

Chestnut

THE JOURNAL OF THE AMERICAN CHESTNUT FOUNDATION



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Will Pitt
President & CEO

HELLO CHESTNUT ENTHUSIAST,

If you live in the native range of the American chestnut, chances are good autumn is one of your favorite seasons.

As you leaf through this issue, you will notice TACF's new logo on several pages. This has been a years-long collaborative effort - one part of a larger, comprehensive brand we know will help spread the hopeful story of the American chestnut even more effectively.

You will see this new brand in action when you visit us in beautiful Cromwell, CT on October 25 and 26 for our 2024 American Chestnut Symposium. This year's meeting will feature engaging events you can participate in, like a tour of chestnut orchards at the Connecticut Agricultural Experimentation Station (CAES), including the opportunity to visit founder trees ('Clapper' and 'Graves') used in TACF's original backcross breeding program.

We also encourage you to support TACF's 2024 End of Year Appeal, the theme of which is Growing a Legacy: Plant the Seeds of Tomorrow's Forests. It takes a bold vision to continue this forward movement with such an audacious goal, especially one as important and complex as restoring the American chestnut. We have spent a better part of this year planning the path ahead, and how we will expand and grow our legacy, building upon past successes to strengthen our organization and enhance connections.

Part of this process includes clarifying our goals and looking to the future, which is exactly what we are doing as we move toward finalizing, then implementing our three-year Strategic Plan. This plan is composed of several crucial elements, including awareness, people, and of course, science. Those three words may appear simple on their own, but together, they will lead us to mission success.

Please read on to learn about the Research Advisory Council (RAC), a blue-ribbon panel of industry and academic experts who are helping us to craft this especially important science plan. You will also learn more about this fall's symposium, and why Meadowview Research Farms is studying linkages between insect communities and chestnut.

I look forward to seeing some of you in Connecticut, and building upon the community and connections that we all enjoy.

Will Pitt, President & CEO
The American Chestnut Foundation

Rocky Fork State Park

Tim Pharis, Park Ranger at Rocky Fork State Park in East Tennessee, captured this brilliantly detailed close-up of a bur on a wild American chestnut tree growing in the Park in 2019. Tim's photo was also a finalist in TACF's 2019 American Chestnut Photo Contest.



WHAT WE DO

The mission of The American Chestnut Foundation is to return the iconic American chestnut to its native range.

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At The American Chestnut Foundation, we strive for accuracy in all of our publications. We regret any errors or omissions and appreciate those who bring them to our attention. We have corrected the following information from the 2024 spring issue of *Chestnut*:

- Page 26: Caption on the top photo stated that Park Greer of Southern Appalachian Highlands Conservancy is not pictured, but he does appear on the front left.
- Page 29, Figure 3: Target blight resistance level for the second generation in the best x best program (now referred to as Recurrent Genomic Selection) is >50, not >40, as described.

Research Advisory Council

By Sara Fitzsimmons, Chief Conservation Officer

Over the course of The American Chestnut Foundation's 41 years, the organization has repeatedly sought outside scientific expertise to ensure its programming is on the right track.

From TACF's inception, the mission, vision, and implementation of the work pursued by the organization has been unprecedented. In addition, the breeding, planting, and evaluation of trees would have to take the course of decades to yield results. By reaching out to experts in the field of tree genetics and improvement, TACF could determine whether the methodologies being employed were the most effective at that time.

The first science review took place in 1999, followed by a second in 2006, and another in 2018. Each time, reviewers

suggested certain improvements in the projects and programming proposed, and those improvements were taken seriously and most often implemented.

- **1999 review:** A suite of 15 separate recommendations published in the *Journal of The American Chestnut Foundation*: 14.1 (Summer 2000)
- **2006 review:** Contained 20 major recommendations, with additional suggestions throughout the report, published online at tinyurl.com/2t95urxh



2018 Science Review
at TACF's Meadowview
Research Farms.

RESEARCH ADVISORY COUNCIL

Walter Carson

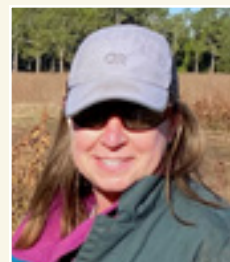
Dr. Walter Carson was a Professor of Biology at the University of Pittsburgh for nearly 30 years. He is a broadly trained ecologist who earned his doctorate at Cornell University and



conducted postdoctoral research at Princeton University. He is a leading expert on the ecology and biodiversity of the Eastern Deciduous Forest Biome of North America. He was a Charles Bullard Fellow in Forest Research at Harvard University in 2017.

Stacy Clark

Dr. Stacy Clark has been a research forester with the USDA Forest Service, Southern Research Station, since 2005. She is based in Knoxville, TN on the University of Tennessee



campus where she is an adjunct Assistant Professor. Her research interests span the life cycle of the oak tree from the acorn to old growth to the whiskey barrel. She currently leads research projects on American chestnut restoration and artificial regeneration of upland oak.

Fikret Isik

Dr. Fikret Isik is Professor of Forestry and Environmental Resources at North Carolina State University. He is also a Fulbright U.S. Scholar and co-director of



the Cooperative Tree Improvement Program, and he has published 94 peer-reviewed journal articles. His research uses genomics and quantitative genetics to fundamentally change tree breeding. With revolutionary changes in DNA sequencing technology and analytical methods, genomics' potential in animal and plant breeding is finally poised to reach its potential.

Todd Jones

Dr. Todd Jones is a Distinguished Laureate and Program Leader for Ag Equity Initiatives at Corteva Agriscience. The Ag Equity Initiatives are a set of highly collaborative,



externally funded, research projects utilizing gene editing to address crop resiliency and improve the productivity and lives of smallholder farmers across the globe. Todd received his Ph.D. in Plant Developmental Biology from the University of California, Davis in 1988.

David Neale

Dr. David Neale retired in July 2020 after a 36-year career in California with the U.S. Forest Service Institute of Forest Genetics and the University of California, Davis (departments:



Genetics, Environmental Horticulture and Plant Sciences). He worked with more than 100 talented young scientists and together they published 200+ papers. He continues at UC Davis as a Distinguished Professor Emeritus and serves as

the Director for the Whitebark Pine Ecosystem Foundation.

Jeffrey Rollins

Dr. Jeffrey Rollins is a professor of Plant Pathology at the University of Florida. His research focuses on plant-pathogen interactions and the biology of plant pathogenic fungi. His



research has made significant contributions to understanding the role of oxalic acid in *Sclerotinia* diseases and the dynamics of tree colonization by the laurel wilt pathogen *Harringtonia lauricola*.

Jeremy Schmutz

Jeremy Schmutz is a faculty investigator at the HudsonAlpha Institute for Biotechnology, a nonprofit research institute in Huntsville, Alabama. He



also leads the Plant Program for the Department of Energy (DOE) Joint Genome Institute, the DOE User facility for genomics. Jeremy has 30 years of experience in genomic sequencing and data analysis, including leading efforts to finish the DOE's 11% of the human genome sequence. Jeremy and his team's research appear in more than 200 peer reviewed articles across major scientific publications.

- **2018 review:** There were six major recommendations with additional suggestions published online at the bottom of this page on TACF's website: tacf.org/science-strategies/tree-breeding (TACF external science review report).

In addition to science reviews, TACF keeps two bodies of science expertise. The first is the longest standing committee at TACF. Originally termed the Science Cabinet, the body has gone through several name changes over the past four decades. Currently, the committee is called the Science and Technology Committee (S&T). This committee meets regularly, at a minimum of two times per year, and sometimes more frequently.

The committee primarily serves as a forum to review reports from TACF staff, recipients of TACF's External Grants, and others engaged in research relevant to the Foundation. In addition to serving as a nexus of information flow across varying levels of the organization, the S&T Committee recommends science policy to the Board, but not the specific science and methodology of program implementation.

The Research Advisory Council (RAC) was first chartered in 2013, and was meant to be a connection between the Science Committee and external experts who have or would eventually create an external review of TACF's scientific programming. Various members have participated in the RAC and the Council has had varying levels of participation with providing advice to TACF.

