

Handshake Partnership Program Report - FY 2016 Recipients

1. **Name of Corps Project/Lake:** W. Kerr Scott Dam & Reservoir
2. **District / Division of Corps Project/Lake:** Wilmington/South Atlantic/W. Kerr Scott
3. **Handshake Project Name:** American Chestnut Restoration Research Project
4. **Amount of Handshake Funds remaining:** \$9721.08
5. **What has been accomplished?** Please provide photographs; before, during, and after!:
See Attachment 1

	Total
Handshake Program Funding Amount	\$21000
Local Corps Office Funds (total expended on labor, materials, contracts, etc.)?	\$19557.50
Partner's Contributions (total value of funds, goods, services, volunteer hours, etc.)	
Partners Name	Total Value of Contributions
1 The American Chestnut Foundation (TACF)	\$38501.66
2 Appalachian State University (ASU) Biology Department	\$13566.53
3 West Wilkes High School (WWHS) Agriculture Program	\$4248.64
4 Friends of W. Kerr Scott Lake (FOL)	\$193.12
5 Warren Wilson College	\$193.12
6 HP Rotary Club	\$386.24
7 Casey & Company Forestry	\$193.12
8 Miscellaneous Individual Volunteers	\$1907.06
9	\$
10	\$

6. Handshake Program Recipient Feedback

Please take this opportunity to provide feedback on all aspects of the Handshake Program and the Challenge Partnership Agreement authority. Your productive comments are important to the ongoing improvement of the program. Make sure to let us know how the Handshake funds have benefited your efforts to initiate and/or strengthen your partnerships.

See Attachment 2

7. Handshake Summary:

Please also include a separate newspaper type article describing the project and the benefit to the Corps of Engineers and to the public as a result of this partnership project. Examples can be found on the gateway under Handshake Success Stories.

See Attachment 3

ATTACHMENT 1 -
W. KERR SCOTT AMERICAN CHESTNUT RESTORATION RESEARCH PROJECT
What has been accomplished?

The American Chestnut Restoration Research handshake project at W. Kerr Scott Dam and Reservoir was a success. There were challenges at times, such as a drought and high mortality of trees. However, the handshake provided the necessary funding and established partnerships to further research efforts in restoring American chestnut (*Castanea dentata*) trees to areas they were native to before they were decimated by the blight in the early 1900s. The planting of experimental stands will help ensure the health and vigor of the American chestnut population and provide for a healthy forest ecosystem.

In 2015, W. Kerr Scott (WKS) staff determined it would be mutually beneficial to the Corps and partners to work cooperatively to restore and enhance American chestnut stands for ecological and educational purposes and to gather scientific data. Partners included in the handshake application were The American Chestnut Foundation (TACF), Appalachian State University (ASU), North Carolina Department of Agriculture Forest Service (NCFS), West Wilkes High School Agriculture Program (WWHS), and Friends of W. Kerr Scott Lake (FOL). Once the handshake was awarded, additional individuals and organizations expressed an interest in the project and volunteered their services in support of it.

The project initially identified two areas for American chestnut trees to be planted, Smithey's Creek Wildlife Management Area (WMA) and Fort Hamby WMA. Biologists with TACF and ASU decided that an open field plot and an understory plot at Fort Hamby WMA would be more suitable and beneficial for restoration and research efforts. The initial plan was to start planting in 2016 once funds were received. Due to a drought that year, planting was delayed until 2017 so the trees would have a higher chance of survival.

In March 2017, W. Kerr Scott staff and partners planted 650 hybrid American chestnut seedlings in the plots at Fort Hamby WMA. In March 2018, one year after the initial planning, research and analysis was conducted by biologists with TACF and ASU to identify how many and which hybrid of American chestnut trees survived. It was determined there was significant mortality. TACF donated another 100 American chestnut seedlings which were planted by ASU biology department staff and students. During 2018 and 2019, ASU continued data collection and analysis and shared scientific assessments with W. Kerr Scott staff and TACF personnel. The initial plan called for a release thinning of other tree species and clearing of brush surrounding maturing American chestnut trees in the understory to open the canopy and provide more sunlight to them. Release and thinning were to happen in the third year. However, mortality in the understory was high, and it was decided by TACF and ASU biologists along with W. Kerr Scott staff personnel to forgo the thinning and release. This action led to funds not being spent for that effort.

