

EBTJV Connectivity Improvement: Removal of two dams in the Wetmore Run Watershed, Potter County, PA

Project Location: Potter County, Pennsylvania

Congressional District of Project: 5th District, Rep. Glenn Thompson

Congressional District of Applicant: 5th District, Rep. Glenn Thompson

EBTJV / NFHAP Funding Requested: \$50,000

Total Project Cost: \$437,000

Total Federal Matching: \$1,000

Total Non-Federal Matching: \$386,000

APPLICANT

Organization: Pennsylvania Fish and Boat Commission (PFBC)

Project Officer: Benjamin D. Lorson

Street: 450 Robinson Lane

City, State, Zip: Bellefonte, PA 16823

Telephone Number: (814)359-5106

Fax Number: (814)359-5183

Email Address: belorson@state.pa.us

U.S. Fish and Wildlife Service Sponsoring Office

Fish and Wildlife Service Office: Northeast Fishery Center

Project Officer: Meredith Bartron

Street: P.O. Box 75

City, State, Zip: Lamar, PA 16848

Telephone Number: (570)726-4247 x155

Fax Number:

Email Address: Meredith_Bartron@fws.gov

U.S. Fish and Wildlife Service FONS Database Project Number: 52230-2011-349

Coordination Completed with US Fish and Wildlife Service Fisheries Office (Check One):

Yes

7/20/2011 Date Coordination Began

No

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

A. Project Description and Scope of Work

The Borough of Galeton is planning to remove two dams, and their associated impoundments, as part of a plan to upgrade their public water supply to a non-dam alternative; we seek funding towards the construction phase of the removal. The dams are located on Wetmore Run and Right Branch of Wetmore Run, Potter County, PA. The dam on Wetmore Run is concrete, approximately 7.25 ft high, 35-ft long with an impoundment surface area of 0.18 acres. The dam on Right Branch of Wetmore Run is concrete, approximately 4.5 ft high, 80-ft long with an impoundment area of 0.14 acres. Both streams are classified as High Quality – Coldwater Fishery (HQ – CWF) by the Pennsylvania Department of Environmental Protection (PA DEP) and drain a predominantly forested watershed comprised of ~60% public land. The barriers block upstream passage to approximately 8.5 miles of headwater habitat (Streamstats), contribute to increased instream temperatures, interrupt the normal flow regime, and negatively impact ecosystem function. As a result of the dam removals, almost 8.5 miles of headwater habitat will be reconnected to the rest of the upper Pine Creek Watershed, which contains several intact eastern brook trout populations (Hudy, 2008). Galeton Borough owns the lands where the project will take place, has funded the design of the project, and will hire a contractor to complete the construction phase. If funded, PFBC will provide EBTJV money to Galeton Borough via a contract agreement for the purpose of removing the two dams. PFBC staff will also provide technical guidance throughout the life of the project, provide pre- and post-dam removal monitoring and design and implement post-removal instream habitat enhancement if deemed necessary.

B. Proposed Methods (Max Characters: 350)

The design for this project is complete and upon permit approval the dams will be removed by hydraulic hammer on track-hoe according to permit conditions and using EBTJV funding, if awarded. PFBC will provide technical guidance for the term of the project, direct follow up habitat enhancement work and direct monitoring efforts.

C. Project Timeline

Pre-dam removal fish survey and habitat assessment	Spring/Summer 2012
Water supply upgrades	Begin June 2012
Dam removal construction	Aug/Sept 2012 (as soon as water supply upgrade is complete)
Post-removal habitat enhancement	Summer 2013
Post-dam removal fish surveys and habitat assessment	2013-2017

D. Proposed Accomplishment Summary (Max Characters: 500)

This project eliminates the only two barriers in the Wetmore Run drainage connecting 8.5 miles of stream and allowing unimpeded movements of brook trout and aquatic life in the upper Pine Creek watershed. Removal of the dams will eliminate thermal pollution, restore lotic ecosystem function and restore connectivity within a watershed supporting an EBTJV intact eastern brook trout population, while simultaneously reconnecting other watersheds classified by EBTJV as supporting intact populations (Hudy, 2008).

