

Restoring a Brook Trout Metapopulation within the Little Cataloochee Creek & Anthony Creek Watersheds, Great Smoky Mountains National Park

Project Location: Little Cataloochee Creek, North Carolina, Haywood County
Anthony Creek, Tennessee, Blount County

Congressional District of Project: NC-11 (Little Cataloochee Creek)
TN-2 (Anthony Creek)

Congressional District of Applicant: TN 1 and 2

NFHP / EBTJV Funding Requested: \$37,642

Total Project Cost: \$226,851

Total Federal Matching: \$121,107

Total Non-Federal Matching: \$68,102

Applicant:

Project Officer: Matt Kulp
Organization: National Park Service, Great Smoky Mountains National Park
Street: 107 Park Headquarters Road
City, State, Zip: Gatlinburg, TN 37738
Telephone Number: 865-436-1254
Fax Number: 865-430-0341
EMail Address: Matt_Kulp@nps.gov

U.S. Fish and Wildlife Service Sponsoring Office:

Project Officer: Walter "Tripp" Boltin
Fish and Wildlife Service Office: Wadmalaw Island Fish & Wildlife Mgmt. Assistance Office
Street: P.O. Box 69
City, State, Zip: Wadmalaw Island, SC 29487
Telephone Number: (843) 819-1229
Fax Number:
EMail Address: Walter_Boltin@fws.gov

USFWS FONS Database Project Number: 42216-2016-304

Coordination Completed with Sponsoring U.S. Fish and Wildlife Service Office

(Check One):

Yes 30 Aug 2016 **Date Coordination Began**
 No

I. PROJECT DESCRIPTION, SCOPE OF WORK, AND PARTNER INFORMATION

A. Project Description

The purpose of this project is to restore brook trout into 2.64 km (1.65 miles) of Little Cataloochee Creek and 2.8 km of Anthony Creek within its native range in Great Smoky Mountains National Park (GRSM) as identified in the GRSM Fishery Management Plan. Successful restoration of Little Cataloochee Creek will reestablish 11.4 km of an allopatric metapopulation within the Little Cataloochee Creek watershed, including 1.74 km of 4th order mainstem habitat. Project setup, pre- and post-treatment monitoring and translocation of brook trout back into the restored segment of Little Cataloochee Creek will be completed by NPS staff, NC Wildlife Resources Commission (NCWRC) staff, Trout Unlimited and other local volunteers. Project treatment will be completed by NPS seasonal staff, NCWRC staff, interns and federal and state agency cooperators under the supervision of the GRSM fishery biologist using the fish piscicide Fintrol (antimycin-A). In addition to restoring a 2.64 km segment of Little Cataloochee Creek, a second GRSM stream will be restored. Multiple electrofishing removals of nonnative rainbow trout were initiated on Anthony Creek in 2016 with two final rounds scheduled for June 2017. After the 2017 removals are completed, multiple age classes of brook trout will be collected from previously genotyped sources and translocated back into Anthony Creek. EBTJV funds will be used to support: 1) seasonal fisheries technicians to setup, implement treatment and translocate brook trout back into Little Cataloochee Creek, and 2) complete the removals and translocation of brook trout on Anthony Creek. The Park's Fishery Management Plan and the Tennessee Brook Trout Conservation Strategy identify restoration as a high priority for the protection and conservation of native brook trout in the Park and in the State. The successful completion of this project will help insure that the management objectives for both agencies are moving forward. Additionally the project will help meet a goal of the National Fish Habitat Action Plan (NFHAP) and the Eastern Brook Trout Joint Venture (EBTJV). EBTJV funds would partially support (3) seasonal NPS fishery technicians working with other NPS seasonal fishery technicians and interns supported through other fund sources to restore brook trout in Little Cataloochee Creek and Anthony Creek.

B. Proposed Methods

Rainbow trout will be removed from Little Cataloochee Creek using Fintrol. Backpack electrofishing will be used to remove remaining rainbow trout from Anthony Creek. After treatment and electrofishing removal are complete, brook trout will be translocated into the treatment reaches from previously genotyped sources.

C. Project Timeline

- June 2017 – Complete final two electrofishing removals on Anthony Creek
- June and July 2017 – Re-verify distribution and define treatment area on Little Cataloochee
- Late-August 2017 - Collect and move brook trout from headwaters of Little Cataloochee
- Early September 2017 - Treat the project area of Little Cataloochee
- Late September 2017 – Translocate brook trout into Anthony Creek
- Late September/October 2017 - Validate removal success and return collected brook trout to the Little Cataloochee treatment area; translocate additional brook trout into Little Cataloochee from previously genotyped sources.

