

# The West Virginia Chapter of The American Chestnut Foundation NEWSLETTER



*In the heart of American chestnut's natural range*

December 2023

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**Find us on Facebook: @WVTACF**  
**National Office: 50 N. Merrimon**  
**Street, Asheville, NC 28804**  
**Phone: 828-281-0047**

**Email: [WVchestnut@acf.org](mailto:WVchestnut@acf.org)**  
**Newsletter Editor: Mark Double**

## Extending Pocahontas County Planting

Under the leadership of **Robert Sypolt** and **Darrell Dean**, the McClain American chestnut planting in Pocahontas County was extended to 50 trees. Twenty trees were planted in the fall of 2022 and remarkably, 19 survived. An additional 30 trees were planted in late October of this year. **Steve Carruth**, neighbor of the landowners, solicited help for the planting. This adds another germplasm conservation orchard in West Virginia. Many thanks to Robert and Darrell for their work on this project.



Some of the volunteers at the McClain planting.

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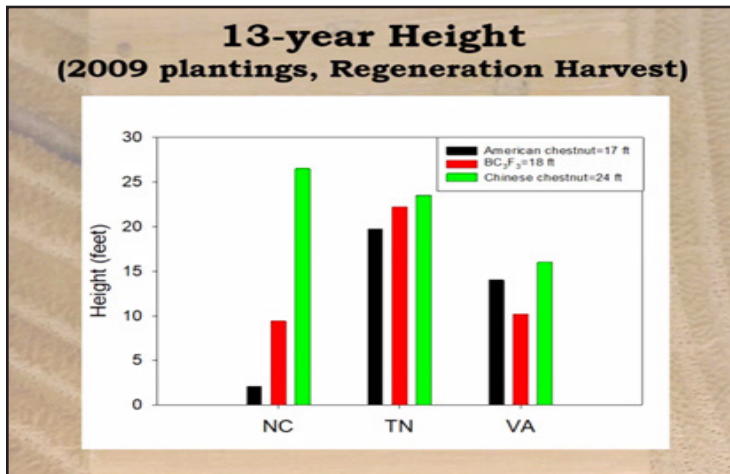
## Excerpts from TACF's Fall Meeting

TACF's fall meeting was held in Kodak, TN the last week of October. The meeting also was held virtually for those unable to attend. Below are some of the highlights of the meeting that may be of interest to WV members.

**Dr. Stacy Clark**, U.S. Forest Service, gave a presentation on long-term survival of chestnuts that were planted in three states, TN, VA and NC. Stacy worked collaboratively with colleagues at the U.S. Forest Service, the University of Tennessee and TACF. Thirteen plantings of 2,115 B<sub>3</sub>F<sub>3</sub> seedlings were established between 2008-2015. Native American and Chinese chestnut seedlings also were planted for a total of 4,493 seedlings. Deer protection and/or tree shelters were provided and herbicide was used to control other competing vegetation. The seedlings were grown in a commercial nursery for one year to provide maximum size. The seedlings aver-

aged 3-4.3 feet when lifted. The seedlings were visually graded into small and large class sizes. There were issues with *Phytophthora* in some of the southern tree nurseries. The seedlings were outplanted using a mechanical auger.

Nut size positively related to height, root-collar diameter and root count. Below is a graph of the 2009 plantings in the three states, NC, TN and VA. The black bars are American chestnut, red bars are B<sub>3</sub>F<sub>3</sub> and green represents Chinese chestnut.



The VA site was dropped due to poor survival of all species partly due to cicada damage of the trees. After 13 years, the average heights of the three species were: American chestnut, 17'; backcross, 18'; and Chinese, 24'. The Chinese chestnuts grew tallest due to the impact of chestnut blight on the American and backcross chestnuts. After 13 years, 77% of the American chestnuts were dead compared to 41% of the backcross and only 16% of the Chinese chestnuts. Interestingly, the blighted trees sprouted, but the sprouts did not survive. It appears the trees put so much energy into top growth that the roots systems' reserves were lost.

The size of the seedling made a difference after 13 years. When planted, the seedlings that were 3' grew to 11'. Conversely, the 5' seedlings grew to 15'.

Dr. Clark feels that backcross trees can be restored if high quality seedlings are used and the seedlings are protected from deer browse. However, the 2009 backcross seedlings did not have sufficient resistance to the chestnut blight fungus to survive long-term. She also suggested using high-quality, tall seedlings when outplanting. *Phytophthora* root rot and deer browse are the major deterrents to success. It was pointed out that the advanced backcross material available in 2023 is about two-times more resistant than the material used in 2009.

