EBTJV Work Plan and Accomplishments Report
FY18 FWS NFHAP Project Funding Cycle

Fish Habitat Partnership: **Eastern Brook Trout Joint Venture**

Contact Person Name: **Stephen Perry**

Phone Number: **603-455-9704**

Email Address: **ebtjv.coordinator@gmail.com**

Section 1. Justification for Stable Operational Support (maximum 6 pages)

Eastern Brook Trout Joint Venture Projects and Activities

Projects (FY2014-FY2016)

The Eastern Brook Trout Joint Venture (EBTJV) had ten Brook Trout projects supported by FWS-NFHAP funds between FY2014 and FY2016; seven of these projects entailed on-the ground fish habitat conservation actions while three supported the EBTJV's operational activities. Forty-three percent (43%) of the on-the ground fish habitat conservation 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 14% occurred in high priority subwatersheds (subwatershed priority score = 0.66-1.29). All of the on-the ground fish habitat conservation projects addressed at least one of the EBTJV's key conservation actions as 100% enhanced recreational fishing for wild Brook Trout; 86% reconnected fragmented Brook Trout habitat; 57% preserved Brook Trout genetic diversity; and, 14% improved Brook Trout spawning and/or early life history habitat. From a national perspective, the seven on-the-ground fish habitat conservation projects addressed three of four National Fish Habitat Partnership national conservation strategies, including restoring hydrologic conditions for fish, reconnecting fragmented fish habitats, and restoring water quality.

Collectively the seven on-the-ground fish habitat conservation projects enhance 14 stream miles of habitat; restore 2 acres of riparian habitat; and, remove 12 fish passage barriers that renew access to 14 stream miles. The socioeconomic benefit resulting from these projects is estimated to be $16 million dollars. Additionally, using the National Fish Habitat Partnership's economic calculator the seven on-the-ground fish habitat conservation projects supported 43 jobs, $3.4 million dollars in total sales, $2.0 million dollars in value added, and $1.5 million dollars in income.

Activities (FY2014-FY2016)

The EBTJV completed its second range-wide Brook Trout status assessment, conducted at the catchment scale, and drafted a summary of the assessment findings. The catchment assessment results are serving as a basis for refining the partnerships strategic Brook Trout conservation priorities, which are contained within a draft of the EBTJV's Eastern Brook Trout: Roadmap to Restoration, 2nd Edition.

The EBTJV continued its strong collaborative working relationship with the Chesapeake Bay Program (CBP) in an effort to address mutual landscape level priority conservation needs. The EBTJV involvement with the CBP was centered on assisting with the development of the Fish Habitat Decision Support Tool, which helps to prioritize Brook Trout conservation actions within the Chesapeake Bay watershed; producing a Brook Trout Management Strategy that's aimed at coordinating priority Brook Trout conservation actions between the two entities; and, participating on the CBP's Brook Trout Action Team, which is charged with generating and implementing annual work plans that ensure progress is being made towards accomplishing the Brook Trout Outcome in the watershed.

The EBTJV was successful in obtaining three Multi-State Conservation Grant Program grants during this time period, providing the partnership with ~$105,000 in operational support focused on collaborative projects undertaken with the Atlantic Coastal Fish Habitat Partnership (ACFHP) and the

Southeast Aquatic Resources Partnership (SARP). The purposes of these collaborative projects were to conserve fish habitat from whitewater to bluewater by advancing the coordinated implementation of strategic plans and habitat assessments of the three eastern Fish Habitat Partnerships; promoting a more cohesive implementation of the National Fish Habitat Partnership's National Conservation Strategies across twenty-seven states; increasing the coordination within and among Partnerships, and with the National Fish Habitat Board and its Science and Data Committee; and, to develop a process that identifies and prioritizes fish habitat conservation focus areas located in drainages that cross the geographic boundaries of ACFHP, SARP, and EBTJV.

