

Work Plan and Accomplishment Report for the FY15 FWS NFHAP Funding Cycle Submitted by

"Eastern Brook Trout Joint Venture"

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Section I: Justification for Stable Operating Support (maximum 6 pages)

Eastern Brook Trout Joint Venture Projects and Activities

<u>Projects (FY2011-FY2013)</u>:

The Eastern Brook Trout Joint Venture (EBTJV) had twenty-three Brook Trout conservation projects supported by FWS-NFHAP funds between FY2011 and FY2013. Fifty-seven percent of these on-the-ground projects were implemented in subwatersheds (HUC 12) the EBTJV has designated as its highest priority focal areas (subwatershed priority score = 1.30-1.66), while nine percent (9%) occurred in high priority subwatersheds (score = 0.66-1.29). All of these projects addressed at least one of the five EBTJV Brook Trout conservation priorities as 91% enhanced recreational fishing for wild Brook Trout; 78% reconnected fragmented Brook Trout habitat; 48% improved Brook Trout spawning and/or early life history habitat; 26% preserved Brook Trout genetic diversity; and, 17% conserved unique Brook Trout life history strategies (i.e. lacustrine populations, large river populations, and coastal populations). From a national perspective, the twenty-three Brook Trout conservation projects addressed three of four National Fish Habitat Partnership national conservation strategies, with twenty of the projects restoring hydrologic conditions for fish, eighteen reconnected fragmented fish habitats, and eight restored water quality.

Collectively the twenty-three Brook Trout conservation projects enhanced 43 stream miles and 157 acres of lentic habitat; restored 30 acres of riparian habitat; and, removed 47 fish passage barriers that renewed access to 115 stream miles. The socioeconomic benefit resulting from these projects is estimated to be \$87 million dollars. Additionally, using the National Fish Habitat Partnership's economic calculator the twenty-three Brook Trout conservation projects supported 127 jobs, \$10 million dollars in total sales, \$6 million dollars in value added, and \$5 million dollars in income.

Activities (FY2011-FY2013)

The EBTJV initiated its second range-wide Brook Trout status assessment, conducted at the catchment scale, which was completed for the partnership's mid-Atlantic and southern states (GA, MD, NC, NJ, SC, TN, VA, and WV). Once fully completed for the northern states (CT, MA, ME, NH, NY, PA, RI, and VT), the assessment results will serve as a basis for refining the partnerships strategic priorities.

The EBTJV established strong collaborative working relationships with the Appalachian Land Conservation Cooperative (AppLCC), the North Atlantic Land Conservation Cooperative (NALCC), and the Chesapeake Bay Program in an effort to address mutual landscape level priority conservation needs. The collaborative work with the AppLCC was focused on development of a data management system for regional fish population and aquatic habitat data, decision support and web-based mapping tools, and processes for evaluating and reporting the

benefits of Brook Trout conservation projects. The EBTJV involvement with the NALCC was centered on the development of decision support tools that will assist with prioritizing Brook Trout conservation actions, while the partnership with the Chesapeake Bay Program was aimed at aligning and coordinating priority Brook Trout conservation actions between the two entities.

The EBTJV was successful in obtaining two Multi-State Conservation Grant Program grants, one in 2012 and another in 2013. These two grants supported a collaborative project undertaken with the Atlantic Coastal Fish Habitat Partnership (ACFHP) and the Southeast Aquatic Resources Partnership (SARP). The purpose of the 2012 project (Conserving Fish Habitat from Whitewater to Bluewater – Phase I) was to advance the coordinated implementation of strategic plans and habitat assessments of the three eastern Fish Habitat Partnerships and to promote a more cohesive implementation of the National Fish Habitat Partnership's National Conservation Strategies across twenty-seven states. The purpose of the 2013 project (Promoting Strategic Fish Habitat Conservation through Regionally-Coordinated Science and Collaboration, aka Conserving Fish Habitat from Whitewater to Bluewater – Phase II) was to support and enhance the communication and outreach, steering committee operation, and scientific assessments of the three eastern Fish Habitat Partnerships, and to provide for increased coordination within and between Partnerships, and with the National Fish Habitat Board and its Science and Data Committee. This grant allowed the three eastern Fish Habitat Partnerships to build upon tasks initiated or completed under their 2012 MSCGP project.

Anticipated Projects (FY2015-FY2017)

The EBTJV Business Plan (2014-2018) identifies four priorities the partnership will emphasize during the next three years. The EBTJV intends to collaborate with key partners to: 1) eliminate fish passage barriers in catchments where habitat fragmentation is the primary threat to wild Brook Trout; 2) implement best practices in catchments where poor management of riparian and in-stream habitat are top stressors for wild Brook Trout; 3) establish a long-term monitoring program that tracks wild Brook Trout population trends across its historic eastern range; and, 4) raise awareness on the plight of wild Brook Trout among targeted audiences.

The EBTJV strategy to eliminate fish passage barriers involves establishing a priority list of catchments where anthropogenic fish passage barriers are identified as the primary threat to sustaining wild Brook Trout and facilitating the elimination of the impassable barriers within these priority catchments. Dashboard benchmarks for measuring the progress made in implementing this strategy will be the number of fish passage barriers removed from priority-designated catchments and increases in Brook Trout patch size that result from these fish barrier removals.

The EBTJV strategy to improve riparian and in-stream habitat entails establishing a priority list of catchments where poor management of riparian and in-stream habitat are identified as the primary threats to conserving wild Brook Trout and facilitating the implementation of best

management practices within these priority catchments. Dashboard benchmarks for measuring the progress made in implementing this strategy will be the acreage of improved riparian habitat and stream miles of Brook Trout habitat enhanced or restored.

The EBTJV strategy to monitor wild Brook Trout populations is focused on establishing a program that further tests the effectiveness of using a series of patch-based metrics in conjunction with a framework that combines sampling a fixed set of sentinel patches annually along with a rotating sampling design for other patches. Dashboard benchmarks for measuring the progress made in implementing this strategy will be the number of States monitoring wild Brook Trout population trends and a summary of annual and multi-year trends of wild Brook Trout population abundance.

The EBTJV strategy to raises awareness about the plight of wild Brook Trout is aimed at establishing an integrated education and outreach campaign that targets anglers and outdoor/environmental reporters. This will include the development and dissemination of a "State of the Brook Trout" report.

Anticipated Activities (FY2015-FY2017)

The EBTJV expects its assessment of wild Brook Trout status at the catchment scale to be fully completed for the northern states by March 2015, at which time the results will be combined with assessment outputs from the mid-Atlantic and southern portion of the Brook Trout range. The range-wide results will then be processed by the EBTJV's Science and Data and Conservation Strategy Committees in a concerted effort to incorporate the findings into the EBTJV's Brook Trout Conservation Strategy (i.e. strategic plan).

The EBTJV will continue its joint efforts to work with the AppLCC to finalize a Project Tracking Database for Brook Trout conservation projects and an open-source mapping platform being designed to meet diverse needs for viewing, creating, and analyzing spatial data and maps. The EBTJV will also be assisting the NALCC with the completion of a Brook Trout model for the Chesapeake Bay watershed, which includes having additional decision support tools available for use by Brook Trout resource managers. The EBTJV will be collaborating with the Chesapeake Bay Program in a lead role to develop a management strategy aimed at achieving the Brook Trout outcome identified in the Chesapeake Bay Watershed Agreement signed in June 2014.

The EBTJV will continue its collaboration with the ACFHP and SARP by working to create an Eastern Aquatic Connectivity Assessment Program, which is an initiative aimed at achieving more efficient and successful fish barrier removal actions at a large regional scale (24 States).

Section II: Accomplishment Report (October 1, 2010 through September 30, 2013)

1. Meet the basic FHP requirements established by the National Fish Habitat Board for strategic planning and assessments

<u>Level 3</u>: FHP has filled data gaps and refined habitat assessments, including climate change considerations, for incorporation into the Science and Data Committee's national assessment.

Narrative: The EBTJV is in the final phase of completing its second status assessment of Brook Trout across the species' historic eastern U.S. range. This assessment was initiated in 2011 as a result of resource managers identifying a need to have the status of Brook Trout determined at a finer scale (catchment vs. subwatershed) as well as integrating the presence of exotic trout species (rainbow trout and brown trout). Eight northern States are reviewing the assessment results from a quality assurance/quality control perspective, which is expected to be completed by March 2015. This step has already been completed by the mid-Atlantic and southern States. The findings from this assessment will be used to refine the EBTJV's Brook Trout Conservation Strategy (Strategic Plan) and modify the partnerships conservation priorities.

The EBTJV has worked with the AppLCC to complete a climate change vulnerability assessment and a riparian restoration decision support tool. The climate change vulnerability assessment classifies Brook Trout habitat patches (populations) in terms of sensitivity to changes in water temperature per unit increase in air temperature and exposure to predicted frequency, magnitude, and duration occurring above threshold water temperatures. Variation in sensitivity and exposure of Brook Trout habitat patches are influenced by landscape metrics such as solar insolation, percent forested riparian corridor, patch area, maximum air temperature, and elevation. The riparian restoration decision support tool allows resource managers and decision-makers to rapidly identify and prioritize areas along the banks of rivers, streams, and lakes for restoration, making these ecosystems more resilient to disturbance and future changes in climate. It also helps the conservation community invest limited conservation dollars wisely. Both tools will be used to assist the EBTJV in identifying priority areas for the delivery of Brook Trout conservation actions.

The EBTJV is collaborating with the NALCC to complete a Brook Trout model for the Chesapeake Bay watershed that will identify and quantify the effect of dominant stressors on the landscape, prioritize spatially explicit conservation actions and, predict the conservation benefits within the context of climate change. While this modeling effort is on-going the timeline for completion of this project is 2015 and so once completed these tools will also be used to assist the EBTJV in identifying priority areas for conservation delivery.

The EBTJV has and will continue to share its assessment data, modeling outputs, and decision support tools with the NFHP National Science and Data Committee so that it can help inform the Committee's national assessment.

2. Execute projects that benefit FHP priority species or priority areas

What percentage of all projects initiated in the past three fiscal years were focused on FHP defined priority species or priority areas? (Choose one)

☐ At least 95% (Level 3) — All of the FY11-FY13 fish habitat conservation projects were focused on EBTJV defined priority species and/or priority areas.

Project Title	FHP Priority Species	FHP Priority Area	Brief project description (max. 250 characters)
Carloe Brook Fish Passage Restoration Project, Washington County, Maine (FY11) See Appendix Map 1	Brook Trout	subwatershed priority score = 1.66 (highest rank category)	This project replaced an undersized and failing stream crossing on Carloe Brook that limited passage for trout and other aquatic organisms. The crossing was replaced with a bottomless arch culvert designed to allow flows at all levels.
Brook Trout Restoration in the Chattahoochee National Forest, Georgia (FY11) Link to project map: http://bit.ly/1qIvvJW	Brook Trout	subwatershed priority scores = 0.10-0.25 (low- medium rank categories)	This project restored fragmented habitat and Brook Trout populations by removing and replacing a perched culvert on Bryant Creek. Additionally, nine miles of habitat was improved by placing 54 structures in nine streams.
Removal of Illegally Introduced and Missed Rainbow Trout from Lynn Camp Prong, Great Smoky Mountain National Park, Tennessee (FY11) See Appendix Map 2	Brook Trout	subwatershed priority score = 0.26 (medium rank category)	This project removed rainbow trout from the Lynn Camp Prong Watershed in Great Smoky Mountain National Park, which resulted in reconnecting Brook Trout populations in three tributary streams thus eliminating fragmentation in the watershed.
Restoring Habitat Connectivity in Machias and Saint Croix River Tributary Streams, Maine (FY11) See Appendix Map 3	Brook Trout	subwatershed priority scores = 1.36-1.66 (highest rank category)	This project restored habitat connectivity on three Brook Trout streams and eliminated ongoing risks of sedimentation during culvert failure, in watersheds identified as Brook Trout habitat priorities.