There was very limited flowering of the trees in her test plots. She estimated that chestnuts will flower in 15-18 years rather than the projected 6-8 years in orchard settings. Stacy pointed out that trees need to be able to have sufficient blight resistance to be able to flower and reproduce in order to survive in the forest.

In her project with the Eastern band of the Cherokee Indians (EBCI), Stacy stated that when asked about a list of trees important to the ECBI, American chestnut was not even on the list. White oak and butternut were high on the list, but not chestnut. This may be the result of the current limited status of American chestnut in KY and TN.

**Dr. John Scrivani**, President of VA-TACF and a member of the national restoration committee, reiterated the goals of TACF. Our mission is to return the iconic American chestnut to its native range, and our vision is a robust eastern forest restored to its splendor. John provided a list of issues:

1. The variable level of blight resistance in future generations;
2. The possible growth penalty of the constitutive OXO gene;
3. Challenges in producing homozygous trees;
4. EPA regulations and its limits on quantities and locations; and,
5. Slow progress on clarifying intellectual property status.

Priority areas for chapter work include:

1. Germplasm conservation orchards to maintain local diversity;
2. Continue "Best X Best" pollinations;
3. OXO seed production (for those chapters that have permits);
4. *Phytophthora* root rot resistance;
5. Reintroduction and restoration projects;
6. Tell the story of *Castanea dentata* to new audiences;
7. Outreach to legislators as directed by TACF.

**Catherine Martini**, northern regional outreach coordinator (ROC), detailed the duties of her office. She and her counterpart, **Hannah Leeper**, southern ROC, help chapter volunteers. They bring volunteer resources to the chapters, ensure chapters have the tools and people-power to do their work, support chapter events and outreach, and build a better foundation for chapter and volunteer engagement.

Catherine reiterated the need for chapter insurance. The recommendations are that each chapter should have policies to cover: directors and officers; general liability; and volunteer activity insurance. The national organization

uses a company in Philadelphia for general liability and volunteer activity insurance. The latter is \$300/year that covers 300 volunteers. The national organization is still investigating director and officer insurance. Each chapter can shop on their own or choose the insurance companies used by the national office.

Catherine talked about 40th Anniversary Celebrations. She provided a table cloth, pins, etc for WV Chestnut Festival in Rowlesburg.



**Mari Peterson**, founder of **Marketing Outpost**, provided an update on TACF's social media. Marketing Outpost is a full-service marketing agency with a team of expert professionals providing strategies, tactics, and solutions for branding, digital presence, and long-term growth. They coordinate creative content such as blogs, emails, newsletters, website design, social media, videography/photography. They also analyze and provide recommendations and implementation for advertising, both digital, social, and traditional. They meet monthly with TACF staff to keep us on track and stay abreast of new marketing needs. Mari stated that of the 40 clients she oversees, TACF is the most active group. Mari stated that she forwards about 50 requests every day to TACF staff or state chapters. Mari provides quarterly reports and she showed the dramatic growth of **Facebook** followers. In Sept 2022, TACF had 16,438 followers. That grew to more than 33,000 in 2023. Likewise, **Instagram** grew from 2,270 followers in 2022 to 5,223 in 2023. One video on chestnut that was posted (not by TACF) reached 532,000 people, so social media can have a huge impact on the number of followers.

TACF's documentary film, **Clear Day Thunder: Rescuing the American Chestnut**, has been seen by more than 3,000 people. The film has been shown at 4 film festivals, from Lookout Mountain, TN to Beverly Hills, CA, and it won 'Best Feature Film' at the Wild Sound Festival. The state chapters have hosted more than 70 viewings. The film is available for viewing by anyone

for \$10, or free if a members asks for a code from Mari.

Editing of the film is not complete. TACF hopes to have two new versions of the film, one aimed at service and the other for student education.

**Jules Smith**, TACF's Director of Communications, talked about TACF's new logo and rebranding. The first iteration of a new logo was based on the nut, under the direction of **Blue Ion**, a full-service digital marketing service, based in Asheville, NC. Jules showed examples of organizations such as the Sierra Club that moved from complex to a simpler logo. The evolution of their logo is shown below.



The new TACF logo is in its final stages of design. I had hoped to include the logo in this edition of the newsletter, but the logo has not been approved yet by the national Board of Directors.

In addition to a new national logo, **Blue Ion** is preparing individual logos for each of the 16 state chapters. Jules stated that **Blue Ion** will prepare three different variations for each state. The Chapter's Committee will then be tasked with approving each state logo. If none of the three variations are acceptable, additional development will be required. There is no date as to when to expect the final version of the national and state logos.

