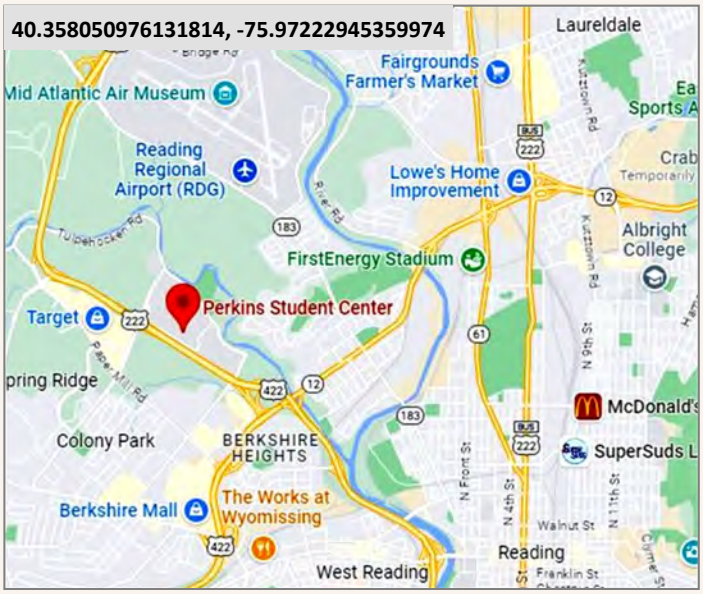


Parking is free for our event in Lots G1, G2, G3, and G4 check out the map on our website: https://patacf.org/2023-pa-nj-tacf-fall-meeting/

<u>Ticket</u>

Tickets are $25 and include a continental breakfast and lunch, provided by Berks Campus—Penn State Catering.

Berks Campus — Penn State University
Perkins Student Center
2080 Tulpehocken Rd, Reading, PA



PA/NJ Chapter of The American Chestnut Foundation

The Chestnut Newsletter

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mail@patacf.org
Phone: 814-863-7192

RETURN SERVICE REQUESTED

OUTREACH AND VOLUNTEER DATES

National Public Lands Day | Festival of Wood
September 23 –24, 2023| 10:00 AM to 5:00 PM
Grey Towers Historic Site | Milford, PA

Volunteer Shucking Day at Penn State
Friday, September 29 | 9:00 AM to 4:00 PM
University Park, PA
Contact Noah Vincent to learn more:
814-863-7192 | nev5073@psu.edu

Autumn Festival of Lights
October 7, 2023| 11:00 AM to 6:00 PM
West Milford, NJ

Fall Member Meeting
November 4, 2023| 8:30 AM to 2:30 PM
Berks Campus PSU | Reading, PA

PA Farm Show
January 6 through 13, 2024| 9:00 AM to 9:00 PM
Farm Show Arena | Harrisburg PA

TACF Chestnut Chats
Third Friday of every other month
(Jan, Mar, May, July, Sept, Nov.)
11:30 AM to 1:00 PM
https://tacf.org/chestnut-chat-archives/

Updates on our website: www.panjtacf.org

The PA/NJ Chapter of TACF is grateful for the continued support of NPC and their pro bono printing of this newsletter. NPC has printed every issue of The Chestnut Tree to date.