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

Eastern brook trout is listed as a Species of Greatest Conservation Need (SGCN) in the PA State Wildlife Action Plan. Wetmore Run is currently classified as a High Quality Cold Water Fishery by PA DEP. Providing connectivity to 8.5 miles of headwater habitat will benefit eastern brook trout and other aquatic life in the Wetmore Run drainage.

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

Dams were built on Wetmore Run and Right Branch Wetmore Run to supply water to the Borough of Galeton, PA. These dams fragment eastern brook trout habitat, interrupt the natural flow regime, and are a cause of thermal pollution.

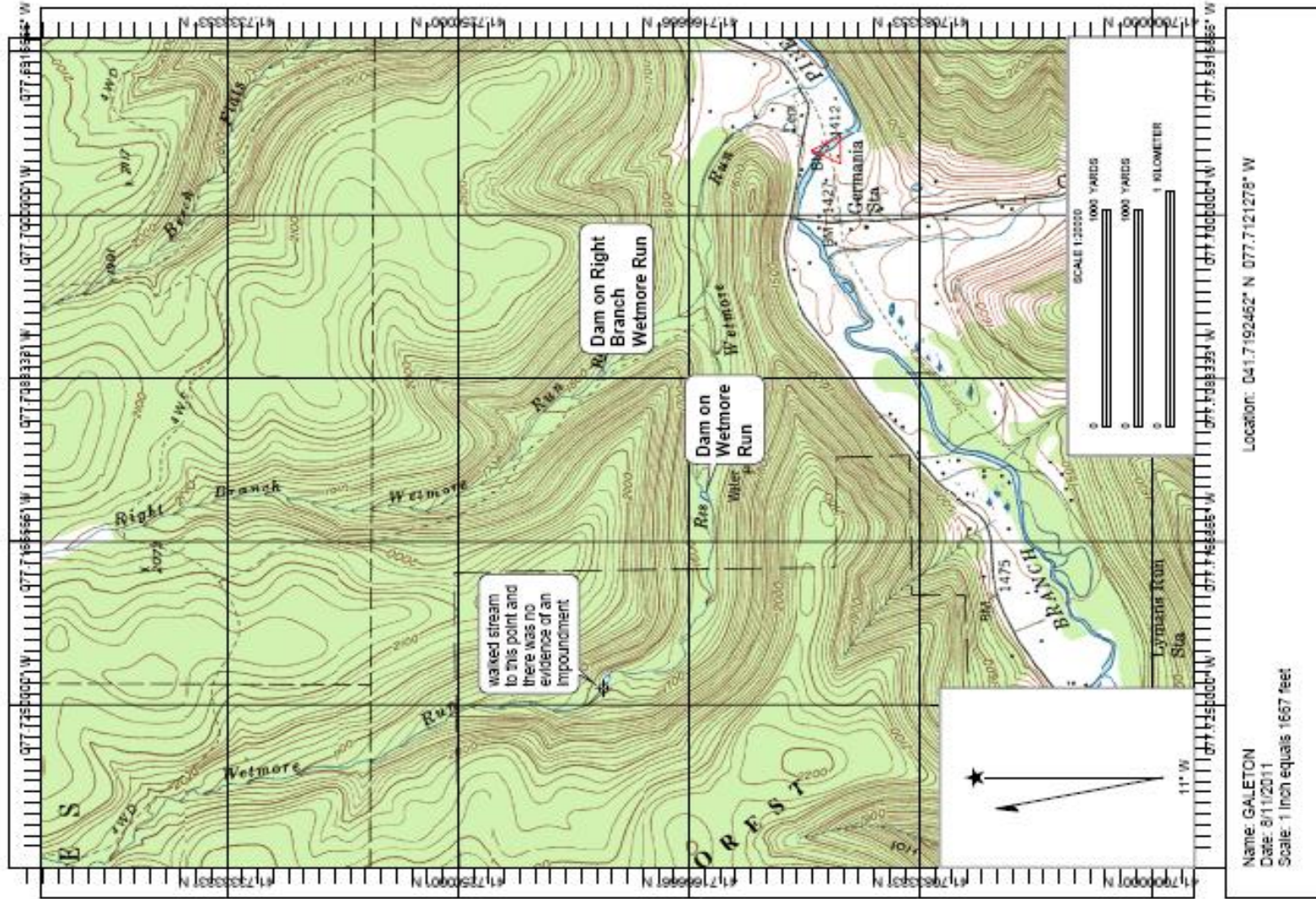
G. Objective of the Project with Reference to the Problem (Max Characters: 350)