D. Proposed Accomplishment Summary (Max Characters: 500)

The project will result in the removal of nonnative rainbow trout from 2.64 km of the Little Cataloochee and 2.8 km of Anthony Creek watersheds. Successful removal of these fish and reintroduction of native brook trout will meet the objectives of GRSM and North Carolina for the protection and conservation of native brook trout in the State. Additionally, the project will help meet a goal of the National Fish Habitat Action Plan (NFHAP) and the EBTJV by restoring brook trout to a watershed in which they have been reduced by over 90% and one where they have been extirpated.

E. State the Importance of the Project to the Resource (Max Characters: 350)

Successful project completion will: 1) reestablish an 11.4 km brook trout metapopulation, 2) provide downstream connectivity to a 5th order mainstem sympatric population resulting in the 2nd largest contiguous brook trout population in GRSM, 3) establish a robust federally protected genotype for other restoration efforts, and 4) reestablish a population in a watershed where previously extirpated.

F. Problem and Specific Cause of the Problem (Max Characters: 350)

In the early 1900's, nonnative rainbow trout were introduced above a 12 foot cascade within the Little Cataloochee watershed within GRSM. Once established, rainbow trout extirpated brook trout from km of their former habitat (km) within the watershed. The extirpation of brook trout from the 4th order mainstem of Little Cataloochee Creek has greatly reduced connectivity and gene transfer within the watershed.

G. Objective of the Project with Reference to the Problem (Max Characters: 350)

Project objectives are: 1) eliminate nonnative rainbow trout in segments of the Little Cataloochee Creek and Anthony Creek watersheds, 2) reestablish a genetically robust brook trout metapopulation within a 4th order watershed with 5th order connectivity, 3) reestablish a genetically robust brook trout population where extirpated, and 4) provide recreational angling in the watersheds once completed.

H. Partner Information

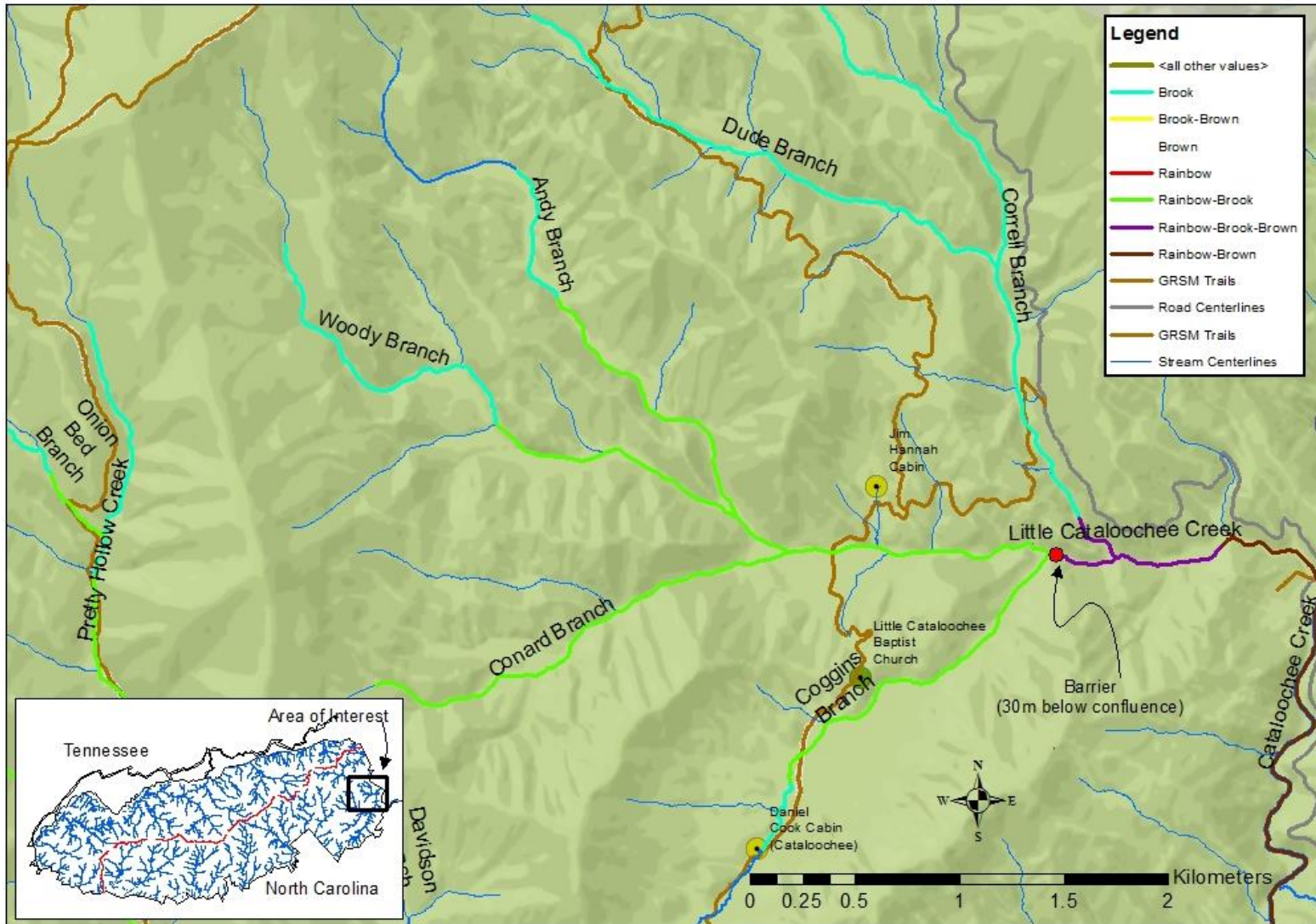
Partner Name	Contribution In-Kind	Contribution Cash	Federal or Non-Federal	Partner Category	Role of Partner
NC Chapter(s) of Trout Unlimited (260 hours x \$23.45/hr)	\$6,097		Non-Federal	Consevation Group (local)	Volunteer help (project setup; moving brook trout in/out)
NC Council of Trout Unlimited (local)		\$2,500 (applied for)	Non-Federal	Consevation Group (local)	Cash for Fisheries Intern (12 weeks)
Little River Chapter of Trout Unlimited		\$21,357	Non-Federal	Consevation Group (local)	Volunteer help and cash for seasonal personnel and supplies
Friends of the Smokies		\$15,518	Non-Federal	Local Conservation Group	Cash for NPS Seasonal Staff - (2) for 12 ppd
TN Council of Trout Unlimited (local)		\$9,552 (applied for)	Non-Federal	Conservation Group (national)	Cash for NPS GS-4 Seasonal Staff -8 ppd and supplies

