



The West Virginia Chapter of The American Chestnut Foundation NEWSLETTER



In the heart of American chestnut's natural range

August 2021

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Preston High School Chestnut Orchard

Robert Sybolt, WV-TACF board member and former board president, has single-handedly installed a chestnut orchard behind Preston High School in Kingwood. Robert has about 100 chestnut trees, representing pure Americans, back-cross trees from Meadowview, a few Chinese, Japanese, and Dunstan hybrids. Robert has not only planted the trees, but he mows the orchard. The trees were planted in various years, but some of the trees are 25' tall and flowering.

Some of the American trees in the orchard are from Cathedral State Park in Preston County. One of the

Cathedral trees bloomed this year and catkins from the tree were collected and mailed to **John Deaborn**, owner of the newly-named WV state record American chestnut. Dearborn's chestnut has produced burs, but the nuts were never fertilized. It is hoped that the pollen from the catkins collected by Robert can successfully pollinate the state record tree. If viable nuts are produced, they can be used in our germplasm conservation orchards. Below is a photo of Robert in the orchard and some of the male catkins.

Robert was featured in an article in the 13 July 2021 edition of the *Preston County Journal* newspaper. The article, written by Kathy



Plum, detailed Robert's work in orchard and the arboretum both of which are behind the Preston County Board of Education Office, adjacent to Preston High School. The orchard is named for the late Duane Waddell. Mr. Waddell was born in Preston County, but spent the majority of his life in Cayucos California, where he was the owner of the Swallow Creek Ranch. Mr. Waddell was a great financial supporter of Preston County chestnut endeavors.

Each year, agriculture teachers at Preston High School have their students pot chestnut seeds. Some teachers also use the chestnut orchard and the arboretum as part of their classroom curriculum.



Flowering American chestnut in the Duane Waddell orchard in Kingwood.

Rooted Stump Sprouts for American Chestnut Conservation

by Tom Saielli

Mid-Atlantic Regional Science Coordinator

The American Chestnut Foundation is seeking germplasm from wild American chestnut trees throughout the native range. The objectives of this study are:

1. *Conserve genetic diversity of unique and underrepresented populations of American chestnut through stool layering and air layering techniques to produce rooted stump sprouts.*
2. *Transplant rooted stump sprouts to germplasm conservation orchards.*
3. *Outcross American chestnuts with transgenic chestnut (pending deregulation of GE chestnut).*

For both techniques (stooling and air layering):

In order to produce roots, stump sprouts should be succulent, current season's growth (Figure 1) and should be growing at the base of the tree at the root crown (not up on the trunk).



Figure 1. Succulent sprouts.

Best times to attempt either technique are late June through August. Get permission from the land owner or land manager first. Collect detailed information about your seedlings. For each tree, record:

- o Date
- o Location info: name of forest, mountain, road, route, etc.
- o County and State
- o Latitude and Longitude (decimal coordinates, please)
- o Previously used for breeding: Yes, No, or Unknown
- o TreeSnap ID

All sprouts should be flagged to en-

able future identification of treated material, and preferably tagged with detailed labels. Preferably, data should be recorded in Tree Snap and entered in the database.

Stooling protocol

Supplies:

- 18-gauge flexible wire
- Pliers
- 1% IBA (indole-butyric acid) rooting hormone, available at garden centers)
- Paintbrush or toothbrush (to apply root hormone)
- Flagging and tree tags
- Hand trowel and bucket
- water

- 1) Clear soil and debris from around the stump to provide easy access to succulent sprouts.
- 2) Cut a 2" piece of 18-gauge wire and bend in half and crimp with pliers to form a tight, U-shape. Squeeze the wire around the base of the sprout (as close to the base of the stump as possible).
- 3) Wrap the wire once and then with one hand, hold one end of the wire while cradling the sprout and with the other hand, use pliers to pull the other end of wire. Pull hard enough to ensure a tight fit around the base of the sprout (but be careful not to damage the fragile sprout). Finally, twist the ends of the wire around the sprout to form a tight coil.

This will slowly girdle the sprout, especially as it grows, forcing roots to emerge as the sprout becomes cut-off from the parent root system.

