

Project Title: Dam Removal, East Branch Passumpsic River, East Burke, Vermont

Project Location (State, County, Town, Congressional District):

Vermont, Caledonia County, East Burke, Vermont At-Large District.

Congressional District of Project: Vermont At-Large, East Burke, VT

Congressional District of Applicant: Vermont At-Large, South Pomfret, VT

NFHP / EBTJV Funding Requested: \$25,000

Total Project Cost: \$325,000 (Removal Cost)

Total Federal Matching: \$25,000 (National Fish & Wildlife Foundation - received)

Total Non-Federal Matching: \$200,000 (NH Charitable Foundation - received)
\$75,000 (VT Ecosystem Restoration Grant – applying)

Applicant:

Project Officer: Ron Rhodes, North Country River Steward, South Pomfret, VT

Organization: Connecticut River Watershed Council

Street: 15 Bank Row

City, State, Zip: Greenfield, MA 01301

Telephone Number: 802-457-6114

Fax Number: NA

EMail Address: rrhodes@ctriver.org

U.S. Fish and Wildlife Service Sponsoring Office:

Project Officer: Madeleine Lyttle, Fish Biologist

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

Street: 11 Lincoln St.

City, State, Zip: Essex Junction, VT 05452

Telephone Number: 802-662-5306

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USFWS FONS Database Project Number: 53330-2016-113

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

(Check One):

 X Yes

 4/15/2015 **Date Coordination Began**

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

A. Project Description

The Passumpsic Valley Land Trust (PVLТ) owns a long defunct dam that is 150 feet long and 13 feet high on the East Branch of the Passumpsic River in East Burke, VT and is interested in seeing the dam removed. PVLТ asked the Connecticut River Watershed Council (CRWC) to take on the project management role for this removal and we eagerly agreed.

According to the State of Vermont, the East Burke dam is a significant impediment for aquatic organism passage (AOP) and sediment transport which dam removal will address. The East Burke dam is the last upstream AOP impediment on the East Branch up to the headwaters. Removal will reconnect 99 migratory miles; 90 miles upstream to the cold, headwater habitats brook trout require and 9 miles downstream.

Engineering plans have been drafted and will be completed by the end of 2016; permits have been submitted to the State of Vermont and U.S. Army Corps of Engineers (USACE); the Vermont State Historic Preservation Office (SHPO) has given clearance to proceed; and a Memorandum of Agreement (MOA) has been signed by project partners (USACE, SHPO, PVLТ et. al.). Removal will take place in summer 2017 once the permits have been issued.

B. Proposed Methods (Max Characters: 350)

CRWC has received two grants to help fund removal in 2017 and we will be applying to the State of Vermont for additional funding also. All EBTJV funds would be used for removal activities after CRWC issues a request for proposals (RFP) and hires a contractor. The dam will be removed via standard excavation equipment and practices (hoe ram and excavator) as outlined in the engineering design plans and permits.

C. Project Timeline

2016 – CRWC will be applying for a State of Vermont Ecosystem Restoration Program grant on October 25th. We will finalize the engineering design plans (via our current contract with Milone & MacBroom); complete the permit application process with State of VT and the USACE (including public meetings); and issue a RFP and hire a contractor for dam removal.

2017 - Facilitate an on-site pre-removal meeting between contractor, regulatory agencies and project partners, including local stakeholders. Contact Dig Safe and secure clearance to proceed with construction. Complete and issue Work Start notification form as required by USACE. Help ensure compliance with permit requirements for road access, construction, silt fencing, sediment capture and all other aspects of design plans. Facilitate on-site morning meetings with contractor, regulators and partners for daily work plan review. Prepare end of day project updates (videos and emails) for stakeholders and funding partners, including EBTJV. Facilitate VIP site visits and media coverage of removal activities. Ensure successful completion of removal activities as required by design plans and permits. Implement riparian buffer plantings and post removal restoration in the fall.

2018 – CRWC and project partners, including the U.S. Fish & Wildlife Service (USFWS), will monitor the site on an on-going basis and document river conditions, changes and restoration survival rates for plantings. Also, USFWS and VT Fish & Wildlife electroshocking data will be collected to monitor brook trout and other fish populations.

