

Dedicated to restoring the American

Chestnut Tree

VOLUME 29, ISSUE 1

MARCH 2024

PA-NJ Chapter Spring Growers Member Meeting

Saturday, April 6th
8:30 AM—2:30PM

@ the Allen Theatre,
36 E Main St, Annville, PA 17003

Join us for our 2024 Spring Growers meeting. There will be food, educational presentations, networking and more! **Tickets:** \$25 (\$15 for students with ID) (Ticket includes: coffee, breakfast snacks and lunch)

Purchase your tickets online using the QR code to the right.



OR **RSVP** by April 3: contact our office
mail@patacf.org | (814)863-7192

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Featured Speakers



Will Pitt, Ph.D.
President and CEO
The American Chestnut Foundation

Meet the New CEO of The American Chestnut Foundation

Just past the 40th Anniversary of the National organization, Will Pitt has taken on the leadership of TACF bringing new energy and a fresh perspective. He will travel north on April 6 to introduce himself to the PA/NJ Chapter, sharing his appreciation for the Chapter role in restoration and providing a snapshot of the future of TACF.



Scott Parkhill
Forest Program Manager
Audubon Mid-Atlantic

Mature Forest Management: Wood Thrush Habitat and Opportunities for Carbon Forestry

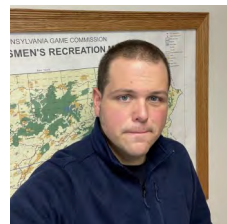
Audubon Mid-Atlantic's Forest Program Manager, N. Scott Parkhill will discuss opportunities to manage mature forests for declining forest bird habitat while integrating the emerging field of carbon forestry. The emerging field of climate resilient forestry, with the co-benefits of carbon sequestration and storage, offers new approaches to mature forest bird habitat management. Examining the habitat requirements of one of Pennsylvania's favorite forest birds, the wood thrush, this presentation will show what interventions can be taken in your mature forest to help the wood thrush and many other mature forest birds.



Bryan J. Burhans
Executive Director of the PA Game Commission

Wildlife and Habitat Conservation in Pennsylvania | Impacts of PA Game Commission

Bryan Burhans will discuss the impacts of the loss of the American Chestnut to not only Pennsylvania's wildlife, but also the pivotal role the loss of the chestnut played in changing how the PGC approached conservation. Bryan will also discuss the approaches the PGC uses to manage wildlife habitat, including the challenges of invasive species and climate change. Bryan will explain how the PGC's work might influence the restoration of the American chestnut to Pennsylvania forests.

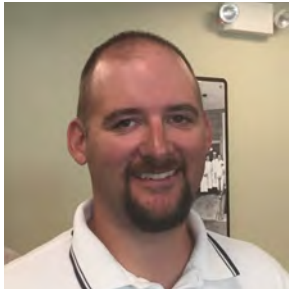


Curtis J. Noll
Public Lands Section Chief
Pennsylvania Game Commission Job
Public Lands Section Chief

Restoration & Maintenance of Barrens Habitats on PA State Game Lands

This presentation will include a brief summary of the PGO's prescribed fire program and its impact on forest and field habitats across the Commonwealth. The presentation will include discussion about the vegetative responses that have been noted in ridgetop barrens habitats that have been treated with prescribed fire on PA State Game Lands over the past decade, and other habitat management techniques that have been utilized to restore them.

President's Corner



Greetings!

Last year, as I sat to compose this column, I mused on the spring renewal on our farm and new-born livestock, and the exciting things to look forward to in the chestnut world. This year, it's spent catching up on rest, as we have a premature lamb to care for and bottle feed in the middle of the night. I thought we were done with bottles in this house! Unexpected changes and challenges are what makes following

our pursuits so enriching. As those challenges happen, we all can reach back and dust off those skills and experiences you thought might have been in a closed chapter. The December news of the Darling 58 project was an unexpected twist in the chestnut restoration plan. We are able to learn from those developments, and use some of our 'older' skill sets to further the mission. "It turns out that our fruit has not been entirely killed as was at first apprehended. Some latter blossoms have yielded a small supply of the this precious refreshment" This 1794 note from Thomas Jefferson to James Madison focuses on the good news out of initial challenges. We have learned a great deal in the work to develop those Darling and Darwin trees, and will take those skills into furthering new technology. The strength of our chapter's skill set is that we have an amazing group of volunteers to help plant, steward, and provide education to the public on these efforts. I thank all of our members for that work.