Great Smoky Mountain Association	\$8,900		Non-Federal	Local Conservation Group	In-kind for (2) Fisheries Interns (12 weeks)
Friends of the Smokies	\$4,300		Non-Federal	Local Conservation Group	In-kind NPS GS-2 Seasonal Staff -8 ppd
NC Wildlife Resources Commission (4 days; 3 staff/day)	\$7,139		Federal	State Agency	Assistance with treatment; Federal Sport Fish Restoration Funds Supported
National Park Service (biologist [4 ppd] & lead tech [6 ppd])	\$30,392		Federal	Federal Agency	Project planning, coordination and implementation
EPA Clean Air Act Settlement		\$90,715	Federal	Federal Agency	Cash for USDI-NPS (2) GS-4 (12 ppd), (2) GS-4 (7 ppd) & backcountry travel for 2017 & 2018

II. MAP OF PROJECT AREA – Little Cataloochee Creek

Great Smoky Mountains National Park
Little Cataloochee Creek Brook Trout Restoration Project

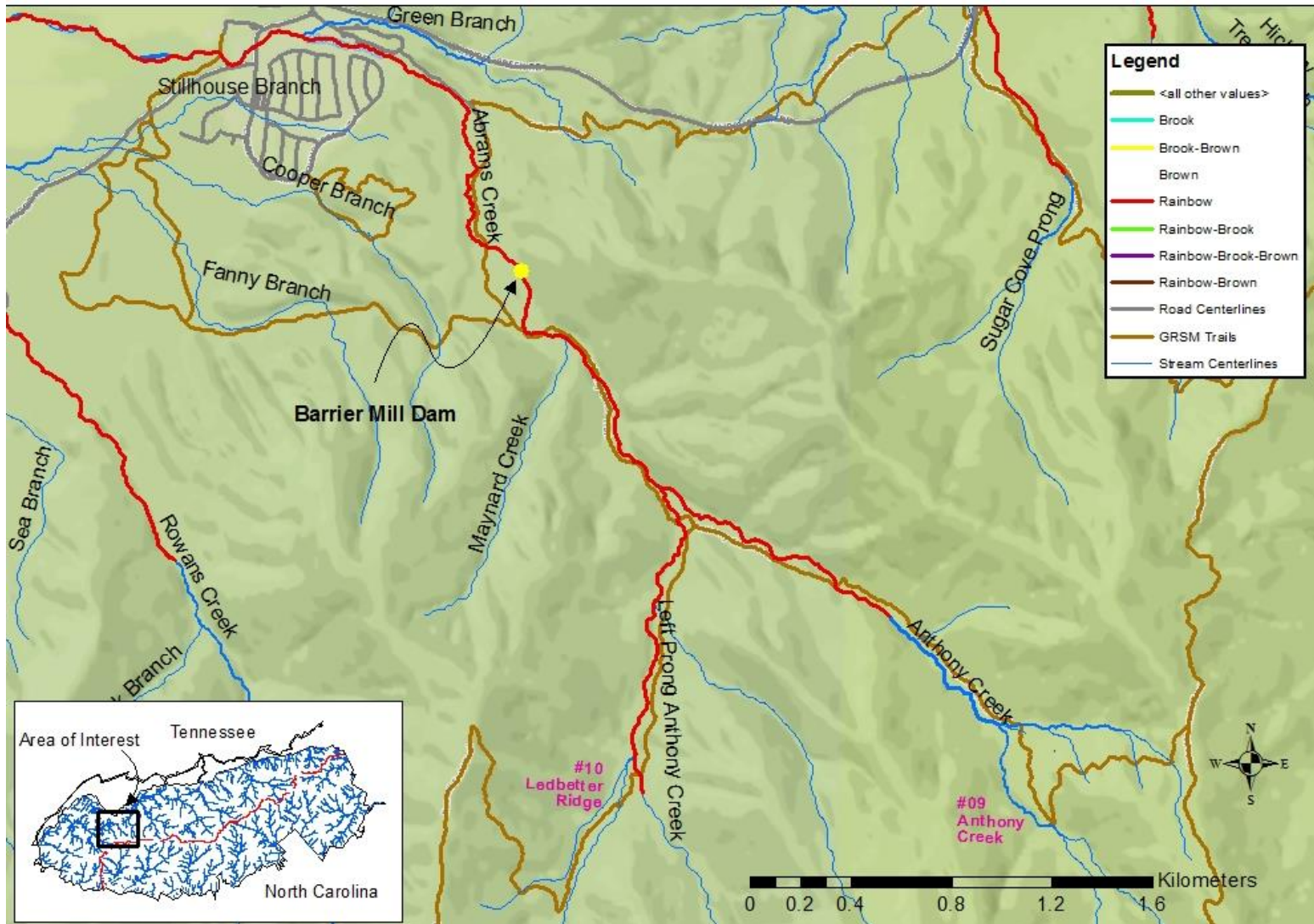
National Park Service
U.S. Department of Interior



II. MAP OF PROJECT AREA – Anthony Creek

Great Smoky Mountains National Park
Little Cataloochee Creek Brook Trout Restoration Project

National Park Service
U.S. Department of Interior



III. PHOTOGRAPH(S) OF PROJECT AREA



Figure 1. — GRSM fisheries staff conducts a 3-pass depletion survey within Little Cataloochee Creek, GRSM.

IV. PROJECT BUDGET
B. Budget Table Example

Partner Name	Partner Category *	Activity of Partner **	Budget Category***	EBTJV NFHAP Request	Non-Federal Contribution		Federal Contribution		Total Contribution	Acres/Miles Affected
					In-Kind	Cash	In-Kind	Cash		