Anticipated Projects (FY2018-FY2020)

During FY18-FY20 time frame, the EBTJV anticipates the focus of its Brook Trout conservation projects will be geared towards achieving the partnership's revised Range-wide Habitat Goals and Objectives (Table I). Additionally, projects that also deliver key conservation actions (Table II) as components of their outcomes will be given a higher priority as our partnership believes these actions represent the strategic elements needed to achieve success in conserving wild Brook Trout. The EBTJV gives prospective Brook Trout conservation projects that address its range-wide habitat goals and key conservation actions higher point scores in our partnership's Project Review Criteria.

Table I. EBTJV's Range-wide Habitat Goals and Objectives

GOAL	OBJECTIVE(S)
Maintain the current number of wild Brook Trout patches (i.e. no net loss)	-Retain at least 6,022 allopatric wild Brook Trout patches (1.1) across the EBTJV geographic range by the year 2022. -Retain at least 3,838 sympatric wild Brook Trout patches (1.2, 1.3, and 1.4) across the EBTJV geographic range by the year 2022.
Increase the average size (km^2) of wild Brook Trout patches, which is currently 19 km^2	Increase the size (km^2) of 30 wild Brook Trout patches by the year 2022.
Increase connectivity within and among wild Brook Trout catchments	Complete Aquatic Organism Passage projects within 45 wild Brook Trout catchments by 2022.
Restore wild Brook Trout to catchments where they were extirpated	Establish wild Brook Trout in 15 extirpated catchments by the year 2022.

Table II. EBTJV's Key Brook Trout Conservation Actions

- Increase recreational fishing opportunities for wild Brook Trout
- Conserve and increase habitats that support robust wild Brook Trout populations
- Restore and reconnect suitable habitats adjacent to robust wild Brook Trout populations
- Conserve genetic diversity of wild Brook Trout populations
- Conserve unique wild Brook Trout life history strategies (e.g., lacustrine populations, large river populations, and coastal populations)
- Minimize threats to wild Brook Trout populations (e.g., degraded water quality, invasive species, altered hydrologic regimes)

Anticipated Activities (FY2018-FY2020)

The EBTJV will be finalizing the revision of its strategic plan "Eastern Brook Trout: Roadmap to Restoration, 2nd Edition" and working towards achieving its goals and objectives. As part of the roll-out of the "Roadmap", we will be establishing a series of workshops and/or webinars that provide hands-on learning about our suite of Brook Trout Conservation Decision Support Tools. Our partnership will continue to liaise and collaborate with the National Fish Habitat Partnership, neighboring Fish Habitat Partnerships and other conservation entities to ensure that strategic conservation actions among this community are synchronized. This includes working with the Atlantic Coastal Fish Habitat Partnership and Southeast Aquatic Resources Partnership 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). The EBTJV will also continue to solicit and rank fish habitat conservation projects that address priority wild Brook Trout conservation needs; 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, promote the accomplishments being achieved in conserving wild Brook Trout to targeted audiences.

Section 2. Accomplishments (Federal FY 2014 through 2016)

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

   Over the previous three fiscal years, how has the FHP met basic requirements for scientific planning and habitat assessments?

- FHP has filled data gaps and refined habitat assessments, including climate change considerations, for incorporation into the Science and Data Committee's national assessment (Level 3)

Narrative: The EBTJV completed its second status assessment of Brook Trout across the species' historic eastern U.S. range during September 2015, which 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). The results from this assessment are contained within a summary of the assessment findings report and are being used to refine the EBTJV's range-wide habitat goals and objectives, modify the partnerships key Brook Trout conservation actions, and revise our Brook Trout conservation project scoring criteria. The EBTJV's Brook Trout assessment data, and related data layers, are readily available in the Brook Trout Integrated Spatial Data and Tools, a web-based platform.

The EBTJV assisted Trout Unlimited with its development of three conservation planning products that help identify strategic conservation opportunities and evaluate potential projects within the eastern range of Brook Trout (EBT). Each product gathers and interprets spatial data related to the pattern of EBT populations, their habitats, and threats to those habitats. The basic unit of analysis and summary for all three products is the EBTJV's EBT population patch data. Reports and tools associated with this TU project can be found at: http://www.tu.org/ebt-portfolio-rwa.

The EBTJV worked with the Appalachian Land Conservation Cooperative to complete a Riparian Restoration Decision Support Tool. This 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.

