Brook Trout Restoration on the Chattahoochee National Forest through the NFHAP within the goals of EBTJV

$25,000
Project Location: (Georgia, Union, Towns, White and Rabun Counties)
Congressional District: 9 and 10

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September 25, 2008
Date Submitted

PROJECT DESCRIPTION, SCOPE OF WORK, AND PARTNER INFORMATION (3 pages maximum)

A. Project Description and Scope of Work

The applicant proposes to continue brook trout habitat restoration efforts on the Chattahoochee National Forest in Georgia as part of the Eastern Brook Trout Joint Venture (EBTJV). Project cooperators include the U.S. Forest Service (USFS), the Georgia Department of Natural Resources (DNR), Trout Unlimited (TU), Soque River Watershed Association (SRWA), and North Georgia Technical College (NGTC). We propose to a two-staged approach to brook trout restoration. The first stage will focus on the enhancement of stream habitat for brook trout in ways that improve the natural carrying capacity of the stream. The second stage will focus on reclaiming historical brook trout waters by removing non-native trout to allow repopulation by brook trout.

This scope of work includes construction of stream habitat structures that will increase stream velocities. Increased stream velocities will benefit adult brook trout by creating deeper pools and runs that provide critical refuge during the summer and serve to "drought proof" these streams during drought years. Currently, these streams have an imbalance in the pool:riffle ratio, with each having wide braided channels and shallow water depths due to sedimentation. Increased stream velocities will also benefit natural reproduction by scouring accumulated sediments to expose underlying gravel beds that are used for spawning. Proposed structures will also create greater habitat diversity by increasing the number of pools and runs and expanding the density of cover logs and rocks. Structures will be constructed with environmentally sound practices to be the most cost and labor efficient using heavy equipment where access allows and hand labor where heavy equipment is not feasible.

A total of 30 structures will be installed in five streams to improve habitat in a total of 10 miles within the Hiawassee, Chattahoochee and Tallulah watersheds. Streams proposed for structure work are Big Net Creek within the Hiawassee River watershed; Upper Chattahoochee River within the Chattahoochee River watershed and North and South Forks of Moccasin Creek and Flat Branch in the Tallulah River watershed. In addition, Walnut Fork and Tate Branch will be electrofished and all non-native trout will be removed. Additional electrofishing will be employed to evaluate pre- and post- construction responses of native brook trout.

These projects are important because they will enhance the carrying capacity of primarily southern strain brook trout streams and will restore southern Appalachian brook trout to two streams that were historically brook trout waters. These efforts will help ensure the conservation of genetic stock in the periphery of the brook trout's range. This need is exacerbated by extreme drought conditions over the past three years that have negatively impacted trout populations in their southern range. Increased brook trout viability and habitat restoration may provide additional benefits to South Carolina as the state fisheries agency obtains adult brook trout from Georgia to stock in renovated streams in South Carolina.

The final component of this scope of work includes water quality monitoring. Over the past four years of 300 water samples were collected and analyzed for their acid neutralizing capacity (ANC). In addition, thermographs were deployed in 20 trout streams to monitor water temperatures during the summer months. As part of the proposed work, we plan to collect 25 ANC samples and continue stream temperature monitoring.

B. Partner Information

The proposed scope of work is a large endeavor that cannot be accomplished by one resource agency. To complete the goals of this project will require cooperation by federal and state agencies and assistance from several non-governmental organizations (NGOs). Cooperating partners for this project and their contributions are summarized in Table 1.

Table 1. Cooperating partners and contributions for the proposed brook trout restoration project in the Chattahoochee National Forest in Georgia.

Partner Name	Contribution In-Kind	Cash Contribution	Federal or Non-Federal	Partner Category	Role of Partner
U.S. Forest Service	$20,000		Federal	Federal Agency	Labor/Materials/Equipment
GA DNR	$20,000		Non-Federal	State Agency	Labor/Materials/Equipment
Trout Unlimited	$5,000	$10,000	Non-Federal	Conservation Group (National)	Labor/Materials
SRWA	$2500		Non-Federal	Conservation Group (Local)	Accounting
Monte Seehorn	$2,000		Non-Federal	Consultant	Labor/ Design
NGTC	$5,000		Non-Federal	Educational Institution	Labor/Lab Analysis

C. Milestones and Timeline

In spring 2008, a barrier was constructed on Tate Branch to prevent the encroachment of non-native trout. Two natural barriers occur on Walnut Fork. The barriers on both streams will be evaluated in 2009 for the passage of non-native trout. We also plan to continue restoration and population monitoring efforts in Tate Branch and Walnut Fork. Improved habitat quality and quantity in these two streams will sustain a high number of brook trout and may provide a significant brook trout fishery, if the competitive species are prevented from migrating back into the reclamation section.