USDI-NPS GS-12 [4 ppd] & GS-7 [6 ppd]	Federal Agency	Planning, Monitoring, Restoration	Personnel				\$30,392		\$30,392	Plan/treatment of 2.64 km stream for brook trout restoration
EPA Clean Air Act Settlement (2) GS-4 (12 ppd), (2) GS-4 (7 ppd) & backcountry travel	Federal Agency	Monitoring, Restoration	Personnel					\$90,715	\$90,715	Conduct project setup, monitoring (2017 and 2018) and treatment [Also being used to restore 2.8 km of Anthony Creek]
USDI-NPS (2) GS-4 (12 ppd) and (1) GS-4 (7 ppd) & backcountry travel	Federal Agency	Monitoring, Restoration	Personnel	\$37,642					\$37,642	Conduct project setup, monitoring and treatment
NC Wildlife Resources Commission	State Agency	Restoration	Personnel				\$7,139		\$7,139	Treatment
NC Council of Trout Unlimited	Conservation Group (local)	Funds for Setup, Treatment & Monitoring	Personnel & Equipment			\$2,500			\$2,500	Project Setup, Monitoring & Supplies
TN Council of Trout Unlimited	Conservation Group (local)	Funds for Setup, Treatment & Monitoring	Personnel & Equipment			\$21,357			\$21,357	Support (2) GS-4 for Project Setup, Monitoring & Supplies
NC Chapters of Trout Unlimited	Conservation Group (local)	Project Setup & Monitoring	Personnel		\$6,097				\$6,097	Volunteers Time for Project Setup & Monitoring
Little River Chapter Trout Unlimited	Conservation Group (local)	Project Setup & Monitoring	Personnel & Supplies			\$2,291			\$2,291	Volunteers Time for Project Setup, Monitoring & Supplies
Great Smoky	Conservation	Project	Personnel		\$8,900				\$8,900	Interns for project

