

**U.S. Army Corps of Engineers
Fiscal Year 2011
Handshake Program Application**

Please review instructions before completing application!

Corps Lake/Project Name:**Shenango Lake**

Handshake Proposal Title:**American Chestnut Re-Introduction Project**

Corps POC Name:**Mr. Kyle Kraynak**

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A. Eligibility checklist:

1. Is the funding going to be spent at Corps facilities and resources that are being maintained at 100% federal expense? * **Yes** **No**
2. Is the agreement with a non-federal public or private entity(ies)? * **Yes** **No**
3. Is the proposed activity within current authorities and contained in the annual or 5-year work plan in the approved OMP? ** **Yes** **No**
4. If no, when will the OMP be updated and approved? (example: Sept 10)

**If "No" to either question 1 or 2 the proposal cannot be authorized under the Corps' challenge partnership authority.*

*** If "No" to question 3 and the date provided in answer to question 4 would come after the commencement of your proposed challenge partnership your activity can not be authorized.*

B. Handshake Funding Program Request (maximum \$25,000): \$25,000

C. Cooperating Association Agreement Bonus: Challenge Partnerships that include an organization (cooperating associations, friends groups) with which your project/district has recently (after January 1, 2009) entered into a Cooperating Association Agreement are eligible to compete for an additional \$5000. You must include a copy of the signed agreement with your proposal. (Reference Chapter 9 of ER and EP 1130-2-500 for information on cooperating associations).

Date of Cooperating Association Agreement: (must be after January 1, 2009 to be eligible).

D. Incentive Points Categories: Check the box for each category that applies to your Challenge Partnership Agreement and include an explanation in the project description (Section E.). Qualifying applications will receive bonus points on their evaluation score.

Utilizes an existing National Memorandum of Understanding (MOU) - National Partner MOU's are posted on the NRM Gateway <http://corpslakes.usace.army.mil/partners/list.html>). Local and regional chapters of national partner organizations are eligible. Groups must be an intended signatory to the agreement in order to qualify for the bonus points.

Includes a veterans and/or military family organization. Groups must be an intended signatory to the agreement in order to qualify for the bonus points.

Presidents Challenge - Active Lifestyle Program: Project provides specific opportunities for children and their families to get outdoors and participate in activities in order to receive a Presidents Active Lifestyle Award. http://www.presidentschallenge.org/the_challenge/active_lifestyle.aspx

E. Describe your partnership and the proposed project:

Your project will be evaluated on the following categories: Sustainability, Partnership Value, Recreation Benefit, Environmental Stewardship Benefit, Communication and Education Value, and Innovativeness. Please address each in your description. Also address incentive point categories you have identified in Section D.

Description:

The historic range of the American Chestnut, *Castanea dentata*, encompassed a significant area in the eastern United States. It was found from Maine to Georgia and as far west as portions of Arkansas, Mississippi, and Illinois. Prior to the arrival of the chestnut blight, *Cryphonectria parasitica*, which originated from imported Asian species of Chestnut trees in the late 1800s, the native range of the American Chestnut covered some 200 million acres. In some areas, it was so abundant that one out of every two trees was an American Chestnut. It was estimated that in the 1800s there were more than 4 billion plus American Chestnuts in the eastern United States.

The American Chestnut was a valued tree species for several reasons. It grew very straight and rapidly. Mature trees could reach heights in excess of 100 feet and some trees grew to between 10 and 15 feet in diameter. This made it a prized lumber species. The trees were also known for their fruit. The nuts of the American Chestnuts are sweet and nutritious and are richer in protein than acorns and other nuts. So prized and valued were the nuts, that extra ones were gathered and used for barter and sale. The wood was excellent for making lump coal which was used in iron furnaces. The bark was a key component in the tanning industry due to high amount of tannic acid found in the bark. These industries were some of the largest in the nation at the time. It is estimated that 50 percent of the economic value of Pennsylvania's forests came from this one tree species.