TACF was founded in 1983, and the logo has never been changed in the Foundation's 40 years. Rebranding is a necessary evolution of an organization, and therefore it takes time to make sure that a new logo is recognizable, current and eye-catching. One thing I can share is that the new logo will feature a moving leaf, rather than a nut. A new color palette has been chosen and I look forward to sharing the new logo with our chapter members once it has been finalized.

**James Votaw**, partner with the Keller and Heckman law

firm in Washington, DC, talked about Federal and State requirements for genetically modified trees. James has extensive practice focusing on environmental and health and safety regulations. He represents clients before State and Federal regulatory agencies in compliance and counseling on matters related to the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), Clean Water Acts, etc. James' work with TACF regarding deregulation of Darling 58 is *pro bono*.

Votaw stated that the EPA is slow to grant full geographic scope to registration of Darling 58. EPA's rule making is delayed oftentimes by public opposition.

### **USDA/APHIS Regulation of GE Trees:**

#### **Potentially regulated under Federal Plant Pest Act**

-Potential plant pests--any organism that can directly or indirectly injure, cause damage to or cause disease in any plant or plant product

#### **Old Rules (replaced Oct 2021).**

-Distribution allowed only under APHIS permit designed to prevent release

-Exit permit system with petition to deregulate

#### **Science question: Does the plant pose plausible increased pest risk compared to a non-regulated version of the plant?**

-Plant's distribution, density or development

-Production, creation or enhancement of a plant pest or a plant pest reservoir

-Harm to non-target organisms beneficial to agriculture and weedy impact of plant and sexually compatible relative

#### **Federal Insecticide, Fungicide and Rodenticide Act**

-Deemed a 'pesticide', also known as a PIP, or plant-incorporated pesticide

#### **Basic requirement. Pesticides must be registered before distribution.**

-Tree nut--the pesticide residue tolerance must be set

#### **Registration Exemptions.**

-25(b) Pesticide or character not warranting regulation, established by rule-making (this is rare)

-Distribution solely for Research and Development to develop registered pesticide is limited to greenhouse and outdoors (10 acres) or an experimental use permit

The State University of New York (SUNY) has submitted their proposal to the FDA, and it is complete. SUNY submitted its petition to deregulate under the Plant Pest Act to APHIS. Darling 58 is considered a plant pest because *Agrobacterium* vector was used to introduce

the OXO gene. APHIS' tentative plant pest risk assessment decision would deregulate. APHIS has completed its draft of the Endangered Species Act review. A final decision is pending. APHIS may await EPA's review.

Votaw noted that APHIS and EPA are in lockstep. They will both accept or reject deregulation.

Three submissions to the EPA include:

1. Pesticide registration application

2. Tolerance exemption petition

--any residual level of OXO in nuts is safe

--EPA will assess/decide the (1) pesticide application and (2) tolerance exemption petition together

3. Petition for Full Exemption from FIFRA 25(b)

--Joint TACF/SUNY petition

--Broader than just Darling 58

--Two steps: petitions EPA to conduct the exemption via rule-making

--Wholly discretionary: if granted, we must follow the rule-making process

The EPA plans limited geographic scope registration as an interim step. They would allow plantings, less than 10 acres while waiting for homozygous tree data. The interim period could be 3-5 years with full exemption 7+ years away.

If SUNY/TACF are provided the 25(b) exemption, there will be no Federal fees, but there may be a maximum cost of \$20,000. The fees may be less.

## **Photos of Deer Rub**

**Bernie and Linda Coyle** who live in Keyser have been planting different tree species on their land in the eastern panhandle. Bernie sent a photo of deer rub on a 10-year-old chestnut oak that was damaged by deer. Bernie points out that just because trees are large enough not to require a cage due to deer browse, cages are an important component of tree survival. The cage was removed from the tree on Page 5 and sure enough, the deer found a great spot to rub.

Bernie has taken heavy, black corrugated drainage pipe and made a lengthwise cut to allow the pipe to be secured around a tree for deer protection.



Deer rub on chestnut oak

## American Chestnut at Cacapon State Park

The WV chapter receives many emails/calls from people who are convinced they have an American chestnut. Some of the trees turn out to be sawtooth oak (*Quercus acutissima*), others are horse chestnut (*Aesculus hippocastanum*), but most of the trees in question are Chinese chestnut (*Castanea mollissima*). Every now and again, one of the inquiries turns out to be an American chestnut. One such tree is in Cacapon State Park in Berkeley Springs (Morgan County). The tree pictured below is a wonderful find. We are hopeful to obtain some chestnuts from the tree next fall.