- 4) Thoroughly brush rooting hormone, approximately 2-3 inches on the base of sprout above the girdling wire.

Air-Layering protocol

Supplies:

- Utility knife with clean sharp blades
- toothpicks
- 1% IBA rooting hormone (available at garden centers)
- Paintbrush or toothbrush (to apply root hormone)
- Flagging and tree tags
- Hand trowel and bucket
- water

- 1) Clear soil and debris from around the stump to provide easy access to succulent sprouts.
- 2) Use a utility knife to carefully cut a 2-inch slit lengthwise at the base of the sprout. Cut all the way through the stem.
- 3) Insert a toothpick into the slit to wedge it open.
- 4) Thoroughly brush 2-3 inches of stem with 1% IBA rooting hormone. Be sure to brush the hormone inside the slit as well as the outside of the stem at the base of the stem and brush some hormone around some of the root crown where the sprout emerges.

Regardless of method, finish with the following steps:

Cover the base of the sprout with a coarse soil mix or surrounding forest soils, or a mixture of both. A hand trowel and bucket may help with collecting soil. Water lightly if necessary. You also may consider packing duff, leaf litter, rocks and small branches on and around the sprouts. This will help keep soil intact and conserve soil moisture. It will likely be necessary to construct a small containment around the base of the stump using rocks, branches, etc., to maintain the soil around the sprouts all year.

Next Steps

Late winter or early spring – use a flat spade to cut dormant sprouts away from old stump. It may be difficult to untangle the roots of

the sprouts from the many other roots and duff growing in the soil. It may be easiest to break the seedlings away from the stump (Figure 2) and transfer the whole root ball, duff and all, into bags for transfer to a work station, where careful dissection of roots can take place.



Figure 2. Gently remove root ball.

Once the sprouts have been untangled, transplant into large containers, stake seedlings if necessary (the root systems will lack a strong tap root, so seedlings may require support for a little while). Add water and allow seedlings to rest in a dormant state. Keep the soil and roots from freezing! In fact, keep them warm. Heel in containers or place in a cold frame if necessary. Warm soil will allow the roots to continue to grow. Keep seedlings watered as necessary and consider light fertilization with a root promoting fertilizer high in P and K.

Cross your fingers that your seedlings will survive and grow. If they do well, they can be transplanted to a GCO that fall. After one year in an orchard, it may be necessary to then cut the seedling at the base in order to promote tree-like growth (rumor has it, rooted stump sprouts can be “runty”, cutting back may solve that problem).

Good luck, and remember, this is highly experimental, so we are

hopeful, but make no promises. Please try this and share your experience!

Demonstration of Root Stooling and Air Layering in the Fernow Forest

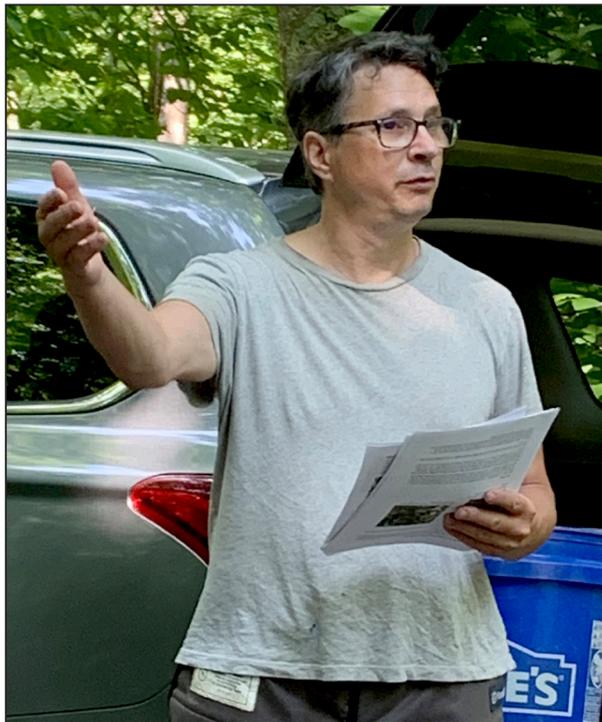
Tom Saielli drove from his home in Charlottesville, VA to demonstrate these two techniques to a group of ten WV-TACF members on July 27. The group met at the U.S. Forest Service (USFS) office in Parsons. **Dr. Melissa Thomas-VanGundy**, research forester with the USFS, located American chestnut sprouts in the Fernow Forest, and she led the way to the trees just beyond one of the entrances to the Otter Creek Wilderness Area. It was a beautiful summer day and the Fernow Forest was ablaze with colorful wildflowers and butterflies.