The most recent plans to hold a science review were established in 2023, when the need for external expertise was accelerated by growing concerns about field performance of Darling 58 (now known to be Darling 54). Across a series of virtual meetings in March and April 2024, an in-person meeting followed in May in Herndon, Virginia. That meeting included all RAC members, TACF science leadership, and Board members selected by the S&T Committee Chair.

A report was drafted by the RAC, then shared with TACF's science leadership team. Recommendations and suggestions from the report will be integrated into the next iteration of the organization's three-year strategic plan. In the near future, we look forward to broadly sharing specific information about the RAC review, revealing the new strategic plan, and providing the current paths and methods we are using to continually improve and enhance American chestnut restoration populations.

"BRAND" NEW

The American Chestnut Foundation (TACF) is going through an exciting transformation! We have developed a new comprehensive brand that allows our national office and state chapters to exhibit a cohesive, consistent presence throughout the Foundation.

You have probably noticed that the new logo is already featured in several areas of the magazine, but even bigger changes are on the way! On September 5, TACF introduced its new brand, including the logo, new colors, tagline, and more. The winter issue of *Chestnut* will feature all these changes by embodying a modern layout, new sections, and overall fresh look.

For those eager to stay updated, visiting the Brand Center on our website (tacf.org/brand) is a great way to explore the new design elements, and will soon include chapter logos, which we anticipate will launch before the new year.



TACF'S NEW ENGLAND CHAPTERS: Small but Mighty

By Kendra Collins, Director of Regional Programs and
New England Regional Science Coordinator

The New England region is home to six relatively small states – Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, and Connecticut. And while the total sum of these northeastern states would fit inside a vast western state, despite their small size each state has a unique personality, and something different to offer. This is true as well of the four TACF state chapters that work across the region to see the American chestnut restored to their local forests.

Chestnut work in New England has been on-going for many years, with the Connecticut Agriculture Experiment Station (CAES) in Hamden, CT hosting the oldest and most extensive on-going chestnut breeding program in the U.S., with crosses being made as early as 1930 (see article on page 26). While TACF chapters do not date back quite as far, the CT Chapter was founded in 1992 and primarily supported TACF locally until getting involved with their own breeding work in 2007. The ME Chapter began its work in 1998, taking on an extensive breeding program at the northern edge of the native range.

The MA/RI Chapter was founded shortly after in 2001, and the VT/NH Chapter is a relative newcomer, being officially incorporated in 2008.

All the New England chapters have active programs to identify wild trees. Wild trees serve many purposes in our work. First, whether they are flowering or not, they help us better characterize where chestnuts are growing to give us better insight into the site preferences of the species. Flowering trees are a bit more exciting, as they may become candidates for breeding.

Historically,

our backcross program utilized wild trees to cross with pollen from our Meadowview Research Farms (MRF), and in more recent years the stronger focus on germplasm conservation has resulted in more crosses between wild trees to capture local genetics. Across New England, more than 2,275 wild trees have been reported, 70% of which are American. CT Chapter President Jack Swatt has submitted 216 wild tree samples for identification, and the duo of Mark Meehl and Dave Lent with the MA/RI Chapter have submitted 140 wild trees to add to our ever-growing inventory.

VT/NH Chapter volunteer board members Gary Hawley, Evan Fox, and Dan Jones (front to back) help pollinate at the UVM Horticulture and Research Education Center Orchard in South Burlington, VT.



This tree is part of a Vermont-based reintroduction trial, planted in partnership with the USDA Forest Service and University of Vermont.

All of these wild trees have allowed the New England chapter to be prolific chestnut breeders. Across six states the chapters have made controlled crosses, and harvested open-pollinated crosses where nature did all the hard work for us to swoop in and collect the bounty. All told, the New England chapters have made, or harvested, more than 2,000 chestnut crosses. And these crosses have produced more than 430,000 nuts. Impressive numbers for such a small geographic area!

Plentiful harvests have led to a wealth of material to plant and the

New England chapters have planted orchards, reintroduction trials, and demonstration plantings to support outreach and education. While not every planting has been tracked in our *dentata*Base system, most have, and in all cases these numbers are an underestimate of trees planted by each chapter: Maine – 44,000; MA/RI – 27,000; VT/NH – 7,000; CT – 6,000; for a total of more than 84,000 trees! Both the Maine and MA/RI chapters were well into planting backcross seed orchards before TACF pivoted its breeding work to the best x best, or Recurrent Genomic Selection (RGS) program, which is

why they have planted so many more than their neighbors. The amount of planting work accomplished by the chapters and their partners across the region is truly inspiring.

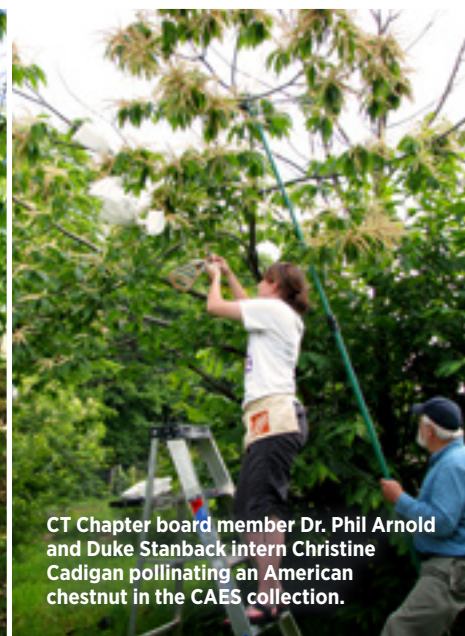
If you live in New England and have never visited a local orchard or planting, we would love to hear from you! Chapter and regional staff contacts can be found on our website at tacf.org. If you are planning to attend our 2024 American Chestnut Symposium in October, we hope you will make time to explore our region, and perhaps see some chestnuts while you are here!



Volunteers from the MA/RI Chapter and other local organizations plant the Springside Park orchard in Pittsfield, MA.



ME Chapter board member and orchard manager Peter Bohman and regional intern Russell Gomory with a nice breeding selection in the Chapter's Winthrop orchard.



CT Chapter board member Dr. Phil Arnold and Duke Stanback intern Christine Cadigan pollinating an American chestnut in the CAES collection.



Regional intern Deni Rangelova locates wild trees to sample in central NH as part of a larger landscape genomics project led by Virginia Tech.



MA/RI Chapter board member Brian Clark, TACF's Kendra Collins (just below Brian), and regional intern Liana Vitousek, collect data in the Chapter's Princeton orchard.

The International Chestnut Arboretum

GREENTREE FOUNDATION, LONG ISLAND

By Steven L. Cantor, NY Chapter Member and Registered Landscape Architect

Dr. Sandra Anagnostakis, the scientist whose work crossbreeding chestnuts has spanned decades, is collaborating with a unique institution in Manhasset, Long Island (Greentree Foundation) on the development of an arboretum of chestnuts found worldwide. Through its mission to advance peace, environmental sustainability, and local philanthropy, Greentree Foundation, founded by the Whitney family in 1982, is working to improve the world they live in from the local community to the world stage. With more than four hundred acres, which includes nearly two hundred acres of forest, Greentree is one of

the largest privately owned properties on Long Island and is dedicated to environmental responsibility. Embracing innovative solutions and creating programs in the areas of sustainable land, wildlife management and environmental education are also integral parts of Greentree's mission.¹

In 2007, Anagnostakis was introduced to Greentree Foundation. She proposed the idea of The International Chestnut Arboretum as a possible project around 2008. After about a year's discussion, the decision was made to create an International Chestnut Arboretum comprised of all species of chestnuts which would be



Group of three *Castanea dentata* (American chestnut) showing the effects of *Cryphonectria parasitica* (chestnut blight). All photos by Steven L. Cantor, June 17, 2024.



Castanea crenata (Japanese chestnut)
foreground; *Castanea sativa*
(European chestnut) background.

provided by Anagnostakis. By this date the Foundation was well established as an international conference center, so to have a collection of trees from throughout the world would provide a source of familiarity and a touch of home for many of these guests.