Mountains Association	Group (local)	Setup & Monitoring								setup, monitoring and treatment
Friends of the Smokies	Conservation Group (local)	Project Setup & Monitoring	Personnel			\$15,518			\$15,518	Partial Support (2) GS-4 for project setup, monitoring and treatment
Friends of the Smokies	Conservation Group (local)	Project Setup & Monitoring	Personnel			\$4,300			\$4,300	GS-2 Intern for project setup & monitoring
Total Contribution				\$37,642	\$14,997	\$45,966	\$37,531	\$90,715	\$226,851	

*Partner Categories - Federal Agency, State Agency, Local Government, Conservation Group (Local), Conservation Group (National), Native American Tribe, Private Landowners, Corporations/Businesses

**Activity - Acquisition, Fish Ladder, Dam Removal, Culvert Removal, Restoration, Monitoring

***Budget Categories – Administration/Technical Services, Construction Material, Construction Labor, Equipment, Contractual, Travel, Supplies, Other.

NOTE: This is not a Federal Grant program and therefore does not exclude non-federal match used here from being matched to other Federal Grant sources to leverage funds for the project. Indicate if partnering contributions are in-kind or new cash. NFHAP requests should illustrate how the dollars will be spent and by what organization. Overhead such as utilities, office space, and salary to prepare applications and develop partnerships will not be funded with NFHAP funds and should not be a line item or built into the project. Activities that directly relate to completion of the project such as travel and salary to do design work let and/or monitor contracts are allowable expenses with NFHAP funds but should not constitute more than 10% of the funding request. For more information on the use of NFHAP funds, please see <http://www.fws.gov/policy/717fw1.html>.

V. EVALUATION QUESTIONS

1. Please provide the GPS Coordinates for the project using UTM NAD 83.

Little Cataloochee Creek 17S 311134.13 3949323.76
Anthony Creek 17S 249556.21 3942749.64

2. Please list the type of project (protection, enhancement, restoration; see definitions in the Appendix).

Restoration of southern Appalachian brook trout via the removal of non-native rainbow trout.

3. Are brook trout currently present at the project site or in the project stream? If not, were brook trout historically present? Is the habitat known to be suitable for restoration/reintroduction of brook trout?

Yes, there are allopatric and sympatric brook trout reaches within the Little Cataloochee watershed. Brook trout have been extirpated from the Anthony Creek watershed via the introduction of nonnative rainbow trout, however park records indicate brook trout were once present throughout the watershed.

4. Please describe how the project will provide for the expansion or improvement of existing habitat?

The restoration of Little Cataloochee Creek will reestablish an 11.4 km brook trout metapopulation and also provide direct downstream connectivity to a 5th order river mainstem sympatric population. Reconnection of stream segments within this system will result in the second largest contiguous brook trout population in GRSM and a robust federally protected genotype for other restoration efforts. Reestablishing 2.8 km of brook trout habitat within the Anthony Creek watershed will convert this watershed from 'extirpated' to 'reduced'.

5. Does the project include a protection component? Is the project footprint located on private or public land? Is the land currently protected? Does the project include land purchase or easements as match?

Yes, the 100% of the Cataloochee Creek and Anthony Creek watersheds are within the 526,000 acre federal protection of the national park service within Great Smoky Mountains National Park. These lands are protected in perpetuity.

6. What percentage of the watershed above the proposed project is protected in perpetuity?

100% of these lands are protected in perpetuity.

7. List the specific EBTJV habitat objectives addressed by the project and describe how the project will contribute towards them (refer to the list of EBTJV habitat objectives in the Appendix).

This project fully supports EBTJV habitat objectives: #3 (Establish self-sustaining brook trout populations in subwatersheds classified as Extirpated), #4 (Maintain Reduced subwatersheds in existing condition) and #5 (Strengthen brook trout populations in

subwatersheds classified as Reduced.) by expanding the range of brook trout within the watershed as well as reestablishing metapopulation structure that historically existed.