Though the handshake has come to an end, the story continues. Long term management planning for Fort Hamby WMA involves actively considering the continued protection and inclusion of the re-introduced American chestnut trees that were planted with this on-going partnership. TACF and ASU continue to volunteer their time and services with research, analysis, and planning. ASU is still involved in the collection of data with the hopes of publishing research associated with the American chestnut restoration project. As of the date of this report, a

conference is scheduled between W. Kerr Scott staff, ASU, and TACF about the possibility of another round of plantings either in Fort Hamby WMA or elsewhere at W. Kerr Scott Reservoir.

In conclusion, this project has been instrumental in the restoration of American chestnut to its natural habitat and fostering research efforts and the sharing of scientific data with other organizations. This data will hopefully result in highly successful restoration efforts elsewhere. Furthermore, this project presented W. Kerr Scott and the Corps an opportunity to establish and continue partnerships with great organizations and individuals whose mutual vision is to see this once great tree establish its roots once again and become a thriving species.



American chestnut tree at W. Kerr Scott Reservoir



WKS Staff and TACF
Personnel Planning
Chestnut Plots (October
2016)



WKS Staff and TACF
Personnel Flagging
Chestnut Plots (October
2016)



WKS Staff Preparing
Holes for Chestnut Trees
(March 2017)



Materials Staged for
Open Field Plots (March
2017)



Materials Staged for
Understory Plots (March
2017)



Volunteers Arrive for
Planting Day (March
2017)



FOL Personnel
Preparing Chestnut
Seedlings for
Distribution to Plots
(March 2017)



TACF and FOL
Personnel Briefing
Volunteers on Planting
(March 2017)



Volunteers Dividing Into
Teams for Planting
(March 2017)



Volunteer Team
Planting Seedlings and
Building Cages Around
Them in Understory Plot
(March 2017)



WWHS Students
Constructing Tree Cages
(March 2017)



Casey & Company
Forestry Personnel
Planting Seedling and
Placing Tube Around
Seedling (March 2017)



WKS Staff, WKS Volunteer, and TACF Personnel Collecting Data on Seedlings (March 2017)



Seedlings Planted and Caged in Understory Plot (March 2017)



WKS Staff Planting Seedlings and Building Cages Around Them in Open Field Plot (March 2017)



Seedlings Planted and Caged in Open Field Plot (March 2017)



Maturing Chestnut Tree A Few Months After Initial Planting (August 2017)



ASU Biology Students Surveying Trees for Survivability and Health One Year After Initial Planting (March 2018)



Maturing Chestnut Tree One Year After Initial Planting (March 2018)



ASU Biology Student Recording Data on New Seedlings One Year After Initial Planting (March 2018)



ASU Biology Students Plant New Seedlings One Year After Initial Planting To Replace 100 Trees That Did Not Survive (March 2018)



WKS Staff and ASU
Biology Professor Brief
PROSPECT
Partnerships Students on
Handshake Project
(October 2019)



Maturing Chestnut Trees
(August 2020)





ASU Biology Professor
Discussing Plot
Maintenance and Future
Plans with WKS Staff
(December 2020)

AND THE STORY CONTINUES.....!

ATTACHMENT 2 -
W. KERR SCOTT AMERICAN CHESTNUT RESTORATION RESEARCH PROJECT
Handshake Program Recipient Feedback

The Handshake Program provides an excellent opportunity for Corps projects to work with local community organizations and individuals in an effective, efficient, and cost saving partnership to accomplish a myriad of projects that are mutually supportive of each other's missions, goals, and desires. The program is an avenue to create not only one-time partners, but also opens the door to lasting partners who have a genuine interest in assisting the Corps and serving the local community. In these times of budget constraints, partners and volunteers are critical to accomplishing the Corps mission. Both the Corps and partners have great ideas, but limited funding and personnel create a challenge. The Handshake Program is the bridge that brings those ideas into fruition.

**ATTACHMENT 3 -
W. KERR SCOTT AMERICAN CHESTNUT RESTORATION RESEARCH PROJECT
Handshake Summary**

Wilkes Journal-Patriot News Release

North Wilkesboro, NC

[Chestnut comeback | News | journalpatriot.com](#)

https://www.journalpatriot.com/news/chestnut-comeback/article_74cc1cf4-033f-11e7-9166-9703f2399e4e.html