Happy planting,
Rick Hartlieb
President
PA-NJ Chapter of TACF

President

Rick Hartlieb
Robesonia, PA

Vice President

Daniel O'Keefe
Ridley Park, PA

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PA-DCNR

Representative
Annetta Ayers

US-ACE Representative

Jeff Krause

Staff

**North Central Reg' Science
Coordinator**

Open position

Orchard Manager

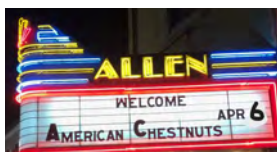
Noah Vincent
nev5073@psu.edu
(484)725-4044

Chapter Administrator

Jean Najjar
Jmn173@psu.edu
(814)863-7192

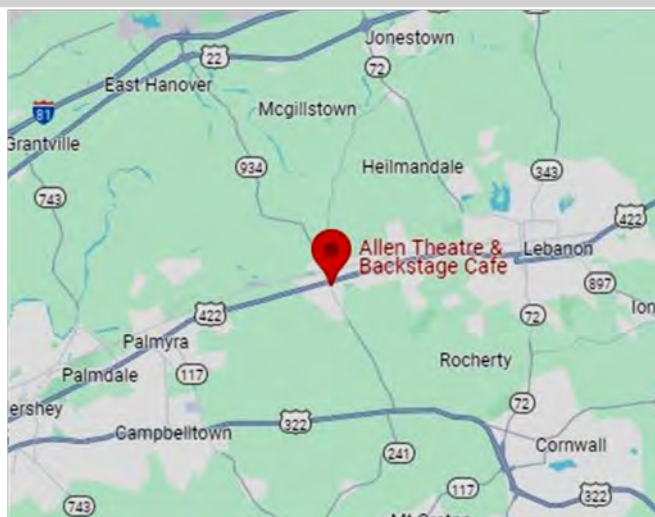
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Meeting Details: <https://patacf.org/2024-spring-growers-meeting/>



NUT DISTRIBUTION: We will be distributing wild American seed nuts at the meeting, but there are limited supplies. If you would like to join the queue for nuts please email Noah Vincent at nev5073@psu.edu

FUNDRAISING: There will be a small Silent Auction fundraiser and merchandise for sale.



MEETING LOCATION:

Allen Theatre -36 E Main St, Annville,
PA 17003
40.329892755019316, -
76.5143550313699

Chapter News

AS A NEW YEAR BEGINS



A Decade of Dedication

On behalf of the PA-NJ Chapter we offer our gratitude to Stephen Hoy for his decade of service to our restoration mission. Hoy finished his tenure with TACF and the

Chapter this past January to embark on his dream job, as a Fire Forester at Rothrock State Forest. Hoy will be missed but we are counting on him staying engaged with our community and mission. Don't be surprised if you see him on a ballot for our Board of Directors, sometime in the future:)

All the best, Hoy!

Fall Appeal Surpasses Fundraising Goal Castanea dentata -- Still the One!

Despite much handwringing around TACF withdrawal of support for the deregulation of the Darling 58, the PA-NJ Chapter experienced one of its most successful fundraising years ever, raising over \$60,000. So, in addition to having all the resources necessary to construct a new storage shed inside our Chestnut orchard and purchase needed orchard equipment we will be able to replace the twenty plus year-old orchard fencing in our research orchard here at Penn State. Many thanks to our all our members and supporters!

There were many generous donations from new and old members, but the last two donations of the year exemplified the cross-generational nature of our mission. Arriving back-to-back on the last day of the year, two \$1,000 donations arrived via PayPal . One came from a new member who joined in 2023. The other came from a member who joined in 1993 — 20 years apart!

Restoration of a species is not the work of the faint of heart or the short sighted. It is the work of the faithful! Those who will put their shoulder to the wheel and push, knowing they may not be able to get there themselves. Whether you have been here with us from the start or you just now learning about the loss of this amazing tree, we are counting on you to help restore the American chestnut to the forest.

2024 is Off to a Great Start with the Help of Volunteers! THANK YOU!

Rocking the PA Farm Show

PA-NJ TACF kicked off the 2024 outreach season at the PA Farm Show (January 6th to 13th) with volunteers sharing the story of the American chestnut and answering chestnut questions. Despite some terrible weather the turnout was great! Our volunteers rocked the week signing up 19 new members and selling a ton of merchandise.