In the late 1800s, the United States began importing smaller Asian Chestnut trees. Some of these trees carried with them a blight to which the Asian Chestnut species were immune. However the American Chestnut had no such resistance. The blight was first identified in the New York Botanical Garden in 1904. The blight spread quickly causing swollen canker wounds on the trunk and branches of American Chestnuts. A mature 100 foot tall American Chestnut, after catching the blight, usually died within two years. These canker wounds caused by the blight killed the portion of the tree above the wound; however the blight did not kill the roots of the tree. By 1911 the blight was identified in Philadelphia, PA and by the 1920s the disease was spreading quickly throughout the Appalachian Mountain range. By the 1950s this iconic and economic tree was basically wiped out. Only standing dead trees and new stump sprouts remained of the American Chestnut species. The sprouts would bring new growth but after only a few decades would catch the blight and die off. Most of the American Chestnuts surviving today are these stump sprouts.

Concerned citizens began a crusade to save the American Chestnut from extinction. By the 1980s two dominant organizations were formed to save the American Chestnut species. The American Chestnut Cooperators Foundation attempts to breed disease resistant trees using only American Chestnut trees. The American Chestnut Foundation (TACF) attempts to cross breed American Chestnuts with Asian species such as Chinese and Japanese Chestnuts which are immune to the blight in order create hybrid American Chestnut trees. These hybrids are cross breed for several generations with other American Chestnuts to create a tree that is not only immune but 94 percent American Chestnut. Hybridization is a time consuming process that is expensive and requires extensive field study and effort.

There is great hope and success in the efforts these organizations are pursuing. The restoration of the American Chestnut to its rightful place in the forest of the eastern United States can take place. However, it will only be through pain-staking and repetitive breeding techniques along with cooperation with local citizen involvement coupled with assistance from state and federal authorities. If the American Chestnut can be restored to a portion of its historic range it will be a major accomplishment and one unquestionably worth undertaking. Recently staff at Shenango Lake have begun to seriously consider efforts to help promote the sustainability of the American Chestnut. The goal is to establish a long term cooperative association between PA-TACF, volunteers,

and U.S. Army Corps of Engineers staff for research, education, and stewardship. The award of the Handshake Partnership funds will allow for the enhancement and maintenance of re-introduction efforts. The funds would be used for the establishment of orchard locations for American Chestnut trees, herbicide spaying, tools such as orchard ladders, back pack sprayer, mower, tree markers, fencing, lumber, and planting supplies. A cornerstone of this process is to provide education to the public about the importance of the American Chestnut and the effort to save it for future generations. Educational efforts would include the development of a well informed volunteer group to assist with planting, upkeep, and harvest of American Chestnut seed. Also, interpretive signage would be placed in the vicinity of the re-introduction orchards that describe the purpose of the project and the mission statement of TACF and the U.S. Army Corps of Engineers Environmental Stewardship program. The funds would also be used to provide interpretive programs at the amphitheater in the campground during the recreational season.

SUSTAINABILITY:

The term sustainability refers to managing resources in a way so future generations can access the same quality and quantity of that resource as present generations benefit from it. Challenges to Shenango's American Chestnut re-introduction and regeneration plan include factors such as invasive species, deer and wildlife damage, acid deposition, and soil conditions. The blight resistant American Chestnut stock produced at Shenango Lake sites will provide advanced seed stock for future generations and provide a tree that is fast growing, competes well with other species and is more resistant to the factors above. With assistance from the Handshake grant, the re-introduction sites are anticipated to produce thousands of viable seeds at peak production. In 20 years, an expected quarter million seeds would be produced that will greatly benefit ongoing research, biodiversity, sustainability, and wildlife food benefits to the forests surrounding Shenango Lake. Current literature suggests American Chestnuts store carbon at a much higher rate than other eastern deciduous trees, making the orchard and subsequent seedlings important for reducing carbon foot prints. As forests are managed for hundreds of years, the benefit of introducing blight resistant American Chestnuts into Corps forests will provide perpetual benefits in forest biodiversity, food for wildlife, carbon storage for our environment, and possible timber revenues in time.