We plan to start constructing habitat structures in late spring and summer of 2009. The first priority is the construction of ten structures in Flat Branch, which is located in the Tallulah River watershed. Crews will next move to Big Net Creek within the Hiawassee River watershed and construct five structures. The Upper Chattahoochee River provides the third habitat construction area where five structures will be installed. By late summer, we plan to install five structures in the North Fork Moccasin Creek and five structures on the South Fork Moccasin Creek. Structure work will cease by the end of October 2009.

During the summer, our seasonal work force will also collect ANC water samples and place thermographs in designated streams. North Georgia College (NGTC) analyzed water samples collected from 2005 through 2008. Collection of these ANC samples in 2009 will be a partnership effort of Trout Unlimited members, NGTC college students, and the USFS and Georgia DNR personnel. This analysis has filled an information gap of monitoring streams with low ANC levels, possibly explaining brook trout absence or low population numbers. NGTC will analyze 50 more water samples in 2009 on brook trout streams. These analyses are performed by NGTC for only the cost of the chemical reagents used in testing, which is about $500. The contribution NGTC gives with labor and use of equipment is $5,000. Trout Unlimited will pay for the cost of chemical reagents.

Since all five streams proposed for habitat work were previously sampled by electrofishing, the proposed work will evaluate changes in brook trout population densities. Walnut Fork and Tate Branch will be monitored by electrofishing to determine if these barriers are effective in preventing the upstream movement of non-native trout. All non-native trout that are collected upstream of the barriers will be moved downstream from the barriers.

III. MAP OF PROJECT AREA (one only)

Name	HUC	Longitude	Latitude
Upper Chattahoochee	31300010101	-83.78375995240	34.79239314550
Moccasin Creek South	30601020705	-83.62517759620	34.86192939630
Moccasin Creek North	30601020705	-83.62168678940	34.87132859980
Flat Branch	30601020701	-83.55858727210	34.95057616840
Tate Branch	30601020101	-83.54338594930	34.96119586330
Walnut Fork	30601020102	-83.27905035630	34.90881599220
Stover Creek	60200030105	-84.19101842650	34.65696995560
Big Net	60200020101	-83.68552315540	34.82486074920

IV. PHOTOGRAPH(S) OF PROJECT AREA (no more than 2, optional)

INSERT PHOTOGRAPH RELEASE FORM

Budget Table

Part of the grant funds coupled with supplemental funding from Trout Unlimited will be used to hire a seasonal workforce that will construct 30 brook trout habitat structures, monitor and renovate streams, and collect 25 water samples for ANC analysis. Additional supplemental funding from local TU chapters will be administered through the Soque River Watershed Association (SRWA). In addition to staffing a seasonal labor force, grant funds will be used to purchase materials and supplies for this work. Georgia DNR and USFS employees will provide labor, materials, and equipment for the construction of the structures as well as the population monitoring on Tate Branch, Stover Creek and Walnut Fork. None of the money will be used to fund USFS or Georgia DNR salaries. All labor from TU will be toward the construction of the 30 structures, renovation of the streams, and collection of the water samples. The Soque River Watershed Association (SRWA) will be responsible for all financial accounting of the project. North Georgia Technical College (NGTC) will provide the materials and analysis for all ANC water samples. The budgetary contributions of all project partners are summarized in Table 2.

Table 2. Contributions of project partners for the proposed brook trout restoration project in the Chattahoochee National Forest in Georgia.

Partner	**Activity**	**NFHAP Request**	**Non-Fed. Contribution**	**Federal Contribution**	**Total**	**Acres/ miles Affected**
U.S. Forest Service	Labor, Materials, & Equipment			$20,000 (in-kind)	$20,000	10 miles
GA DNR	Labor, Materials, & Equipment	$25,000	$20,000 (in-kind)		$45,000	
Trout Unlimited	Labor		$10,000 (cash) $5000 (in-kind)		$10,000	
SRWA	Labor		$2500 (in-kind)		$2,500	
Monte Seehorn	Labor & Contractor		$2000 (in-kind		$2,000	
NGTC	Materials & Lab Analysis		$5000 (in-kind)		$5,000	
Total		**$25,000**	**$44,500**	**$20,000**	**$84,500**	**10 miles**

VI. EVALUATION QUESTIONS (3 pages maximum)

A. Conservation of Sustainable Brook Trout Populations:

Need for the project: This project is needed to restore and conserve brook trout at the southern most extent of their range. Habitat will continue to be enhanced in five streams to increase brook trout carrying capacity. Additionally, upstream sections from barriers in Tate Branch and Walnut Fork will be renovated by the removal of non-native trout by electrofishing.