The objective of this project is to provide connectivity to 8.5 miles of headwater brook trout habitat, restore natural ecosystem function and alleviate any thermal impacts. Removal of the two dams will benefit brook trout in an EBTJV intact subwatershed as well as brook trout in surrounding EBTJV intact subwatersheds (Hudy, 2008).

H. Partner Information

Partner Name	Contribution In-Kind	Contribution Cash	Federal or Non-Federal	Partner Category	Role of Partner
Galeton Borough		\$92,000 (Design) \$282,000 (Const.)	Non-Fed	Local Gov't	Dam/property owner
PA Fish and Boat Commission	\$6,000		Non-Fed	State Agency	Technical assistance, fish habitat enhancement design and construction
US Fish and Wildlife Service	\$1,000		Fed	Fed Agency	Monitoring
PA DEP	\$4,000		Non-Fed	State Agency	Technical Assistance, Permitting
American Rivers	\$2,000		Non-Fed	Non-Profit (National)	Technical Assistance, Monitoring

II. MAP OF PROJECT AREA



III. PHOTOGRAPH(S) OF PROJECT AREA (no more than 2, please provide credits and attach photo release forms)



Dam on Wetmore Run – Looking upstream at face of spillway (Photo: Ben Lorson, PAF&BC)

Note: No water is going over the spillway showing the advanced state of disrepair of the structure.



Dam on Right Branch Wetmore Run – Looking upstream at face of spillway (Photo: Ben Lorson, PAF&BC)

Note: No water is going over the spillway showing the advanced state of disrepair of the structure.

IV. PROJECT BUDGET

B. Budget Table

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		
Galeton Borough	Local Government	Water Supply Upgrade	Equipment materials			129,000			374,000	300 ft. of previously impounded stream channel and >8 miles of upstream habitat connectivity
		Water Supply Upgrade	Construction			142,000				
		Upgrade/ Dam Removal	Design			92,000				
		Dam Removal	Construction			11,000				
PFBC	State Agency	Monitoring/ Technical Assistance	Personnel/Travel		6,000				6,000	
USFWS Northeast Fishery Center	Federal Agency	Monitoring	Personnel/Travel				1,000		2,000	
DEP	State Agency	Permitting/ Technical Assistance	Personnel/Travel		4,000				4,000	
American Rivers	Conservation Group (Nat'l)	Technical Assistance/ Monitoring	Personnel/Travel		2,000				2,000	
EBTJV		Dam Removal	Construction	49,000					50,000	300 ft. restored stream channel; >8 mi. connectivity
		Monitoring	Personnel/Travel	1,000						
Total Contribution				50,000	12,000	374,000	1,000		437,000	

*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 - Equipment, Construction, Contractual, Personnel, 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

Please refer to the website (www.easternbrooktrout.org) for application instructions.

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

Right Branch Wetmore Run – 41.719728° N, 077.708009° W (known as Right Branch Dam)

Wetmore Run – 41.716233° N, 077.714196° W (known as Left Branch Dam)

2. Please list the type of project. Examples include: in-stream habitat, riparian planting, fencing, acid mine drainage restoration, fish passage, reintroduction, assessment, etc.

This project is a fish passage project with associated habitat restoration and monitoring.

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?