Marshall Brook Culvert Replacement, Hancock County, Maine (FY 11) See Appendix Map 4	Brook Trout	subwatershed priority score = 1.66 (highest rank category)	This project replaced two existing undersized, improperly set round culvert inhibiting fish passage at the road / stream crossing of Marshall Brook with the Seal Cove Road in Southwest Harbor, Maine with an open bottom culvert.
Thunder Brook Dam Removal, Cheshire, Massachusetts (FY11) Link to project map: http://bit.ly/14mH9ph	Brook Trout	subwatershed priority score = 1.21 (high rank category)	This project restored natural riverine functions and values to Thunder Brook, a tributary to the South Branch of the Hoosic River, by removing 2 fish passage barriers. The project also restored Brook Trout spawning habitat.
Upper Shavers Fork Aquatic Passage Project, West Virginia (FY11) See Appendix Map 5	Brook Trout	subwatershed priority score = 0.35 (medium rank category)	This project replaced two culverts serving as fish passage barriers and restored habitat linkages between two Brook Trout spawning tributaries and the mainstem of Upper Shaver's Fork.
Enhancing Connectivity in the Ash-Black Rock Subbasin of the WB Narraguagus River, Maine (FY11) See Appendix Map 6	Brook Trout	subwatershed priority score = 1.66 (highest rank category)	This project replaced two poorly functioning culverts with open bottom arch culverts to allow unhindered fish passage and enhanced stream connectivity.
Restoration of Native Charr in Big Wadleigh Pond Through Maine's NFHAP / EBTJV Conservation Strategy (FY12) See Appendix Map 7	Brook Trout	subwatershed priority score = 1.66 (highest rank category)	This project restored 157 acres of habitat for native Brook Trout and arctic charr in Big Wadleigh Pond by using chemical treatments to eliminate an illegal introduction of an invasive species (rainbow smelt).
Jam Black Brook Culvert Replacement, Searsmont, ME EBTJV NFHAP (FY12) See Appendix Map 8	Brook Trout	subwatershed priority score = 1.66 (highest rank category)	This project removed two improperly placed culverts and replaced them with a single, bottomless arch culvert to allow Brook Trout and Atlantic salmon to access over 10 miles of high quality habitat in Jam Black Brook.

Nash Stream Restoration b/t Emerson Brook & Long Mountain Brook, Coos Co, Stratford, NH (FY12) See Appendix Map 9	Brook Trout	subwatershed priority score = 1.66 (highest rank category)	This project restored approximately 5.5 miles of instream habitat on the mainstem of Nash Stream. Restoration activities included boulder placement, pool construction, large wood additions, floodplain reconnection, and planting riparian vegetation.
Culvert Replacement and Instream Habitat Restoration in the Nulhegan River VT NFHAP / EBTJV (FY12) See Appendix Map 10	Brook Trout	subwatershed priority score = 1.61(highest rank category)	This project replaced three fish passage barriers and installed approximately 3 miles of chop and drop instream restorations on the East Branch of the Nulhegan River and its tributaries.
Oats Run Fish Passage Project, Pocahontas County, WV EBTJV NFHAP (FY12) See Appendix Map 11	Brook Trout	subwatershed priority score = 0.35 (medium rank category)	This project restored habitat linkages between a Brook Trout spawning tributary in Oats Run and the mainstem of the Upper Shaver's Fork by removing fish passage barriers and using natural stream design techniques.
EBTJV Connectivity Improvement, Removal of Two Dams in the Wetmore Run Watershed, Potter County, PA (FY12) See Appendix Map 12	Brook Trout	subwatershed priority score = 1.12 (high rank category)	This project removed the only two dams in the Wetmore Run Watershed in Potter County, Pennsylvania opening 8.5 miles of habitat for Brook Trout. Removal of the dams will also eliminate thermal pollution and restore lotic ecosystem function.
Wolf Laurel Branch Culvert Replacement, NC (FY12) See Appendix Map 13	Brook Trout	subwatershed priority score = 0.23 (medium rank category)	This project replaced existing double culverts with a bottomless structure to provide passage for Brook Trout and native nongame species. Replacement of these culverts reconnected existing populations of southern strain Brook Trout.

Upper White River Habitat Restoration Project, White River, Rochester, Vermont (FY13) See Appendix Map 14	Brook Trout	subwatershed priority scores = 0.48 & 0.56 (medium rank category)	This project addressed flood and flood recovery related habitat modifications on 4 tributaries to the Upper White River in VT by utilizing active in-stream management and design; establishing riparian buffers; and removing barriers to fish passage.
Dirt & gravel road, streambank stabilization projects, Cross Fork Subwatershed, Cross Fork, PA (FY13) See Appendix Map 15	Brook Trout	subwatershed priority score = 1.35 (highest rank category)	This project focused on dirt and gravel road improvements, streambank stabilization, riparian buffer restoration, and Brook Trout habitat expansion.
Dam Removals to Reconnect Brook Trout Habitat on an Unnamed Tributary to Frankstown Branch, Hollidaysburg PA (FY13) Link to project map: http://bit.ly/1zW5Nu0	Brook Trout	subwatershed priority score = 0.20 (low rank category)	This project removed two fish passage barriers to provide 1.33 miles of unrestricted fish passage to high-quality coldwater spawning and rearing habitat.
Restoration of Natural Hydrology and Habitat Complexity in the Machias Rivers, Maine (FY13) See Appendix Map 16	Brook Trout	subwatershed priority scores = 1.58 & 1.63 (highest rank category)	This project removed 11 remnant log drive dams and added large woody material to restore fish passage, stream connectivity and natural stream processes that will passively restore cold water habitat in the tributaries of the Machias River.
Meduxnekeag Watershed, ME in-stream habitat restoration (FY13) See Appendix Map 17	Brook Trout	subwatershed priority score = 1.56 (highest rank category)	This project restored 1.9 miles of habitat on the Meduxnekeag River mainstem and 0.25 miles of habitat on its north branch for Brook Trout within trust land for the Houlton Band of Maliseet Indians.

Scott Brook Fish Passage Restoration. Grand Lake Stream, Maine (FY13) See Appendix Map 18	Brook Trout	subwatershed priority score = 1.36 (highest rank category)	This project replaced an undersized and failing stream crossing on Scott Brook with an open bottom arch culvert and restored access from Big Lake to approximately 3 miles of
			stream habitat for Brook Trout and other native species.
Restoring Connectivity in Sunday River & Martin Stream Watersheds, Riley Twp & Turner, ME (FY13) See Appendix Map 19	Brook Trout	subwatershed priority scores = 1.61 & 1.66 (highest rank category)	This project removed two fish passage barriers providing a total of six miles of connectivity in the Sunday River and Martin Stream subwatersheds.
St. Mary's Liming, St. Mary's River, Vesuvius, Virginia (FY 13) See Appendix Map 20	Brook Trout	subwatershed priority score = 0.46 (medium rank category)	The streams of the Saint Mary's Wilderness have been severely compromised by atmospheric acid deposition. This project added limestone sand to the headwater streams of St. Mary's River to enhance over 12 miles of stream for Brook Trout.

3. Execute projects that benefit FWS priority species / trust resources

What percentage of all projects initiated in the past three fiscal years addressed habitat issues for FWS priority or trust resources? (Choose one)

□ <u>75%</u> (Level 3) – All of the FY11-13 fish habitat conservation projects addressed habitat issues for FWS priority resources.

Project Title	Location (FWS Region)	Primary Species or Resources Benefitted	FWS Priority or Trust Resources (if neither, leave blank)
Carloe Brook Fish Passage Restoration Project, Washington County, Maine (FY11)	Region 5	Brook Trout	Brook Trout
Brook Trout Restoration in the Chattahoochee National Forest, Georgia (FY11)	Region 4	Brook Trout	Brook Trout

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Removal of Illegally	Region 4	Brook Trout	Brook Trout
Introduced and Missed			
Rainbow Trout from			
Lynn Camp Prong,			
Great Smoky Mountain			
National Park,			
Tennessee (FY11)			
Restoring Habitat	Region 5	Brook Trout	Brook Trout
Connectivity in Machias			
and Saint Croix River			
Tributary Streams,			
Maine (FY11)			
Marshall Brook Culvert	Region 5	Brook Trout	Brook Trout
Replacement, Hancock			
County, Maine (FY 11)			
Thunder Brook Dam	Region 5	Brook Trout	Brook Trout
Removal, Cheshire,	<i>G</i>		
Massachusetts (FY11)			
Upper Shavers Fork	Region 5	Brook Trout	Brook Trout
Aquatic Passage	region 5	Brook from	Brook from
Project, West Virginia			
(FY11)			
Enhancing Connectivity	Region 5	Brook Trout	Brook Trout
in the Ash-Black Rock	Region 5	Blook Hout	Blook Hout
Subbasin of the WB			
Narraguagus River,			
Maine (FY11)			
Restoration of Native	Region 5	Brook Trout	Brook Trout
	Region 3	Blook Hout	Blook Hout
Charr in Big Wadleigh Pond Through Maine's			
NFHAP / EBTJV			
Conservation Strategy			
(FY12)	Decien 5	Due els Tuessé	Due els Tuesst
Jam Black Brook	Region 5	Brook Trout	Brook Trout
Culvert Replacement,			
Searsmont, ME EBTJV			
NFHAP (FY12)			1
Nash Stream	Region 5	Brook Trout	Brook Trout
Restoration b/t Emerson			
Brook & Long			
Mountain Brook, Coos			
Co, Stratford, NH			
(FY12)			

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Culvert Replacement and Instream Habitat	Region 5	Brook Trout	Brook Trout
Restoration in the			
Nulhegan River VT			
NFHAP / EBTJV			
(FY12)			
Oats Run Fish Passage	Region 5	Brook Trout	Brook Trout
Project, Pocahontas	Region 3	Brook front	Brook frout
County, WV EBTJV			
NFHAP (FY12)			
EBTJV Connectivity	Region 5	Brook Trout	Brook Trout
Improvement, Removal	Region 5	Blook flout	Blook flout
of Two Dams in the			
Wetmore Run			
Watershed, Potter			
County, PA (FY12)	D : 4	D 1.T	D. I.T.
Wolf Laurel Branch	Region 4	Brook Trout	Brook Trout
Culvert Replacement,			
NC (FY12)		 	
Upper White River	Region 5	Brook Trout	Brook Trout
Habitat Restoration			
Project, White River,			
Rochester, Vermont			
(FY13)			
Dirt & gravel road,	Region 5	Brook Trout	Brook Trout
streambank stabilization			
projects, Cross Fork			
Subwatershed, Cross			
Fork, PA (FY13)			
Dam Removals to	Region 5	Brook Trout	Brook Trout
Reconnect Brook Trout			
Habitat on an Unnamed			
Tributary to Frankstown			
Branch, Hollidaysburg			
PA (FY13)			
Restoration of Natural	Region 5	Brook Trout	Brook Trout
Hydrology and Habitat			
Complexity in the			
Machias Rivers, Maine			
(FY13)			
Meduxnekeag	Region 5	Brook Trout	Brook Trout
Watershed, ME in-			
stream habitat			
restoration (FY13)			
Scott Brook Fish	Region 5	Brook Trout	Brook Trout
Passage Restoration.			
Grand Lake Stream,			
Maine (FY13)			
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Restoring Connectivity	Region 5	Brook Trout	Brook Trout
in Sunday River &			
Martin Stream			
Watersheds, Riley Twp			
& Turner, ME (FY13)			
St. Mary's Liming, St.	Region 5	Brook Trout	Brook Trout
Mary's River, Vesuvius,			
Virginia (FY 13)			

Project Completion and Success

What percentage of projects, funded in whole or in part, with FWS NFHAP funds in the past three fiscal years have been completed consistent with the project design? (Choose one) See attachment further guidance on responding to this criterion

□ <u>75%</u> (Level 2) - 79% (19 out of 23) of the FY11-FY13 fish habitat conservation projects have been completed consistent with their project design.

Project Name	Completion Date	Project Completed according to design (Yes/No and explain response, max. 250 characters)
Carloe Brook Fish Passage Restoration Project, Washington County, Maine (FY11)	During or before FY13	Yes; personal communication from FWS Project Officer Scott Craig.
Brook Trout Restoration in the Chattahoochee National Forest, Georgia (FY11)	During or before FY13	Yes; personal communication from Project Applicant Michael Joyce (USDA Forest Service). mjoyce@fs.fed.us
Removal of Illegally Introduced and Missed Rainbow Trout from Lynn Camp Prong, Great Smoky Mountain National Park, Tennessee (FY11)	During or before FY13	Yes; personal communication from Project Applicant Steve Moore (National Park Service). matt kulp@nps.gov
Restoring Habitat Connectivity in Machias and Saint Croix River Tributary Streams, Maine (FY11)	During or before FY13	Yes; personal communication from FWS Project Officer Scott Craig.
Marshall Brook Culvert Replacement, Hancock County, Maine (FY 11)	During or before FY13	Yes; personal communication from FWS Project Officer Scott Craig.
Thunder Brook Dam Removal, Cheshire, Massachusetts (FY11)	During or before FY13	Yes; personal communication from FWS Project Officer Martha Naley
Upper Shavers Fork Aquatic Passage Project, West Virginia (FY11)	During or before FY13	Yes; personal communication from FWS Region 5 NFHP Coordinator Callie McMunigal.