<i>David Vivic</i>	<i>David Deaville</i>	<i>Don McCann</i>
<i>Harry Vivic</i>	<i>Steve Dellp</i>	<i>Rick Hartlieb</i>
<i>Bret Doverspike</i>	<i>John Yoder</i>	<i>Ray Najjar</i>
<i>Tim Eck</i>	<i>Mary Ayres</i>	<i>Sophie Najjar</i>
<i>Judy Milliken</i>	<i>Kathryn Kerr</i>	<i>Adam Lambert</i>
<i>Peter Reinhart</i>	<i>Ed Buchak</i>	<i>Chris Ditlow</i>

Special Thanks to Chris Ditlow

for his donations of crafted items including this beautiful bench which together helped us to raise almost \$500.



Grooving in the Greenhouse!

Orchard Manager, Noah Vincent, kicked off the 2024 planting season with a volunteer workday in the Tyson Greenhouse. Volunteers joined Noah and Sara Fitzsimmons to plant 1500 seedlings. Noah will be growing our these seedlings to test the severity of blight on D54 crosses, both positive and negative.

<i>Beverly Auvil</i>	<i>Mike Weinstock</i>
<i>Jim Peles</i>	<i>John Yoder</i>
<i>Mary Ann McCurdy</i>	<i>Steve Delp</i>
<i>Michael McCurdy</i>	<i>Jay Brenneman</i>
<i>Ed Hamor</i>	<i>Jesse Otto</i>

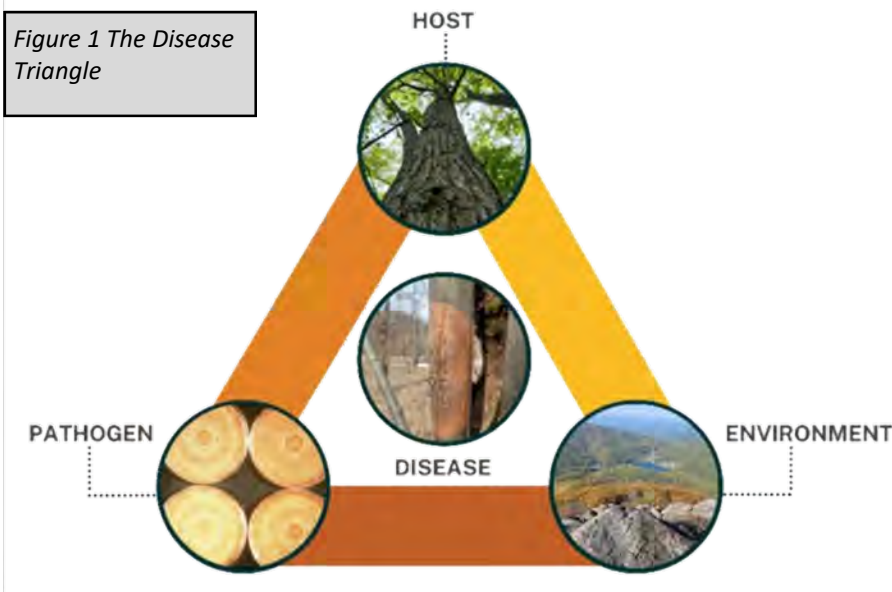
There is more work to do. Contact Noah to sign up to and stay in the loop on upcoming volunteer days.
484-725-4044 | nev5073@psu.edu

While hopes were high that either the products of TACFs backcross breeding program or Darling 58 would be “the” product to secure American chestnut restoration, the path forward for this hopeful and audacious goal is clear: multiple products, programs, and pathways must be combined to realize success.

Biological systems are complicated, and the more diversity included in a given system, the more complicated it gets. Complexity increases in individual biological units from viruses and single-celled organisms up to plants and animals. Those complex individuals then make up a complex and interwoven series of relationships, the full extent of which we may never understand.

Figure 1). The disease triangle is a simplified model highlighting the three elements that are required for a disease to manifest. How a disease manifests is dependent upon the interconnectivity of these elements: the host, the pathogen, and the environment. Disentangling the specific contributions of each of these three elements is at the heart of any approach to overcoming disease. Is there resistance in the host? Can a pathogen’s virulence be reduced or pathogenicity signaling be overcome? Can the environment be made more favorable to the host and/or more hostile to the pathogen?

Figure 1 The Disease Triangle



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Natural selection and adaptation has 1000s of years and 1000s of combinations through which it can run to find a solution. And ultimately, it doesn’t care if it does find a solution to a specific

issue. When we determine that a solution is required we can speed up natural selection using our 3BUR Strategy: Breeding, Biotechnology, and Biological Controls.