Wetmore Run and Right Branch Wetmore Run are listed as High Quality (HQ) Coldwater Fisheries (PA DEP, Ch. 93) and contain a healthy brook trout population as evidenced in a fish survey by PFBC in 2002. The Wetmore Run watershed can be considered among the best of the best for eastern brook trout in PA since there is brook trout present and the regulatory protection provided by its HQ status. There are also brook trout populations in surrounding subwatersheds classified as intact by EBTJV (Hudy, 2008) and waters that are listed as HQ by PA DEP.

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

The project will improve existing habitat by reverting degraded habitat around the old dams to a natural free flowing stream that will benefit all aquatic life associated with HQ coldwater streams in PA. The proposed project will expand existing habitat by restoring connectivity within an EBTJV intact watershed and connectivity to surrounding EBTJV intact watersheds (Hudy, 2008). Over 8 miles of headwater habitat will be opened to fish passage (Streamstats). This watershed is also listed as an intact watershed that is considered ‘best for protection’ under the EBTJV priority scoring.

5. Does the project include a protection component? If so, explain how the project sufficiently protects brook trout habitat. Does the project include fee simple land purchase or easements?

This project provides protection to this watershed by alleviating any further impacts associated with the historic use of these dams as a water supply source. This will allow for continued regulatory protection by maintaining the HQ status. The large portion of public land in the watershed (60%) provides protection from anthropogenic influences. Furthermore, the forested nature of the watershed (97% forested) protects the stream from thermal impacts and provides a buffer between the stream and surrounding watershed, minimizing deleterious inputs to the stream.

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

Nearly 60% of the land upstream of the project is public land (State Forest, State Game Lands, Borough) protected in perpetuity (~2000/3360 acres).

7. List the specific regional EBTJV habitat objectives addressed by the project and describe how the project will contribute towards them.

- Maintain the status, or no net loss, of 746 subwatersheds classified as healthy by 2012.
- Strengthen brook trout populations in 44 subwatersheds classified as healthy by 2012.

The project will contribute to the EBTJV habitat objectives by removing barriers to the passage of wild brook trout, reducing thermal gain in the streams, and improving habitat connectivity and water quality. These benefits will maintain and strengthen local brook trout populations.

8. Please state whether the project is an enhancement, restoration or protection project.

This project is considered a protection project as identified in the EBTJV priority listing because it protects and improves best of the best brook trout habitat that already contains a healthy, stable population.

9. State which, if any, EBTJV priority the project addresses:

- 1) This project protects “best of the best” brook trout habitat by alleviating further degradation associated with the use of these dams as a public water supply.
- 2) It also reconnects this “best of the best” habitat to adjacent “best of the best” habitats in other intact watersheds in the upper Pine Creek watershed (Hudy, 2008).
- 3) Wetmore Run has never been inventoried below the water supply dams, but based on visual observation in July, 2011 it is expected that the brook trout populations below the dams have been negatively impacted by the effects of the dams and associated water withdrawals. The removal of the dams will enhance these downstream habitats by restoring Wetmore Run to a free flowing system.

10. What is the EBTJV subwatershed number and priority ranking for the proposed project watershed for the type of project (enhancement, restoration or protection) being proposed?

Watershed # = 420189

Priority Score = 1.12

Map = Protection

Note: Proposed projects in watersheds that are classified as “other subwatersheds” and shown in grey on the state priority maps are not eligible for funding for that type of project.

11. Will the completed project benefit any federally listed threatened or endangered species?

The project area is not known to contain any federally listed threatened or endangered species.

12. Will the completed project benefit any state listed threatened or endangered species?

The project area is not known to contain any state listed threatened or endangered species but the eastern brook trout is listed as a “Species of Greatest Conservation Need” in the State Wildlife Action Plan (PFBC, 2007).

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

This project will reconnect over 8 miles (Streamstats) of upstream habitat within an intact watershed. The removal of the two dams will also provide connectivity to other intact watersheds in the upper Pine Creek watershed, PA.