D. Proposed Accomplishment Summary (Max Characters: 500)

Removal of this deteriorating dam will improve natural flow regimes, free-flowing river conditions, water quality and temperature, sediment release and transport, and connectivity resulting in the restoration of AOP for native brook trout, sculpin and minnows (as identified by VT Fish & Wildlife electrofishing data) opening 99 migratory miles on the East Branch of the Passumpsic River. In addition, 3.4 acres of shrub-scrub wetland will be enhanced by removal of the dam and subsequent restoration work.

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

The East Branch flows 19 miles into the Passumpsic River and the watershed drains approximately 80 square miles. The East Branch scores 1.41 (sub-watershed 500278) and 1.42 (sub-watershed 500277) respectively in the EBTJV category “Intact Watersheds – Best for Protection”. In addition the East Branch is a popular fishing stream for brook trout, which will also benefit from removal of the dam.

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

The 150 foot wide by 13 foot high concrete dam that now stands in the river was constructed in 1931, adjacent to the East Burke Lumber Company sawmill, in order to transport logs to the sawmill. Brook trout populations below the dam are fragmented and unable to access the colder headwaters above the dam that brook trout rely upon for spawning and thermal refugia in the warm summer months.

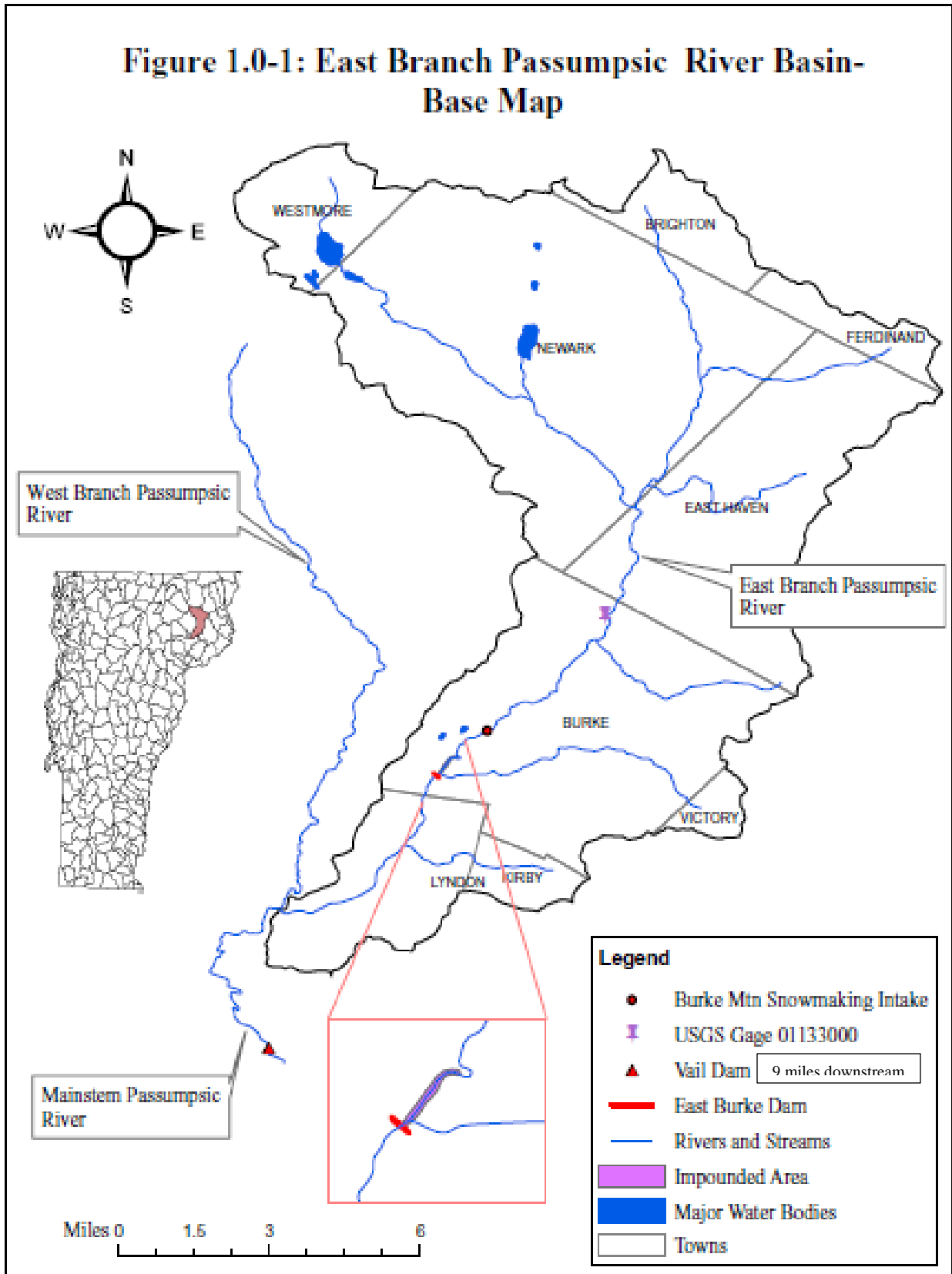
G. Objective of the Project with Reference to the Problem (Max Characters: 350)