Explaining her approach, Anagnostakis notes, “Work on chestnuts has been going on in CT for a very long time, and the trees planted at the Chestnut Plantation at Sleeping Giant (Hamden, CT) by Arthur Graves (starting 1930), and by Donald Jones at Lockwood Farm at the Connecticut Agriculture Experiment Station (CAES), Hamden, CT represent a huge collection of species.” Yet, she continues, “I have long felt that having all the species of *Castanea* in Connecticut was short-sighted. I wanted another site where they were all present.”²

The clusters of chestnut species in the Arboretum represent geographical locations in the historic journey of the chestnut tree. Marco Polo’s Silk Road – the network of

ancient trade routes linking China with the West, north Africa, and the Middle East – carried goods, probably including chestnuts, and ideas between the two great civilizations of Rome and China. The Romans took them on to England. A legend suggests that an ancient monastery in southern Turkey is the site of European chestnuts being crossed with Asian chestnuts.³

The International Chestnut Arboretum at Greentree exhibits eight species of chestnut trees found worldwide:

<i>Castanea crenata</i>	(Japanese chestnut)
<i>Castanea dentata</i>	(American chestnut)
<i>Castanea henryi</i>	(Chinese chinquapin)
<i>Castanea mollissima</i>	(Chinese chestnut)
<i>Castanea ozarkensis</i>	(Ozark chinquapin)
<i>Castanea pumila</i>	(Allegheny chinquapin)
<i>Castanea sativa</i>	(European chestnut)
<i>Castanea seguinii</i>	(Dwarf Chinese chestnut)

SOURCES

1 Information provided by Greentree Foundation Fact Sheet and updates from staff 05/02/2024

2 Phone interview/correspondence 03/04/2024

3 Adapted from text of map on the site of the Arboretum

Over many years, scientists at CAES in New Haven collected seeds and seedlings of all species of chestnuts. Anagnostakis made crosses of the trees to obtain seed of the pure species. The first seedlings were brought to Greentree in 2010, and these were grown in the on-site nursery, which had ideal soil and was irrigated. The saplings were 3' to 4' tall by 2010. By 2012 they were 6'-8' tall, with 1"-2" caliper. A tree services contractor was hired to ball and burlap them and plant them in the site for the arboretum, which had variable soils. On a relatively flat 3-acre site, an oval path in gravel was laid out which could be serviced by a truck and later used by pedestrians.

Transplanting occurred in April to early May 2012 for all the tree form *Castanea*: American, Chinese, European, and Japanese chestnuts and Ozark chinquapin. At least five of each species were planted in small groupings around the oval path.

A lawn of native species, little blue stem, Indian grass, purple top, and big blue stem, completes the composition

towards the rear of the plantings. The native lawn is mown once annually in early spring. In the front is a standard lawn, mown weekly during the summer. The remaining, shrub-type species of *Castanea*, the Allegheny and Chinese chinquapin, and the dwarf Chinese chestnut, were planted in 2014-15. All trees and shrubs were treated initially with an application of a slurry of hypovirus, hoping it would provide protection against chestnut blight and spread elsewhere on the site. As of spring 2024, most of the trees are about 30' tall, flowering and fruiting. The shrub forms are robust.⁴

Over the 10-12 years since planting, perhaps a dozen times during periods of extreme drought, a hose from a water truck was used for irrigation when secondary watering was being provided to other plantings and gardens on the Greentree property. However, there is no irrigation system for standard use. There has been no watering at all in the last three to four years. Similarly, there is no treatment protocol for pests and diseases, except when a pest is occurring across Greentree's gardens, in which case treatment is



Castanea pumila (Allegheny chinquapin).
A Greentree staff member standing
under its canopy provides scale.



Castanea mollissima (Chinese chestnut).

provided. Once, an infestation of mites was sprayed on all the *Castanea* trees and shrubs because of extreme webbing on the foliage. Perhaps twice in 12 years such treatments have occurred. Since the trees are mature, if a significant, treatable problem arises, staff at Greentree are prepared to deal with it. One American chestnut has died back but has resprouted from the ground around the lowest part of the trunk affected by the fungus. The remaining American chestnuts are showing at least some signs of the blight. One chestnut seedling has sprouted in the native lawn, but it will probably be removed, since there is no way of knowing its parentage.⁵

Greentree staff have prepared a Geographic Information System (GIS) data map locating the coordinates for each planted specimen in the Arboretum, as well as the locations of existing American chestnuts and chestnut sprouts in the surrounding forests. Anagnostakis has records of where she acquired seed of each species. She made significant efforts to be sure no hybrids were planted here.⁶

Due to the nature of the Foundation and the importance of maintaining a private atmosphere, there will likely be a limit to publicity and new scientific research. Since Greentree is a restricted access property not open to the public, pre-arranged small groups may be accommodated with advance notice based on the Foundation's operating calendar. Anagnostakis suggests, "I see its role as an educational project for the benefit of the people who are at Greentree for meetings. Possibly, in the future, they may choose to hire a scientist to study new diseases or pests that come to Long Island."⁷

With the establishment of the International Chestnut Arboretum, Anagnostakis has provided a prototype for other teams to implement on appropriate sites. She proposes, "I would love to see plantings like the Arboretum in many parts of the country, so that new pests and pathogens can be studied on all the species. The next generation of plant breeders will have to do this!"⁸

SOURCES

4 Phone conversation with Jim Stevenson-Mathews and updates from Dr. Anagnostakis, 03/04/2024

5 Phone interview and emails with Jim Stevenson-Mathews 03/04/2024 and updates from Dr. Anagnostakis

6 Phone interview and emails with Jim Stevenson-Mathews 03/04/2024 and updates from Dr. Anagnostakis

7 Email from Dr. Anagnostakis 04/2024

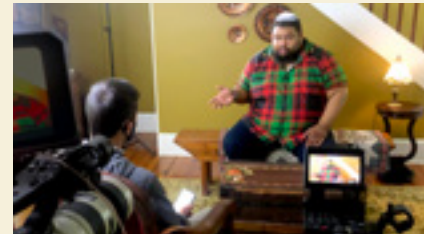
8 Email correspondence with Dr. Anagnostakis 04/2024

BIO

Steven L. Cantor is a landscape architect registered in New York and Georgia whose most recent book is *Professional and Practical Considerations for Landscape Design* (Oxford University Press, 2020). He's a landscape editor for greenroofs.com with his most recent photographic essay being on Little Island. With wide experience in education, public and private practice, he has a lifelong fascination with the American chestnut.



**TACF'S AWARD-WINNING
DOCUMENTARY
IS NOW AVAILABLE
FOR IN-HOME VIEWING.**



The film shares the hopeful story of passionate citizen scientists and researchers working to restore the American chestnut to its native range after being decimated by a deadly blight. Featuring interviews with luminaries such as Dolly Parton and President Jimmy Carter, as well as stalwart volunteers of the forests, the documentary is sure to inspire. Until recently it was only available at festivals and regional screenings, but you can now watch it from the comfort of your own home.



**To learn more or purchase the film,
visit rescuingtheamericanchestnut.com
or scan the QR code.**

Buckeye State Tree Nursery

OPENING IN OHIO

By Stephen Rist, OH Chapter President

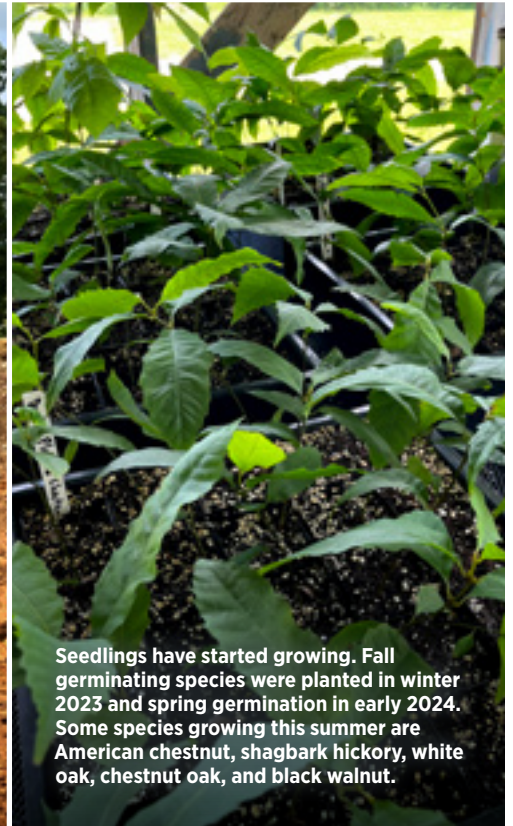
A state-operated nursery is returning to Ohio after the last one closed in 2009. Ohio Department of Natural Resources (ODNR) Division of Forestry had funding approved in February 2024 to open a new facility known as the Buckeye State Tree Nursery (BSTN).