Each of those iterations need to be first evaluated and optimized independently, so as to fully understand and troubleshoot a given methodology or tool. That tool is then optimized independently, at which point it can be integrated with other methodologies. The combination is then tested and optimized, at which point it can be integrated with yet others. In some cases, these combinations will mesh and sing. In others, they will clash and fail. Often, this type of process is known as adaptive management (Figure 2), and is what must be undertaken for a problem with the amount of complexity inherent in tree species rescue and restoration.

What occurred with the Darling 58/54 (D54/58) product demonstrates how a given product must be first tested in isolation, then fully evaluated on a broad scale to fully determine its effectiveness. Initial ab and greenhouse testing looked extremely promising, with results suggesting that resistance was very high, even higher than Chinese chestnut. The concept was good, and early experiments raised high hopes. As the D54/58) trees were planted in multiple locations, and longer-term field testing was implemented, the product started exhibiting extreme deficiencies. *Finally*, the true identity of the Darling line was uncovered, leading to the discovery of an early laboratory error taking place back in 2016 when most if not all the Darling 58 material was mistakenly switched with Darling 54. The Darling 54 was a different transgenic event with several deficiencies, including the placement of the OXO resistance gene into unexpected areas of the tree’s DNA and an unintended deletion of a gene that helps regulate the chestnut’s salinity tolerance. For details the reader is encouraged to view the most recent Chestnut Chat Science Updates Part 1 and 2 available online at <https://tafc.org/chestnut-chat/>

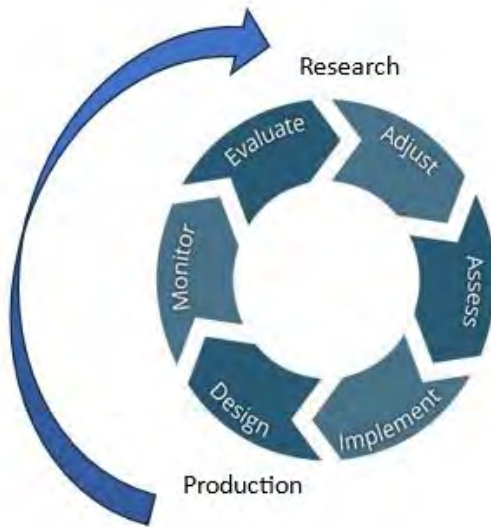
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Science of Restoration

Continued from page 4 Those performance issues, however, do not indicate that transgenics as a whole will not work, nor that the OxO gene specifically won't work. The only way to determine that is to continue testing other OxO gene containing lines, and then put them through these paces. Now that a testing pipeline and protocol has been established with D58/D54, each subsequent event, line, and product can be vetted more quickly and more thoroughly than ever before.

For complex diseases in humans, many times only incremental success can be achieved. Often a given protocol or method, or drug can be administered to extend the life span of a human suffering from the disease, even if the disease is not cured. That process will be very analogous to what we have achieved and will

Figure 2. Tree species restoration is a process, not a product. This process must include products of multiple cycles ongoing, each being tested and optimized independently. Those products are then combined and go through their own cycles, and so on and so forth and various tools, methods, and products are implemented



continue to achieve with American chestnut restoration, and in fact, will be the case for other species as well.

TACF, the PA-NJ Chapter, its members, and many collaborators must all work together to imagine, test, implement, optimize, combine, and deploy the multitude of techniques that will ultimately be responsible for successful American chestnut restoration. Advanced backcross American chestnuts, transgenics, cisgenics, RNAi, gene edited trees, modified fungal strains, resistance from large surviving Americans: these programs and others will produce products which will not be singular to restoring the American chestnut, but which must all be optimized and deployed collaboratively to

solve this extremely complex yet laudable and achievable mission.



Figure 3. American chestnut restoration will require the combination of a variety of tools, methodologies, and products. A) Tissue culture box with transgenic plantlets; B) Kendra Collins pollinates an advanced backcross American chestnut tree; C) A blight canker arrested on an American chestnut tree in Maine due to the action of hypovirulence.

Chapter News

Committee Reports

Outreach Update

David Deaville, Outreach Committee

Energetic outreach, is critical to continuing our restoration mission! Outreach volunteers are the 'boots on the ground' providing direct, personal contact with the public. No experience or superhero cape, required. We want to invite you to join our outreach team. Help share the story of the American chestnut by volunteering to table at one of the following outreach events. You will be provided with FAQs, handouts, physical samples as well as our professional interpretive display to help make it easy.