Enhancing Connectivity in the		
Ash-Black Rock Subbasin of	During or	Yes; personal communication from FWS Project Officer
the WB Narraguagus River,	before	Scott Craig.
Maine (FY11)	FY13	3330 3330
Restoration of Native Charr in	ъ .	
Big Wadleigh Pond Through	During or	Yes; personal communication from FWS Project Officer
Maine's NFHAP / EBTJV	before	Scott Craig.
Conservation Strategy (FY12)	FY14	
Jam Black Brook Culvert	During or	
Replacement, Searsmont, ME	before	Yes; personal communication from FWS Project Officer
EBTJV NFHAP (FY12)	FY14	Scott Craig.
Nash Stream Restoration b/t		
Emerson Brook & Long	During or	Yes; personal communication from FWS Project Officer
Mountain Brook, Coos Co,	before	Martha Naley
Stratford, NH (FY12)	FY14	Translation 1 (time)
Culvert Replacement and		
Instream Habitat Restoration	During	Yes; personal communication from FWS Project Officer
in the Nulhegan River VT	FY14	Jaime Masterson.
NFHAP / EBTJV (FY12)		
Oats Run Fish Passage Project,	During or	Vacanasas I amanas in the Comp PWG Date of AMPHD
Pocahontas County, WV	before	Yes; personal communication from FWS Region 5 NFHP
EBTJV NFHAP (FY12)	FY14	Coordinator Callie McMunigal.
EBTJV Connectivity		
Improvement, Removal of	During or	V
Two Dams in the Wetmore	before	Yes; personal communication from FWS Project Officer
Run Watershed, Potter	FY14	Thomas Kehler.
County, PA (FY12)		
Wolf Laurel Branch Culvert	During or	Vacuum and communication from Draiget Applicant Issue
Replacement, NC (FY12)	before	Yes; personal communication from Project Applicant Jason
	FY14	Farmer (USDA Forest Service) jfarmer@fs.fed.us
Upper White River Habitat		No; according to FWS Project Officer Jaime Masterson this
Restoration Project, White	27.4	project was ready to go but the State & FEMA required
River, Rochester, Vermont	NA	more surveys before they'd approve a local floodplain
(FY13)		permit, so the project will be done in FY15.
Dirt & gravel road,		
streambank stabilization	Dorday	V
projects, Cross Fork	During	Yes; personal communication with FWS Project Officer
Subwatershed, Cross Fork, PA	FY14	Thomas Kehler.
(FY13)		
Dam Removals to Reconnect		
Brook Trout Habitat on an		No; personal communications with Project Applicant Lisa
Unnamed Tributary to	NA	Hollingsworth-Segedy (American Rivers) <u>lhollingsworth-</u>
Frankstown Branch,		segedy@americanrivers.org
Hollidaysburg PA (FY13)		
Restoration of Natural		
Hydrology and Habitat	During	Yes; personal communication from FWS Project Officer
Complexity in the Machias	FY14	Scott Craig.
Rivers, Maine (FY13)		

Meduxnekeag Watershed, ME in-stream habitat restoration (FY13)	NA	No; personal communication from FWS Project Officer Scott Craig.
Scott Brook Fish Passage Restoration. Grand Lake Stream, Maine (FY13)	During FY14	Yes; final project report distributed by FWS Project Officer Scott Craig.
Restoring Connectivity in Sunday River & Martin Stream Watersheds, Riley Twp & Turner, ME (FY13)	NA	No; personal communication from FWS Project Officer Scott Craig.
St. Mary's Liming, St. Mary's River, Vesuvius, Virginia (FY 13)	During FY14	Yes; personal communications with FWS Region 5 NFHAP Coordinator Callie McMunigal (FWS Project Officer Keith McGilvray)

4. Monitoring and Evaluation

What percentage of all projects initiated in the past three fiscal years included a monitoring and evaluation plan? (Choose one)

□ <u>90%</u> (Level 3) – All of the FY11-FY13 fish habitat conservation projects included a monitoring/evaluation plan.

Project Name	Brief Monitoring & Evaluation Plan Description (max. 250 characters)
Carloe Brook Fish Passage Restoration Project, Washington County, Maine (FY11)	Brook Trout survey data will be collected pre and post restoration.
Brook Trout Restoration in the Chattahoochee National Forest, Georgia (FY11)	For in-stream habitat improvements, fish and habitat are being surveyed for 2 years and a subset of streams are being monitored for three and five years post treatment to observe and document changes in habitat and populations.
Removal of Illegally Introduced and Missed Rainbow Trout from Lynn Camp Prong, Great Smoky Mountain National Park, Tennessee (FY11)	The project area will be electrofished one to two weeks after treatment to determine the success of the treatment. If rainbow trout are located those stream sections will be retreated. A second evaluation will occur in June or July of 2012.
Restoring Habitat Connectivity in Machias and Saint Croix River Tributary Streams, Maine (FY11)	Electrofishing surveys will be conducted to determine Brook Trout size, condition and fish species relative abundance, and a follow-up comparison will be performed 3-5 years after the project has been completed.
Marshall Brook Culvert Replacement, Hancock County, Maine (FY 11) Thunder Brook Dam Removal, Cheshire, Massachusetts (FY11)	Annual standardized fish, habitat and geomorphic survey protocols above and below the project sites for two years. Determine angling trip information as for a minimum of two years after project completion to assess changes to the fishery. Project monitoring will proceed in accordance with the Gulf of Maine Barrier Removal Monitoring Guide, which addresses the parameters of channel formation, fish population, substrate condition, macro invertebrate community structure, and riparian plant community composition.
Upper Shavers Fork Aquatic Passage Project,	The long-term monitoring program will evaluate changes in temperature, water and habitat quality, benthic invertebrate diversity and productivity, and Brook Trout abundance, growth,

West Virginia (FY11)	movement, and survivorship.
Enhancing Connectivity in the Ash-Black Rock Subbasin of the WB Narraguagus River, Maine (FY11)	Fish passage capacity will be evaluated visually (effectiveness of culvert installation) and through electrofishing annually for three years following installation of bottomless arch culverts. Continuous read temperature and pH data loggers will also be installed at each site.
Restoration of Native Charr in Big Wadleigh Pond Through Maine's NFHAP / EBTJV Conservation Strategy (FY12)	Sampling will occur after the pond is restocked with native fish to monitor the recovery, including abundance and growth. Periodic sampling will continue over the next 10 years as needed.
Jam Black Brook Culvert Replacement, Searsmont, ME EBTJV NFHAP (FY12)	Pre- and post-construction electrofishing will occur both upstream and downstream of the project site and will include a minimum of two years of post-project data. Pre- and post-construction longitudinal profiles and channel cross sections will be completed.
Nash Stream Restoration b/t Emerson Brook & Long Mountain Brook, Coos Co, Stratford, NH (FY12)	Long-term monitoring of aquatic habitat and fish populations will include extensive fish surveys through at least 2015. Geomorphic assessments of Nash Stream will continue after the restoration activities are complete.
Culvert Replacement and Instream Habitat Restoration in the Nulhegan River VT NFHAP / EBTJV (FY12)	Temperatures will be monitored annually throughout the watershed and designated stream reaches will be surveyed yearly for trout population trends.
Oats Run Fish Passage Project, Pocahontas County, WV EBTJV NFHAP (FY12)	The long-term monitoring program will evaluate changes in temperature, water and habitat quality, benthic invertebrate diversity and productivity, and Brook Trout abundance, growth, movement, and survivorship.
EBTJV Connectivity Improvement, Removal of Two Dams in the Wetmore Run Watershed, Potter County, PA (FY12)	Surveys will be used to estimate Brook Trout abundance at treatment and control sites both preand post-removal for up to 5 years.
Wolf Laurel Branch Culvert Replacement, NC (FY12)	Surveys downstream and upstream of the new crossing will be done to track Brook Trout movement for at least two years post crossing installation.
Upper White River Habitat Restoration Project, White River, Rochester, Vermont (FY13)	The Green Mountain National Forest maintains a long-term fish monitoring station on the West Branch to evaluate physical and biological conditions on an annual basis. The FWS will conduct pre-Project monitoring above and below each culvert site as well as post-Project monitoring for at least 2 years following Project implementation.
Dirt & gravel road, streambank stabilization projects, Cross Fork Subwatershed, Cross Fork, PA (FY13)	To monitor the effectiveness in terms of fine sediment contribution to the adjacent stream, Brook Trout spawning habitat surveys will be conducted upstream and downstream of the selected project sites. Periodic inspection of the riparian buffer projects will result in clearing away any non-native vegetation that may inhibit the growth of the newly planted native trees and shrubs.
Dam Removals to Reconnect Brook Trout Habitat on an Unnamed Tributary to Frankstown Branch, Hollidaysburg	Visual monitoring of stream conditions will be conducted post-removal to verify project performance and success. A stream survey will be conducted at approximately one year and three years after construction completion to evaluate the effectiveness of the project on achieving the stated objective.

PA (FY13)	
Restoration of Natural Hydrology and Habitat Complexity in the Machias Rivers, Maine (FY13)	The Gulf of Maine Stream Barrier Removal Monitoring Protocols will be used for pre-and post-restoration monitoring. Longitudinal profiles and benchmarked transects will be surveyed prior to dam removal and again post-removal following a year of high water following through the site.
Meduxnekeag Watershed, ME instream habitat restoration (FY13)	Annual standardized fish, habitat and geomorphic survey protocols above, within and below the project sites will be implemented for two years. ACOE will use these same protocols to monitor the project sites for one additional year as part of a larger Meduxnekeag Watershed Management Planning Project.
Scott Brook Fish Passage Restoration. Grand Lake Stream, Maine (FY13)	Brook Trout survey data will be collected pre and post restoration.
Restoring Connectivity in Sunday River & Martin Stream Watersheds, Riley Twp & Turner, ME (FY13)	The Lively Brook project will be monitored during construction at sites for compliance with best management practices and permitting guidelines. Fishery responses to the project will be evaluated for a minimum of 2 years after construction (three years including the construction year).
St. Mary's Liming, St. Mary's River, Vesuvius, Virginia (FY 13)	Water chemistry will be monitored throughout the watershed following project implementation as part of a cooperative agreement between James Madison University and the Forest Service. Fish and macroinvertebrates will be monitored at two permanent sampling stations every year and six permanent sampling stations every other year.

5. Leveraging of FWS Project Funds

Over a three year period the FHP leveraged FWS NFHAP funding by a ratio of:

 \square At least 3:1 (Level 3) – \$4,808,870 in Non-FWS Contributions was leveraged with \$1,597,281 in FY11-FY13 NFHAP Funds, a 3.01:1 ratio.