Unveiling of the BSTN sign on February 19, 2024 at opening ceremony. In attendance was OH Governor Mike DeWine, ODNR Director Mary Mertz, local representatives, and partnering agencies.



The first building to be constructed is the planting barn. This building will have all the machinery to put seed into pots. The greenhouse will be connected to the barn so the trays can be moved to their growing location.



Seedlings have started growing. Fall germinating species were planted in winter 2023 and spring germination in early 2024. Some species growing this summer are American chestnut, shagbark hickory, white oak, chestnut oak, and black walnut.

The operation will be based out of the Zanesville area in the east central region of the state. Seedlings will be grown in containers in greenhouses. This method will allow for a longer shipping period for seedlings. The main shipping season will remain during the spring months, but a longer opportunity of planting will be possible with the containerized stock.

BSTN will be focusing primarily on hard mast species that are beneficial to wildlife, water quality, forest resources, and aesthetics. This will include both red and white oaks, hickory, chestnut, and walnuts. The nursery will bring in additional species according to demand and program needs. Seed will be collected locally for it to be best suited for the ecoregion.

Seedlings will be grown as containerized stock. Different pots will be used depending on the species grown. Seedlings will be grown in the

pot best suited for their root system. Growing trees in the greenhouse will allow for more control during their early stages of growth. As the seedling ages it will be grown in the open or under a shade cloth, so it will be able to harden off and have a strong stem. Plans are in place to remove the soil media that the trees are grown in from a portion of the seedlings, so they can be planted as bareroot stock.

BSTN is starting from the ground up. The infrastructure system is being built over a series of steps. As more hoop houses and greenhouses are built, the number of seedlings being grown will increase. In the beginning the nursery will be growing seedlings for programs that are working directly with the Divisions of ODNr. This will include trees for wind breaks, mine land reclamation and riparian zone protection. As production increases seedlings will be distributed to more programs and the public.

Since funding was approved in February, a lot has been accomplished. A manager, two natural resource technicians, and an administrative professional have been hired to work at BSTN. Efforts are underway to recruit AmeriCorps members to work with the nursery, helping these young people learn the trade. More than 10,000 seeds of multiple species have been planted to start the process. Construction on the planting headhouse has started and the first hoop houses will be delivered, as well as construction started, in the coming weeks.

Collection of seed for the upcoming planting season is underway. Seed will be collected from trees that are native to the region and will be best suited for the state. Once seed is collected it will be cleaned, heat treated, if needed, to limit weevil damage, and put in cold storage for stratification. The fall germinating species will be planted in containers soon after collection.

BSTN is working with several partnerships with the startup of the nursery and seed collection. The American Chestnut Foundation has shared beneficial knowledge about the species and growing operations. Seed collection will be a collaborative effort where BSTN collectors will be working with arboretums and local groups to gage when mature seed is falling and where it is best to collect. Plans are in place to work with universities to include research in the growing operations. More partnerships will be developing as the nursery grows.

Nurseries have had a long history in Ohio and forest management. Millions of seedlings have been planted on thousands of acres over decades. This nursery returning to the state is allowing for more generations to enjoy trees that are being planted today and will have benefits for those in the future.



Drone view of the nursery. Existing building is acting as a temporary greenhouse and will be used for drying seed in the future. Pad for the first building is being worked on. Additional buildings and greenhouses will be added in conjunction with the planting barn.

Tour TACF's Meadowview Research Farms

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POWERING THE RESTORATION OF THE AMERICAN CHESTNUT TREE.

Minutes from charming and historic Abingdon, Virginia, home of the
Virginia Creeper Trail, Barter Theatre, and other destinations.

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Contact Director of Research Dr. Vasiliy Lakoba: vasiliy.lakoba@taf.org or (276) 696-9142



Jack Swatt

HOW A DAIRY FARM LED TO CHESTNUT CONSERVATION

By Scott Carlberg, Contributing Author

Jack Swatt has been on a journey. All his life. Still is. “I took lots of day hikes, starting as a boy,” he says. “I grew up with woods behind our house.” That was in Ansonia, Connecticut, about a half hour drive from the Long Island Sound.

Now Jack is president of The American Chestnut Foundation’s (TACF) CT Chapter. He was elected in 2018.



Jack Swatt and daughter Allison hiking along the California coast, always looking for more chestnuts. Photo by Julie Swatt.

His dedication to chestnuts started early in life. “I became interested in chestnuts when I was working at a dairy farm in Oxford, CT. The farmer said that he had a chestnut on the land and told me the whole story of the blight and how it wiped out the trees.”

More than three decades ago, in 1993, he joined TACF through a mailing. “I went to some meetings when the Chapter was young.” Swatt took his interest outside the Chapter meeting room. “Later on, I became more active in the Chapter when I found some nut-producing chestnuts in Naugatuck and saw trees with burs on the tops and obtained samples. I watched those trees over the years.” That land is being managed as clear-cut scrub land habitat, so sprouts would grow, flower, and produce nuts but never reach maturity after getting the blight. Those trees were lost as seed-producing chestnuts.

Jack’s interests combine to be perfectly suited as a TACF leader – he has an analytical mind, he is active in the community, and he has patience for all things environmental.

Analytical mind: Jack was a physician assistant (PA), an early one. He started as a medical laboratory technologist and saw the need for PA’s, a position that has been a huge benefit to a society needing increasing medical services.

Community team member: You may know someone active in a volunteer fire department and sense their personal dedication. Jack is a lifelong member of the Wolcott, CT, volunteer fire department with more than 20 years of active service. What was the “big lesson” Jack got from that training? “While not every call turns out to be an emergency, people are just so thankful and appreciative that you are giving your time to help them.”

A tenacious environmentalist: Jack’s dedication to science and service is something special and reflects diverse interests. “In school I took a lot of environmental science courses,” he says. The nature and medical interests blend perfectly for Jack. Quite a few medical and lab professionals are terrific educators of science.

Jack enjoying a peaceful hike along the Potomac River at Great Falls in Maryland. Photo by Julie Swatt.



Jack organized CT Chapter volunteers to search for *Andrena rehni* to establish the range of the “lost chestnut bee.”



Aside from chestnuts, he is an ornithologist. “I have collected sightings of about 550 species all over the world, Peru, England, Ireland, Canada...”

In addition to ornithology, he studies entomology. Jack organized chapter volunteers to help search for *Andrena rehni*, the “lost chestnut bee,” which was rediscovered on a chinquapin and chestnut flower in 2019. “The bees were seen in the 1800s and even the early 1920s, then disappeared.” This type of bee is said to have been in the New England states, and south to North Carolina and Georgia. (Yes, similar to the American chestnut!) The CT Chapter, among others, helped survey the bee specimens to assist in establishing the range of the bees.

The Chapter is a stand-out for what can be accomplished toward chestnut restoration, such as:

- finalizing the selections in its backcross orchards,
- establishing germplasm conservation orchards with the nuts found around the state,
- engaging with volunteers to assist the Chapter in searching for flowering chestnut trees and collecting nuts,
- and working with state educators to ensure this foundational tree species is restored to the forests for future generations.

Jack’s tenacity, community spirit, and attention to scientific detail suit his duties as a TACF chapter leader. “A challenge of being a chapter president is to keep organized, expand the group, and improve our outreach.” Many chapter leaders agree that getting and keeping volunteers is tough. “Most people recognize that this benefits the forest,” he says, noting that the long-time horizon is difficult in a society that is increasingly geared toward short-term rewards and instant gratification. “We have a lot of hope. Restoring the chestnut to the forest will take time. Decades, not weeks, as we all know.”

Jack leads a pollination workshop and demonstrates the process of pollinating an American chestnut at the Old Lyme Library in Old Lyme, CT. Photo by Katie Balocca.



Jack and Allison hiking in central Oregon, again looking for more chestnuts after finding one in Portland. Photo by Julie Swatt.



GROWING A LEGACY

PLANT THE SEEDS OF TOMORROW'S FORESTS

As the end of the year approaches, we reflect on our mission to return the iconic American chestnut to its native range, and the legacy we are growing for future generations. Today, with your support, The American Chestnut Foundation (TACF) is forging ahead to restore this iconic tree to the forests of Appalachia and beyond.