PA-NJ Chapter is seeking volunteers to represent TACF at the following outreach events. No experience necessary. Our interpretive display is comprehensive and will provide you with FAQs to help you become an expert.

4/19/2024

EcoAction Earth Day at PSU

University Park, PA

4/21/2024

Earth Fest Millbrook Marsh

State College, PA

4/27/2024

Core Creek Park Earth Day

Langhorne, PA

4/27/2024

Lancaster Native Plants and Wildlife Festival

Lancaster, PA

4/28/2024

Trailside Nature & Science

Center's Twelfth Wild Earth Fest

Mountainside, NJ

5/4/2024

Central PA Native Plant Fest

State College PA

5/24/2024

Environmental Day

Hanover Middle School

6/6/2024

Backyard Landowners Conference

Loyalsock State Forest

6/8 – 6/9 2024

ECO Event at Codorus State Park

Codorus State Park, PA

8/13-8/15 2024

Ag Progress Days

Pennsylvania Furnace, PA

9/28/2024

National Public Lands Day

Milford, PA

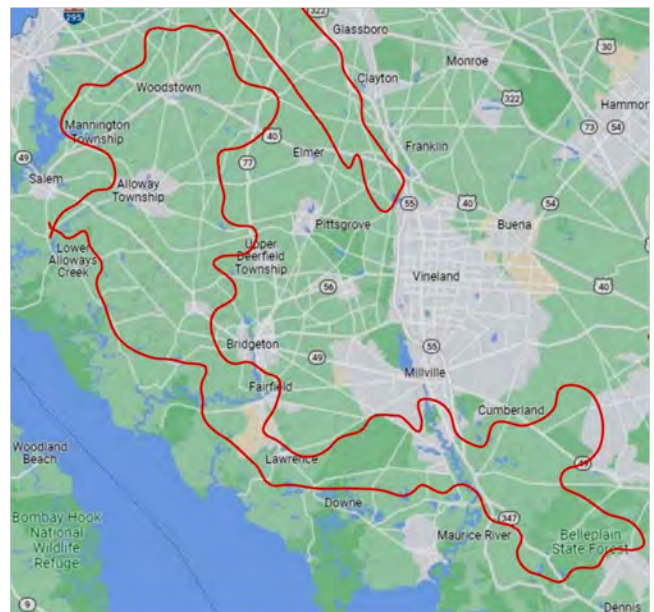
Whether you are just learning about the American chestnut or have been a passionate follower for years, we welcome your help. We'd love to hear your ideas and we may have unexpressed needs that you could match.

mail@patacf.org | 814-863-7192

Wild Americans Update

Lake Graboski, Conservation Committee

PA/NJ TACF wants to encourage folks to continue to keep their eyes open for wild-type Americans. There is special interest in our Southern N.J. mission that was where the unusually diverse sample appeared in the population genotypes study.



Learn more about reporting a chestnut here:
<https://patacf.org/report-a-tree/>

Chapter News

Committee Reports

Membership update

Peter Reinhart, Membership Committee

Membership is important to all organizations. They are the driver of ideas and support; its mission and growth. That sounds so familiar to our PA-NJ Chapter. Our Chapter is filled with citizen scientists and volunteers whose goal is restoration of the American chestnut. The support of these members



is critical to our success and our restoration goal. This Chapter is full of many loyal members. We currently have approximately 150 members who have been part of this journey for over 20 years! We want to extend a hearty THANK YOU to these loyal members! Your contribution to our restoration efforts is very much appreciated as we continuously move forward towards

WOW! TWENTY YEARS PLUS — THANK YOU FOR YOUR LOYAL SUPPORT

Since 1987

Thomas O'Neill

Since 1988

Patricia & Rodney Bows
John Price

Since 1989

Donald L. & Christa Nuss
Eugene Morton
Hemlock Hill Field Station
Richard Habermann
Mervyn Haines

Since 1990

Larry Wehr
Richard White & Carol Pollard

Since 1991

Black Forest Conservation
Association
G. Rodney Haines, Jr.
Scott Conking
Hugh Snyder