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

Over 97% of the upstream watershed is forested and, therefore, the fragmentation caused by the dams can be considered a major cause of watershed degradation. The removal of the two barriers will eliminate a direct cause of degradation while reconnecting over 8 miles of forested headwater eastern brook trout habitat (Streamstats).

15. Describe the plans for project monitoring and evaluation.

Surveys will be directed by PFBC to estimate brook trout abundance at treatment (downstream of the dams) and control (upstream of the dam) sites both pre- and post-removal for up to 5 years.

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

Removing the obstructions in the Wetmore Run watershed will allow fish to move freely into and out of Wetmore Run and the other surrounding High Quality watersheds. Opening the headwater habitat of the Wetmore Run watershed will ensure that the genetic integrity of this brook trout population is protected. The unobstructed access to surrounding High Quality watersheds and associated intact brook trout populations will provide this population with access to habitat necessary for survival and reproduction and will encourage genetic mixing. It is expected that the abundance of brook trout below the dams will increase while the abundance upstream of the dams will at least remain the same, if not increase.

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, please describe it.

The removal of the two dams will establish connectivity within and to intact watersheds indefinitely. This project can be considered to be protected and effective in perpetuity. No long term maintenance is necessary.

18. What size stream does the project benefit? Is this stream a tributary or mainstem habitat?

Wetmore Run and Right Branch Wetmore Run are headwater tributary habitats to West Branch Pine Creek. The project will provide connectivity within the Wetmore Run watershed as well as to West Branch Pine Creek and the rest of the upper Pine Creek watershed.

19. What competitive non-native or invasive fish are in the watershed with access (no barrier) to the proposed project?

To date no competitive non-native or invasive fish have been documented in fish surveys in Wetmore Run above or below the dam.

20. Are other strains of brook trout, salmonids, or exotics present in the proposed watershed? Where (e.g. upstream, downstream, and distance from project site) does the stocking take place with respect to the project site?

Wetmore Run and Right Branch Wetmore Run are not stocked with hatchery trout. West Branch Pine Creek is stocked with hatchery trout over one mile below the project site.

21. Please describe the current status of the project. Is it planned, permitted and ready to begin? Please identify the targeted month and year for project completion.

Plans for this project are complete; permits have been submitted and are awaiting regulatory approval. Permits that have not been received will be in hand by winter 2011. Construction is tentatively planned to start per permit conditions in June/July 2012. The project is planned to be completed by the Fall of 2012.

22. Will public access be allowed at the project site? If so, what kinds of recreational activities are allowed - public fishing, nature trails, etc?

Stream access is allowed for public fishing at the proposed sites on borough property. Most of Wetmore Run is either on Borough property or State Forest Land. Right Branch Wetmore Run is open to the public at the project site and access is not a problem upstream from the removal site. It was noted that anglers already fish this particular property and this is expected to continue and/or increase.

23. What is the recreational quality of the potential fishery?

Wetmore Run already has a self sustaining wild brook trout population providing a fishery for those interested in fishing for wild trout. The removal of the two dams will only enhance the recreational potential of the fishery by restoring those areas degraded by the impoundments as well as providing access to upstream habitats that have been minimally impacted by human development.

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

Possible outreach components include a published newspaper article, press release on PFBC website, or an article in the PA Angler and Boater. This would be an opportunity to highlight the partnership utilized to satisfy the needs of the residents of the Borough of Galeton as well as benefit one of PA's High Quality wild brook trout streams.

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

The most recent climate change projections identify increased fluctuations in seasonal temperature extremes (ie, higher high temperatures, and lower lows) as well as increased fluctuations in precipitation extremes (more intense rainfall events and more droughts). Removing barriers in streams will allow them to return to natural form and function,

including reconnection to wetlands and floodplains, natural flow conditions, and relief from the thermal gain caused by impounding the stream. These natural conditions will provide climate change resilience for the stream, the aquatic ecosystem, and the natural populations (Hewes and Pitt, 2009).

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.