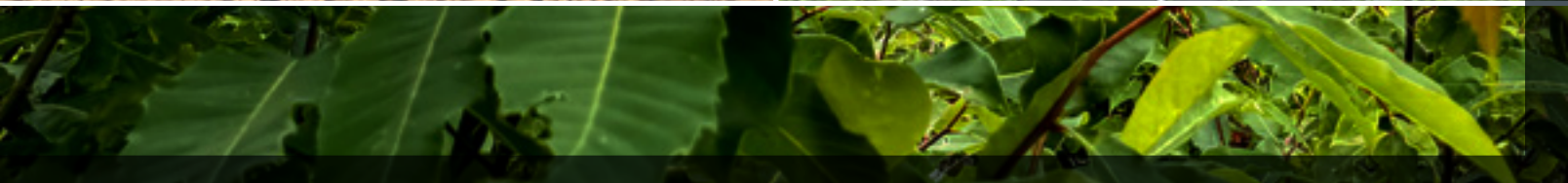
Thanks to thousands of dedicated members and supporters, we continue to progress in this audacious journey. Our science programs have strengthened through your contributions, allowing us to better understand and tackle the challenge of rescuing a forest tree species.

After the dramatic swing of excitement and then challenges surrounding the Darling project, we see the future of providing ecosystem and economic services through combining the best of our trees and approaches. The first season of the Recurrent Genomic Selection (RGS) program was implemented this summer, and we look forward to reporting on its results within the next year.

Progress continues, but the work is far from over, and we need your help as we make advancements in this critical effort. Your year-end gift will ensure that our research, conservation, and educational programs thrive and work in unison. Every dollar you contribute directly supports this extensive research – its implementation and optimization – from Mississippi to Maine.

Your generosity makes all the difference. Scan the QR code to make a secure donation or use the enclosed envelope. Thank you!





A View

FROM MEADOWVIEW

As a foundational species in ecosystems worldwide, chestnuts have long been known for their close associations with myriad microbes, insects, birds, and other animals. The American chestnut tree (*Castanea dentata* (Marsh.) Borkh.) specifically has a rich co-evolutionary history with numerous other species, whether as a generalist or as a specialist ally. To begin comparing linkages between insect communities and American, Chinese, and hybrid chestnuts, the first step is targeted sampling throughout and across growing seasons in mature stands representing these different tree ancestry groups. Working with Assistant Professor Camila Filgueiras and Senior Lecturer Caroline Kennedy at the University of North Carolina at Asheville, TACF's Meadowview Research Farms staff have completed a 90-day sampling campaign for insects typically found in the trees, in the air, as well as on and below the ground. UNC Asheville students then diligently identify all samples, and the Filgueiras laboratory will statistically analyze trends, yielding novel insights on insect communities in chestnut orchards and setting up data-driven questions for future research. Tracking patterns of insect response to mature chestnut populations in the landscape allows us to set expectations for restoration impacts in a variety of ecosystems.







Maple cross section
DeCoursey created from
the tree cut down at
Belser Arboretum.

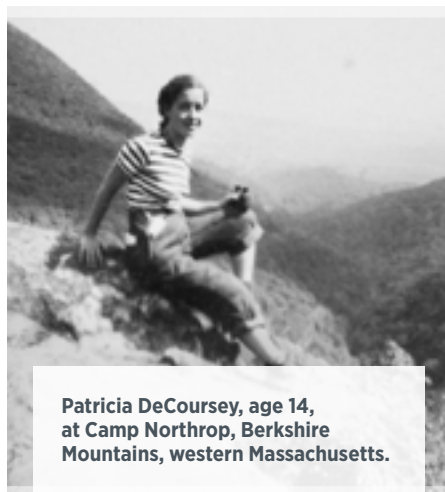
Remembering Dr. Patricia DeCoursey

UNIVERSITY OF SOUTH CAROLINA

By Doug Gillis, Carolinas Chapter President

Patricia DeCoursey and I first met on November 8, 2008, at the Carolinas Chapter's fall orchard tour. It was her first meeting as a new Chapter member. While touring Don Myer's and Susan Wilson's backcross orchard near Leicester, NC, in the Sandy Mush Valley, she heard former TACF Regional Science Coordinator Paul Sisco refer to the Graves line of chestnut trees in the orchard. She asked and Paul confirmed that he was referring to Dr. Arthur Graves.

As a 14-year-old, Patricia attended Northrop Camp in western Massachusetts where she had hiked



Patricia DeCoursey, age 14,
at Camp Northrop, Berkshire
Mountains, western Massachusetts.

in chestnut ghost forests in the Berkshire Mountains. She was amazed by the grandeur of the magnificent chestnut trees still standing many years after they had died from blight. While hiking, she discovered one tall tree sprout covered with catkins. She returned that fall to check for nuts. To her delight the tree was still alive. She retrieved 30 viable nuts.

She had learned that a center for research on American chestnuts was located at the Brooklyn Botanic Garden of New York under the direction of Graves. A treasured memory she recounted was delivering



DeCoursey holding a chestnut wood burl.

Learn more about Dr. Patricia DeCoursey

and her remarkable career on the University of South Carolina's website at sc.edu.

(Enter Dr. Patricia DeCoursey in the search function.)

Information about the Arboretum, its location, and hours can be found by searching on W. Gordon Belser Arboretum.



Bob Askins, University of South Carolina, beside largest hybrid American chestnut at Belser Arboretum in Columbia, SC.

the chestnuts to him and hearing him tell of his research. She appreciated his great love of chestnuts and his kindness. He encouraged her to pursue her interest in science, an inspiration to her throughout her career. The photograph of and articles about Graves in her copy of *Mighty Giants: An American Chestnut Anthology*, brought back happy recollections of her pivotal chestnut contact with him. DeCoursey later attended Cornell University and majored in Zoology. She earned M.S. and Ph.D. degrees in Zoology and Biochemistry from the University of Wisconsin.

At the time of the fall meeting in 2008, she was serving as a professor of Biological Science at the University of South Carolina. She was given the role of directing the restoration of the University's Arboretum located on 10 acres that had been gifted by W. Gordon Belser in 1959. As part of the restoration program, she planned to establish 10 different plant habitats, one to include a grove of chestnut trees. I visited the Arboretum with DeCoursey after extensive work had been done to restore the grounds. She

led me along the meandering path that crossed through 10 different biomes where native species had been planted with more to follow. She showed me a hillside at the base of which an ancient stream once flowed. It was comprised of sandy loam soil, an ideal place where she planned to grow chestnut trees. In 2011, DeCoursey received the South Carolina Environmental Awareness Award for her efforts to reforest the Belser Arboretum as an outdoor teaching center, and for other accomplishments as well.

The Chapter initially supplied DeCoursey with seedlings grown from nuts produced in one of its backcross orchards. At a ceremony held May 7, 2012, to honor Distinguished Professor Emeritus Dr. Wade Batson at USC, Tom Saielli, former TACF Southern Regional Science Coordinator, and I planted potentially blight-resistant American chestnut seedlings at the Arboretum. The largest of the hybrid American chestnut trees is pictured above.

Patricia DeCoursey was a good friend and inspiration to me and

many others. Being a wood worker myself, I appreciated her having her own wood working shop. When she had a dead maple tree cut down at the Arboretum, she realized it had been infected in the past by ambrosia beetles, which created a starburst pattern in the wood. She cut a slice from the trunk, sanded it smooth, and applied a finish to create a spectacular piece of art. She presented it to me as a gift. I soon learned that ambrosia beetles can attack chestnut seedlings. Fortunately, they did not attack the young chestnut trees at the Arboretum. Perhaps the gift was given in thanks for the help I provided her regarding the former Camp Sequoyah located near Asheville, NC, which her son Mark attended in his youth. I was saddened to learn of DeCoursey's passing on January 1, 2022. Her work to restore the W. Gordon Belser Arboretum will be a lasting benefit to the students, faculty, and visitors of the University of South Carolina. Patricia DeCoursey has and will continue to inspire others, especially young people, to pursue their interest in nature and science.

PROGRESS AT THE
Codorus 'Timber Type'
Orchard

By Lake Graboski, TACF North Central Regional Science Coordinator



Codorus F₁ trees in 2024.