The EBTJV collaborated with the North Atlantic Land Conservation Cooperative to complete a Brook Trout model for the Chesapeake Bay watershed that identifies and quantifies the effect of dominant stressors on the landscape, prioritizes spatially explicit conservation actions, and predicts the conservation benefits within the context of climate change. The Fish Habitat Decision Support Tool, which supports this model's outputs, assists with identifying priority areas for conservation delivery in the Chesapeake Bay watershed.

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 its national assessment.

2. Execute projects that benefit FHP priority species or priority areas **(Federal FY 2014 through FY 2016)**

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

- ☐ At least 95% (Level 3)

Complete table adding rows for additional projects as needed. Attach map with project locations and priority areas identified.

Project Title	**FHP Priority Species**	**FHP Priority Area**	**Brief project description (max. 250 characters)**
Restoring Habitat Connectivity, Machias & Saint Croix River Tributary Streams, ME (FY14) See Appendix Map 1	Brook Trout	Subwatershed Priority Score = 1.36-1.66 (highest rank category)	This project restores habitat connectivity on four Brook Trout streams and eliminates ongoing risks of sedimentation during culvert failure. This project also enhances the value of previous conservation investments in the upper Machias and St. Croix River watersheds.
Mill Creek (Tygart River) Stream Restoration, WV (FY14) See Appendix Map 2	Brook Trout	Subwatershed Priority Score = 1.00 (high rank category)	This project utilizes principals of natural stream restoration and "chop and drop" LWD placement to address suspended tree storm damage on 6 miles of Mill Creek, WV and remediates fish passage barriers.
Nash Stream Restoration & Columbia Road Culverts, Odell, Coos County, NH (FY15) See Appendix Map 3	Brook Trout	Subwatershed Priority Score = 1.66 (highest rank category	This project restores 6 miles of instream habitat by adding wood and other habitat elements, and replaces 2 culverts to remediate long-term habitat impairments caused by a catastrophic dam break.
Upper Shavers Fork Instream and Riparian Habitat Restoration, Randolph County, WV (FY15) See Appendix Map 4	Brook Trout	Subwatershed Priority Score = 0.35 (low rank category)	This project enhances connectivity and genetic exchange within the Upper Shavers Fork and improves instream and riparian habitat.

Sparta Glen Brook Restoration, NJ (FY16) See Appendix Map 5	Brook Trout	Subwatershed Priority Score = 0.20 (low rank category)	This project restores critical instream habitat within Sparta Glen Brook, including natural pool regimes and spawning areas, restores toe of slope protection, further stabilizes upland fringe areas, as well as the riparian corridor along a 0.68 mile stretch.
Great Pond Tributary Culvert Replacement, Little Cards Brook, Franklin, ME (FY16) See Appendix Map 6	Brook Trout	Subwatershed Priority Score = 1.51 (highest rank category	This project replaces an undersized and failing stream crossing on Little Cards Brook. It also fixes a chronic sedimentation problem that is detrimental to the health of the stream and Great Pond.
Watershed Connectivity Project, Beebe River Watershed, Campton and Sandwich, NH (FY16) See Appendix Map 7	Brook Trout	Subwatershed Priority Score = 0.45 (low rank category)	This project replaces culverts for five stream crossings in the Beebe River Watershed, thereby providing wild Brook Trout over 5 miles of accessible thermal refuge and spawning locations.

3. Execute projects that benefit FWS priority species / trust resources **(Federal FY 2014 through FY 2016)**

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

   ☐ 75% (Level 3)

Project Title	FWS Region	State	Primary Species or Resources Benefitted	FWS Priority or Trust Resources (if neither, enter N/A)
Restoring Habitat Connectivity, Machias & Saint Croix River Tributary Streams, ME (FY14)	5	ME	Brook Trout	Brook Trout
Mill Creek (Tygart River) Stream Restoration, WV (FY14)	5	WV	Brook Trout	Brook Trout
Nash Stream Restoration & Columbia Road Culverts, Odell, Coos County, NH (FY15)	5	NH	Brook Trout	Brook Trout
Upper Shavers Fork Instream and Riparian Habitat Restoration, Randolph County, WV (FY15)	5	WV	Brook Trout	Brook Trout
Sparta Glen Brook Restoration, NJ (FY16)	5	NJ	Brook Trout	Brook Trout

