Umpire Brook Culvert Replacement

NFHAP funding requested: $9,200

Project Location: (Vermont, Essex County, Victory)

Congressional District: District 1 (VT)

APPLICANT
Organization: Vermont Department of Fish and Wildlife
Project Officer: Jud Kratzer
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Sponsoring Fish and Wildlife Service Fisheries Office

Fish and Wildlife Service Office: Lake Champlain Fish and Wildlife Resources Complex

Street: 11 Lincoln St.

City, State, Zip: Essex Junction, VT 05452
Project Officer: Dave Tilton
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Date Submitted: September 29, 2008

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

A. Project Description and Scope of Work

Umpire Brook is a small second order stream in the town of Victory, Vermont. It sustains a wild brook trout population and its watershed is almost entirely forested, with nearly the entire watershed falling within the Victory State Forest. Other than the limited runoff from forest roads, the only significant human-induced impact on this brook is a culvert on Umpire Brook Road. This culvert, which was made from an old boiler tank, is undersized, perched about 10", and is probably impassable by brook trout throughout the entire year. This culvert also has many maintenance issues because it is often plugged by beavers. Replacing this culvert with a structure that is passable by brook trout would allow them to access the upper two miles of Umpire Brook, which is a large beaver flowage. There are no other barriers to fish passage downstream until a dam on the Passumpsic River in St. Johnsbury, Vermont, roughly 23 river miles downstream.

The goal of this project is to replace the current culvert with a bridge that will allow for upstream passage of fish and require less maintenance. An excavator will be hired to remove the old culvert, do site work for the bridge, and place the bridge beams. Vermont Forest, Parks, and Recreation staff will install the decking. Most of this work will take place in August or September of the performance year. The land and road are owned by the Vermont Department of Forest, Parks, and Recreation.

This project will allow brook trout to pass upstream of Umpire Brook Road. Results will be monitored by visually inspecting the stream channel under the new bridge. The improvement of fish passage should be obvious. Fish sampling is very difficult upstream of the project site because it is an extensive beaver dam complex. Thus, electrofishing or any kind of efforts to monitor changes in brook trout abundance upstream of the project are not practical.

B. Partner Information

Partner Name	Contribution In-Kind	Contribution Cash	Federal or Non-Federal	Partner Category	Role of Partner
Vermont Department of Forest, Parks, and Recreation	$1,600		Non-Federal	State Agency	Hire contractors, acquire necessary permits, install decking on bridge.
Vermont Department of Fish and Wildlife	$200		Both	State Agency	Evaluate fish passage, provide technical assistance

Vermont Department of Environmental Conservation	$400		Non-Federal	State Agency	Bridge design
Vermont Agency of Transportation	$7,000		Non-Federal	State Agency	Provide steel beams for bridge

C. Milestones and Timeline

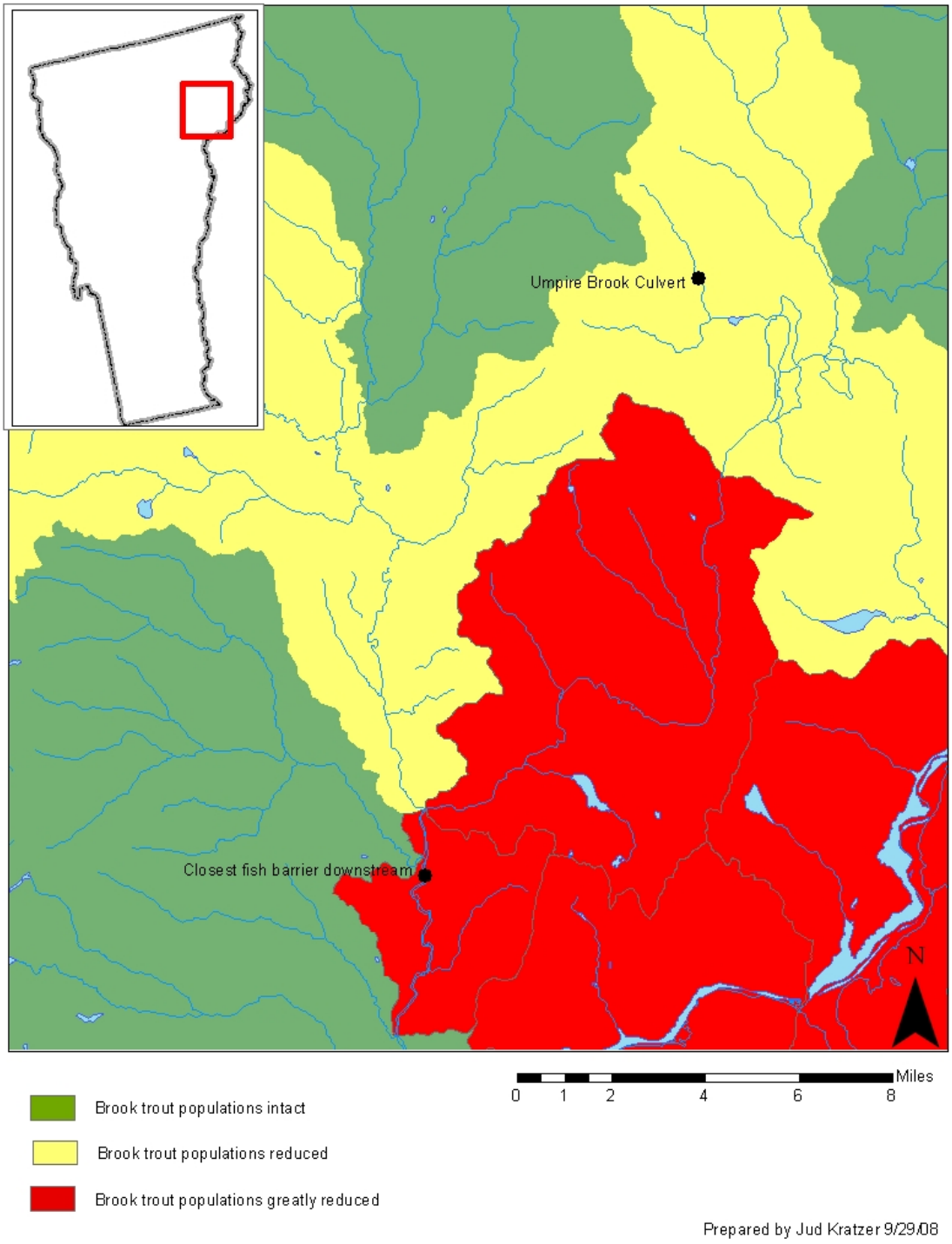
Year 1 - January to July: Bridge design and construction planning.