The objective of this dam removal is to restore connectivity for resident brook trout, slimy sculpin and other species throughout 99 miles of habitats in the East Branch sub-watershed. Removal will also restore the river back to its natural state, allow full aquatic passage, improve water quality and temperatures, restore sediment transport, and provide flood and ice jam storage within the Town of East Burke.

H. Partner Information

| Partner Name | Contribution In-Kind | Contribution Cash | Federal or Non-Federal | Partner Category | Role of Partner |
|--|-----------------------------|--------------------------|-------------------------------|----------------------------------|---|
| Passumpsic Valley Land Trust | TBD | | | Local Conservation Group | Dam Owner |
| Vermont Fish & Wildlife | TBD | | | State Agency | Data, Reports & Technical Support |
| U.S. Fish & Wildlife Service | TBD | | | Federal Agency | Technical Support |
| New Hampshire Charitable Foundation (NHCF) | | \$200,000 | Non-Federal | Local Conservation Foundation | Cash from Upper CT River grant (received) |
| VT Dept. of Environmental Conservation (DEC) | | \$75,000 | Non-Federal | State Agency | Cash from Ecosystem Restoration Program grant (pending) |
| National Fish & Wildlife Foundation (NFWF) | | \$25,000 | Federal | National Conservation Foundation | Cash from New England Forests & Rivers Fund (received) |

II. MAP OF PROJECT AREA



III. PHOTOGRAPH(S) OF PROJECT AREA



Looking upstream at the East Burke dam, East Branch Passumpsic River.



Close up of downstream side of dam, looking east toward downtown East Burke, VT.

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 | | |
| All partners, as listed above under Partner Information | | Dam Removal | Contract via RFP | \$25,000 | | \$275,000 | | \$25,000 | \$325,000 | 99 miles |
| | | | | | | <i>NHCF & VT DEC</i> | | <i>NFWF</i> | | |
| | | | | | | | | | | |
| Total Contribution | | | | \$25,000 | | \$275,000 | | \$25,000 | \$325,000 | 99 miles |

*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.

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>

CRWC BUDGET NOTE: CRWC will use the entire \$25,000 NFHAP request to help pay for a contractor to remove the dam. CRWC is not seeking NFHAP funds for travel or salary. All other funds listed above also will be used to hire the contractor.

V. EVALUATION QUESTIONS

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

44.588437, -71.946559, or 1218676.4, 4977260.4 using UTM NAD83

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

Restoration: Conservation action that returns natural/historic attribute and functions to aquatic habitat.

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, brook trout are present both above and below the project site according to State of Vermont Fish & Wildlife electroshocking data.

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

Removal of the East Burke dam will reconnect 99 miles of habitat for local brook trout populations, ninety (90) miles of which is cold, headwater habitats above the dam.

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?

No, the project does not include land purchase or easements as match. The dam and surrounding land is privately owned by a local conservation group, the Passumpsic Valley Land Trust.

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

77% of the watershed is forested, including protected State of Vermont Wildlife Management Areas (Bald Hill, 932 acres, and Calendar Brook, 413 acres). In addition, the watershed includes areas with protected species (4 tree communities, 2 vertebrate animals and 3 endangered species). Other individually owned properties may have easements also.

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 dam removal will address EBTJV habitat objective #2, Strengthen brook trout populations in a sub-watershed classified as intact. This dam removal will reconnect 99 miles of habitat in the East Branch of the Passumpsic River, including 90 miles of cold headwater habitats which are inaccessible to resident brook trout below the East Burke dam.