Project Name	NFHAP Funds	Non-FWS Contributions	Total Project Costs	List of Funding Partners
Carloe Brook Fish Passage Restoration Project, Washington County, Maine (FY11)	\$25,714	\$16,000	\$43,714 ¹	Maine Inland F & W Maine Forest Service Wagner Forest Management FWS – GOMC ¹
Brook Trout Restoration in the Chattahoochee National Forest, Georgia (FY11)	\$71,429	\$291,500	\$362,929	USDA Forest Service Georgia DNR Trout Unlimited Northern GA Technical College Soque River Watershed Assoc.
Removal of Illegally Introduced and Missed Rainbow Trout from Lynn Camp Prong, Great Smoky Mountain National Park, Tennessee (FY11)	\$70,000	\$201,295	\$271,295	Little River Chapter TU Trout Unlimited (National) TN Council of TU NC Council of TU Friends of GSMNP Federation of Fly Fishers Trout and Salmon Foundation TN Wildlife Resources Agency National Park Service

Restoring Habitat Connectivity in Machias and Saint Croix River Tributary Streams, Maine (FY11)	\$47,143	\$100,400	\$156,543 ²	Downeast Lakes Land Trust NRCS Project SHARE FWS – Maine FRO ²
Marshall Brook Culvert Replacement, Hancock County, Maine (FY 11)	\$71,429	\$100,000	\$171,429	Maine Inland F & W Town of Southwest Harbor
Thunder Brook Dam Removal, Cheshire, Massachusetts (FY11)	\$71,429	\$180,646	\$252,075	Town of Cheshire MA Div. of Ecological Restor. MA Division of F & W Hoosic River Watershed Assoc. MA College of Liberal Arts MA Environmental Trust
Upper Shavers Fork Aquatic Passage Project, West Virginia (FY11)	\$71,429	\$495,860	\$567,289	NRCS USDA Forest Service WV University WV DNR WV Rail Authority DGV Railroad Trout Unlimited The Nature Conservancy Shavers Fork Coalition Snowshoe Private Landowner
Enhancing Connectivity in the Ash-Black Rock Subbasin of the WB Narraguagus River, Maine (FY11)	\$67,463	\$42,670	\$119,233 ³	The Nature Conservancy Maine Inland F & W Project SHARE FWS ³
Restoration of Native Charr in Big Wadleigh Pond Through Maine's NFHAP / EBTJV Conservation Strategy (FY12)	\$65,729	\$121,146	\$191,775 ⁴	Maine Inland F& W Clayton Lakes, LLC Natural Res. Educ. Center The Nature Conservancy Mt. Springs Trout Farm FWS ⁴
Jam Black Brook Culvert Replacement, Searsmont, ME EBTJV NFHAP (FY12)	\$57,858	\$188,700	\$251,558 ⁵	Georges River Chapter TU Maine TU Council Trout Unlimited Robbins Lumber NRCS Maine Inland F & W Maine Outdoor Heritage Fund Maine NRC Program Davis Family Foundation Georges River Land Trust FWS – MFO ⁵
Nash Stream Restoration b/t Emerson Brook & Long Mountain Brook, Coos Co, Stratford, NH (FY12)	\$71,429	\$336,280	\$407,709	NH Fish and Game NH Division of Forests &Lands NH Environmental Services Upper CT River M & E Fund

	T	Т	I	
Culvert Replacement and Instream Habitat Restoration in the Nulhegan River VT NFHAP / EBTJV (FY12)	\$71,429	\$406,200	\$501,229 ⁶	Upper CT River M & E Fund American Rivers NFWF Canaday Family Foundation VT Fish & Wildlife Plum Creek Company Lyndon State College Orvis VT TU Chapters Nulhegan Wildlife Refuge ⁶
Oats Run Fish Passage Project, Pocahontas County, WV EBTJV NFHAP (FY12)	\$71,429	\$230,000	\$301,429	USDA Forest Service NRCS WV University WV DNR WV Rail Authority D & G Valley Railroad Trout Unlimited The Nature Conservancy Shavers Fork Coalition Snowshoe Private Landowner
EBTJV Connectivity Improvement, Removal of Two Dams in the Wetmore Run Watershed, Potter County, PA (FY12)	\$71,429	\$386,000	\$458,429 ⁷	Galeton Borough PA Fish and Boat Commission PA DEP American Rivers FWS ⁷
Wolf Laurel Branch Culvert Replacement, NC (FY12)	\$71,429	\$247,000	\$318,429	USDA Forest Service HTAP Legacy Road Fund NC Wildlife Resources Comm. Trout Unlimited
Brook Trout Climate Change Vulnerability Assessment EBTJV NFHAP (FY12)	\$102,143	\$83,500	\$185,643	EBTJV
Upper White River Habitat Restoration Project, White River, Rochester, Vermont (FY13)	\$71,429	\$604,800	\$778,229 ⁸	FEMA USDA Forest Service VT Fish and Wildlife Town of Rochester White River Partnership Private Landowners FWS ⁸
Dirt & gravel road, streambank stabilization projects, Cross Fork Subwatershed, Cross Fork, PA (FY13)	\$64,286	\$266,562	\$330,848	NFWF Richard King Mellon Fund Chesapeake Bay Trust PA DEP
Dam Removals to Reconnect Brook Trout Habitat on an Unnamed Tributary to Frankstown Branch, Hollidaysburg PA (FY13)	\$35,714	\$80,500	\$116,214	American Rivers PA Fish and Boat Commission Hollidaysburg Borough

Restoration of Natural Hydrology and Habitat Complexity in the Machias Rivers, Maine (FY13)	\$47,143	\$23,441	\$87,084 ⁹	Maine DMR Downeast Lakes Land Trust Project SHARE Washington Academy University of Maine – Machias FWS ⁹
Meduxnekeag Watershed, ME in-stream habitat restoration (FY13)	\$19,284	\$124,300	\$143,584	HBMI NRCS ACOE Maine Inland F & W Monticello F & G Club SASWCD
Scott Brook Fish Passage Restoration. Grand Lake Stream, Maine (FY13)	\$28,571	\$19,500	\$48,571 ¹⁰	Maine Inland F & W Maine Forest Service Wagner Forest Management FWS ¹⁰
Restoring Connectivity in Sunday River & Martin Stream Watersheds, Riley Twp & Turner, ME (FY13)	\$51,943	\$36,362	\$88,305	AVSWCD ARWC OCSWCD AVCOG Maine Inland F & W Town of Turner Trout Unlimited
St. Mary's Liming, St. Mary's River, Vesuvius, Virginia (FY 13)	\$71,429	\$93,000	\$164,429	Dominion Power VA Department of G & IF James Madison University University of Virginia USDA Forest Service Trout Unlimited Skylarks Farm Blue Ridge Parkway
EBTJV Operational Support - Interactive Database & Mapper and Travel Support (FY13)	\$128,571	\$133,208	\$228,571	EBTJV
Total	\$1,597,281	\$4,808,870	\$6,546,543	

¹ Total Project Costs includes \$2,000 of in-kind contribution from the FWS.

Total of "other" FWS contributions = \$173,600

² Total Project Costs includes \$9,000 of in-kind contribution from the FWS.

³ Total Project Costs includes \$9,100 of in-kind contribution from the FWS.

⁴ Total Project Costs includes \$5,000 of in-kind contribution from the FWS.

⁵ Total Project Costs includes \$5,000 of in-kind contribution from the FWS.

⁶ Total Project Costs includes \$23,500 of in-kind contributions from the FWS.

⁷ Total Project Costs includes \$1,000 of in-kind contributions from the FWS.

⁸ Total Project Costs includes \$102,000 of in-kind and cash contributions from the FWS.

⁹ Total Project Costs includes \$16,500 of in-kind contributions from the FWS.

¹⁰ Total Project Costs includes \$500 of in-kind contributions from the FWS.

Section 3: Work Plan (1-Year Planning Horizon)

Proposed Projects for FY15 NFHAP Funding

FWS Region	State	FONs#	Project Title	Rank	NFHAP Funds	Partner Funds	Total Cost	NFHP Strategic Action	FWS Climate Objective
								Protect intact and healthy waters	
5	16 EBTJV Partner	53374-2015- 403	Eastern Brook Trout Coordination and	1	\$128,571	\$140,000	\$268,571	Restore hydrologic conditions for fish	Objectives 3.1, 3.2, 3.3,
	States	403	Operations FY15					Reconnect fragmented fish habitat	and 3.4
								Restore water quality	
5	5 NH 53340-2014-	53340-2014- 351	Nash Stream Restoration & Columbia Road Culverts, Odell, Coos County, NH, EBTJV FY2015	2	\$71,429	\$226,000	\$297,429	Restore hydrologic conditions for fish.	Objectives 3.1, 3.2, and 3.3
								Reconnect fragmented fish habitat.	
5	ME	53371-2014- 385	Patten Stream Fish Passage Construction, Surry, ME	3	\$71,429	\$184,548	\$255,977	Reconnect fragmented fish habitat.	Objectives 3.1, 3.2, and 3.3
5	WV	53374-2015- 398	Upper Shavers Fork Instream and Riparian Habitat Restoration, Randolph County, WV NFHAP EBTJV FY15	4	\$71,429	\$862,500	\$933,929	Restore hydrologic conditions for fish.	Objectives 3.1, 3.2, and 3.3
5	VT	53330-2015- 101	Tower Road Culvert Removal, Mettawee River, Bennington County, Dorset,	5	\$71,429	\$150,000	\$221,429	Restore hydrologic conditions for fish.	Objectives 3.1, 3.2, and
		Vermont NFHAP EBTJV					Reconnect fragmented fish habitat.	3.3	
4	NC	42330-2013- 171	Aquatic Organism Passage, Chastain Creek, Cullowhee, NC	6	\$65,000	\$268,500	\$333,500	Reconnect fragmented fish habitat.	Objectives 3.1, 3.2, and 3.3

5	VT	53330-2015- 100	West Mountain Wildlife Management Area, Paul Stream / Nulhegan Watershed, Essex County, VT – NFHAP/EBTJV	7	\$71,429	\$342,600	\$414,029	Restore hydrologic conditions for fish. Reconnect fragmented fish habitat.	Objectives 3.1, 3.2, and 3.3
5	ME	53371-2015- 388	Lewys Brook Culvert Replacement, East Machias River, Princeton, Maine	8	\$28,571	\$23,000	\$51,571	Reconnect fragmented fish habitat. Restore water quality.	Objectives 3.1, 3.2, and 3.3
5	NY	53330-2015- 102	Horse Brook Culvert Replacement Project, Beaver Kill, Delaware County, Roscoe, NY NFHAP / EBTJV	9	\$62,143	\$496,973	\$559,116	Restore hydrologic conditions for fish. Reconnect fragmented fish habitat.	Objectives 3.1, 3.2, and 3.3
5	NH	53340-2014- 339	North Branch Oliverian Brook Culvert Replacement, Haverhill, NH EBTJV FY2015	10	\$35,714	\$189,200	\$224,914	Restore hydrologic conditions for fish. Reconnect fragmented fish habitat.	Objectives 3.1, 3.2, and 3.3
5	MD	51320-2014- 065	Upper Savage River Stream Restoration Project, Garrett County, MD	11	\$71,429	\$224,435	\$295,864	Restore water quality.	Objectives 3.1, 3.2, and 3.3
5	VT	53330-2015- 099	Groton Dam 9 Removal, Wells River, Caledonia County, Groton, VT	12	\$35,714	\$180,000	\$215,714	Reconnect fragmented fish habitat. Restore water quality.	Objectives 3.1, 3.2, and 3.3
5	PA	52230-2014- 382	Replacement of Two Culverts in Cross Fork Watershed, Potter County, Cross Fork, PA EBTJV FY15	13	\$71,429	\$287,890	\$359,319	Reconnect fragmented fish habitat.	Objectives 3.1, 3.2, and 3.3
5	MA	53340-2014- 352	Middleton Road Culvert Replacement Project, Crooked Pond Brook, Boxford, Essex County, MA EBTJV FY 2015	14	\$35,714	\$202,500	\$238,214	Reconnect fragmented fish habitat.	Objectives 3.1, 3.2, and 3.3
5	PA	52230-2014- 383	Riparian & Instream Enhancement Upper Spring Creek, James City, Elk County, PA EBTJV FY15	15	\$32,204	\$26,843	\$59,047	Restore hydrologic conditions for fish.	Objectives 3.1, 3.2, and 3.3

5	NY	52270-2015- 155	Wylie Brook Brook Trout Connectivity Restoration, Chenango County, Town of Coventry, NY (EBTJV)	16	\$57,143	\$47,742	\$104,885	Reconnect fragmented fish habitat.	Objectives 3.1, 3.2, and 3.3
5	NY	52270-2015- 154	Brook Trout Restoration in Cattaraugus Creek Tributaries, Seneca Nation Territory, NY (EBTJV)	17	\$49,094	\$45,078	\$94,172	Protect intact and healthy waters.	Objectives 3.1 and 3.3
5	PA	52230-2014- 381	Conditional Assessment of Fish Passage Structures in Bear Run Watershed, PA EBTJV FY15	18	\$68,571	\$117,684	\$186,255	Reconnect fragmented fish habitat.	Objectives 3.1 and 3.3
5	NY	52270-2015- 153	Brook Trout Habitat Enhancement in Onondaga Creek, NY	19	\$55,326	\$176,880	\$232,206	Restore water quality.	Objectives 3.1, 3.2, and 3.3

6. Strategic Implementation

Percentage of projects that include measurable goals and objectives to address:

- FHP priority species or priority areas; and/or
- Habitat issues for FWS priority species or trust resources
- □ <u>95%</u> (Level 3) All of the proposed projects include a measurable goal/objective that addresses an EBTJV priority species/priority area and/or habitat issues for FWS priority species/trust resource.