Year 1 – August to September: Remove old culvert and replace with new bridge.

Year 1 – September: Visually evaluate bridge for fish passage.

Years 2 on: Repair and maintain bridge as necessary.

III. MAP OF PROJECT AREA (one only)



HUC6 watershed number 500280
Project coordinates: 71^{o} 50’ 19.66” W, 44^{o} 33’ 42.75” N

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

The culvert on Umpire Brook was made from an old boiler tank. The outlet is perched about 10" higher than the water's surface. Photo by Jud Krazter, Vermont Fish and Wildlife Department, winter 2008.

INSERT PHOTOGRAPH RELEASE FORM

5 **V. PROJECT BUDGET A. General Requirements B. Budget Table**

Partner	Activity	NFHAP Request	Non-Fed Contribution	Federal Contribution	Total
VT Department of Environmental Conservation	Bridge Design		$400 (in kind)		$400
VT Agency of Transportation	Steel beams		$7,000 (in kind)		$7,000
VT Department of Forest, Parks, and Recreation	Transport beams	$5,000			$5,000
VT Department of Forest, Parks, and Recreation	Purchase other bridge materials	$2,200			$2,200
VT Department of Forest, Parks, and Recreation	Hire excavator to remove culvert and install bridge	$2,000			$2,000
VT Department of Forest, Parks, and Recreation	Construct decking		$1,600 (in kind)		$1,600
VT Department of Fish and Wildlife	Fish passage evaluation		$50 (in kind)	$150 (in kind)	$200
Total		$9,200	$9,050	$150	$18,400

VI. EVALUATION QUESTIONS (3 pages maximum)

A. Conservation of Sustainable Brook Trout Populations:

In the Eastern Brook Trout Joint Venture's "Roadmap to Restoration", reduction of habitat fragmentation is listed as a management priority for the Northern Region. It is also a goal of the Vermont Department of Fish and Wildlife to reduce fish habitat fragmentation. Replacing the Umpire Brook culvert with a bridge will reduce habitat fragmentation by allowing brook trout to travel an additional 2 miles upstream into an extensive beaver flowage.

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

Wild brook trout are listed as a Species of Greatest Conservation need by the state of Vermont.

C. Other Species of Economic Importance not Included Above:

None.

D. Special Considerations:

None.

E. EBTJV Targeted Watershed:

I could not find the targeted watersheds map on the webpage.

F. Habitat Connectivity and Enhancing Population Mobility:

The project will take place on a tributary and will connect habitat to the mainstem. Approximately 90% of the watershed upstream of the project area is owned by the Vermont Department of Forest, Parks, and Recreation as the Victory State Forest. Also much of the area surrounding this watershed is either owned by the Vermont Department of Forest, Parks, and Recreation or the Vermont Department of Fish and Wildlife. The project is in a sub-watershed listed as having reduced brook trout populations, and a connected sub-watershed, immediately to the east, is listed as intact.

There are probably already brook trout present upstream of the project site, but by replacing the culvert with a structure that allows for upstream passage of brook trout, the population should benefit from increased connectivity. There is a high probability of successful continuation of fishable brook trout populations, although the area upstream of the project is probably not fished very frequently because it can be difficult to fish beaver flowages.

G. Management Assets:

The project will be evaluated visually for fish passage. The culvert was clearly not passable in the upstream direction. The proposed bridge will almost certainly be passable.

The project and nearly all of the brook upstream and downstream of the project site is on state land and is open to fishing for anyone that has a fishing license.

H. Supporting Documentation and Management Plans:

This proposal was written by Jud Kratzer, Fisheries Biologist for the Vermont Department of Fish and Wildlife. All of the partners involved in the project are state agencies. I am not attaching a letter from the state indicating the state's support of the project, but I will send one if necessary.