Volunteers plant 650 hybrid tree seedlings near W. Kerr Scott Reservoir Thursday

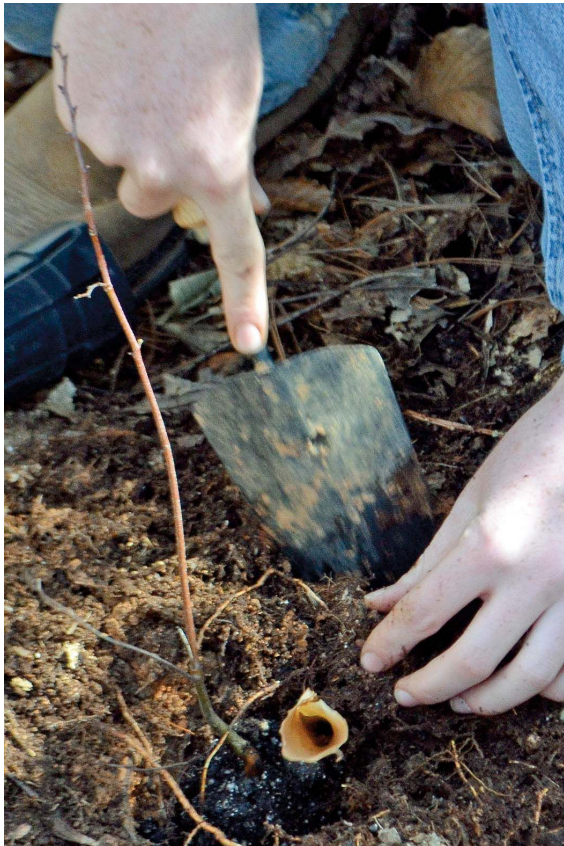
Chestnut comeback

Kaitlin Dunn Mar 7, 2017 Updated Mar 7, 2017



Judy Sutton and Dylan Hauck measure how tall a chestnut seedling is and record it for their records.

Kaitlin Dunn



A volunteer digs a hole in the forest to plant a chestnut seedling for an American Chestnut Foundation study.

Kaitlin Dunn



Crystal Dillard and Johnny Jones of the U.S. Army Corps of Engineers put up fences to protect chestnut seedlings from animals.

Kaitlin Dunn

The American chestnut was a dominant tree species in Wilkes County and elsewhere in the eastern U.S. before it was decimated by a blight in the early 1900s.

About 50 people spent most of Thursday planting about 650 hybrid chestnut tree seedlings near the U.S. Army Corps of Engineers' W. Kerr Scott Reservoir as part of a comeback effort in several states coordinated by the American Chestnut Foundation (TACF).

They included volunteers from TACF and Friends of W. Kerr Scott Lake, students in the Future Farmers of America at West Wilkes High School, biology students at Appalachian State University and staff from the Corps of Engineers and N.C. Forest Service.

The project is designed to learn more about the blight resistance of trees developed through three decades of backcross breeding, help learn which forest planting techniques work best and help restore the American chestnut within its natural range, said Tom Saielli, TACF mid-Atlantic region science coordinator.

A \$21,000 Corps grant funded supplies related to planting and TACF donated the one year-old seedlings, said Johnny Jones, a Corps ranger at W. Kerr Scott Reservoir.

Jones said planning for the work has been underway about two years. Corps Ranger Brad Carey suggested the planting site to TACF and applied for the grant when he was assigned to W. Kerr Scott Reservoir. Carey is now assigned elsewhere.

Saielli said most of the hybrid seedlings planted Thursday are about 96 percent American chestnut and about 4 percent Chinese chestnut, resulting from backcross breeding to produce trees with the blight resistance of Chinese chestnut and physical characteristics of American chestnut.

The first cross-pollination between a Chinese chestnut and one of the few surviving pure American chestnuts creates offspring that are genetically one-half American chestnut. The second cross is between one of the 50-50 hybrids back to another pure American chestnut to create trees that are 75 percent American. Backcrossing hybrids with pure American chestnut trees continues until the result is seedlings that are more than 90 percent pure American chestnut.

He said seedlings were planted both in an open field and in the forest understory to determine which conditions allowed faster growth and better survival.

Saielli explained that in the field, the trees will be exposed to more sunlight, allowing them to grow faster, but they will have to compete with the surrounding grass for resources, especially water if there is a drought.

In the forest, he said, they won't grow fast, but they won't have to compete for resources. "It'll let them get more established," he said.

Trees and brush surrounding some of the hybrid chestnut seedlings will be cut to allow more sunlight in two years and this will be done around the remaining seedlings in four years to determine the impact of limited sunlight for these two periods of time.

Saielli said hybrid chestnut seedlings that are 75 percent American and 25 percent Chinese or 50/50 were also planted in the research study.

"We wanted to plant other genotypes that we know have higher levels of resistance and see how they compare long term. The more American they are, the more competitive they are in the forest, so we're also seeing how the advanced hybrids compare to the others when put in that environment," Saielli said.

"Trees grow as a combination of their genetics and their environment, just as you and I are a product of our genetics and environment," he said.