8. State which, if any, EBTJV conservation priority the project addresses (refer to the list of EBTJV conservation priorities in the Appendix):

Successful restoration of Little Cataloochee Creek and Anthony Creek will address each EBTJV conservation priority in the following manner: #1 (Increase recreational fishing opportunities for wild brook trout) - - Project will provide additional angling opportunities for allopatric brook trout in their natural setting; #3 (Improve and reconnect adjacent habitats that have a high likelihood of supporting stable wild brook trout populations) - Project will reconnect 4 allopatric populations and their common 4th order mainstem to form one 11.64 km metapopulation, and #5 (Preserve genetic diversity of wild brook trout populations) - Project will to form one 11.64 km metapopulation that enables each population to form as one and provide genetic material downstream to a large 5th order mainstem sympatric population.

9. State which, if any, of the EBTJV common state-level objectives are being addressed by the project (refer to the list of EBTJV common state-level objectives in the Appendix):

Project success should meet state-level objectives #1 (Improve protection of brook trout resources), #2 (Maximize brook trout habitat and water quality protection through state and federal agencies), and #12 (Partner with organizations on projects that involve nongame species, migratory birds, and brook trout).

10. What is the EBTJV subwatershed number (6th level Hydrologic Unit), and associated classification and priority score for the proposed project?

Little Cataloochee Creek

- **Subwatershed #** = 3701088
- **Subwatershed Status Classification (Intact, Reduced, Extirpated; terms are defined in the Appendix)** = Reduced
- **Subwatershed Priority Score** = 0.21
- **Subwatershed Map Used** = NC Priority Scores for Reduced Subwatersheds

Anthony Creek

- **Subwatershed #** = 470742
- **Subwatershed Status Classification (Intact, Reduced, Extirpated; terms are defined in the Appendix)** = Extirpated
- **Subwatershed Priority Score** = 0.62
- **Subwatershed Map Used** = TN Priority Scores for Extirpated Subwatersheds

11. Will the completed project benefit any federally listed threatened or endangered species or Service priority species (refer to the list of Service priority species for Region 4 and Region 5 in the Appendix)?

No, there are no known federally listed species in either project area.

12. Will the completed project benefit any state listed threatened or endangered species or species of greatest conservation need?

No, there are no known state listed species in the project area.

13. Will the project provide or enhance connectivity to or within an intact subwatershed?

No, the Little Cataloochee Creek watershed is a 'reduced' watershed, not 'intact'. The Anthony Creek watershed is an 'extirpated' watershed.

14. What are the root causes of the watershed degradation and which of these are addressed by the project?

The introduction of rainbow trout in the early 1900's is the root cause of the brook trout extirpation within both watersheds. Once these invasive non-natives are removed, they will not be able to reinvade either system due to a 12 foot boulder/bedrock cascade on Little Cataloochee Creek and a 7 foot historic Mill Dam on Anthony Creek.

15. Describe the plans for project effectiveness monitoring and evaluation (i.e. measuring the project's success in meeting its goals/objectives).

Prior to treatment, TU volunteers will assist NPS staff with 3-pass depletion surveys throughout the treatment area as well as a downstream control area of Little Cataloochee Creek. Pretreatment surveys have already been completed on Anthony Creek. These pretreatment population surveys will be used to establish a carrying capacity range for the system. Once treatment is complete and brook trout are translocated into the system, NPS staff and volunteers will revisit monitoring sites annually for a minimum of three years to determine when newly established brook trout populations exceed the pretreatment rainbow trout biomass. Staff will use the Southern Division AFS, Trout Committee Standardized Sampling Guidelines for all depletion monitoring efforts.

16. Describe the expected effect on the brook trout population. To what degree will the project strengthen the brook trout population status?

The completion of this project will expand the range of native brook trout in Little Cataloochee and Anthony Creeks within GRSM by 2.64 km and 2.8 km. This restoration effort will also restore approximately 11.64 km (7.3 miles) of stream below 1,067m, which is less susceptible to acidic deposition and pH effects on trout. Thus providing a long term low elevation well buffered stream system that will insure long term survivability for this population.

17. Please describe the long term benefit of the project and provide an estimate of the length of time the project is expected to be effective. If a plan for long term maintenance is necessary to maintain project benefits, please describe it.

The presence of a significant barriers to upstream migration of non-native salmonids insures the long term success of the project. Once the population has stabilized the stream will be opened for recreational angling. The successful restoration of these streams for brook trout will result in Little Cataloochee Creek being the second largest and readily accessible brook trout stream in GRSM. A readily accessible brook trout

population in Anthony Creek provides angling opportunities to over 2 million annual visitors to the Cades Cove area.