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

Removing the dam will;

1. Increase recreational fishing opportunities for wild brook trout;
 2. Protect the “best of the best” habitat that supports existing, healthy wild brook trout populations;
 3. Improve and reconnect adjacent habitats that have a high likelihood of supporting stable wild brook trout populations;
 4. Focus on critical wild brook trout spawning and early life history habitat in sub-watersheds classified as Intact; and
 5. Preserve genetic diversity of wild brook trout populations.
- 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):**
1. Improve protection of brook trout resources.
 2. Maximize brook trout habitat and water quality protection through state and federal agencies.
 3. Minimize fish stocking impacts to wild brook trout populations.
 4. Mitigate factors that degrade water quality.
 5. Maintain or restore natural hydrologic regimes.
 6. Utilize state, federal and private programs that support watershed stewardship programs in systems containing brook trout.
 7. 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?**
- **Subwatershed #** = 500278 and 500277 respectively
 - **Subwatershed Status Classification (Intact, Reduced, Extirpated; terms are defined in the Appendix)** = Intact
 - **Subwatershed Priority Score** = 1.41 and 1.42 respectively
 - **Subwatershed Map Used** = <http://easternbrooktrout.org/assessment-data/resources/holdings/priority-watershed-maps/vermont-protection>
- 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)?**
- Salvelinus fontinalis*, Brook Trout
- 12. Will the completed project benefit any state listed threatened or endangered species or species of greatest conservation need?**
- Yes, according to the Vermont Natural Resources Atlas 4 tree communities, 2 vertebrate animals and 3 endangered species are present. S3 Rare Natural Communities are present in Dish Mill brook just upstream of the dam, and a S3 Rare Vertebrate Animal (uncommon in VT) is present just below the dam; all of which will benefit from removal of the dam.
- 13. Will the project provide or enhance connectivity to or within an intact subwatershed?**
- Yes, the project will provide 99 miles of connectivity within intact sub-watersheds #500278 and 500277.

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

This sub-watershed is intact, but connectivity is impaired due to the existence of the East Burke dam. Removal of the dam will solve this, restore the watershed and provide full aquatic organism passage. Removal will also restore the river back to its natural state, improve water quality and temperatures, restore sediment transport, and provide flood and ice jam storage within the Town of East Burke.

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

Post removal, CRWC will facilitate technical team monitoring site visits and data collection (including electrofishing) in addition to required items under our State of Vermont and USACE permit conditions. Our technical team includes engineers from Milone & MacBroom, staff from the U.S. Fish & Wildlife Service, and State of Vermont staff from the Department of Environmental Conservation as well as Fish & Wildlife.

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

In our previous dam removal projects in Vermont and New Hampshire, we have witnessed immediate aquatic organism passage and brook trout moving upstream into previously inaccessible habitats. In addition, trout abundance above and below the dams have increased immediately following dam removal. We expect the same results in East Burke, which will strengthen the resident brook trout populations in the East Branch watershed. Removal also will provide access to 90 miles of headwater spawning and rearing habitat, secure genetic diversity and improve water quality by restoring sediment transport and reduce warmer temperature in the summer.

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 long term benefit is immediate and forever! Once the dam is removed, AOP and connectivity are accomplished and no maintenance is required since no structures (culverts, bridges etc.) are being put back into the river. Removal will permanently restore the river back to its natural state, restore sediment transport, and provide everlasting flood and ice jam storage within the Town of East Burke.

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))?

Yes, there are 4 examples:

1. According to the VT Dept. of Environmental Conservation, "The Tactical Basin Plan for the Passumpsic and Upper Connecticut River includes a Bridge and Culvert Assessment Summary and High Priority Actions which identifies the East Burke dam as a major factor impacting sediment transport contributing to incision downstream on the East Branch and so its removal is the first active restoration projects listed."

2. The Vermont Natural Resources Atlas and the BioFinder layer highlights this sub-watershed, both above the East Burke dam and below as having multiple tiers contributing to biological diversity. Just below the dam is Tier 1 - having the "greatest concentration of components contributing to biological diversity." Areas of Tier 2, 3 and 4 surround the dam location both upstream and downstream.