B. Threatened and Endangered Species and Species of Conservation or Management Concern:

There are no federally listed species that occur in the Hiawasee watershed. The hellbender (*Crytobranchus alleganiensis*) is a state threatened species that resides in some stream reaches affected by this proposed project. Proposed stream habitat structures, however, will likely benefit the indigenous hellbender populations in these streams.

C. Other Species of Economic Importance not Included Above:

Angler interest for brook trout in Georgia is unique. Due to Trout Unlimited's efforts in 2006, brook trout was legislated as the official state cold water fish.

D. Special Considerations:

Over the past 25 years, over 1,000 structures were installed in trout streams on the Chattahoochee National Forest. These structures directly benefited trout anglers by increasing fishing opportunities in non-native trout streams. The USFS has also used these time-tested habitat structures to improve brook trout waters using the USFS' manual authored by Monte Seehorn (USFS, 1992). Heavy equipment or hand labor will be used to construct structures. Rock and log structures create sinuosity, deepen pools, increase velocity and create habitat diversity.

E. EBTJV Targeted Watershed:

The projects proposed for Georgia do not allow for connection to a watershed identified as intact or reduced. The project does expand available habitat of existing brook trout populations within the proposed watersheds. The probability of success for this project is good to excellent for all proposed watersheds because existing habitat quality is poor; primarily because shallow riffles and little overhead cover currently dominate the affected streams. Large woody debris is also lacking on most streams due to poor land management practices in the early part of the 20th century. The lack of suitable barriers has allowed stocked rainbow and brown trout to encroach and displace brook trout in many streams. Structures have been constructed on the Chattahoochee National Forest over the past 50 years, and a number of these structures remain in good condition. Workdays are set up every year to work with local TU chapters to maintain and construct stream structures within the national forest. With regular maintenance, structures have a longevity of 25-50 years.

F. Habitat Connectivity and Enhancing Population Mobility:

Brook trout populations in the state of Georgia have been greatly reduced from historic levels by a variety of factors including poor land use practices and displacement by non-native trout species. Existing brook trout streams are generally small headwater streams that are generally lacking in adult trout habitat (pools) and cover, in particular, large woody debris. Our goal for this project includes installing 30 structures to improve the habitat in five brook trout streams. Our objective is to increase habitat diversity, increase cover, and increase the quality and quantity of spawning substrate. In addition, we plan to renovate two streams by removing non-native trout upstream from the fish passage barriers.

Currently, there are 86 known brook trout streams within the state of Georgia, and almost all are located on the Chattahoochee National Forest. Only 24 streams are of the Southern Appalachian strain. Restoring habitat within these watersheds is vital to strengthen brook trout populations in Georgia. These enhanced populations would provide a source of Southern Appalachian brook trout for future stockings into other Georgia and South Carolina streams in need of restoration.

G. Management Assets:

Work to be done and by whom: This work will be accomplished on public lands within the US Forest Service Chattahoochee National Forest with personnel from the USFS, Georgia DNR, Trout Unlimited (monies and in-kind labor), North Georgia Technical College, Soque River Watershed Association, private consultant Monte Seehorn, and a hired seasonal work force that will be supervised by Georgia DNR and the USFS. There will also be work performed by the USFS and GA DNR employees and TU on weekend volunteer workdays.

All streams on USFS lands are open to the public and some of the streams are more accessible than others. There is no additional fee charged for fishing brook trout waters.

Stover Creek is located along the Appalachian Trail. The brook trout restoration efforts on Stover Creek provide a unique fishing and educational opportunity on this important, high-profile recreational area. Signage is being developed to place at the bulletin boards in watersheds where brook trout waters have been enhanced through the partnership of EBTJV, TU, USFWS, USFS and GA DNR, which magnifies the educational benefits of this restoration project

H. Supporting Documentation and Management Plans:

Our ultimate goal is to restore brook trout fisheries in several watersheds across their former range in Georgia. All work will occur on USFS lands. Our objective is to increase habitat diversity, provide cover, and increase the quality and quantity of spawning substrate as well as remove any non-native trout in two brook trout streams above the barriers. These goals are outlined in the Brook Trout Plan prepared by the state and federal agencies in 2006. This plan outlines the goals for each watershed across the Chattahoochee National Forest. Goals for restoring brook trout are also stated in the revised Forest Service Land and Resource Management Plan 2004.