Project Title	Identify FWS Priority Species or Trust Resources	Identify FHP Priority Species or Area
Eastern Brook Trout Coordination and Operations FY15	Brook Trout	Brook Trout
Nash Stream Restoration & Columbia Road Culverts, Odell, Coos County, NH, EBTJV FY2015	Brook Trout	Brook Trout
Patten Stream Fish Passage Construction, Surry, ME	Brook Trout	Brook Trout
Upper Shavers Fork Instream and Riparian Habitat Restoration, Randolph County, WV NFHAP EBTJV FY15	Brook Trout	Brook Trout
Tower Road Culvert Removal, Mettawee River, Bennington County, Dorset, Vermont NFHAP EBTJV	Brook Trout	Brook Trout
Aquatic Organism Passage, Chastain Creek, Cullowhee, NC	Brook Trout	Brook Trout

West Mountain Wildlife Management Area, Paul Stream / Nulhegan Watershed, Essex County, VT – NFHAP/EBTJV	Brook Trout	Brook Trout
Lewys Brook Culvert Replacement, East Machias River, Princeton, Maine	Brook Trout	Brook Trout
Horse Brook Culvert Replacement Project, Beaver Kill, Delaware County, Roscoe, NY NFHAP / EBTJV	Brook Trout	Brook Trout
North Branch Oliverian Brook Culvert Replacement, Haverhill, NH EBTJV FY2015	Brook Trout	Brook Trout
Upper Savage River Stream Restoration Project, Garrett County, MD	Brook Trout	Brook Trout
Groton Dam 9 Removal, Wells River, Caledonia County, Groton, VT	Brook Trout	Brook Trout
Replacement of Two Culverts in Cross Fork Watershed, Potter County, Cross Fork, PA EBTJV FY15	Brook Trout	Brook Trout
Middleton Road Culvert Replacement Project, Crooked Pond Brook, Boxford, Essex County, MA EBTJV FY 2015	Brook Trout	Brook Trout
Riparian & Instream Enhancement Upper Spring Creek, James City, Elk County, PA EBTJV FY15	Brook Trout	Brook Trout
Wylie Brook Brook Trout Connectivity Restoration, Chenango County, Town of Coventry, NY (EBTJV)	Brook Trout	Brook Trout
Brook Trout Restoration in Cattaraugus Creek Tributaries, Seneca Nation Territory, NY (EBTJV)	Brook Trout	Brook Trout
Conditional Assessment of Fish Passage Structures in Bear Run Watershed, PA EBTJV FY15	Brook Trout	Brook Trout
Brook Trout Habitat Enhancement in Onondaga Creek, NY	Brook Trout	Brook Trout

Conservation Actions and Project Outcomes

Percentage of proposed projects that specify conservation actions that will produce desired conservation outcomes and achieve project goals and objectives?

□ <u>100%</u> (Level 3) – All proposed projects specify conservation actions that will produce the conservation outcomes and achieve the project goals/objectives.

Brief Project Summary for each prioritized project

Eastern Brook Trout Coordination and Operations FY15 Project Rank: 1

Question 7 - Measurable Goals & Objectives (Max. 700 characters): The EBTJV will implement the following operational strategies under this project: (1) Refine the partnership's strategic objectives and key conservation priorities using the results of the recently completed status assessment of wild Brook Trout at the catchment scale; (2) Collaborate with neighboring Fish Habitat Partnerships and other conservation entities to ensure strategic conservation actions among this community are synchronized; (3) Support fish habitat conservation projects that address priority wild Brook Trout conservation needs; (4) Coordinate and compile information on wild Brook Trout conservation activities and improvements in wild Brook Trout habitat condition for use in measuring progress towards conserving wild Brook Trout; and, (5) Promote the accomplishments being achieved in conserving wild Brook Trout to targeted audiences.

Question 8 - Conservation Actions & Project Outcomes (Max. 700 characters): By implementing these five strategies the EBTJV will be able to refine the partnership's roadmap for wild Brook Trout conservation, using the results of its range-wide catchment level status assessment of Brook Trout to enhance key priorities that serve as a framework for collaborating and coordinating strategic conservation actions among our partners, thereby strengthening our capacity to facilitate integrated approaches to conserving healthy coldwater aquatic resources and fishable wild Brook Trout populations. The EBTJV will also be better positioned to provide our partners with vital decision-support tools that assist in directing resources to essential on-the-ground wild Brook Trout conservation projects as well as deliver a web-based data management system that is readily accessible. It will also allow the EBTJV to foster outreach efforts that build stewardship support for conserving wild Brook Trout.

Nash Stream Restoration & Columbia Road Culverts, Odell, Coos County, NH, EBTJV FY2015 Project Rank: 2

Question 7 - Measurable Goals & Objectives (Max. 700 characters): To restore approximately 6 miles of instream habitat and to reconnect another 2.7 miles by eliminating two fish passage barriers.

Question 8 - Conservation Actions & Project Outcomes (Max. 700 characters): This project will restore six miles of instream habitat by adding wood and other habitat elements, and will replace two culverts to remediate long-term habitat impairments caused by a catastrophic dam break, subsequent bulldozing and berming, active and passive removal of instream wood and geomorphically-incompatible stream crossings. These actions will ultimately result in the restoration of thriving wild Brook Trout populations in Nash Stream and its perennial tributaries.

Patten Stream Fish Passage Construction, Surry, ME Project Rank: 3

Question 7 - Measurable Goals & Objectives (Max. 700 characters): To restore fish passage to over 20 stream miles including a renewed link between an estuary and an upper watershed. This project will restore unhindered fish passage by installing a cost-effective, nature-like fish passage structure. The project is occurring within a subwatershed the EBTJV identifies as one of its highest priority and is listed as Critical Habitat for Atlantic Salmon. A nearly extirpated Alewife run on Patten Stream will also benefit from renewed access to 1,200 acres of spawning habitat.

Question 8 - Conservation Actions & Project Outcomes (Max. 700 characters): This project will restore unhindered passage for Brook Trout and other resident and long-distance migrants throughout over 20 stream miles in the Patten Stream drainage from headwaters to the estuary. Project effectiveness will be monitored by engaging participation of local schools, the general public, and volunteers.

Upper Shavers Fork Instream and Riparian Habitat Restoration, Randolph County, WV NFHAP EBTJV FY15 Project Rank: 4

Question 7 - Measurable Goals & Objectives (Max. 700 characters): To restore instream coldwater habitat in approximately one mile of the Shavers Fork mainstem, as well as restore riparian habitat on both sides of the Shavers Fork mainstem in the restoration reach.

Question 8 - Conservation Actions & Project Outcomes (Max. 700 characters): Using natural stream restoration principles, the restoration team will construct large wood structures including log clusters, cross-vanes, single log vanes, wood revetments, and mud sills on the Upper Shavers mainstem through and below the town of Spruce. Very intensive riparian plantings will be made using fast-growing, non-invasive tree species interplanted with slower-growing, longer-lived species tree species. These actions will cool elevated mainstem temperatures both within and downstream of the project area, enhance mainstem habitat, increase access to the mainstem forage base, and facilitate genetic mixing within the Brook Trout metapopulation.

Tower Road Culvert Removal, Mettawee River, Bennington County, Dorset, Vermont NFHAP EBTJV Project Rank: 5

Question 7 - Measurable Goals & Objectives (Max. 700 characters): To reconnect approximately 4.11 miles of thermal refugia habitat upstream of an impassable culvert with more biologically productive lower elevation river reaches for a potential total of over 16 miles of interconnected habitat along the Mettawee River and to increase flood resiliency thereby reducing negative impacts to the Brook Trout populations (extreme flow velocities, function loss/destruction, sediment/phosphorous inputs, etc.).

Question 8 - Conservation Actions & Project Outcomes (Max. 700 characters): Reconnecting existing fragmented native Brook Trout populations within their natural/historic habitat networks and functions along the Mettawee River will address issues associated with small population size ('patch size') and the inability of fish and other aquatic fauna to reach cold water spawning habitat and suitable juvenile and adult habitat.

Aquatic Organism Passage, Chastain Creek, Cullowhee, NC Project Rank: 6

<u>Question 7 - Measurable Goals & Objectives (Max. 700 characters)</u>: To eliminate three fish barriers with AOP structure; this will re-connect 5.5 miles of upstream high elevation habitat with over 1.3 miles of lower, more productive waters.

Question 8 - Conservation Actions & Project Outcomes (Max. 700 characters): This project removes impediments to fish movements, reduce sediment inputs, and prevents the installation of a fish barrier in the future. Ultimately, the project will allow native-strain trout to move freely between lower areas of the watershed and higher elevation streams, making the Chastain Creek's Southern Appalachian Brook Trout more resilient to climate change.

West Mountain Wildlife Management Area, Paul Stream / Nulhegan Watershed, Essex County, VT – NFHAP/EBTJ Project Rank: 7

<u>Question 7 - Measurable Goals & Objectives (Max. 700 characters)</u>: To restore connectivity to 3.6 miles of Brook Trout streams in the West Mountain WMA of Vermont.

Question 8 - Conservation Actions & Project Outcomes (Max. 700 characters): This project will eliminate habitat fragmentation and increases genetic diversity of unnaturally isolated Brook Trout populations by installing new properly sized crossings that will allow the natural transportation of wood, gravel and cobble through the system, which is currently being inhibited. Secondary benefits include reduced road erosion sediments caused from improperly designed and installed road crossings. This project expands the current restoration efforts in the Nulhegan River watershed to restore, reconnect, protect, and sustain native Brook Trout populations.

Lewys Brook Culvert Replacement, East Machias River, Princeton, Maine Project Rank: 8

Question 7 - Measurable Goals & Objectives (Max. 700 characters): To restore access to approximately 3 miles of stream habitat in the Pocomoonshine sub watershed. This project will replace an undersized and failing stream crossing on Lewys Brook, a wild Brook Trout and Atlantic Salmon water. Temperature monitoring on this stream has indicated very cold water providing excellent habitat. The current crossing is also a significant sediment source due to improper construction and overtopping. Restoring this crossing will serve to protect and maintain the resource in the extremely popular Grand Lake stream recreational area.

Lewys Brook has also been designated as critical habitat for Atlantic Salmon. The project is occurring within a subwatershed the EBTJV identifies as one of its highest priority.

Question 8 - Conservation Actions & Project Outcomes (Max. 700 characters): This project will improve access for wild eastern Brook Trout in the lower portions of Lewys brook to their historic headwater areas for spawning, nursery and cold-water refugia. Improving this crossing will increase the wild Brook Trout status in Lewys Brook especially during low flow when deteriorated condition of the culvert prevents access to very important cold water refugia. The improved crossing will also be a benefit during periods of high flows when the current culvert increases velocities making it impossible for trout to access even at burst speeds. Improving this crossing structure will help increase trout numbers because of the numbers of wild Brook Trout located in the lower portions of the brook. It will also help terrestrial organisms move along the riparian zone under the road.

Horse Brook Culvert Replacement Project, Beaver Kill, Delaware County, Roscoe, NY NFHAP / EBTJV Project Rank: 9

Question 7 - Measurable Goals & Objectives (Max. 700 characters): To eliminate a barrier that fragments 2.3 miles of historic Brook Trout spawning habitat and coldwater refugia. Reconnecting habitat that supports wild Brook Trout populations is a conservation priority for EBTJV, NYS DEC and TU.

Question 8 - Conservation Actions & Project Outcomes (Max. 700 characters): To protect and restore stream continuity and to maintain natural conditions that do not restrict fish movement, a single span bridge has been designed for the replacement structure to reconnect Horse Brook to the mainstem of the Beaver Kill. This restores Horse Brook's ecological integrity and allow for the unhindered flow of flood waters, sediment and organism through the Horse Brook road stream crossing.

North Branch Oliverian Brook Culvert Replacement, Haverhill, NH EBTJV FY2015 Project Rank: 10

<u>Question 7 - Measurable Goals & Objectives (Max. 700 characters)</u>: To reconnect access to the North Branch of Oliverian Brook, opening 10 miles of upstream and 20 miles in all of interconnected high quality stream segments for wild, native Brook Trout.

Question 8 - Conservation Actions & Project Outcomes (Max. 700 characters): By removing an under-sized perched culvert, this project will restore self-sustaining, natural riverine function to the brook, will improves in-stream habitat, fish migration, water quality, and riparian habitat.