3. The New Hampshire Charitable Foundation's Upper Connecticut River report entitled "Priority Connectivity Projects" identifies the East Burke dam on page 20 in Appendix C: Dam and Culvert Linear Miles Tables and Culvert Inventory Project under Table 1 – Dams that Affect the Passage of Organisms that are not on the Connecticut River.

4. The East Burke dam is ranked #63 in the entire Connecticut River watershed by the North Atlantic Landscape Conservation Cooperative, which addresses regional threats to land, water, fish, wildlife, plant and cultural resources by prioritizing goals and effective conservation actions by partners toward those goals. This is part of the National Aquatic Connectivity Initiative, a program within USFWS at the national level.

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?

Vermont Fish & Wildlife used to stock Atlantic salmon fry in the East Branch, but that program no longer exists. The Vermont trout stocking report for 2016 shows no stockings in either the East Branch of the Passumpsic River or in the town of East Burke. According to reports, "the fish community of the East Branch is typical of north-temperate, cold water, moderate gradient conditions. It includes few species, mainly brook trout and slimy sculpin."

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

Engineering design plans are nearly complete and will be "construction ready" by the end of 2016. A Memorandum of Agreement (MOA) has been signed by project partners (USACE, VT SHPO, PVLТ et. al.) setting forth historic preservation mitigation measures. Permit applications have been submitted to both the State of Vermont and the U.S. Army Corps of Engineers; we anticipate receiving all permits by spring 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.?

Yes, public access is currently allowed and will continue to be popular after the dam is removed. Fishing, swimming and paddling are all popular recreational uses on the East Branch. Removal of the dam will improve and expand all of these opportunities. PVLТ owns a 0.71-acre parcel of land, which occupies an area on the west bank of the East Branch upstream and downstream of the dam and a small section on the east bank downstream. PVLТ is a local non-profit conservation group whose members are dedicated to preserving the ecological health and beauty of the Passumpsic River, as well as improving public access. The mission of the PVLТ is to conduct conservation activities, with a focus on the recreational, educational, ecological, and historic assets.

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?

Yes, the East Branch is a popular fishing stream for brook trout throughout all of its length. Some reaches of the river are attractive for their remoteness and some for their accessibility. Fishing regulations for the river follow the Vermont general rules for trout streams. Many river reaches are especially conducive to fly casting. Measuring the increase in recreational fishing opportunities will be difficult, but Vermont Fish & Wildlife fishing license sales in the region could be used to compare angler interest in this fishery. The local Trout Unlimited chapter also will help us measure interest.

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

According to Jud Kratzer, Fisheries Biologist, VT Fish and Wildlife – “Of special significance with the East Burke dam is the fact that Dish Mill Brook, a cold stream, enters the river just upstream of the dam. Removing this dam will enable brook trout to access this brook and others upstream for temperature refuge and spawning. I am not aware of any impassable falls on the East Branch between its mouth and the Brighton town line, so this removal would restore connectivity for a long way.”

“This dam removal should benefit other fish species by restoring natural geomorphology, reducing water temperature in the summer, and restoring upstream passage. Just this year [2016], Vermont Fish and Wildlife decided to stop stocking trout in the East Branch Passumpsic River and to rely on wild brook trout to provide fishing opportunities for anglers on this river. The removal of this dam will help our new fisheries management strategy for this river to succeed.”

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

This dam removal project has been moving slowly forward for several years, including public meetings related to engineering and permit applications. CRWC also has been meeting with local businesses and town organizations regarding removal proceedings. In addition, CRWC has engaged the nearby private high school St. Johnsbury Academy on this project. Student briefings by CRWC staff already have been done and will continue in 2017. So far, two students have chosen to do their Senior Capstone Project on the benefits of dam removals as a result of our educational outreach to the school.

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

Dams and the altered flow regimes associated with their presence directly impact aquatic species, ecological processes and water temperature. Climate change, which is expected to increase the quantity and severity of erratic flows as well as increase water temperatures, further threatens high quality cold water streams according to numerous studies by NOAA, US EPA and others.

Native aquatic species, such as brook trout and sculpin, require water temperatures below 20 degrees C in order to thrive. Young fish suffer mortality above 20 degrees C and adults perish at temperatures above 25 degrees C. Access to cold headwaters is key for

spawning and thermal refugia. Removing the East Burke dam will help restore cold water habitats and allow native brook trout to survive and thrive despite climate change.

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.