PARTNERSHIP VALUE:

TACF is an expanding foundation seeking alliances with state and federal agencies and the private sector to improve the restoration of the American Chestnut. The Corps Headquarters Office signed a National Memorandum of Understanding with TACF in December 2009 and provided an excellent opportunity for cooperation at the grass roots level to utilize Corps land resources and volunteer programs to improve TACF missions and long-term sustainability of Corps lands. In addition to TACF contributing resources, the Pennsylvania State University Cooperative Extension of Mercer County will also provide insight in the project. This project also meets the Presidents Challenge-Active Lifestyle Program requirements. This program is designed to involve children and adults in outdoor activities, and will actively engage children and adults to participate in the program. The project will be an outdoor environmental conservation program in which ecological, biological, and physical participation will be achieved via public and private partnership.

ENVIRONMENTAL STEWARDSHIP VALUE:

The Handshake proposal is well matched to the mission of the U.S. Army Corps of Engineers Environmental Stewardship Program which provides for sustainable lands and waters for future generations. As discussed in sustainability benefits above, the improved natural biodiversity, great wildlife food sources, long-term forest products and restoration, and interpretation of the American Chestnut will greatly improve the value of the forests around Shenango Lake. The re-establishment of a valued native tree at Shenango Lake directly improves degraded forest lands and improves the U.S. Army Corps of Engineers performance measure for sustainability. There is well documented research on how American Chestnuts can be utilized on reclaimed lands, and the re-introduction project at Shenango can further this and other studies.

COMMUNICATION AND EDUCATION VALUE:

The re-introduction and restoration project along with the associated interpretive exhibits will provide direct information to estimated 500,000-600,000 visitors per year of Shenango Lake. As time has passed since the

American Chestnut has fallen to the blight, a new generation of students and general public has grown without any reference to this majestic and valuable tree. Educational panels and brochures will communicate the history and restoration efforts and educate visitors on the new era of this important tree species. The re-introduction and restoration sites and volunteers supporting the project will provide education programs and tours and be included in the popular summer programs at the Shenango Lake amphitheater. Habitat tours would include a special visit to orchard sites to highlight the cooperative project. An outreach to local high schools biology and ecology classes would also benefit from this project. Both the U.S. Army Corps of Engineers and PA-TACF websites will provide profiles of this successful project and extend education well beyond the borders of Shenango Lake.

RECREATION BENEFIT:

The forest resources of Shenango Lake support numerous recreational activities such as hunting, hiking, bird watching, wildlife viewing and nature photography. The sustainability and wise stewardship of these forest resources are critical to the continued aesthetic value of these activities. The ability to restore the American Chestnut to the Shenango Lake forest will not only sustain the forest resources but provide even more enhanced and improved resources that will benefit all forest related recreation. The return of these majestic nut producers will not only attract more wildlife for consumptive use, but attract new visitors who will look for the opportunity to once again enjoy this significant species in its natural habitat.

INNOVATIVENESS:

The project will be using a backcrossing technique that was established by TACF to produce a blight resistant American Chestnut tree to replace the nearly extinct species. The potential to restore the American Chestnuts to eastern forests of the United States may turn the worst ecological forest impact of all time into one of the most important recoveries. The project will also provide a unique match of the highest level of scientific genetic and pathology researchers in the nation working along with grassroots volunteers to nurse and maintain the backcross trees and help shape the recovery of the American Chestnut. This re-introduction and restoration project, located in the heart of the native range of the American Chestnut, will provide a unique setting to produce seed selected to perform well in the ecotype of the area.