Upper Savage River Stream Restoration Project, Garrett County, MD Project Rank: 11

Question 7 - Measurable Goals & Objectives (Max. 700 characters): To stabilize and enhance 1000 feet of eroding, aggrading stream utilizing in-stream structures, bankfull benches, and riparian plantings to restore natural channel dimensions, pattern and profile, along with in-stream habitat and riparian vegetation. This objective is in line with EBTJV Conservation Priorities, Common State-Level Objectives, the Maryland Wildlife Diversity Conservation Plan, and the Maryland Brook Trout Fisheries Management Plan.

Question 8 - Conservation Actions & Project Outcomes (Max. 700 characters): This project will reduce sediment loads and enhance Brook Trout habitat and connectivity by reestablishing stable stream pattern, profile, and dimensions. The channel will be narrowed and deepened. Banks will be graded to a stable angle with bankfull benches for flood relief, and then planted. A proper sequence of meanders, riffles and pools will be re-established to dissipate energy and divert high flows away from the banks.

Groton Dam 9 Removal, Wells River, Caledonia County, Groton, VT Project Rank: 12

Question 7 - Measurable Goals & Objectives (Max. 700 characters): To remove a dam and return the upper Wells River to a free-flowing state, thereby allowing Brook Trout to move freely, water quality to be improved, and hydrologic conditions to be enhanced. The project is occurring within a subwatershed the EBTJV identifies as one of its highest priority.

Question 8 - Conservation Actions & Project Outcomes (Max. 700 characters): This project will open roughly 22 miles of cold water refuge and spawning habit from the main stem up to the headwaters where forest cover is still prevalent, water quality is good and water temperatures are relatively cold.

Replacement of Two Culverts in Cross Fork Watershed, Potter County, Cross Fork, PA EBTJV FY15 Project Rank: 13

Question 7 - Measurable Goals & Objectives (Max. 700 characters): To reconnect 9.4 miles of Brook Trout habitat by replacing two barriers to fish passage thereby improving the status of existing Brook Trout populations from reduced to intact. This project will result in the restoration and expansion of Brook Trout habitat in the Cross Fork subwatershed which contains a "reduced" population of Brook Trout and is neighbor to the Hammersley Fork subwatershed that contains the only "intact" Brook Trout population in the Kettle Creek drainage and is one of only nine "intact" populations in the West Branch Susquehanna watershed. The project is occurring within a subwatershed the EBTJV identifies as one of its highest priority.

Question 8 - Conservation Actions & Project Outcomes (Max. 700 characters): Existing habitat will be expanded by reconnecting 9.4 miles of stream. The removal of each barrier

will facilitate the up and downstream movement of existing populations of Brook Trout thereby expanding spawning, foraging, rearing, and thermal refuge for these populations. Also, the decreased sediment loading will improve available habitat and population health. Project success will be determined by monitoring hydraulic, geomorphic, and biological parameters at each site.

Middleton Road Culvert Replacement Project, Crooked Pond Brook, Boxford, Essex County, MA EBTJV FY 2015

Project Rank: 14

Question 7 - Measurable Goals & Objectives (Max. 700 characters): To improve aquatic habitat and fish passage into the Crooked Pond complex that is situated in Town and State-protected wild lands. Improved access offers enhanced spawning opportunities for Brook Trout. The existing culvert is grossly undersized and deteriorating. During much of the year the culvert is elevated above stream level blocking fish passage and contributing to a significant downstream scour pool.

Question 8 - Conservation Actions & Project Outcomes (Max. 700 characters): The long term benefit of this project is to provide continuous access to the Crooked Pond complex over natural streambeds within a permanently preserved habitat. The expectation is that habitat improvement will provide a foundation for the restoration of a resident Brook Trout population at and near the project site. The benefits of this project should be realized over a three to five year period, allowing time for resident Brook Trout from connected stream systems to migrate to the Fish Brook/Crooked Pond Brook site.

Riparian & Instream Enhancement Upper Spring Creek, James City, Elk County, PA EBTJV FY15

Project Rank: 15

Question 7 - Measurable Goals & Objectives (Max. 700 characters): To restore approximately 550 feet of East Branch Spring Creek by adding Large Woody Material (LWM) from the surrounding forest to the stream and floodplain to improve habitat for aquatic species and control erosion and sedimentation. This project will accomplish goals and objectives established by the EBTJV, Pennsylvania's Wildlife Action Plan, and Pennsylvania Fish and Boat Commission's Brook Trout Conservation Strategies.

Question 8 - Conservation Actions & Project Outcomes (Max. 700 characters): This project will improve floodplain function and reduce bank erosion by increasing sinuosity and roughness in the stream with large wood structures that reduce the velocity of erosive forces and associated sedimentation. Improved water and habitat quality will benefit Brook Trout populations and the aquatic ecosystem.

Wylie Brook Brook Trout Connectivity Restoration, Chenango County, Town of Coventry, NY (EBTJV)

Project Rank: 16

<u>Question 7 - Measurable Goals & Objectives (Max. 700 characters)</u>: To replace three inadequate stream crossings and restore connectivity to over 5 miles of key habitat in Upper Susquehanna headwater streams.

Question 8 - Conservation Actions & Project Outcomes (Max. 700 characters): Hanging culverts will be replaced with appropriately sized embedded culverts to allow for Brook Trout passage. Culverts will be sized to at least allow for a bankfull channel. Instream work will involve installation of grade-control structures to maintain an appropriate channel profile. Removal of the three barriers to Brook Trout movement will opening up access to over 5 miles of habitat, which allows for the recolonization of small headwater tributaries.

Brook Trout Restoration in Cattaraugus Creek Tributaries, Seneca Nation Territory, NY (EBTJV)

Project Rank: 17

Question 7 - Measurable Goals & Objectives (Max. 700 characters): To preserve the "wild" genetic strain of the Brook Trout living on the Seneca Nations' Cattaraugus Territory and reintroduce the population into other suitable waterways within its territory.

Question 8 - Conservation Actions & Project Outcomes (Max. 700 characters): The initial stream identified for re-introduction of a unique strain of Brook Trout is a small, one-mile long spring fed stream, which is remotely located and has excellent canopy cover and ideal water temperatures. Protection of the stream will occur through installation of Gabion barrier structures preventing competition from invasive fish species. The stream will be monitored on a regular basis and population surveys will be conducted yearly to establish the success of the re-introduction.

Conditional Assessment of Fish Passage Structures in Bear Run Watershed, PA EBTJV FY15

Project Rank: 18

Question 7 - Measurable Goals & Objectives (Max. 700 characters): To identify places were inadequate passage exists for fish populations in the Bear Run watershed, prioritize those locations based on assessment information and electrofishing surveys, develop a framework for future AOP restoration projects and complete one top priority project.

Question 8 - Conservation Actions & Project Outcomes (Max. 700 characters): This project will evaluate the entire Bear Run watershed for suitability of aquatic organism passage at stream-road intersections. It will enhance habitat availability in the reaches known to have existing native Brook Trout populations and improve the ability of fish to recolonize the previously impaired sections of the watershed. This project will be the framework for future AOP projects in the watershed.

Brook Trout Habitat Enhancement in Onondaga Creek, NY Project Rank: 19

Question 7 - Measurable Goals & Objectives (Max. 700 characters): To restore up to 1 mile of in-stream habitat and 560 m² of riparian habitat to increase the amount of suitable habitat for existing populations of Brook Trout and enhance habitat in areas where Brook Trout have been extirpated in Onondaga Creek. This project will reduce fragmentation of Brook Trout populations and improve spawning areas. Improved riparian habitat will provide substrate, shelter, spawning grounds, and food. Increased canopy cover will help maintain stream temperatures and mitigate the impacts of climate change.

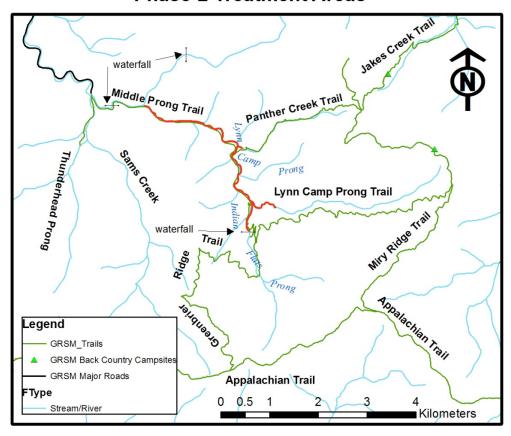
Question 8 - Conservation Actions & Project Outcomes (Max. 700 characters): In-stream and riparian habitat will be enhanced at a maximum of 6 locations in the Onondaga Creek watershed, and will include but not be limited to: tree and shrub plantings, cobble and substrate placement (e.g., woody debris), and modifications to the stream channel (i.e., meanders). Monitoring will be performed pre- and post-construction. The training and monitoring component of this study will promote long-term environmental stewardship and ensure successful Brook Trout establishment; which helps fulfill the Onondaga Nation's *Vision for a Clean Onondaga Lake*.

Appendix: FY11-FY13 Project Maps

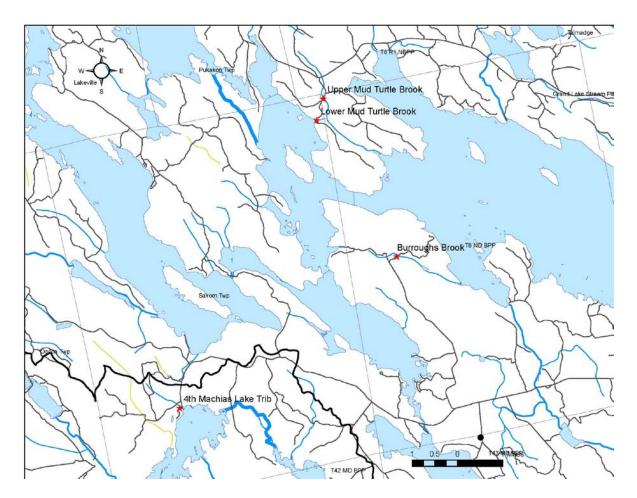


<u>Appendix Map 1</u>: Site location of Carloe Brook (ME) Project. Watershed #230467; EBTJV Priority Score = 1.63 (highest rank category); Site coordinates: Northing 4,991,479; Easting 497,036 (UTM Zone 19N).

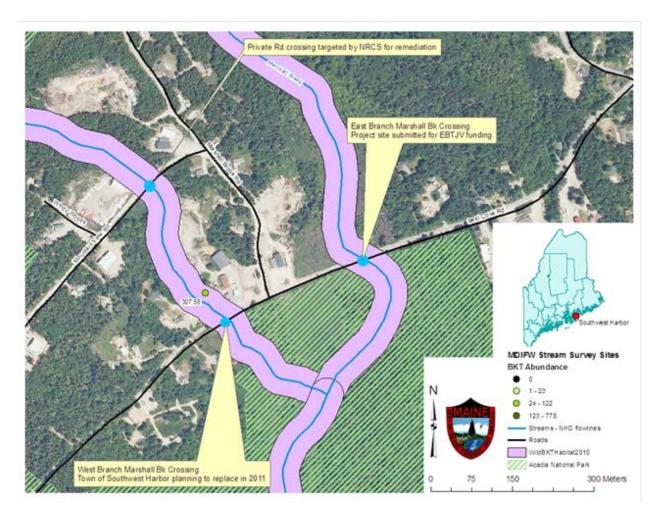
Lynn Camp Prong Restoration Project Phase-2 Treatment Areas



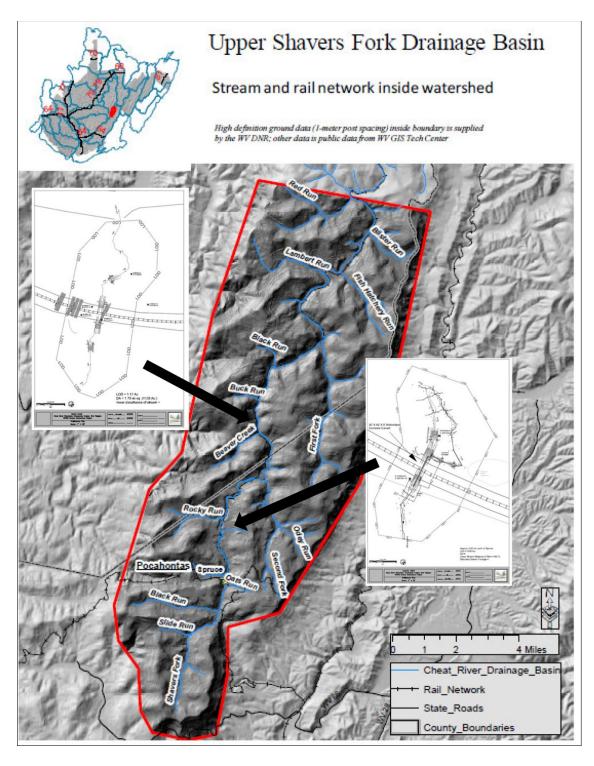
<u>Appendix Map 2</u>: Site location of Lynn Camp Prong (TN) Project. Watershed #470728; EBTJV Priority Score = 0.26 (medium rank category); Site coordinates: 258624.4 E, 3944646.2N (NAD 83).