This year, as TACF's new North Central Regional Science Coordinator, I had the chance to visit the 'timber type' chestnut orchards at Codorus State Park in York County, PA.

There, volunteer Jay Brenneman and I collected pollen from these trees for the Recurrent Genomic Selection (RGS), or best x best, breeding program.

The Codorus 'timber-type' orchards were established by members of the PA/NJ Chapter, including Dr. Robert Leffel and Dave Armstrong. In the early 2000s, Leffel presented a paper in 2004 at the meeting of the International Union of Forest Research Organizations (IUFRO) titled "Strategies for Breeding Blight Resistant, Timber-type Chestnut Trees." Among the strategies presented was a proposal for an F123 program to breed blight-resistant timber-type chestnut trees by crossing Asian trees, for their blight resistance, with American trees, for their timber potential.

The F123 program differed from the Burnham plan in that there was no backcrossing. Trees were selected for timber form (tall and straight growth) and blight resistance. In 2005, an orchard of 144 F₁ trees was planted on a small hill behind the Codorus State Park Campground. These F₁ trees were from 15 unique controlled crosses between American chestnut father trees and Chinese and Japanese mother trees. From 2013 through 2014 the trees were inoculated and rated for their blight resistance. Only those with at least moderate resistance and good form were retained. Today, there are more than 20 F₂ orchards tracked within the PA/NJ Chapter resulting from the Codorus F₁ timber-type orchard, and the F₂ orchard where we collected pollen at Codorus is one of them.

Much progress has been made in understanding blight resistance in the two decades since the establishment of the F₁ orchard. The Codorus F₂ orchard was genotyped and found to contain unique genes for blight resistance that are not highly represented in TACF's breeding

program. We hope that by crossing these trees with advanced backcross material, we will create trees with the criteria of American chestnut ancestry and blight resistance needed to move forward with the RGS breeding plan.

As is ever the case with trees, we build on the work of those who came before us. Leffel, Armstrong, and other members, many of whom are no longer with us, stewarded



Jay Brenneman stands by orchard ladder in Codorus F₁ orchard. Pollen Collection 2024.

these plantings and implemented multiple strategies to restore the American chestnut to the forests of the eastern U.S. Chapter members Jay Brenneman and Mike Aucott now shepherd this work; Jay at Codorus and Mike overseeing the program at-large. It is a pleasure to also assist in their work and to integrate it into TACF's broader efforts and with its many partners. I am learning about the things I do not know, and I look forward to this continued growth and building our collective knowledge together.

Chestnut Diversity and History

AT THE CONNECTICUT AGRICULTURE EXPERIMENT STATION

By Sara Fitzsimmons, TACF Chief Conservation Officer



The Graves tree was used to jump-start TACF's original backcross breeding program in 1989. Planted in the West Pine Lot at the Sleeping Giant tract of CAES (Row 13, Tree 1), the Graves tree is an F_1 originally planted in 1955.

This year's 2024 American Chestnut Symposium and member meeting for The American Chestnut Foundation (TACF) will be held in central Connecticut, with a primary goal being the showcase of chestnut holdings at the Connecticut Agriculture Experiment Station (CAES). Between two farms – Lockwood and Hamden/Sleeping Giant – there are chestnut trees by the thousands of virtually all types and combinations. It is likely the most diverse inventory of chestnut trees in the world.

Visit to Lockwood Farm in October

During the Symposium, several tour guides will lead participants through the many chestnut sites of Lockwood Farm. You will be able to see decades-old trees from every species of chestnut, a long-standing planting of American chestnuts treated with hypovirulence, and examples of many different hybrids on display.

Studying Wild American Chestnut Populations

CAES was founded in 1875. In 1903, the first state forest in Connecticut, Meshomasic State Forest (MSF), was established. The land was clear-cut to let chestnuts sprout which, at the time, was the best management for American chestnut. In 1905, researchers at CAES began establishing best management

practices for American chestnut in the woodlots of Connecticut.

As of 1910, CAES was still researching management of chestnut woodlots. At this point there were an estimated 130 million mature American chestnut trees in Connecticut alone. It was the only species used for telephone poles, and was also used for railroad ties and musical Instruments. Ivoryton, CT was once home to two piano factories



Aerial view of the CAES Lockwood Farm in Hamden, CT with chestnut orchard in the center of the image, July 2021. Taken from a drone by CT Chapter member Florian Carle.

which use American chestnut as a major component of their pianos.

In 1926 Walter Filly, forester at MSF, established long-term vegetation plots in CT forests to evaluate how they develop naturally, by setting up four long-term forest plots in the form of transects that traverse CT State forests. Every 10 years, CAES measures every woody stem .5 inches in diameter and larger, and those data have been used to study American chestnut dynamics.

Chestnut Blight

Dr. George Clinton, the first plant pathologist at CAES, studied the progression of chestnut blight from 1902 – 1937. He originally thought chestnut blight was triggered by drought, and that it was likely a native pathogen. Another scientist, Paul J. Anderson, named the pathogen *Endothia parasitica* after a thorough taxonomic study.

Chestnut Breeding

The longest chestnut breeding program in the U.S., which has continued without interruption, is that at CAES. Dr. Arthur Graves (1879 – 1962) began his chestnut breeding work in 1930. He started breeding for blight resistance in chestnut on his property next to Sleeping Giant State Park. He later gave approximately nine acres, with those hybrids, to CAES with the stipulation that the land would always be available for tree breeding (not necessarily chestnut). Graves' students, Dr. Hans Neinstaedt and Dr. Richard (Dick) Jaynes, developed many of the additional hybrids still living and being used at CAES. Dr. Sandra (Sandy) Anagnostakis worked at CAES for almost 50 years, building upon the work of those before her, the results of which can still be seen today.

Trees of two kinds are being chosen: for timber (tall and straight, with little energy put into forming nuts), and for nut production (short and spreading with maximum energy put into forming large, good tasting



Female flowers with styles and catkins on a branch of a Turkish chestnut tree at the CAES Lockwood Farm in Hamden, CT, July 2021. Photo by Florian Carle.

nuts). Both kinds of trees must have resistance to chestnut blight and be well adapted to our climate. TACF is beginning to select our trees for resistance to Ink Disease, caused by the root pathogen *Phytophthora*.

Progenitors of TACF's Breeding Program

Many of the great-great-grandparents of TACF's breeding program originated

from collections at CAES. You may be familiar with TACF chestnut family names such as 'Graves,' 'Clapper,' 'Mahogany,' and 'Eaton.' These trees were used to start TACF's programming in 1989 and they can still be found today on the grounds at CAES.

In more recent years, Jack Swatt and Dr. Florian Carle of the CT Chapter have helped breed and collect seed from the 'Mahogany' tree for creating genomic signatures of Chinese chestnut. Most published genetic maps of blight resistance loci in chestnut are based on a population of F_2 progeny from a cross between two F_1 hybrids involving *C. dentata* and the 'Mahogany' cultivar of *C. mollissima*. The 'Mahogany' cultivar is the Chinese ancestor for the 'Graves' source of resistance.

Biological Control of Chestnut Blight Disease

In the late 1950s, a chestnut recovery phenomenon was discovered and studied by Dr. Jean Grente in France. He called the system "hypovirulence," because the chestnut blight fungus that he isolated had less than normal ability to kill chestnut trees, and the "fungal sickness" could spread.

Anagnostakis established a hypovirulence test plot at Lockwood Farm. She

inoculated a stand of American chestnut with hypovirulence for four years (1986-1989). She treated each canker on each tree. Since the treatment, 1/3 of the trees died and sprouted; 1/2 died and sent out sprouts, which died and sent out more sprouts; and 15% of the trees have the original stem. The important information gained from this study is that there is



Happy harvesters came to celebrate TACF's 40th Anniversary at CAES on October 8, 2023 and left with their pockets full of chestnuts!
Photo by Florian Carle.



Top-down drone view of the canopy of flowering chestnut trees at the CAES Sleeping Giant Orchard in Hamden, CT, July 2021. Photo by Florian Carle.

genetic variation in the trees that causes differentiation in survival.