Since 1992

Thomas Pugel
Robert & Nancy Shipman
Jack Hillard
John Angus
Faye Lord

Since 1993

Gary & Joan Warner
Fred Fletcher
James Schuetrumpf

Since 1994

Timothy Van Vliet
Nils Abate
Jay Herman
Tracey Coulter
Judy Updegrove
Alton & Cheryl Ebersole

Since 1995

J. Edward Wilson
Warren & Gordene Randolph
Ron & Susan Bowman
Al & Marilyn Eelman
Jim Szymanski
Kenneth & Tina Love
John & Glenda Ritchick
John Chernisky
Tucker Hill
Northern Nut Growers
Association

Since 1996

Samuel Spector
Mary Carbaugh
Carl & Lois Wolgemuth
Thomas & Carolyn Cooley
Paul & Ann Hornberger
Joseph Duganich
Denny and Elaine Porter

Since 1997

Charles & Jean Schmalzer
Cynthia & Terrence Tobias
Christopher & Lois Ditlow
Mark & Ellen Peet
Priscilla Offen
Lawrence Hilaire

Since 1998

Robert Peters
Dana Felty
Thomas Frank
Matthew & Janet Weir
Michael Shanshala
Edward Buchak
John Ianacone & Cynthia
D'Ambrosio
Herbert & Gayl Henze
Mary Brown

Since 1999

Fred Snyder
Timothy Eck
Robert & Jeanne Drennan
George Perry

Gary Wivell

Dirt Dugan Landscaping
Steve and Catherine Palmateer
Saint Marys Sportsman's Club
Charles Merroth
Phyllis & Leonard N. Berman
Timber Resources Unlimited,
LLC
Rufus Fulton, Jr.
Suzanne Snyder
Rick Ochs Lumber Company
Dennis Joura
Paul Henry
John Geisz
Steven Wheeler
M. Lee Eberhart
Alvin Jackson
Ralph Johnson
Charles Skillington
Edward & Jane Tlumac
N. David Charkes
Tom Giovannelli
Black Wolf Fish & Gun Club,
Inc.

Since 2000

Hugh Lewis & Kate Lobdell
Richard Matz
Robert Adams
Daniel Reifsnnyder
Daniel Nydick
Shawn Wood
Michael Boyle
Larry Klotz
Carl Meixsell
Hugh & Kathy Wenger
James & Libby Walizer
William P. Gaspar
Victor Dozzi

Since 2001

Geoffrey Monsou
Robert Diehl
Kenton & Sandra Taylor
Malcolm Farrow IV
Bradley Seitz
Judith Landis

Harton Semple, Jr.

Les Nichols
Daniel Amspacher
Susan Berry-Gorelli
Howard & Pearl Sleppy

Since 2002

Lynn Ramage
Paul Markiewicz
Alan Tumblyn
David & Sharon Smith
Nina Manzi
David Lazor
Leonard Speis
Kenneth Light
Jerry & Sharon Devlin
Stephen Rozak
Susanna Treesh
Wendy Kindig
David Van Duren

Since 2003

Lee Harshbarger
The Archie W. & Grace Berry
Foundation
Peter Mathews
Victor Commisso
Franklin Jarrett
Donald McCann
Tom Radel
Richard Snyder
A. W. Addison
Dean Newhouse
Jonathan Sevy & Shirley Wagner
-Sevy
Robert & Jane Feister
David Malarek
Harold Wingert
John & Cordelia Swinton
Victor Mello
Lynne Brady
Galen Graybill
Edward Gilardi
Brian Kolar
Richard Beard
William Clark
Warren Hodgkiss



Pennsylvania State University

108 Research A Modular Lab
University Park, PA 16802
mail@patacf.org
Phone: 814-863-7192

RETURN SERVICE REQUESTED

SAVE THE DATE

2024 PSU Ag Progress Days

August 13th — 15th
Pennsylvania Furnace, PA

2024 Joint Meeting of CGA and NGA

July 21 — 24
SUNY ESF | Syracuse NY

2024 TACF Annual Meeting

September 28th — October 1st
Asheville, NC

2024 PA/NJ Chapter Fall Meeting

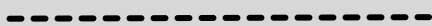
Saturday, November 2
Harrisburg, PA

2025 PA Farm Show

January 4- — 11
Harrisburg, PA

2025 Spring Growers Meeting

Saturday, April 5
TBD



Visit our website for updates: www.patacf.org



The PA-NJ Chapter of TACF is grateful for the continued support of NPC through their pro-bono printing of this newsletter. NPC has freely printed every issue of The Chestnut Tree since 1995.