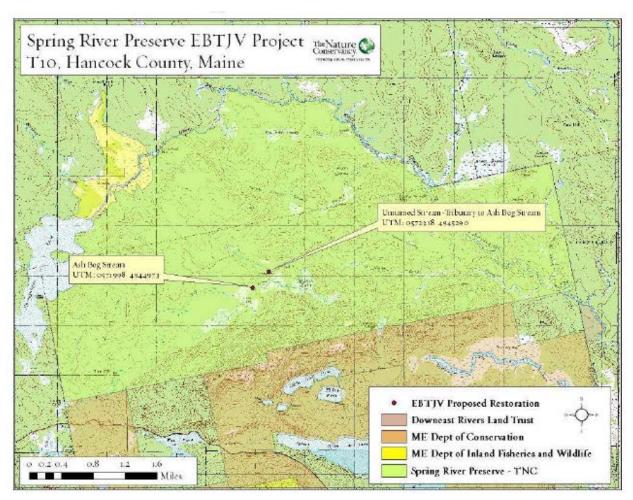
<u>Appendix Map 3</u>: Site locations of the Machias and Saint Croix River (ME) Projects. Watershed #230425 (West Grand Lake), EBTJV Priority Score = 1.36 (highest rank category), and Watershed #230477 (4th Machias Lake), EBTJV Priority Score = 1.63(highest rank category). Site coordinates: 45.261111 Lat., -67.930833 Long.; 45.268056 Lat., -67.927778 Long.; 45.217222 Lat., -67.895556 Long.; and, 45.169722 Lat., -67.994444 long.



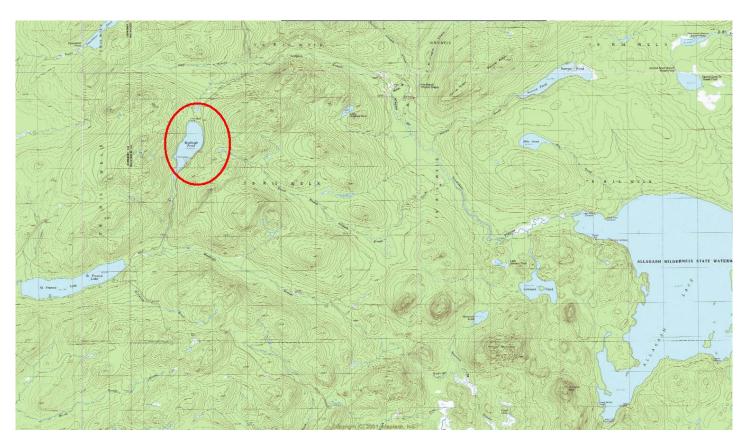
<u>Appendix Map 4</u>: Site location Marshall Brook (ME) Project. Watershed #230822; EBTJV priority score = 1.66 (highest rank category); Site coordinates: 552140.98 W and 4903741.78 N (NAD83, Zone 19N).



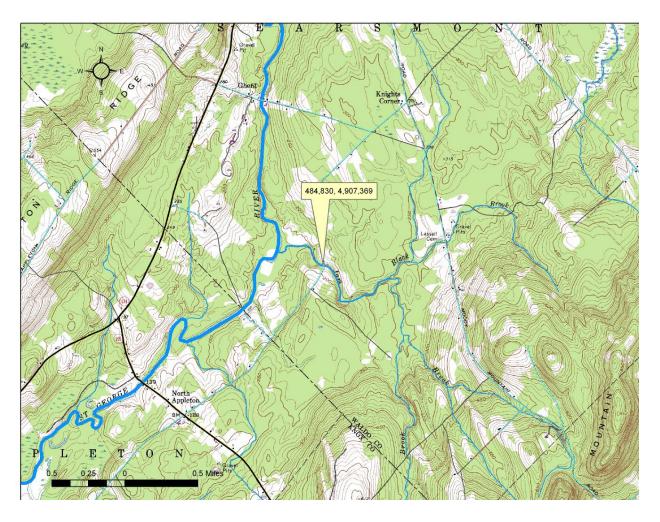
<u>Appendix Map 5</u>: Site location of the Upper Shavers Fork (WV) Project. Watershed #540417; EBTJV priority score = 0.35 (medium rank category); Site coordinates: 590,940E, 4,260,182N (Beaver Creek) and 591,102E, 4,258,085N (Lamothe Creek).



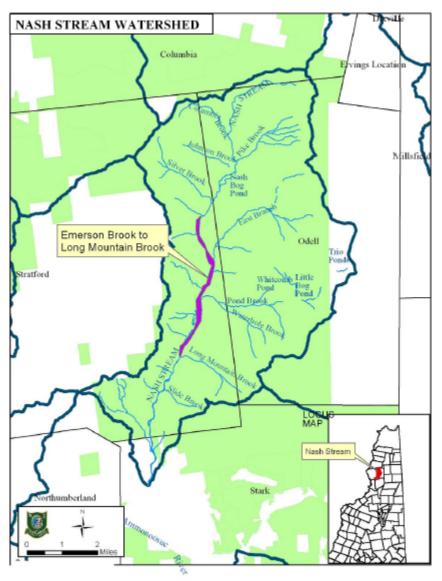
<u>Appendix Map 6</u>: Site locations of the WB Narraguagus River (ME) Project. Watershed #230635; EBTJV priority score = 1.66 (highest rank category); Site coordinates: 0571998, 4944973 (Ash Bog Stream culvert); 0572318, 4945290 (Unnamed Tributary culvert).



<u>Appendix Map 7</u>: Site location of the Big Wadleigh Pond (ME) Project. Watershed #230-234; EBTJV priority score = 1.66 (highest rank category); Site coordinates: 445411E, 5133816N.

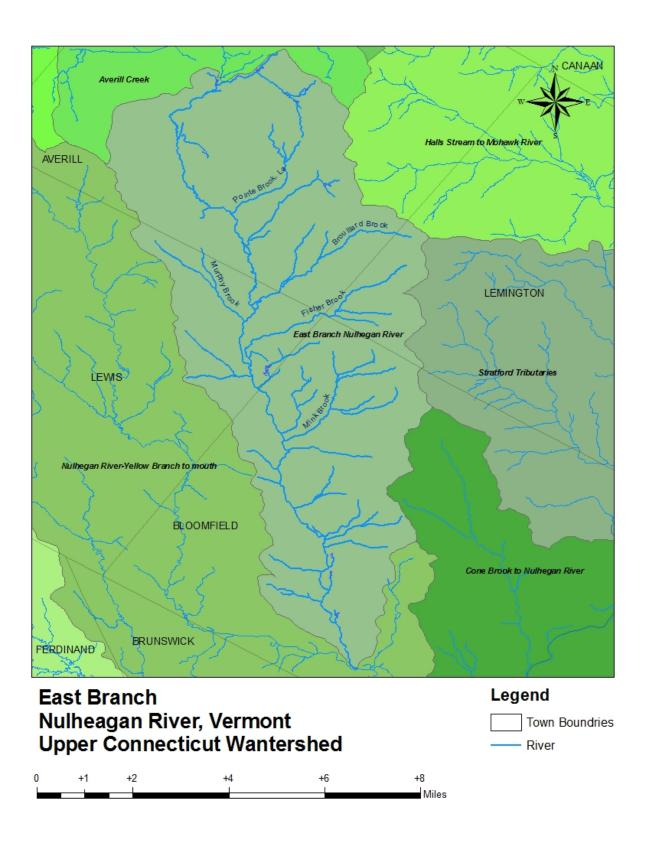


<u>Appendix Map 8</u>: Site location of the Jam Black Brook (ME) Project. Watershed #230859; EBTJV priority score = 1.66 (highest rank category); Site coordinates: (UTM Zone 19N) x = 484,830, y= 4,907,369.

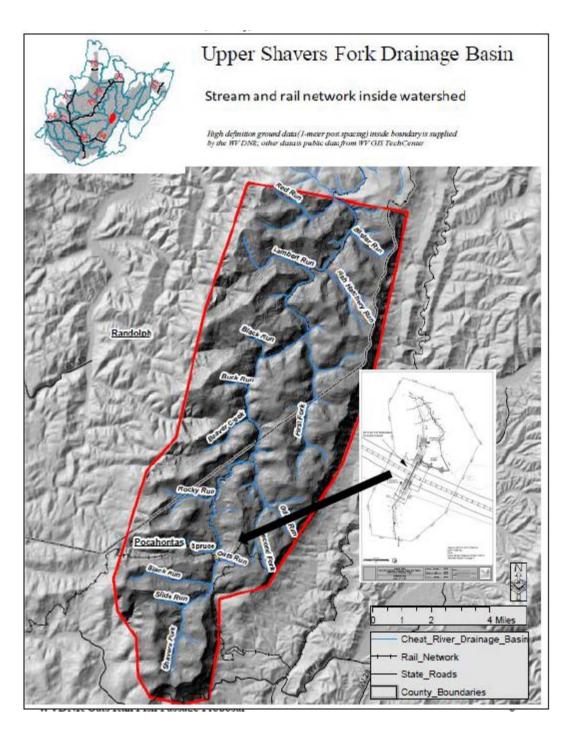


Proposed work area is in Nash Stream itself within purple shaded area. 1:100,000. Map created August 1, 2011 by John Magee, NHFGD

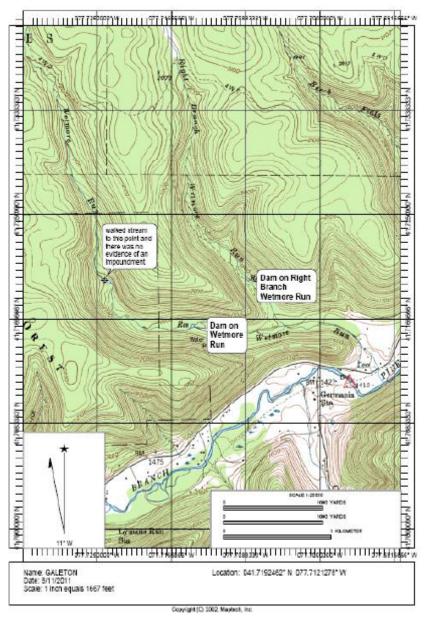
<u>Appendix Map 9</u>: Site location of the Nash Stream (NH) Project. Watershed #33096; EBTJV priority score = 1.66 (highest rank category); Site coordinates: Upstream coordinates: 19N 4956549, 306847 (at confluence with Emerson Brook); Midpoint coordinates: 19N 4953266, 306946; and Downstream coordinates: 19N 4950195, 305849 (at confluence with Long Mountain Brook).



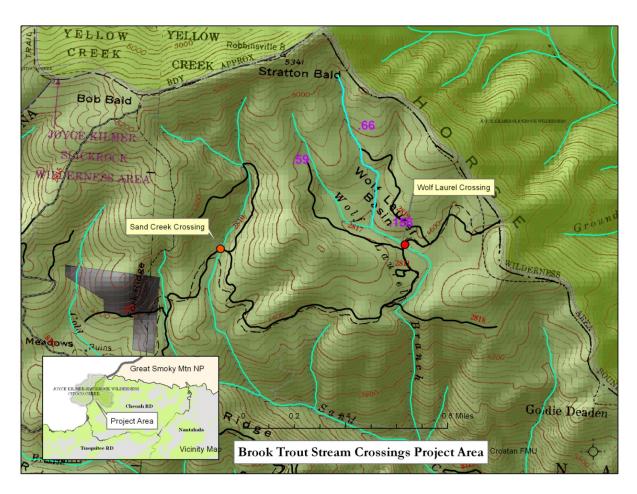
<u>Appendix Map 10</u>: Site location of the Nulhegan River (VT) Project. Watershed #500293; EBTJV priority score = 1.61 (highest rank category); Site coordinates: -71.670840, 44.877273 DD (watershed center).