Great Pond Tributary Culvert Replacement, Little Cards Brook, Franklin, ME (FY16)	5	ME	Brook Trout	Brook Trout
Watershed Connectivity Project, Beebe River Watershed, Campton and Sandwich, NH (FY16)	5	NH	Brook Trout	Brook Trout

4. Project Completion and Success

*What percentage of projects, **funded in whole or in part**, with* FWS NFHAP funds *have been completed consistent with the project design?*

- 80% of projects completed in the past five years (Level 3)

Complete table adding rows for additional projects as needed. **All projects that received federal fiscal year (FY) 2012 through 2016 FWS NHFAP project funds should be listed in the table below. Those projects they will be scored for completion between FY13 – FY17.** In the Completion Date column, enter the date that the project was completed (use the following date format, mm/yyyy). Month and year must be specified in order to determine project completion date. For projects that are on-going or incomplete, enter N/A.

Project Title	Accomplishments #	Completion Date	Project completed according to design? (Enter Yes or No. If no, provide an explanation. Max 250 characters)
Restoration of Native Charr in Big Wadleigh Pond, ME (FY12)	53371-A-188	09/2014	Yes
Jam Black Brook Culvert Replacement, ME (FY12)	53371-A-187	09/2014	Yes
Nash Stream Restoration b/t Emerson Brook & Long Mountain Brook, NH (FY12)	53340-A-055	09/2014	Yes
Culvert Replacement and Instream Habitat Restoration in the Nulhegan River VT (FY12)	53330-A-048	09/2014	Yes
Removal of Two Dams in the Wetmore Run Watershed, PA (FY12)	52230-A-043	09/2014	Yes
Wolf Laurel Branch Culvert Replacement, NC (FY12)	Couldn't get # from Region 4	09/2014	Yes
Brook Trout Catchment Scale and Climate Change Vulnerability Assessment (FY12)	53374-A-044	09/2015	Yes
Oats Run Fish Passage Project, Upper Shavers Fork, WV (FY12)	53374-A-043	08/2014	Yes
Upper White River Habitat Restoration Project, VT (FY13)	Multiple Numbers	09/2015	Yes
Dirt & gravel road, streambank stabilization projects, Cross Fork Subwatershed, PA (FY13)	52230-A-049	09/2014	Yes

Dam Removals to Reconnect Brook Trout Habitat on an Unnamed Tributary to Frankstown Branch, PA (FY13)	52230-A-050	09/2015	Yes
Restoration of Natural Hydrology and Habitat Complexity in the Machias Rivers, ME (FY13)	53371-A-194	09/2014	Yes
Meduxnekeag Watershed In-Stream Habitat Restoration, ME (FY13)	53371-A-193	12/2014	Yes
Restoring Connectivity in Sunday River & Martin Stream Watersheds, ME (FY13)	53371-A-189	06/2016	Yes
St. Mary's Liming, St. Mary's River, VA (FY13)	53374-A-049	09/2014	Yes
EBTJV Operational Support - Interactive Database & Mapper and Travel Support (FY13)	53374-A-050	09/2015	Yes
Restoring Habitat Connectivity, Machias & Saint Croix River Tributary Streams, ME (FY14)	53371-A-206	09/2015	Yes
Mill Creek (Tygart River) Stream Restoration, WV (FY14)	53374-A-053	12/2015	Yes
EBTJV Coordination and Operations (FY14)	53374-A-043	12/2015	Yes
Nash Stream Restoration & Columbia Road Culverts, Odell, Coos County, NH (FY15)	53340-A-084	08/2016	Yes
Upper Shavers Fork Instream and Riparian Habitat Restoration, Randolph County, WV (FY15)	53374-A-058	N/A	
EBTJV Coordination and Operations (FY15)	53374-A-059	06/2017	Yes
Sparta Glen Brook Restoration, NJ (FY16)	52232-A-027	10/2016	Yes
Great Pond Tributary Culvert Replacement, Little Cards Brook, Franklin, ME (FY16)	53371-A-213	08/2017	Yes
Watershed Connectivity Project, Beebe River Watershed, Campton and Sandwich, NH (FY16)	53340-A-089	N/A	
Eastern Brook Trout Coordination and Operations (FY16)	53374-A-065	08/2017	Yes

5. Monitoring and Evaluation **(Federal FY 2014 through 2016)**

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

☐ 90% (Level 3)

Complete table adding rows for additional projects as needed.