According to a 2015 USGS study, "rivers quickly erode sediment accumulated in former reservoirs and redistribute it downstream, commonly returning the river to conditions similar to those prior to impoundment." In addition, "fish and other biological aspects of river ecosystems also respond quickly to dam removal. When given the chance... migratory fish will move upstream and utilize newly opened habitat."

The East Branch of the Passumpsic River is a popular playground for paddlers. According to the Passumpsic River Canoe and Recreation Guide, "Many paddlers start their run down the East Branch of the Passumpsic just below the village of East Burke. Do not launch near the old concrete dam unless you are an expert boater..." Earlier this year CRWC reached out to American Whitewater and the Vermont Paddlers Club to engage them as a partner in this dam removal project.

A \$25,000 investment from EBTJV is less than 10% of the \$325,000 removal total project cost. CRWC already has secured \$225,000 toward removal and has received positive initial indications from State of Vermont staff about our ERP grant application. In addition, all other aspects of this dam removal (engineering design plans, permitting, CRWC administrative costs etc. are already funded by other sources previously granted).

SUPPORTING DOCUMENTATION: Literature Cited & References to published interagency fishery or aquatic resource management plans.

Vermont Wildlife Action Plan –

[http://vtfishandwildlife.com/UserFiles/Servers/Server_73079/File/About%20Us/Budget%20and%20Planning/WAP_2015draft/A3.%20Fish%20SGCN%20Conservation%20Reports%20\(Draft%209-25-2015\).pdf](http://vtfishandwildlife.com/UserFiles/Servers/Server_73079/File/About%20Us/Budget%20and%20Planning/WAP_2015draft/A3.%20Fish%20SGCN%20Conservation%20Reports%20(Draft%209-25-2015).pdf)

Vermont Tactical Basin Plan –

http://dec.vermont.gov/sites/dec/files/wsm/mapp/docs/mapp_b15-16tbp.pdf

Upper Connecticut River, Priority Connectivity Projects report –

<https://www.nhcf.org/wp-content/uploads/2015/12/MEF-Priority-Areas-Connectivity-Projects.pdf>

Brook Trout Integrated Spatial Data and Tools -

http://ecosheds.org:8080/geoserver/www/Web_Map_Viewer.html

North Atlantic Landscape Conservation Cooperative -

<http://nalcc.databasin.org/maps/308dd4224496423ab2949db4d26f1b9f/active>

USGS Dam Removal Portal – <https://pubs.er.usgs.gov/publication/ofr20161132>

NOAA - <http://www.noaanews.noaa.gov/stories2015/noaa-analysis-journal-science-no-slowdown-inglobal-warming-in-recent-years.html>

US EPA - <https://www3.epa.gov/climatechange/>

Appendix

Definitions

Protection: Conservation actions that maintain, or prevent the decline of, aquatic habitat.

Enhancement: Conservation actions that heighten, intensify, or improve specific functions of aquatic habitat.

Restoration: Conservation actions that return natural/historic attributes or functions to aquatic habitat.

Subwatershed Classification Terms

Intact: Subwatersheds with wild brook trout present in $\geq 50\%$ of the habitat.

Reduced: Subwatersheds with wild brook trout present in $< 50\%$ of the habitat.

Extirpated: Subwatersheds that historically contained wild brook trout but currently they are not present.

EBTJV Habitat Objectives

1. Maintain the status, or no net less, of subwatersheds classified as Intact.
2. Strengthen brook trout populations in subwatersheds classified as Intact.
3. Establish self-sustaining brook trout populations in subwatersheds classified as Extirpated.
4. Improve Reduced subwatersheds to Intact classification.
5. Strengthen brook trout populations in subwatersheds classified as Reduced.
6. Maintain Reduced subwatersheds in existing condition.
7. Validate the predictive brook trout status model by assessing status in predicted subwatersheds.
8. Maintain the status, or no net loss, of Intact pond and lake watersheds, and assess the status of 100 unknown subwatersheds.

EBTJV Conservation Priorities

6. Increase recreational fishing opportunities for wild brook trout;
7. Protect the “best of the best” habitat that supports existing, healthy wild brook trout populations;
8. Improve and reconnect adjacent habitats that have a high likelihood of supporting stable wild brook trout populations;
9. Focus on critical wild brook trout spawning and early life history habitat in sub-watersheds classified as Intact;
10. Preserve genetic diversity of wild brook trout populations; and,
11. Conserve unique wild brook trout life history strategies (i.e. lacustrine populations, large river populations, and coastal populations).