It was estimated in 2004 that angling activities occurring on wild trout waters in PA contributed 7.16 million dollars to the PA economy (Greene *et al* 2005). Since anglers seeking wild trout already visit this property it is expected that those visiting Wetmore Run will continue to provide money to PA's economy. Galeton Borough is also upgrading their water supply to incorporate a state of the art infiltration gallery. The alternative to removal of the dams would have been to tear down and reconstruct new dams which would have cost an estimated \$1.5 million for each dam. This project has a major economic benefit for the Borough of Galeton, major ecological benefits mentioned in other sections of this proposal, benefits the PA and the local economy through the revenue generated by wild trout anglers, who are benefitting from the hours of angling pleasure that Wetmore Run provides.

VI. SUPPORTING DOCUMENTATION: (see letter of support on last page)

EBTJV (Eastern Brook Trout Joint Venture). 2008. Conserving the eastern brook trout: action strategies.

Greene, R., R. Weber, R. Carline, D. Diefenbach, M. Shields, M. Kauffman, R. Moase, and B. Hollender. 2005. Angler use, harvest and economic assessment on wild trout streams in Pennsylvania. PFBC Files, Bellefonte, PA.

Hewes, W. and K. Pitts. 2009. National Security: How sustainable water strategies are preparing communities for a changing climate. American Rivers, Washington, DC.

Hudy, M., T.M. Thieling, N. Gillespie and E.P. Smith. 2008. Distribution, status, and land use characteristics of subwatersheds within the native range of brook trout in the eastern United States. North American Journal of Fisheries Management 28: 1069-1085. American Fisheries Society.

Maptech Terrain Navigator Pro v7.01. Copyright 1998-2005. Maptech Inc., Amesbury, MA

PFBC. 2009. Strategic plan for management of trout fisheries in Pennsylvania, 2010-2014. PFBC Bureau of Fisheries. URL: http://www.fishandboat.com/pafish/trout/trout_plan/troutplan2010.pdf

PFBC. 2007. An amendment to the Pennsylvania Wildlife Action Plan: Addition of the native Eastern Brook Trout (*Salvelinus fontinalis*) as a species of greatest conservation need. URL: http://fishandboat.com/promo/grants/swg/nongame_plan/pa_wap_sections/appx06amd01brook_trout.pdf

Title 25 of the PA Code, Chapter 93 – Water Quality Standards. URL:
<http://www.pacode.com/secure/data/025/chapter93/chap93toc.html>

USGS StreamStats. URL: <http://streamstats.usgs.gov/>



August 2, 2011

Mr. Ben Lorson
Dam Removal and Fish Passage Coordinator
PA Fish and Boat Commission
450 Robinson Lane
Pleasant Gap, PA

RE: EBTJV Connectivity Improvement: Removal of two dams in the Wetmore Run Watershed, Potter County, PA

Dear Mr. Lorson,

American Rivers offers its support to PA Fish & Boat Commission's proposal to the Eastern Brook Trout Joint Venture program to fund removal of two dams in the Wetmore Run watershed in Potter County, PA. These two dams are barriers to the headwaters areas of streams classified as High Quality Cold Water Fisheries; removal would improve stream connectivity by opening these tributaries to provide fish passage for wild brook trout and other associated resident species. The benefits will be greater local biodiversity, improved habitat connectivity to benefit spawning and rearing, reduced thermal impacts to an important cold water fishery, and improved water quality. This project area is located in an area of PA that has the most forested area and the greatest density of High Quality-Cold Water Fishery and Exceptional Value streams. Removing barriers to reconnect streams will help to ensure that this area remains among "the best of the best" in PA for brook trout habitat.

This proposed project coincides with the river restoration and conservation goals of American Rivers, the Eastern Brook Trout Joint Venture, and the Pennsylvania State Wildlife Action Plan. As such, we support the proposal wholeheartedly.

Sincerely,

Lisa Hollingsworth-Segedy, AICP
Associate Director for River Restoration
American Rivers