Current research

Dr. Susanna Keriö is the current researcher charged with carrying the mantle of chestnut investigation at CAES. She is an assistant scientist with a background in forest pathology and forest ecology, specializing in tree stress responses and tree resistance to fungal pathogens. Current research in the Keriö lab at CAES includes quantifying the impact of site factors on urban tree health, impacts of mycorrhizal inoculation on tree health, tissue culture of chestnuts, and how chestnuts respond to chestnut blight infection.

In addition to being on-site for a tour at Lockwood Farm, Keriö will give a talk during the symposium that highlights the past and ongoing efforts in chestnut research and restoration in Connecticut, showcases some unique chestnut plantings and chestnut trees, and introduces

the people doing the work. The talk also overviews recent regional and national efforts and breakthroughs, and how restoration of the American chestnut can improve forest resilience in the eastern United States.

Touring Research Plots at CAES

At TACF's upcoming Symposium in central Connecticut, Drs. Jaynes, Anagnostakis, and Keriö will be on site to discuss their far-ranging vision of chestnut work in the U.S., both from the past and then looking to the future of what is possible for the species in the Appalachian forests of tomorrow.

Jaynes has recently harvested seed from a graft of a large surviving American (LSA) from Scientists Cliffs in Maryland, and provided those seeds for testing by TACF. Anagnostakis continues her work with all nut trees, and will be on site to give first-hand accounts of the breeding and hypovirulence treatments which may be observed this October.

Pollen in the Bank

By Kendra Collins, TACF Director of Regional Programs and New England Regional Science Coordinator

Chestnut matchmaking is always a major focus of our pollination season, but this summer we added a newer twist to our efforts: pollen collection and freezing. A key component of the Recurrent Genomic Selection (RGS) program, or best x best, is making specific crosses between trees with desirable attributes. (See article on Optimizing Disease Resistance in American Chestnuts using Advanced Genomic Modeling and Selection, in spring 2024 *Chestnut*, page 27.) Just because these chestnut pairings might be beneficial for breeding, this does not mean the logistics always succeed in making crosses within the same season.



Fluffy male catkins in full bloom - the stage we look for when harvesting pollen.

Like a missed connection, a tree in ME paired with a tree in PA might not be available, or accessible, to provide or accept pollen when needed. And while we did make several RGS crosses this summer by collecting and freezing pollen from many prioritized trees, we are certain to experience more flexible and productive pollination efforts in 2025.

A standard aspect of making controlled crosses, something The American Chestnut Foundation (TACF) has done for decades, is collecting and drying pollen so it can be used in different locations. Dried pollen typically works well and many of our veteran citizen scientists know how to do this. Freezing pollen is a newer tool in our toolbox. Loading dried pollen onto microscope slides and freezing those in an ultralow temperature lab freezer has proven a reliable way of preserving pollen for future use.

The process of collecting pollen for freezing is relatively simple. Catkins, containing the male flowers of the chestnut, are harvested during full bloom. The ideal time is when the catkins have fully expressed anthers and look creamy white and very fluffy. Catkins are laid out on a large piece of glass – like from a picture frame or old window – and left in a cool place overnight to allow the pollen grains to dehisce. The pollen and anther heads are then shed from the catkins by gently stroking each one onto the glass. Other parts of the flower, bugs, and debris often come off the catkins during this step and are removed. Pollen is then loaded into vials with an opening diameter a little smaller than the width of a microscope slide. The pollen is dried by placing the open vial into a larger container of desiccant, and then loaded onto microscope slides by covering the vial with a slide, shaking it to load pollen onto the spot covering the vial, and then repositioning the slide and repeating until the slide is covered in pollen. Pollen-loaded slides are then placed into vials specifically designed to hold them and be frozen, then shipped to a storage location; currently Meadowview Research Farms (MRF), Penn State partnership office, and our partners at Berry College and the University of Tennessee at Chattanooga.

The trees identified for use in RGS breeding, have been pulled from many different programs: TACF state chapter orchards for backcross breeding, Phytophthora root rot (PRR) resistance, and other chapter breeding initiatives (see RSC Column on page 24), Meadowview Research Farms' extensive collection, and partnership sites like Lesesne State Forest in Virginia. For the state chapter orchards, many of the planting sites were chosen with the assumption of open-pollination by trees assessed and selected for breeding, and they may not be easily accessible for making controlled crosses. Pollen collection allows us to capture these more difficult-to-access trees in the breeding program and apply their pollen to trees more suited to hand-pollination.



Pollen collection was prioritized at many orchard sites in 2024. In most cases, orchards were selected because they contained multiple trees of interest, maximizing our efficiency and providing more pollination possibilities in 2025.



Lucinda Wigfield, orchard manager at TACF's Meadowview Research Farms, clipping catkins from SS44 (American chestnut) for pollen collection and freezing.

This season we captured pollen from more than 80 unique sources across our network, greatly expanding our flexibility to make crosses next year. Regional science coordinators, utilizing guidance and priorities from TACF's Director of Science Dr. Jared Westbrook, each worked with their network of interns, chapter citizen scientists, and partners to prioritize and support pollen collection, processing, and freezing.

For long-serving TACF staff and volunteers, pollen collection is a skill honed during the early days of backcross breeding. But for newer staff and volunteers, there were some surprises! Lucinda Wigfield, orchard manager at MRF, is enjoying her first breeding season at the farm and was surprised by how quickly the flowers can pop. "One Friday, I went to check on some catkins that I needed for pollinations on Monday and none of the male flowers had started blooming on those trees. I was worried about finding possible replacements by Monday morning, but when I went to check again on Monday those trees were ready for pollen collection!"



Male floral parts have been shed from catkins and cleaned up to remove most of the unwanted debris. This pile is ready to be scooped into a vial and dessicated in the refrigerator.



Former New England regional intern Russell Gomory pollinating female chestnut flowers with pollen loaded onto a microscope slide.

Interns also play a huge, but often "behind the scenes" role in pollen processing. Many of our volunteers can help collect catkins from local trees, but not all have the necessary space for drying and processing pollen. The VA Chapter's Absher intern, Vincent Varsalona, helped process all pollen collected across the region; 29 sources from VA, MD, and KY! In Vermont, regional intern Kylie Roth helped collect and process pollen from six VT and NH sources for freezing and assisted in assembling and shipping dozens of pollen collection kits to volunteers across ME and MA. Stanback intern Lizzy Dvorak participated in pollen collections in the southern region, which occurred from late May through



TACF Development Analyst Angus Mullis-McCord bagging Chinese chestnut flowers at Beaver Lake in Asheville, NC.

late June, due to early flowering in the deep south, and later flowering in the high mountain elevations.

As we have worked through the process this year, it has become clear that more storage locations for pollen would reduce shipping costs and increase efficiencies at a regional scale. We are currently looking to equip all regional offices with pollen-freezing capacity. This would allow MRF to also function as a collection and preservation facility, with duplication across the regional locations. We have also highlighted some questions regarding how to best maintain pollen viability – Where are timelines and storage temperatures critical and where is there flexibility? Next year we hope to continue refining our best management practices with this effort.

We cannot thank our volunteer citizen scientists and partners enough for their help with pollen collections in 2024, and we look forward to making more crosses in 2025!

Handcrafted American Chestnut Chef Knives

TACF is offering not one, but two chances to win an extremely rare, handcrafted Kasumi Damascus chef knife!

Each chef's knife is valued at over \$1,200. All proceeds benefit The American Chestnut Foundation.



Resting on the bottom of the Green River in Kentucky for more than 120 years, a rare, old-growth American chestnut timber was preserved by deep cold water and a lack of oxygen and light. The handles of these special knives were crafted from this wood by Antique River Logs.