The Corps will:

The U.S. Army Corps of Engineers staff at Shenango Lake will provide overall project guidance and provide supervision to staff and volunteers maintaining the re-introduction and restoration sites. The staff at Shenango Lake will utilize volunteers, who have signed the DOD volunteer agreement, to accomplish the Corps' agreement responsibilities. The U.S. Army Corps of Engineers will procure all equipment and supplies through micro-purchase and other contracting services to accomplish work tasks and oversee execution of the work. The U.S. Army Corps of Engineers will coordinate meetings with technical staff from PA-TACF on the design and purchase of the educational exhibits and materials.

The Partner(s) will:

PA-TACF and the Pennsylvania State University Cooperative Extension of Mercer County will provide in-house services by providing technical expertise from scientists across the Eastern United States to support the planning and guidance of the research and restoration sites. Specifically, TACF Northeast Science Coordinator will provide essential guidance throughout the planting, maintenance, backcross, and harvest processes. PA-TACF also will supply advanced backcross seeds for initial and future plantings. These advanced seed, produced through several decades of research are available only to orchard partners and represent the backbone of the eventual recovery of the species. PA-TACF will provide in-house services for design guidance of the educational panels at the re-introduction and restoration sites as well as the visitor exhibits. PA-TACF, when available, will provide material such as brochures and fact sheets that highlight the work of TACF. Some additional educational materials will be provided through the Handshake grant.

Challenge Partnership Financial Work Sheet

Corps Project Name: Shenango Lake

Work Project Title: American Chestnut Re-Introduction Project

POC Name: Mr. Kyle Kraynak

Address: 2442 Kelly Road

City: Hermitage

State: PA Zip Code: 16148

Telephone: 7246461124

Location on Project: Sites Include Areas Of The Campground, The Chestnut Run Swim Beach, Upper And Lower Mahaney Recreation Areas, Mercer Recreation Area, The Old Ymca Campground, And Clark Recreation Area.

Partner Organization 1: Pennsylvania Chapter of The American Chestnut Foundation (PA-TACF)

POC Name: Ms. Sara Fitzsimmons

Address: 206 Forest Resources Lab

City: University Park

State: PA Zip Code: 16802

Telephone: 8148637192

Partner Organization 2: Pennsylvania State University Cooperative Extension Mercer County

POC Name: Mr. Gary Micsky

Address: 463 North Perry Highway

City: Mercer

State: PA Zip Code: 16137

Telephone: 7246623141

Partner Organization 3:

POC Name:

Address:

City:

State:

Zip Code:

Telephone:

Proposed start date of work: MAR-2011

Simple description of work to be accomplished through the partnership: Develop a long-term cooperative re-introduction and restoration project to produce seed and trees for research on blight resistant American Chestnut trees.

Double click on spreadsheet to access data entry fields:

	Local Corps Office	Handshake Funds	Partner 1	Partner 2	Partner 3	Total
Salaries	\$7,000	N/A	\$7,000	\$1,000	\$0	\$15,000
Travel	\$500	N/A	\$2,000	\$0	\$0	\$2,500
Supplies	\$500	\$25,000	\$11,000	\$0	\$0	\$36,500
Equipment Use	\$2,000	\$0	\$1,000	\$0	\$0	\$3,000
Funds Contributed	N/A	N/A	\$0	\$0	\$0	\$0
Personal Property	N/A	N/A	\$3,500	\$0	\$0	\$3,500
Volunteer	N/A	N/A	\$16,680	\$500	\$0	\$17,180
In-House Services	N/A	N/A	\$0	\$0	\$0	\$0
Other (explain below)	\$0	\$0	\$0	\$0	\$0	\$0
Total	\$10,000	\$25,000	\$41,180	\$1,500	\$0	\$77,680
Share of Total Cost	12.9%	32.2%	53.0%	1.9%	0.0%	100%

Explanations: The \$7,000 for local Corps salary is based on overhead costs of 1 GS-5 park ranger (\$33.68/hr) and 1 WG-11 maintenance employee (\$61.88). The total is \$95.56/hr for both. This comes out to about 74 hrs of work the local Corps office will provide. The supplies and equipment money is for miscellaneous items the local Corps office will provide.