Seedlings were planted in holes 8 to 10 inches deep, with a bit of bone meal for fertilizer.

A blue plastic tube was placed around each seedling to protect it from voles and other small pests. Wire fencing is designed to provide protection from deer.

"It'll be amazing to see them grow," said TACF volunteer Judy Sutton. "We want to get chestnuts in the wild as the great trees they once were," she said.

Each seedling is numbered and charted to record its height and location and when planted.

TACF researchers, with assistance from Appalachian students, will collect data every spring and fall for years. This will include growth rate, height, tree form, timber form, blight resistance and other aspects .

“We’re going to go back in a few months and collect data and make sure they survived the transplant,” said Saielli.

He said the work on the Corps of Engineers property is one of many projects TACF is taking on to restore the American chestnut to its past glory, and working with other groups is a key to success.

“This is a really great example of how this takes collaboration to get this research done,” Saielli said.

“As a small nonprofit, we can only do things with cooperators. It took a few years and some great partners working hard and it will take many more years, but it’s because of those cooperators we can make things like this work.”

Ed Schwartzman, TACF southern region science coordinator, was one of the other volunteers in charge of this project.

Saielli said Schwartzman started the project and they worked together to see it through.

American chestnut trees were valuable for lumber and their nuts were important for wildlife, as well as popular for people.

He said he hoped the trees would once again be plentiful.

“We’ve got a long way to go still, but we are making progress,” Saielli said.

W. Kerr Scott Storyboards

WILMINGTON DISTRICT

WKS American Chestnut Tree Project

On 9 December 2020, Michael Madritch, Biology Professor at Appalachian State University (ASU), met with Park Rangers David Bolick and Johnny Jones at Ft. Hamby Wildlife Management Area to discuss chestnut tree survivability/mortality and plot maintenance. Almost 1000 trees were planted as part of a handshake agreement awarded to W. Kerr Scott Reservoir in FY16. In addition to ASU, other partners involved with the project included The American Chestnut Foundation, Friends of W. Kerr Scott Lake, West Wilkes High School Agriculture Program, and North Carolina Department of Agriculture Forest Service. Photos taken by Park Rangers Josh Sigmon and Johnny Jones.



American Chestnut Tree



Park Ranger David Bolick (l) and Michael Madritch (r) discuss plot maintenance actions.

Working Today to Build a Better Tomorrow

WILMINGTON DISTRICT

WKS American Chestnut Tree Project: Tree Cage Removal – Forest Canopy

On 12 January 2021, Park Rangers David Bolick and Johnny Jones along with W. Kerr Scott Volunteers Randy and Debbie Connor, Tommy and Darlene O'Neal, and Eric and Cathy Wall removed several hundred tree cages from the chestnut tree plot located under the forest canopy at Ft. Hamby Wildlife Management Area. Cages were left in place around the 42 surviving chestnut trees. An analysis to determine survivability of the chestnut trees planted in the open field is yet to be completed. The metal tree cages will be salvaged for a possible planting of additional trees later.

* Photos taken by Park Ranger Johnny Jones.



Park Ranger David Bolick removes tube from surviving chestnut tree.



Volunteers Debbie Connor (l), Cathy Wall (c) and Randy Connor (r) load dismantled tree cages.

Working Today to Build a Better Tomorrow

WILMINGTON DISTRICT

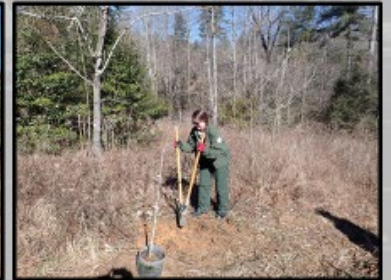
WKS Team Building Exercise: Planting Fruit Trees at Ft Hamby WMA

On 23 February 2021, W. Kerr Scott staff members Thomas Nicholson, Dave Funderburk, David Bolick, Grace Trimble, Crystal Triplette, Tim Taylor, and Johnny Jones gathered at the Ft. Hamby Wildlife Management Area (WMA) open field site for a team building exercise. They planted persimmon and plum trees purchased from Petersen's Wildlife Management. Persimmon and plum trees are native to the area. Cages were built using salvaged material from the chestnut project and were placed around the trees to prevent or reduce herbivory predation from deer and other animals that prey on plants.

* Photos taken by Park Ranger Johnny Jones.



Engineering Tech Tim Taylor (l) and Ranger David Bolick (r) using auger to dig holes.



Ranger Grace Trimble prepping the hole for the tree.

Working Today to Build a Better Tomorrow

AND THE STORY CONTINUES.....!