In addition to Melissa, those joining the demonstration were: **Bob Born** (Preston County), **Bernie and Linda Coyle** (Mineral County), **Mark and Mindy Double** (Monongalia County), **Randy and Carla Kesling** (Harrison County), **Steve McClelland** (Monongalia County) and **Robert Sypolt** (Preston County).

Tom demonstrated how to dig around the base of the sprouts to locate the root collar. He then demonstrated how to bend and crimp the wire that snugly fit around the base of the sprout. Several members of the group participated in the learning experience as they layed on the ground watching carefully as Tom went through the various steps.

While late July is a bit too late in the season, Tom stated that once the two

methods were complete, the sprouts would be left for another 14-months, at which time the shoot with roots can be dug up and replanted. The basic premise of these procedures is to move American chestnut sprouts from remote areas to areas that are more accessible so that the sprouts/trees can be used in breeding programs. While trees in the wild are useful, it is often too difficult to assess their flowering and subsequent nut collection. Often trees in the wild are far from a road. If the trees are too far from a road, they can be moved to a location that is easier to access and breeding is much easier.



Tom Saielli provides information to the group prior to the demonstration.



The entrance sign to the Fernow Forest.



Some of the members who participated in the demonstration were (L to R): Linda Coyle, Melissa Thomas-VanGundy, Bob Born, Bernie Coyle, Randy and Carla Kesling, Robert Sybolt and Steve McClelland.



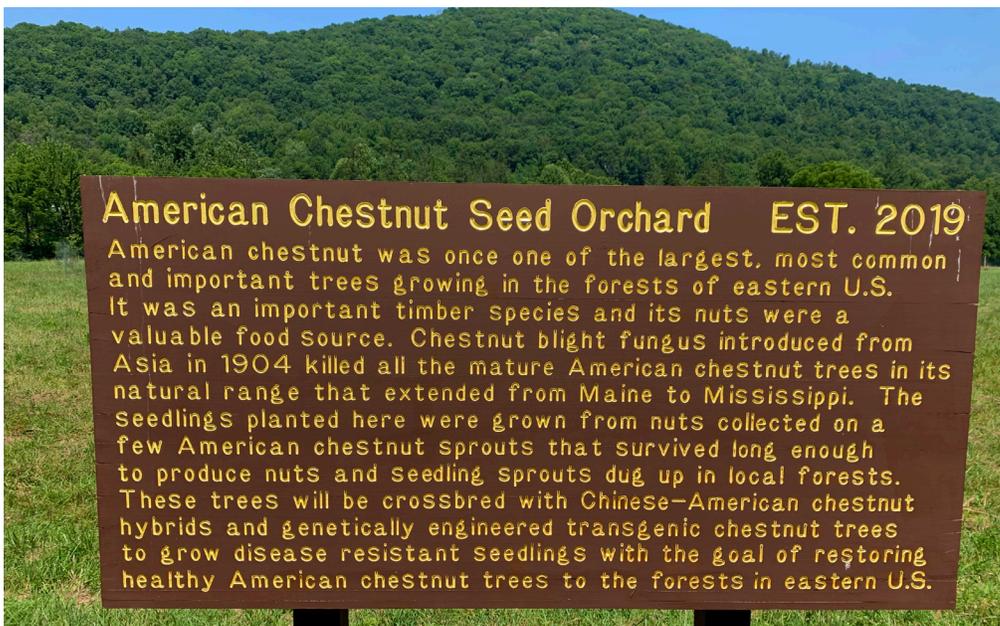
Linda Coyle practices shaping wire. Tom suggested shaping the wire to the diameter of the sprout to obtain a snug fit around the sprout.