Project Name	**Brief Monitoring & Evaluation Plan Description (max. 250 characters)**
Restoring Habitat Connectivity, Machias & Saint Croix River Tributary Streams, ME (FY14)	Post project monitoring will entail electro-fishing 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.
Mill Creek (Tygart River) Stream Restoration, WV (FY14)	This project will benefit from pre-project surveys, assessments, and detailed mapping. Biannually, the 6 mile project area will be monitored with comparisons to pre-restoration conditions in terms of both geomorphic and fishery conditions.
Nash Stream Restoration & Columbia Road Culverts, Odell, Coos County, NH (FY15)	The project entails a long-term monitoring of aquatic habitat and fish populations. Fish surveys will be conducted to at least 2020 and geomorphic assessments will continue until after the restoration activities are completed.
Upper Shavers Fork Instream and Riparian Habitat Restoration, Randolph County, WV (FY15)	WVDNR has funded WVU to conduct a watershed scale monitoring effort through 2017. The project area is included in that monitoring effort.
Sparta Glen Brook Restoration, NJ (FY16)	The project area is being monitored annually for fish and macroinvertebrates for three years, riparian areas are being inspected monthly during the first growing season following project completion and then semi-annually for three years following project completion.
Great Pond Tributary Culvert Replacement, Little Cards Brook, Franklin, ME (FY16)	A pre-project assessment of the stream's fisheries was conducted to obtain a baseline and the fisheries will be monitored after the culvert is replaced with an open bottom structure.
Watershed Connectivity Project, Beebe River Watershed, Campton and Sandwich, NH (FY16)	Pre-surveys were conducted to obtain a baseline to compare post-survey results that will be conducted to show how the population (overall numbers and recruitment rates) and the average length and weight of individuals respond to the conservation actions.

6. Leveraging of FWS Project Funds **(Federal FY 2014 through 2016)**

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

☐ At least 3:1 (Level 3)

Project Name	FWS NFHAP Funds	Non-FWS Contributions	Other Contributions	Total Project Costs	Funding Partners
Restoring Habitat Connectivity, Machias & Saint Croix River Tributary Streams, ME (FY14)	$41,500	$153,700	$24,786	$219,986	Downeast Lakes Land Trust Lyme Timber (GLS Woodlands) Grand Lake Stream Plantation Natural Resources Conservation Service USFWS, Maine Fisheries Resource Office
Mill Creek (Tygart River) Stream Restoration, WV (FY14)	$50,000	$100,000	$21,429	$171,429	WV DNR WVU-NRAC WV State Parks WV Division of Forestry
EBTJV Coordination and Operations (FY14)	$90,000	$107,628	$38,571	$236,199	EBTJV Partners
Nash Stream Restoration & Columbia Road Culverts, Odell, Coos County, NH (FY15)	$50,000	$226,000	$21,429	$297,429	NHFGD NHDRED Upper CT River MEF Groveton Traiblazers
Upper Shavers Fork Instream and Riparian Habitat Restoration, Randolph County, WV (FY15)	$25,291	$862,500	$10,839	$898,630	WV DNR-WR WV DNR-SP WVU Snowshoe Corp. WV State Rail Auth. JF Allen Corp. Private Landowner
EBTJV Coordination and Operations (FY15)	$90,000	$140,000	$38,571	$268,571	EBTJV Partners
Sparta Glen Brook Restoration, NJ (FY16)	$10,000	$106,400	$9,286	$125,686	Hudson Farms Foundation Fred S. Burroughs North Jersey TU Corporate Wetlands Restoration Partnership NJ Highlands Coalition USFWS NJDFW