Purchase your ticket(s) for a chance to own this priceless American chestnut chef knife for just \$25. Learn more on our website: support.tacf.org/2024-american-chestnut-chef-knife-raffle

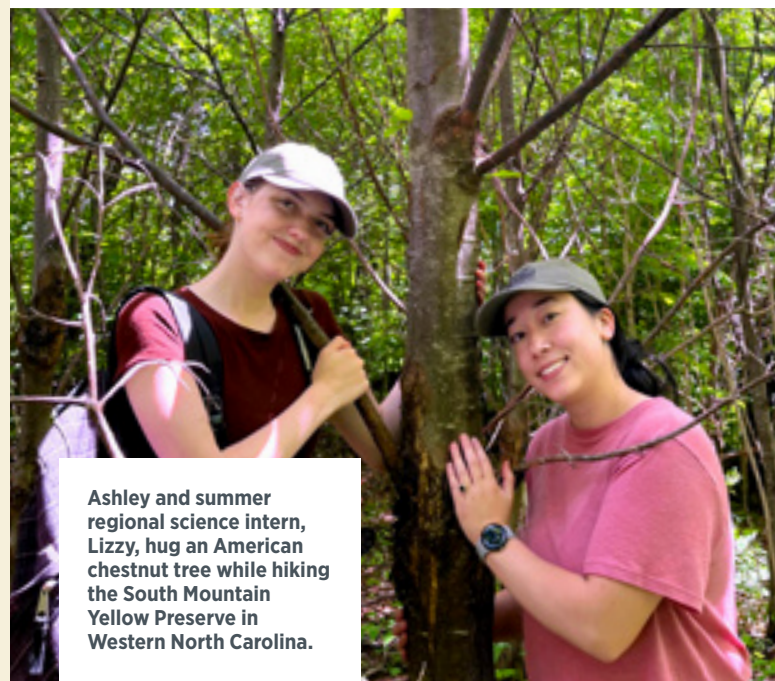
Two winning tickets will be drawn at the 2024 American Chestnut Symposium in Cromwell, CT on **Saturday, October 26**. You do **NOT** have to be present to win.

From Intern to Advocate

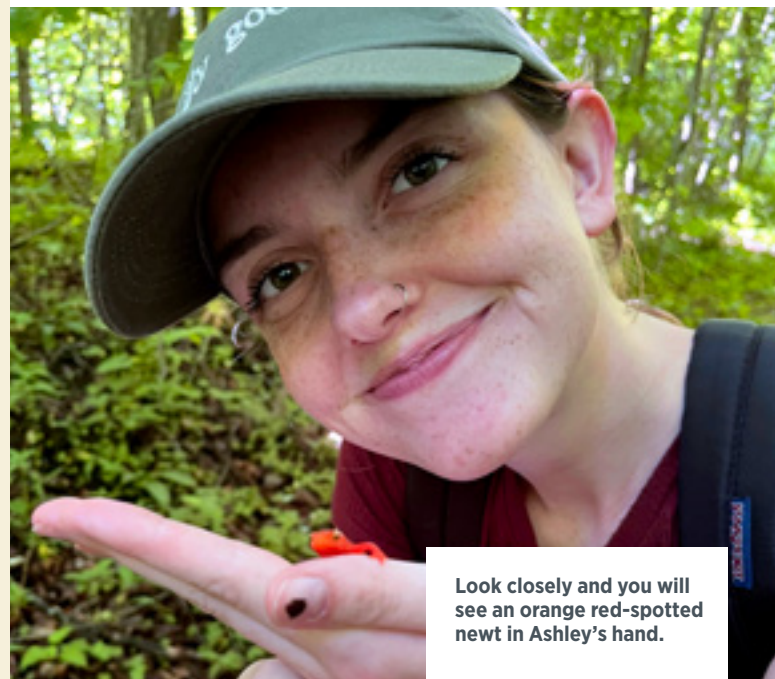
By Ashley Wahlers,
2024 Summer Communications
Intern at The American Chestnut
Foundation's National Office

Before applying for an internship with The American Chestnut Foundation (TACF), I had little knowledge of the American chestnut's existence - or even the devastating impact from chestnut blight, if I'm being honest. It wasn't until I began researching the organization that I delved into the fascinating world of American chestnut trees and the pivotal role TACF plays in their restoration. I was amazed to discover that this tree not only provided materials to build many prominent foundations, but also served as a significant food source for wildlife, and contributed greatly to the rural economy. I began to feel excited about the prospect of combining my love of nature with my passion for mass communications, realizing I could help spread the word about the Foundation and educate people on why saving this tree is crucial. I hope to inspire others as I am inspired.

The blight was first detected in the U.S. in 1904, nearly a century before I was born. Without the restorative efforts of The American Chestnut Foundation, I might never have learned about the wonders of the American chestnut. I started asking my friends what they knew about the tree, and I was surprised to learn that it was very little, despite knowing very little myself. This inspired me to work for the Foundation and raise awareness, especially among younger generations. My generation and the generations that follow may never know about the American chestnut unless we



Ashley and summer regional science intern, Lizzy, hug an American chestnut tree while hiking the South Mountain Yellow Preserve in Western North Carolina.



Look closely and you will see an orange red-spotted newt in Ashley's hand.



Ashley at TACF's Meadowview Research Farms collecting small samples of leaf tissue to be sent away for genotyping.

share its importance with them. Many don't understand why this tree is significant or what makes it truly magnificent, and I want to help change that. The members and supporters are the backbone of TACF, so it's crucial that we continue to grow our following and educate younger generations about the American chestnut tree.

That's why I find so much joy in my internship. I love brainstorming video ideas that educate and entertain. Every time I post a video, I feel like a child eagerly checking to see if their loose tooth is ready to be pulled – except I'm checking to see how well my video is received! Going into the field to capture content is especially thrilling because it deepens my understanding of the science behind restoring this tree. Witnessing the science in action and participating in restoration efforts always leaves me feeling energetic, sparking my creativity for more social media content ideas.

In addition to social media, I've written articles for *eSprout* (TACF's electronic newsletter), explored collaborations and partnerships, and captured photos and videos in the field. Moreover, my colleagues have shown me what it truly means to work in this field, and I couldn't have asked for better mentors. Working with them has opened my eyes to the complex challenges and the promising future of the American chestnut. Through my internship, I've come to appreciate not only the tree's historical significance but also its potential to flourish once again. I strive to magnify the message of conservation and restoration, aiming to cultivate a community that cherishes and protects this iconic species for generations to come. I'm incredibly grateful for this experience and eager to continue expressing my passion for chestnuts in the years ahead.

Ashley finishes off a hike to locate wild American chestnut trees by crossing a small river stream.

Warm Pears and Chestnuts

Recipe shared by Jim Searing, PA/NJ Chapter
Recipe courtesy of Penguin Random House

This recipe, shared by TACF board and PA /NJ Chapter member Jim Searing, is a perfect dish for holiday gatherings. When TACF development analyst Angus Mullis-McCord heard about the recipe, he was eager to prepare it.



Jim stumbled upon this dish in *Ruth and Skitch Henderson's Christmas in the Country* during a book exchange at his local post office. Skitch Henderson, a legendary band leader in the 20th century, began his career at MGM, where he worked with Judy Garland, Bing Crosby, and Frank Sinatra. Upon moving to New York, he became the music director of NBC and conducted many orchestras worldwide. Ruth and Skitch Henderson started the New York Pops and owned four restaurants in New York City, Garrison, New York, and St. Thomas. With achievements like theirs, how can we not give this recipe a try?

Ingredients

- | | |
|---|---|
| 1 tablespoon canola oil | ½ teaspoon freshly ground black pepper |
| 1 pound shallots, peeled | 1 teaspoon dried marjoram |
| 1 8-ounce jar roasted chestnuts, halved | 3 cups reserved giblet stock or chicken broth |
| 1 pound dried pears | 2 teaspoons balsamic vinegar |
| 1 teaspoon salt | |

Instructions

Heat the oil in a saucepan over medium heat. Add the shallots; cook, turning often, until golden but not brown, about 6 minutes. Add the chestnuts and cook for 3 minutes. Add the pears, salt, pepper, and marjoram; toss well. Add the stock and vinegar. Heat to boiling; reduce heat and simmer, covered, about 5 minutes. Remove from heat and keep covered while pears plump and flavors develop. To serve, spoon around poultry of choice (Angus used duck) on a serving platter. Serves 6.

IN MEMORY AND IN HONOR OF OUR TACF MEMBERS

APRIL 1, 2024 – AUGUST 15, 2024

IN MEMORY

IN HONOR

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Disque Agricola**

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Cherokee Timber Company
Pamela Ferger
Alex and Amy Neubauer
Elias Horry Parker
John D. Peebles
Cenda and Charles Price
Drew Virden

Randy Anderson

From:
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Reverend Doug Wilson

From:
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We regret any errors or omissions and hope you will bring them to our attention.



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2024 END OF YEAR APPEAL