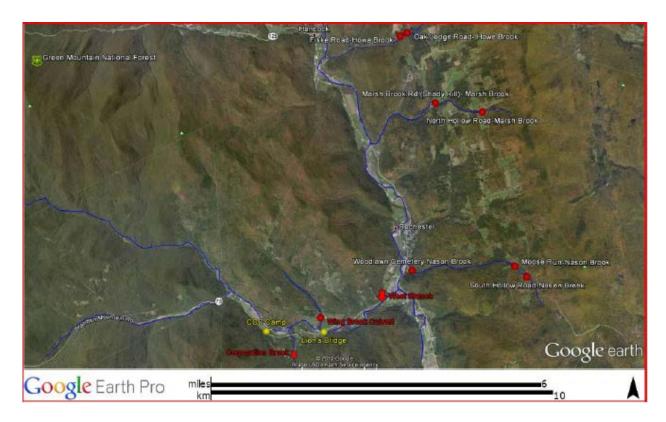
<u>Appendix Map 11</u>: Site location of the Oats Run (WV) Project. Watershed #540417; EBTJV priority score = 0.35 (medium rank category); Site coordinates: 591,021E, 4,256,815N.



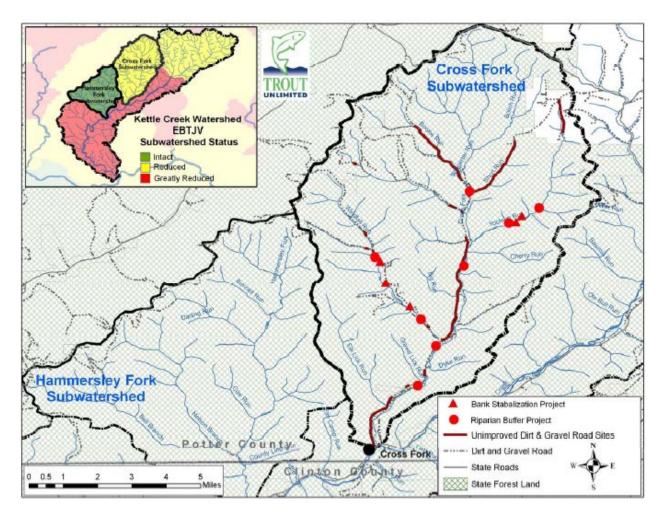
<u>Appendix Map 12</u>: Site location of the Wetmore Run (PA) Project. Watershed # 420189; EBTJV priority score = 1.12 (high rank category); Site coordinates: – 41.719728° N, 077.708009° W (Right Branch Dam); – 41.716233° N, 077.714196° W (Left Branch Dam).



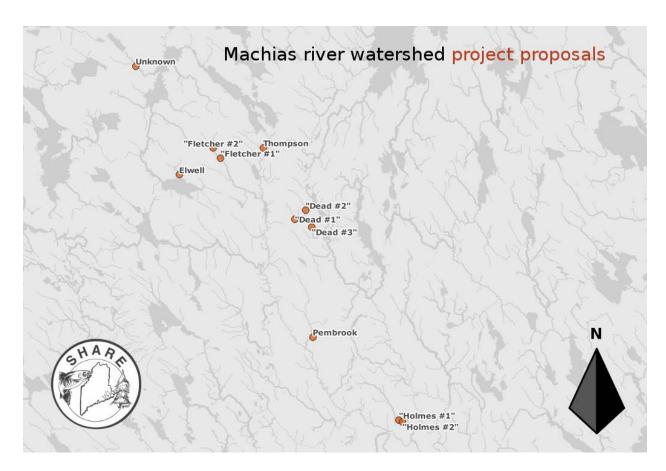
<u>Appendix Map 13</u>: Site location of the Wolf Laurel Branch (NC) Project. Watershed #3701428; EBTJV priority score = 0.23 (medium rank category); Site coordinates: Easting 228979, Northing 3917405.



Appendix Map 14: Site location of the Upper White River (VT) Project. Watershed #500247 (West Branch), EBTJV priority score = 0.56 (medium rank category) and Watershed #500245 (Upper White River from Hancock Branch to Tweed River), EBTJV priority score = 0.48 (medium rank category); Site coordinates: CCC Camp on West Branch: 43.8495, -72.8583; Wing Brook, Wing Farm Road culvert: 43.8531, -72.8389; Lion's Bridge on West Branch: 43.8495, -72.8381; Howe Brook, Fiske Road culvert: 43.9254, -72.8106; Howe Brook, Oak Lodge Road culvert: 43.9262, -72.8081; Marsh Brook, Shady Rill culvert: 43.9083, -72.7980; Marsh Brook, North Hollow Road culvert: 43.9059, -72.7817; Nason Brook, Woodlawn Cemetery culvert: 43.8652, -72.8063; Nason Brook, South Hollow Road culvert: 43.8636, -72.7662; Nason Brook, Moose Run culvert: 43.8665, -727702.



<u>Appendix Map 15</u>: Site location of the Cross Fork (PA) Project. Watershed #420247, EBTJV priority score = 1.35 (highest rank category); Site coordinates: -77° 49' 12.29", 41° 29' 6.36" (mouth of the watershed).

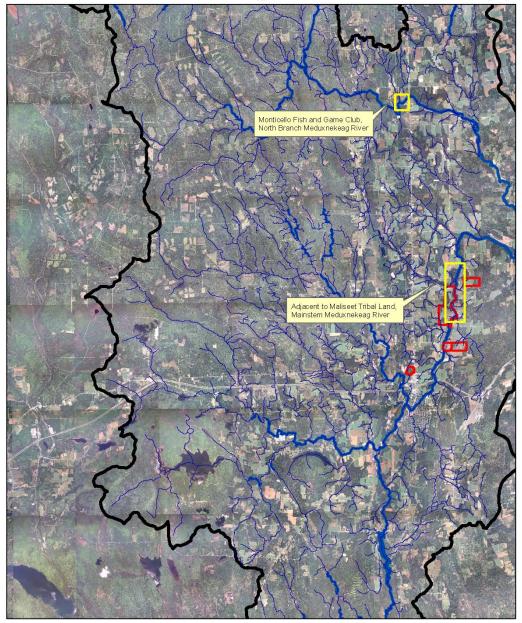


Appendix Map 16: Site location of the Machias River (ME) Project. Watershed #230545, EBTJV priority score = 1.58 (highest rank category), Watershed #230471, EBTJV priority score = 1.63 (highest rank category), Watershed #230477, EBTJV priority score = 1.63 (highest rank category), Watershed #230519, EBTJV priority score = 1.58 (highest rank category); Site coordinates:

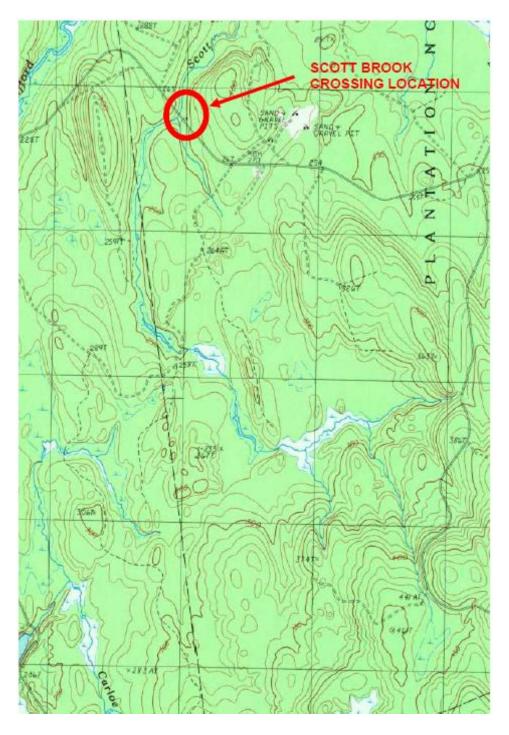
Location of dam_	UTM X	UTM Y
Pembrook	594279	4972332
Holmes 1	603208	4963706
Holmes 2	603569	4963543
Thompson	589145	4991940
Fletcher 1	584700	4990869
Fletcher 2	583946	4991901
Elwell	580415	4989152
Unknown	575911	5000417
Dead 1	592423	4984544
Dead 2	593505	4985460
Dead 3	594156	4983727

Proposed Instream Restoration Project Locations Meduxnekeag Watershed

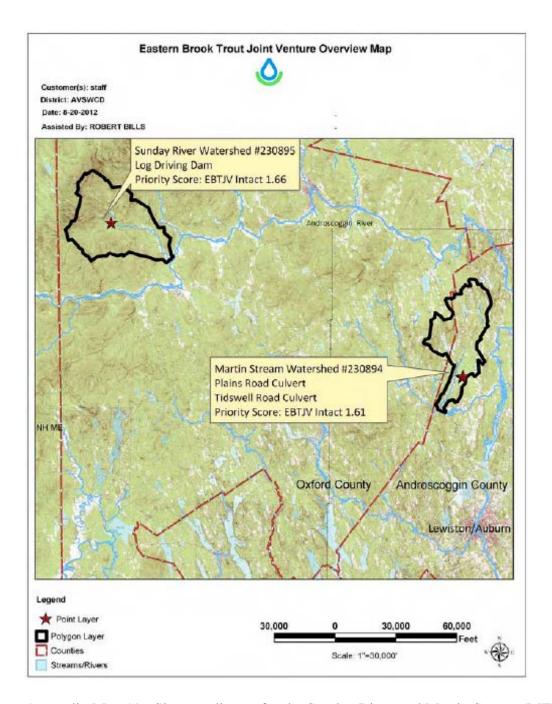




<u>Appendix Map 17</u>: Site location of the Meduxnekeag Watershed (ME) Project. Watershed #230172, EBTJV priority score = 1.56 (highest rank category; Site coordinates (in decimal degrees): (Site1) mainstem from Lowery Bridge @ 46.181106 N -67.804181 W to Covered Bridge @ 46.209678 N -67.800142 W and (Site 2) north branch at Monticello Fish and Game Club from 46.307786 N -67.846419 W to 46.309933 N -67.843678 W (NAD83, Zone 19N).



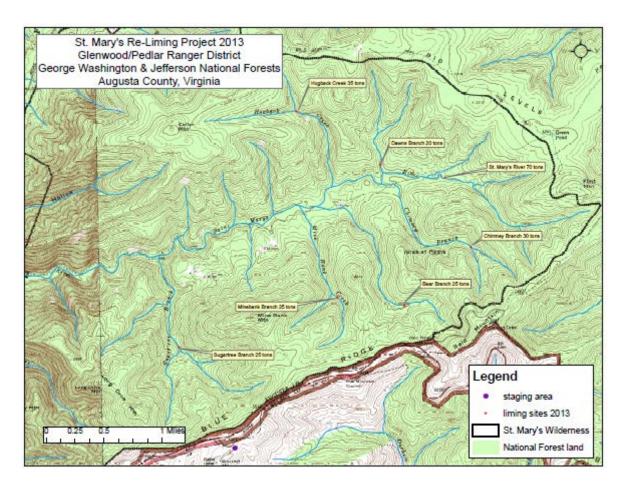
<u>Appendix Map 18</u>: Site location of the Scott Brook (ME) Project. Watershed #230427, EBTJV priority score = 1.36 (highest rank category; Site coordinates: Northing 604989, Easting 4995043.



Appendix Map 19: Site coordinates for the Sunday River and Martin Stream (ME) Project:

Lively Brook Site 1: 400143.37E, 4906052.36N Lively Brook Site 2: 399951.18E, 4905946.03N

Sunday River Site 0347260E, 4929331N



<u>Appendix Map 20</u>: Site location of the St. Mary's River (VA) Project. Watershed #510428, EBTJV priority score = 0.46 (medium rank category); Site coordinates:

Sugartree Branch Lat/Long N 37 55' 8.6", W 79 06' 50.1" Mine Bank Creek Lat/Long N 37 55' 16.1", W 79 05' 14.0" Bear Branch Lat/Long N 37 55' 11.4", W 79 04' 36.7" Chimney Branch Lat/Long N 37 55' 36", W 79 03' 56.3" Hogback Creek Lat/Long N 37 56' 40.0", W 79 05' 35.4" Dawn's Branch Lat/Long N 37 56' 14.2", W 79 04' 47.1" Upper St. Mary's River Lat/Long N 37 56' 8.9", W 79 04' 11.6"