EBTJV Common State-Level Objectives:

8. Improve protection of brook trout resources.
9. Maximize brook trout habitat and water quality protection through state and federal agencies.
10. Pursue direct land purchase or conservation easements to protect brook trout habitat.
11. Establish land conservation easements that require the use of Best Management Practices and include the development of stewardship plans.
12. Assist landowners in utilizing existing land conservation programs.
13. Minimize fish stocking impacts to wild brook trout populations.
14. Mitigate factors that degrade water quality.
15. Maintain or restore natural hydrologic regimes.
16. Prevent the spread of invasive species into brook trout habitat.
17. Expand and integrate state, federal, and private programs that support riparian conservation in watersheds that support brook trout populations.
18. Utilize state, federal and private programs that support watershed stewardship programs in systems containing brook trout.
19. Partner with organizations on projects that involve nongame species, migratory birds, and brook trout.

Service Priority Species

| | R5 | R4 |
|---|-----------|-----------|
| Acipenser brevirostrum, Shortnose Sturgeon | x | x |
| Acipenser fluvescens, Lake Sturgeon | x | x |
| Acipenser oxyrinchus, Atlantic Sturgeon | x | |
| Acipenser oxyrinchus, Atlantic Sturgeon - Carolina DPS | | x |
| Acipenser oxyrinchus, Atlantic Sturgeon - Chesapeake Bay DPS | x | |
| Acipenser oxyrinchus, Atlantic Sturgeon - Gulf of Maine DPS | x | |
| Acipenser oxyrinchus, Atlantic Sturgeon - New York Blight DPS | x | |
| Acipenser oxyrinchus, Atlantic Sturgeon - South Atlantic DPS | | x |
| Acipenser oxyrinchus desotoi, Gulf Sturgeon | | x |
| Alasmidonta heterodon, Dwarf Wedgemussel | x | |
| Alosa aestivalis, Blueback Herring | x | x |
| Alosa alabamae, Alabama Shad | | x |
| Alosa mediocris, Hickory Shad | x | x |
| Alosa pseudoharengus, Alewife | x | |
| Alosa sapidissima, American Shad | x | x |
| Ablema neislerii, Fat Threeridge | | x |
| Ambystoma bishopi, Reticulated Flatwoods Salamander | | x |
| Ambystoma singulatum, Flatwoods Salamander | | x |
| Anguilla rostrata, American Eel | x | x |
| Atractosteus spatula, Alligator Gar | | x |
| Cambarus hartii, Piedmont Blue Burrower | | x |
| Crassostrea virginica, Eastern Oyster | | x |
| Cryptobranchus alleganiensis bishopi, Ozark Hellbender | | x |
| Crystallaria asprella, Crystal Darter | | x |
| Crystallaria cincotta, Diamond Darter | x | |
| Cynoscion nebulosus, Spotted Seatrout | | x |
| Cyprinella callitaenia, Bluestripe Shiner | | x |
| Cyprogenia stegaria, Fanshell | x | |
| Elliptio chipolaensis, Chipola Slabshell | | x |
| Elliptio purpurella, Inflated Spike | | x |
| Elliptoideus sloatianus, Purple Bankclimber | | x |
| Epioblasma capsaeformis, Oyster Mussel | x | |
| Epioblasma torulosa rangiana, Northern Riffleshell | x | |
| Erimonax monachus, Spotfin Chub | | x |
| Erimystax cahni, Slender Chub | x | |
| Etheostoma boschungii, Slackwater Darter | | x |
| Etheostoma chienense, Relict Darter | | x |
| Etheostoma moorei, Yellowcheek Darter | | x |