Around the tree are Melissa Thomas-VanGundy, Carla Kesling and Tom Saielli. Onlookers are Steve McClelland, Mindy Double, Linda Coyle and Robert Sybolt.

Parsons American Chestnut Seed Orchard

Jeff Kockenderfer, secretary of WV-TACF, established an American chestnut seed orchard adjacent to the USFS office in Parsons, WV. For those familiar with the area in Tucker County, this was the site of the former state tree nursery, prior to the 1985 flood. In November of 1985, the floodwaters devastated much of the Potomac Highlands, forcing the state tree nursery to be moved to the Clements tree nursery in Mason County.



Rowlesburg Chestnut Festival and Annual WV-TACF Meeting

After a year hiatus due to Covid-19, the Rowlesburg Chestnut Festival returns in 2021. The date of this year's festival is **Sunday, October 10, 2021** at the Old Rowlesburg School. From 8:00 am until noon, the River City Cafe will be open, serving a full breakfast. Events at the scenic Rowlesburg park include: roasted chestnuts; chestnut seedling sale; jarred chestnuts in honey; chestnut furniture sales by **Charles and Randall Wotring**; Allgheny Treenware collectible items; ox-roast sandwiches; Applachian avian conservation center bird exhibit; and, music.



Hot roasted chestnut vendors

The WV-TACF meeting will take place earlier than in previous years. The WV chapter meeting is scheduled from **11:30 am to 1:30 pm** in a classroom on the 2nd floor of the Szilagy Center (the old school building).

Vendors and displays will be located in the Rowlesburg Community Park, located just across the street from the school.

The chestnut scientific session will be held from 3:00 - 4:30 pm on the 2nd floor of the Szilagy Center. All are welcome. Speakers this year are **Tom Saeilli**, TACF's Mid-Atlantic Regional Science Coordinator and **Dr. Heather Griscom**, Professor from

James Madison University in Harrisonburg, VA.

The gala banquet takes place in the school auditorium from 5:30 - 7:30 pm. The Madrigal Singers from Preston High School will perform and join in the crowning of the 2021 Mr. and Mrs. Chestnut, **Jeff and Erica Kochenderfer**. Jeff is the secretary of the WV-TACF and he works for the U.S. Forest Service in Parsons.

The gala dinner will feature savory chestnut dishes that includes the main course, dessert and drinks. Festival Director Emeritus, **Shirely Hartley-Meisner** will lead the toast of the new wine prior to dinner. Keynote speaker is **Mark Double**, WV-TACF president. His presentation is titled, "**Chestnut and Religion**". **Deborah Westbrook**, Preston High School choir director, will be the pianist for the evening. The festivities will close with the winners of the silent auction.

Place Your Order for Chestnuts in 2022

It will soon be time for the West Virginia chapter to place its order for advance backcross nuts from the national organization. TACF has three research chestnut orchards in Meadowview, VA. Since the farms were first planted in 1983, about 120,000 chestnut trees have been planted on the three farms. Over the last several years, there has been a concerted effort to rouge all except the very best trees. The first effort rouged trees to the best 2,500 and this practice has since selected only the very best 500 trees. Thus, with fewer trees, there will be fewer nuts to share among the 16 state chapters. If you are interested, I suggest that we limit orders to three seedlings. If you would like seedlings next spring (May 2022), send an email

to Mark Double at: **mdouble122@gmail.com** or write a note and send it to: **Mark Double, 12 Dartmouth Street, Morgantown, WV 26505-3617**. The deadline for placing an order is **September 30, 2021**, as the order will be placed in October.

Chapter President's Virtual Meeting

On August 9, 2021, a virtual meeting was held, comprised of 14 of the 16 state chapter presidents of TACF. The meeting was led by **Dr. Carolyn Keiffer**, President of OH chapter and President of the Chapter's Committee. Several items were discussed, as outlined below.

1. There is currently an upgrade of TACF's website. One of the goals of the upgrade is to make it easier for those chapter members who submit articles/pictures of their respective state chapters. The national office hopes the upgrades will be complete sometime in October 2021.