## American Chestnut Education at Preston High School

**Robert Sypolt** and **Darrell Dean** spent two days conducting visits to the Waddell Orchard with Preston High School Biology classes in Kingwood. They talked to 250 students covering 15 different biology classes. Darrell gave talks about the history of American chestnut and pointed out the fruiting structures (stroma) of the chestnut blight fungus on several trees in the orchard. Robert provided information on the history of the orchard and talked about specific trees that were planted. Robert has planted native American, Chinese, backcross and Japanese chestnuts over the last decade. Robert provided information on TACF's backcross program and on the genetically modified tree (Darling 58) from the State University of New York. Robert said the students were attentive and cooperative.



Some of the Preston High School students in the Waddell orchard.

## Fagaceae Twig Identification

The Fagaceae family has several genera of trees, *Fagus* (Beech), *Castanea* (Chestnut/Chinquapin) and *Quercus* (Oak). The characteristics of the Fagaceae are trees or shrubs with simple, usually toothed and/or lobed leaves arranged alternately along the stem.

When identifying members in the Fagaceae family, many believe that leaves are the best feature to differentiate one genus from another. While leaves offer specific characteristics, twigs also can be used to identify the various genera. One feature of trees in the *Quercus* genus are the multiple buds at the end of twigs. Conversely, trees in *Castanea* and *Fagus* have a single bud at the twig terminal.

Below is a photo of winter twigs. Notice the differences in the terminal ends. American chestnut has reddish twigs with pointed buds. Chinese chestnut has brown/tan twigs with rounded buds (that are hairy). European chestnut twigs are much stouter than either American or Chinese and they have large, plump buds. Often, European chestnut twigs have a 'fluted' appearance (sunken areas). Oak twigs have multiple buds at the end. A mature oak tree often has a spreading form, as the branches result from the bud configuration. Beech has cigar-shaped buds that are very distinct from *Fagus* and *Castanea* members.



American chestnut, Chinese chestnut, European chestnut, Red oak and American beech twigs (left to right)

## TACF Raffles

The national office in Asheville, NC in association with **Mari Peterson** of Marketing Outpost (see page 3) began brainstorming ideas to get members more involved. One idea that emerged was a raffle. Mari began by raffling off hats and mugs with TACF's old logo. They sold raffle tickets for \$10, and they used a random generating program to select the winners. The goal was to raffle items at a low cost to involve more members. Since that first raffle was such a huge success, the next idea was to raffle chestnut tours in each of the 16 state chapters. Mari sent out an email to each state chapter asking if there was any interest. The WV chapter is one of a half dozen state chapters that will participate in 2024. Mari is uncertain of the ticket price, but she is considering \$25. The goal is \$500 per state chapter, but the real hope is that those winners will get a better understanding of TACF's goals for restoration. Mari thinks 5 winners will comprise a group that is small enough to get one-on-one conversation with the group leaders. The WV chapter has agreed to host a tour on June 19, 2024 from 11:00 am until 2:00 pm. The winners will meet at Exit 7 off Interstate 68 and the tour will begin at the WVU Agronomy Farm, the site of a 900-tree planting that includes American, Chinese, European and backcross chestnuts. The group will see flowering chestnuts and learn to differentiate American from Chinese and European chestnuts. They will witness active chestnut blight on some of the American chestnut sprouts, as the American chestnut trees became blighted early after the trees were planted in 2006. While the main stems died, sprouts continue to be produced. The tour will then progress to the University Forest off Interstate 68 at the Cooper's Rock exit. The University Forest planting contains 300 backcross trees that were planted in 2015. From there, we will travel to Robert Tinnell's property near Pisgah to see Robert's chestnut trees and his efforts with the National Resources Conservation Service with forest 'feathering' practices. The tour will end at Cooper's Rock where members will learn about President Franklin D. Roosevelt's Civilian Conservation Corps (CCC) that built pavilions at the park with American chestnut logs in the 1930s. Lunch for the winners will be provided at one of the picnic tables at Cooper's Rock. The tour will be led by **Bernie Coyle**

and **Mark Double**, current and past WV chapter presidents.

## In Memoria, Dr. William Powell

If you have been a member of the WV chapter for the last few years, you have read a lot in our chapter newsletters about Darling 58, the genetically modified American chestnut tree. What you may not know is the man behind the idea of using a gene from wheat to break down oxalic acid was **Dr. William Powell** from the State University of New York (SUNY). Sadly, Bill passed away on 12 November 2023 at the age of 67. Bill's work to restore the American chestnut tree to the landscape will be his legacy. He was a dedicated researcher and educator remembered for his warm and generous spirit. He fostered an environment of teamwork and collaboration across the Syracuse campus and the greater research community. Bill came to SUNY in 1989 and founded the American Research and Restoration Project with his colleague **Dr. Charles Maynard** to bring the American chestnut back from the brink of extinction. Bill spent 34 years working toward that goal. During that time, he mentored countless students who took his classes and worked in his lab. His research will not only restore the American chestnut but lays the foundation for the restoration of other species.