| | | |
|--|---|---|
| Etheostoma okaloosae, Okaloosa Darter | | X |
| Etheostoma percnurum, Duskytail Darter | X | X |
| Etheostoma raneyi, Yazoo Darter | | X |
| Etheostoma sellare, Maryland Darter | X | |
| Etheostoma sp., Bluemask Darter | | X |
| Fundulus julisia, Barrens Topminnow | | X |
| Ictalurus punctatus, Channel Catfish | | X |
| Lampsilis subangulata, Shiny-rayed Pocketbook | | X |
| Lampsilis virescens, Alabama Lampmussel | | X |
| Lasmigona decorata, Carolina Heelsplitter | | X |
| Lepomis auritus, Redbreast Sunfish | | X |
| Lepomis macrochirus, Bluegill | | X |
| Lepomis microlophus, Redear Sunfish | | X |
| Limulus polyphemus, Horseshoe Crab | X | |
| Margaritifera hembeli, Louisiana Pearlshell | | X |
| Marstonia castor, Beaverspond Marstonia | | X |
| Medionidus penicillatus, Gulf Mocassinshell | | X |
| Medionidus simpsonianus, Ochlockonee Mocassinshell | | X |
| Micropterus cataractae, Shoal Bass | | X |
| Micropterus dolomieu, Smallmouth Bass | | X |
| Micropterus henshalli, Alabama Spotted Bass | | X |
| Micropterus punctulatus, Spotted Bass | | X |
| Micropterus salmoides, Largemouth Bass | | X |
| Morone chrysops, White Bass | | X |
| Morone saxatilis, Striped Bass | X | X |
| Moxostoma robustum, Robust Redhorse | | X |
| Moxostoma sp., Sicklefin Redhorse | | X |
| Noturus flavipinnis, Yellowfin Madtom | X | X |
| Oncorhynchus clarkii, Cutthroat Trout | | X |
| Oncorhynchus mykiss, Rainbow, Steelhead, Redband Trout | | X |
| Percina caprodes, Logperch | | X |
| Percina jenkinsi, Conasauga Logperch | | X |
| Percina rex, Roanoke Logperch | X | |
| Percina sp. cf. palmeris, Halloween Darter | | X |
| Percopsis omiscomaycus, Trout-Perch | | X |
| Phencobius mirabilis, Suckermouth Minnow | | X |
| Phoxinus cumberlandensis, Blackside Dace | X | |
| Pleurobema clava, Clubshell | X | |
| Pleurobema collina, James River Spiny mussel | X | |
| Pleurobema pyriforme, Oval Pigtoe | | X |
| Polyodon spathula, American Paddlefish | | X |

| | | |
|---|---|---|
| Potamilus capax, Fat Pocketbook | | x |
| Procambarus econfinae, Panama City Crayfish | | x |
| Pteronotropis euryzonus, Broadstripe Shiner | | x |
| Pylodictus olivaris, Flathead Catfish | | x |
| Quadrula sparsa, Appalachian Monkeyface Pearlmussel | x | |
| Rachycentron canadum, Cobia | | x |
| Salmo salar, Atlantic Salmon | x | |
| Salmo salar, Atlantic Salmon, GOM DPS | x | |
| Salmo trutta, Brown Trout | | x |
| Salvelinus fontinalis, Brook Trout | x | x |
| Salvelinus namaycush, Lake Trout | x | x |
| Sander canadensis, Sauger | | x |
| Sander vitreus, Walleye | | x |
| Scaphirhynchus albus, Pallid Sturgeon | | x |
| Scaphirhynchus platyrhynchus, Shovelnose Sturgeon | | x |
| Scaphirhynchus suttkusi, Alabama Sturgeon | | x |
| Sciaenops ocellatus, Red Drum | | x |
| Scomberomorus maculatus, Spanish Mackerel | | x |
| Villosa fabalis, Rayed Bean | x | |
| Villosa perpurpurea, Purple Bean | x | |

Fish & Wildlife Department
District Fisheries Office
3902 Roxbury Road
Roxbury, Vermont 05669
www.VtFishandWildlife.com

[phone] 802-485-7566

Agency Of Natural Resources

September 14, 2016

Ron Rhodes
North Country River Steward
Connecticut River Watershed Council

Dear Ron,

I am writing to provide support for your effort to obtain EBTJV funding for the removal of the dam on the East Branch of the Passumpsic in East Burke, VT. Regional Fisheries Biologist, Jud Kratzer has confirmed that the East Branch of the Passumpsic River in this area supports naturally reproducing populations of brook trout as well as the project benefits through enhancing aquatic habitat quality and connectivity.

Sincerely,

Rich Kirn
Fisheries Biologist, EBTJV Representative
Vermont Department of Fish and Wildlife
rich.kirn@state.vt.us