18. Does the project address, support or build upon existing action plan(s) (e.g. state fish & wildlife, watershed protection, water quality improvement, land or water-use plan(s), or other regional plan(s))?

The restoration of brook trout populations is one of the highest management goals listed in the GRSM Fishery Management Plan. The “*protection, and enhancement of Brook Trout populations*” is also listed as the number one goal of the NC Wildlife Resources Commission Trout Management Plan. The #1 Goal of the Tennessee Trout Management Plan is to “*Conserve Tennessee’s native, southern Appalachian brook trout*”.

19. Are there competitive non-native or invasive fish species within the watershed with access (no barrier) to the proposed project? Are other strains of brook trout, non-native salmonids or other exotics stocked at the proposed site or will they have access following project completion?

Invasive rainbow trout are currently within the Little Cataloochee and Anthony Creek watersheds; however this project will remove these nonnatives from stream segments above barriers within each system. Genetic sampling using microsatellites analyzed by Dr. Tim King (USGS) have been collected on each of the allopatric populations within the Little Cataloochee watershed. There is no indication of any hatchery influence in any of the populations to date.

20. Please describe the current status of the project. Is it planned, permitted and ready to begin?

Some of the prep work was completed in 2016 and NEPA compliance has already been completed through an Environmental Assessment. The Little Cataloochee Creek treatment is ready to begin in 2017 as planned if funding is awarded. NEPA compliance has been completed and four removals were completed on Anthony Creek in 2016 with two more scheduled for 2017.

21. Will public access be allowed at the project site? If so, what kinds of recreational activities are allowed – fishing, hiking, camping, wildlife viewing, etc.?

Public access will be allowed at both sites prior to and immediately after treatment, however, access will not be allowed during antimycin application. Once treatment is complete, access to the stream will be open again to fishing, hiking, camping, etc.

22. Will the project increase recreational fishing opportunities for wild brook trout? If so, how much will it increase and how will the increase be measured?

Project success will provide an additional 2.6 km and 2.8 km of allopatric brook trout habitat for anglers to fish that is readily accessible below 1,067m. Currently, anglers can fish the watershed and must hike off-trail into headwater reaches to find allopatric brook trout waters. After project completion, anglers will have direct access to 4th order sections of allopatric brook trout via the Little Cataloochee trail that bisects the stream approximately 1.1 km above the barrier. A hiking trail parallels Anthony Creek

providing excellent access within 1 mile of a horse camp and 2 miles of an RV/tent campground.

23. What is the recreational potential of the fishery (i.e., fish abundance, average fish size, type of accessibility for fishing)?

The recreational quality of the brook trout fishery in Little Cataloochee Creek and Anthony Creek is anticipated to be moderate to high due to the good trail access. Historically, each stream supported 800 – 1,000 rainbow trout to the mile of stream. Past successful brook trout restoration projects have demonstrated that brook densities are higher than those observed for rainbow trout. This stream will be one of the largest in GRSM to support brook trout and has the potential to produce brook trout in the 10 inch range. Many anglers have already stated that they are looking forward to the day the stream is opened to fishing.

24. Describe the outreach or educational components of the project and how many individuals/students will be served.

The project will be summarized in an online report for the park website that will be viewed by thousands of people. A press release will be drafted for local newspaper and TV stations to use to promote the project and generate angler interest in the stream. There will be an article produced in the GRSM newspaper, The Smokies Guide, which is free to the 9-10 million visitors who visit GRSM each year. The following Personal Services Programs will promote this project:

- Park Fishery personnel will present power point talks to Trout Unlimited and Federation of Fly Fishers chapters, community and civic groups and university classes
- On request Interviews with local TV and newspapers outlets will be granted when requested.

25. If applicable, please briefly describe how this project will promote adaptation to climate change.

The project will promote adaptation to climate change by reestablishing and preserving a southern Appalachian brook trout metapopulation, which provides the best chance to adapt to climate change over time via relatively unrestricted gene exchange. National Parks provide some of the best remaining unaltered habitat to protect these genotypes and allow them to adapt to climate change if possible.

26. Please explain how this project is a good investment of funds, using a quantitative approach where possible and the recreational and / or economic value of the project.

To date, GRSM and its many partners have restored 12 streams totaling 45.9 km (28.7 miles) of habitat, 25.6 km of which has been restored using antimycin. Potential for success on the project is high given the experienced staff with the NPS and NCWRC.