2. Several years ago, each state chapter president was automatically a member of the national board. While this ensured each state had a voice on the national Board of Directors, it made meetings cumbersome with so many voices. As a result, only the chair of the chapter's committee is a member of the national board. Discussion ensued as how communication flows from Regional Science Coordinators (RSCs) to state chapters. Some chapter presidents felt communication could be improved in terms of transmitting newly found information from the national level to the states. One suggestion was for

each RSC to hold periodic virtual meetings with representatives of each of their states. **Tom Saielli**, the RSC for the Mid-Atlantic region, coordinates activities in four states: KY; MD; VA; and WV.

3. Since chapter presidents are no longer members of the national board, the suggestion was made that each state should have at least one member on one of the six national-level committees (**1. Science and Technology; 2. Governance; 3. Finance; 4. Promotion and Outreach; 5. Restoration; and, 6. Chapters**). A member from each state will aid in having good representation among all 16 state chapters. Membership on a national committee is open to any WV chapter member. If you have an interest on serving on a national committee, contact Mark Double.

4. An update was provided on the status of the genetically-engineered (Darling 58) tree from the State University of New York. TACF submitted its application for deregulation to the USDA more than a year ago. A 90-day comment period allowed for the submission of comments, both positive and negative. After the comment period was closed, positive comments versus negative comments were 2:1. Now the USDA is requiring a NOI or Notice of Intent. As part of the NOI, TACF will assist with an EIS or Environmental Impact Statement that describes potential impacts as they pertain to deregulation. As a result of the NOI, there will be another open comment period. It is believed that those who submitted a

comment last year are not required to resubmit their comments.

From the Federal Register:
We (USDA) are announcing to the public that the Animal and Plant Health Inspection Service (APHIS) intends to prepare an environmental impact statement (EIS) evaluating the impacts that may result from the approval of a petition for non-regulated status for blight-tolerant Darling 58 American chestnut from the State University of New York. The trees have been developed using genetic engineering to express an oxalate oxidase enzyme from wheat as a defense against the fungal pathogen, Cryphonectria parasitica. Issues to be addressed in the EIS include the potential environmental impacts to managed natural and non-agricultural lands, the physical environment, biological resources, human health, socioeconomics, federally listed threatened or endangered species, and cultural or historic resources. We are requesting public comments to further delineate the scope of the alternatives and environmental interrelated economic issues and impacts to be considered in the EIS.

5. TACF hopes to submit their request for deregulation to the EPA in September 2021. Permission is required from both the USDA and the EPA. As a result of the change in the U.S. presidency, many top-level positions in government have changed. There is a new chief of the U.S. Forest Service, so TACF will have to revisit new officials in Washington, D.C. to acquaint them with the goals of TACF.

6. The chairman of TACF's Board of Directors, **Dr. Brian McCarthy** (faculty member at Ohio University in Athens, OH). suffered spinal trauma during a mountain biking accident in South Carolina. Brian remains in a South Carolina hospital awaiting transport to a spinal facility in Columbus, OH.

TACF's Summer Board Meeting

The summer board meeting of TACF was held virtually on August 13, 2021. The two-hour meeting covered the foundation's finances along with science and governance issues. A summary of the meeting follows.

--**Finance Committee** (**Barb Tormhelen**, Treasurer and **Paul Wingefeld**, Chief Financial Officer). There was a significant increase in income during the last fiscal year. TACF budgeted \$2.372M, but took in \$4.584M. The increase came from investment income (\$973,000), PPE loan forgiveness of \$208,000, and increased giving from individuals donors/members.

As of July 31, 2021, TACF has 5,121 members. This number does not include donors (those who donate money but are not official members of TACF). Due to less travel, the absence of a national meeting in 2020, and good oversight by TACF staff, expenses were only 93.8% of the budgeted amount. Not all state chapters are incorporated under the umbrella of the national chapter. That means that some state chapters manage their own funds and file their own taxes. WV is incorporated; the collective funds of all incorporated state chapters totals \$253,600.

A portion of the national expenses breaks down to: science and technology (31%); national office (23.9%); chapter services (10%); Meadowview farms (14.7%); and external research (10.2%). The Asheville office reopened June 1, 2021, and all staff returned to in-office work. That may change with the Delta variant.