Dr. William Powell (photo courtesy of SUNY)

## Fort New Salem

Fort New Salem is a representative frontier log house settlement of nineteenth-century North Central Western Virginia/West Virginia. The village of over 18 relocated log structures was created as an extension of the Salem Inter-

national University campus. Since December 2005, Fort New Salem has been under the private ownership of the Fort New Salem Foundation, Inc. It is a living history outdoor museum interpreting the history, crafts and lifestyles of the area. The settlement is surrounded by tree covered hills and takes its visitors into another lifetime when work and leisure activities reflected the values and traditions of the community and the Appalachian culture of her people. Historically, among the numerous seasonal activities held at the fort is **"The Spirit of Christmas in the Mountains"**. This nationally recognized event is a joyous celebration of the traditional folk-ways found in observance of Christmas in West Virginia. For several years, **Sam Muncy** and **Sharon Cottrill** have roasted chestnuts the "The Spirit of Christmas in the Mountains".



Sam Muncy and Sharon Cottrill in period costume at the Fort.

Sam and Sharon roasted 30 pounds of chestnuts over an open fire for more than 200 visitors. Sam stated that over 1/3 of the visitors had never tasted roasted chestnuts and about 1/3 of the people who tasted them as visitors to the Fort in previous years came back looking for more roasted chestnuts. Many of Sam and Sharon's visitors specifically asked at the gate where the chestnut station was located. Kudos to Sam and Sharon! Sam commented that some of the people who were hesitant to try roasted chestnuts came back for more during the event. Sam and Sharon walked through the crowd and shared hot chestnuts, and many of the visitors commented that roasted chestnuts made their day as they experienced a 'Christmassy' feeling. Sam had good discussions with those visiting his booth with some people taking TACF literature. None of the new visitors knew the story of the plight of the American chestnut, so Sam provided good information. The kids who tried roasted

came back time and time again. While they roasted 30 pounds of chestnuts (from Greg Miller's Rout 9 Cooperative in Carrollton, OH), they could have roasted twice that amount. Sam attempted to give one chestnut per visitor. Sam and Sharon enjoyed being outside at an open fire, dressed in period costume and meeting people who experienced eating chestnuts for the very first time. The visitors were delighted to see how easy it was to peel the chestnuts and how good the warm, roasted treats tasted. Fort New Salem has been an excellent way to get TACF in front of people and the event is growing annually. Once they heard the story of American chestnut, the main question posed to Sam was, "when will the American chestnut tree be back". The WV chapter owes a lot to Sam and Sharon for being such good ambassadors of TACF.



Sam Muncy (above) and Sharon Cottrill (below) at the Fort.



## TACF's Decision on Darling 58

**Breaking News. TACF is no longer supporting development of Darling 58 (D58) or deregulation of the Darling Line.**

Throughout 2023, TACF and its partners observed disappointing performance results from broad-scale field and greenhouse tests of advanced generations of Darling trees across several geographic locations. As discussed in the September 15, 2023 episode of TACF's Chestnut Chat webinar series (Darling 58 Update), analysis indicated striking variability in Darling trees' blight tolerance, significant losses in growth competitiveness, and reduction in overall fitness including stunted growth, leaf browning and curling, and increased mortality.

In November 2023, through molecular analyses performed by partners at the University of New England and University of Maine, TACF learned that the OxO gene of all Darling 58 trees was on a different chromosome than expected (chromosome 4 instead of chromosome 7). Upon further and additional independent investigation, scientists confirmed that the trees they had been researching were in fact descendants of a different event in the Darling line in which the OxO gene had been inserted into a coding region, causing a deletion in a known gene. That research also has indicated that the homozygous state (when an individual plant inherits the OxO gene from both parents, which occurs in 25% of offspring) is lethal, and that a majority of homozygous offspring die in the embryonic stage.

TACF researchers suspect that the performance issues of Darling trees stem primarily from the placement of the OxO gene as well as the constitutive expression of the OxO gene which is always "switched on" via the 35S promoter. Somewhat like having a constant fever, the constitutive promotion appears to result in high metabolic costs for the trees. All events in the Darling line use this promoter. Therefore, TACF is no longer pursuing research efforts with any event in the Darling line. Additional information will appear in the first edition of the 2024 WV chapter newsletter.