Once recreational fishing is allowed, it is projected to have a positive impact on the local economy. Anglers who fish for brook trout in streams currently open for fishing spend \$65 - \$158 per day for this activity (Duda et al. 2009). Anglers who fish for brook trout in Little Cataloochee Creek are expected to have similar expenditures.

SUPPORTING DOCUMENTATION:

- **Literature Cited**

Duda, M.D. et al. 2009. THE ECONOMIC IMPACT OF MOUNTAIN TROUT FISHING IN NORTH CAROLINA Final Report MOUNTAIN FISHERIES INVESTIGATIONS Federal Aid in Fish Restoration Project F-86 Period Covered: November 2008–June 2009. Responsive Management and Southwick Associates.
http://www.ncwildlife.org/Portals/0/Fishing/documents/TroutEconomicImpactsFullRpt_08062009.pdf

- **References to published interagency fishery or aquatic resource management plans.**

Moore, S.E. 1993. Fishery management plan, Great Smoky Mountains National Park. 48 pp.

Rash, North Carolina Trout Management Plan. 2013.
<http://www.ncwildlife.org/Portals/0/Fishing/documents/TroutManagementPlan.pdf>



⊠ North Carolina Wildlife Resources Commission ⊠

Gordon S. Myers, Executive Director

7 September 2016

Eastern Brook Trout Joint Venture
c/o Callie McMunigal
U.S. Fish and Wildlife Service
Appalachian Partnership Coordination Office
400 E Main Street
White Sulphur Springs, WV 24986

To Whom It May Concern,

The North Carolina Wildlife Resources Commission (NCWRC) would like to submit a letter of support for the project titled *Restoring a Brook Trout Metapopulation within the Little Cataloochee Creek & Anthony Creek Watersheds, Great Smoky Mountains National Park* that has applied for funding through the Eastern Brook Trout Joint Venture. The goal of this project is to restore Brook Trout within Little Cataloochee and Anthony creeks. In addition to increasing the distribution of Brook Trout within Great Smoky Mountains National Park (GSMNP), this project will utilize contemporary genetic data to inform management decisions. Furthermore, the reestablishment of an allopatric metapopulation within the Little Cataloochee Creek watershed will provide a significant biological resource for GSMNP and the southeastern United States. Brook Trout metapopulations are rare in the southern portion of their native range, so this project has the potential to provide valuable insight into Brook Trout population dynamics through time. This particular project will help the NCWRC meet several objectives in its efforts to conserve North Carolina's native Brook Trout.

This project supports the mission, vision, and goals of the NCWRC and we endorse this project. In addition, the National Park Service has been an active partner with NCWRC, and we look forward to continuing joint-efforts to conserve coldwater resources in North Carolina. Please let me know if I can provide any additional information.

Sincerely,

Jacob M. Rash
Coldwater Research Coordinator



TENNESSEE WILDLIFE RESOURCES AGENCY

REGION IV
3030 WILDLIFE WAY
MORRISTOWN, TENNESSEE 37814

Callie McMunigal
Appalachian Partnership Coordinator
U.S. Fish and Wildlife Service
400 E Main St.
White Sulphur Springs, WV 24986

12 September 2016

Dear Callie,

The Tennessee Wildlife Resources Agency wishes to express its support for the National Park Service's (NPS) proposed project to restore native brook trout in two systems in Great Smoky Mountains National Park with Eastern Brook Trout Joint Venture (EBTJV) funding. Our Agency has worked closely with the NPS for years to restore native brook trout to their former habitats in the Park, has assisted with preliminary efforts to remove the existing rainbow trout population in Anthony Creek, and may provide further assistance toward the completion of this project in 2017. This native brook trout restoration work aligns with and helps attain goals of Tennessee's Brook Trout Conservation Strategy, the EBTJV, and the National Fish Habitat Action Plan. Its successful completion will result in significant additions to the native brook trout resource in the Park and the southern Appalachian region.

Sincerely,

Jim Habera
Tennessee Wildlife Resources Agency
Region IV
Coldwater Fisheries

The State of Tennessee

AN EQUAL OPPORTUNITY EMPLOYER

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Service Representative: Matt Kulp

Office and Phone: Great Smoky Mountains National Park, 865-436-1254

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or

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Product Description (image number, subject, horizontal/vertical, location, title, etc.):

GRSM fisheries staff conduct a 3-pass depletion survey within Little Cataloochee Creek, GRSM

Name: Matt Kulp

Address: GRSM - Fisheries, 107 Park Headquarters Road, Gatlinburg, TN 37738

Phone: 865-436-1254

Signature: _____

Date: 8 September 2016