--**Lisa Thomson, President's report.**
Lisa stated that an agreement has been made with the Eastern band of the

made with Cherokee Indians of NC, Lisa attributed much of the success of this agreement to **Rex Mann**, a member of KY-TACF and a former speaker at the Rowlesburg Chestnut Festival. Members of TACF and the Cherokee nation gathered at Meadowview this summer and they collectively did some hand-pollinating using the bucket truck. A memorandum of understanding has been signed and there are mutual projects and tree plantings planned on Cherokee land.

Lisa also reported that *Legacy Trees* (members who donate \$10,000 are provided a *Legacy Tree*), all now have signage in the Meadowview orchards.

Jim Searing, Darling 58 Deregulation committee. Jim reported on USDA-APHIS's request for a DOI (see page 7). TACF will submit its own comments on the DOI. Jim's greatest news was that APHIS indicated that deregulation of Darling 58 is their preferred outcome. That is great news. More news was APHIS finally provided a projected date for their decision on deregulation--two years from the end of the NOI or August, 2023. This is the first time a firm date has been provided by APHIS, The caveat is that the date is subject to an extension.

Since submission to EPA and FDA is separate, it is hoped that TACF will file with both agencies in September 2021. EPA has an 18-month timeline for review. FDA's is not as long.

Many non-profit organizations have offices in Washington, DC with access to leaders in various government agencies. TACF does not have an office in our nation's capitol, but it helps if a U.S. Senator or

their aide has an interest in an organization. Thus, contacts are necessary for TACF to keep those in power apprised of TACF and its goals.

Jared Westbook, Director of Science.

Jared commended that TACF's mission has become more complex. If the Darling 58 tree is deregulated, then crossing of TACF's backcross trees and the OXO trees of the State University of New York will commence. Jared gave a brief report on three items. (1) There is good diversity of chestnut trees in state chapter breeding orchards. (2) Some of the advanced backcross trees look very good. The plan is to now make crosses among the best performing trees. (3) Jared is analyzing 18 years worth of data relative to *Phytophthora* root rot resistance.

Jared stated that we need adaptive diversity, so the plan is to sequence DNA from about 400 American chestnuts. The next step will be to sequence the best backcross trees to see if we have captured the diversity that is needed for chestnuts to survive in the wild.

There are several projects planned to look at specific genes. He has sequenced many Chinese and American chestnut genes to see what genes differ. Virginia Tech is hiring a post-doc to look at specific genes.

Sara Fitzsimmons, Director of Restoration. Sara reported that **Kendra Collins**, the Regional Science Coordinator for New England just returned from maternity leave, giving birth to a second daughter, Ailis. Kendra's fill-in traveled over 3,000 miles in New England taking care of TACF members in the northeast.

Sara shared the metrics she uses to assess the phenotype of chapter selections. She affirmed what Jared said, that they are planning to cross the best with the best in Meadowview's orchard

trees. Another step is scheduled to cross the best GCO (germplasm conservation orchard) trees with the best BCO (backcross conservation orchard) trees.

Sara said that new learning boxes are being planned. The original learning boxes were designed by the MD chapter. One of the 12-year-old culled backcross trees was large enough to be cut into lumber. The wood from this tree is being used in the new learning boxes.

More than 11,000 chestnut trees have been inoculated in New England. Data from these trees will aid in assessing the crosses made to date.

Sara conducted several pollination workshops in 2021, at the University of Vermont, in New York, at Penn State University and at Meadowview. More than 1,000 pollination bags were placed at the Penn State workshop.

Committee Reports.
Carolyn Keiffer, Chapter's Committee (see page 6).

Bruce Wakefield, Restoration Committee. A report is forthcoming as to how best to use the B3F3 nuts that will be collected this fall. It was reported that 96% of the tree roguing at Meadowview is complete.

Jay Cude, Governance. Jay wants to know how TACF can grow its vision. (1) How big are our current grants? The average grant is \$30,000-\$40,000. (2) How many tree restoration groups are there? About 30. (3) We hope to move beyond chestnut to rescue other species in peril.