Great Pond Tributary Culvert Replacement, Little Cards Brook, Franklin, ME (FY16)	$24,000	$19,000	$15,286	$58,286	Hancock County Soil and Water Conservation District USFWS Great Pond Road Association Project SHARE Franklin Great Pond Association Private Landowners
Watershed Connectivity Project, Beebe River Watershed, Campton and Sandwich, NH (FY16)	$50,000	$300,000	$21,429	$371,429	Natural Resource Conservation Service NH Fish and Game Pemigewasset TU Chapter The Conservation Fund Trout Unlimited National USDA Forest Service
Total	$430,791	$2,015,228	$201,626	$2,647,645	

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

Proposed Projects for FY18 FWS NFHAP Project Funding

FWS Region	State	FONS #	Rank	NFHAP Funds	Partner Funds	Total Cost	NFHAP Conservation Strategy
4 &5	ME NH VT NY MA RI CT NJ PA MD WV VA SC NC TN GA	53374-2018-428	1	$90,000	$7,686	$97,686	Protect intact and healthy waters Restore hydrologic conditions for fish Reconnect fragmented fish habitat Restore water quality

5	MA	53310-2017-233	2	$49,450	$246,750	$296,200	Restore hydrologic conditions for fish Reconnect fragmented fish habitat Restore water quality
5	WV	53374-2017-421	3	$43,000	$227,250	$270,250	Restore hydrologic conditions for fish Reconnect fragmented fish habitat Restore water quality
5	PA	52230-2017-412	4	$9,059	$10,120	$19,179	Reconnect fragmented fish habitat Restore water quality
5	ME	53371-2017-419	5	$50,000	$160,189	$210,189	Restore hydrologic conditions for fish Reconnect fragmented fish habitat
5	ME	53371-2016-405	6	$19,500	$24,500	$44,000	Restore hydrologic conditions for fish Reconnect fragmented fish habitat Restore water quality
5	WV	53374-2017-420	7	$25,000	$101,450	$126,450	Restore hydrologic conditions for fish Restore water quality
5	VA	53374-2016-409	8	$50,000	$70,000	$120,000	Protect intact and healthy waters Restore water quality
5	CT	Unknown	9	$50,000	$454,400	$504,400	Reconnect fragmented fish habitat

4	NC	42330-2018-186	10	$50,000	$276,060	$326,060	Reconnect fragmented fish habitat Restore water quality
5	CT	Unknown	11	$50,000	$462,200	$512,200	Reconnect fragmented fish habitat
4	SC	42330-2018-184	12	$40,000	$40,000	$80,000	Reconnect fragmented fish habitat
4	SC	42330-2018-185	12	$40,000	$40,000	$80,000	Reconnect fragmented fish habitat

7. 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*

□ 95% (Level 3)

Project Title	**Identify FWS Priority Species / Trust Resources**	**Identify FHP Priority Species / Area**
Eastern Brook Trout Joint Venture Coordination and Operations FY18	Brook Trout	Brook Trout
Dam Removal on the Childs River, Falmouth, MA	Brook Trout	Brook Trout / Wild Brook Trout Patch # 5878733
Upper South Branch/Thorn Creek Brook Trout Patch Restoration and Monitoring, Cave, WV	Brook Trout	Brook Trout / Wild Brook Trout Patch # 8423048
Bowman Creek Eastern Brook Trout Habitat Restoration	Brook Trout	Brook Trout / Wild Brook Trout Patch #4201082
Darnit Brook Culvert Replacement, Nezinscot-Androscoggin River, Buckfield, ME	Brook Trout	Brook Trout / Wild Brook Trout Patch # 6711881
St. Croix River Tributary Culvert Replacement, West Musquash Tributary, Grand Lake Stream, ME	Brook Trout	Brook Trout / Wild Brook Trout Patch # 5195840
Laurel Fork of Holly River Watershed Habitat Enhancement, WV	Brook Trout	Brook Trout / Wild Brook Trout Patch # 19320735

Wilson Creek Watershed Improvement Project, Rugby, VA	Brook Trout	Brook Trout / Wild Brook Trout Patch #688925
Fuller Mountain Road Downstream Culvert Replacement, Pond Mountain Brook, Kent, CT	Brook Trout	Brook Trout / Wild Brook Trout Patch # 7712578
Cove Creek Watershed FS Road #809 Low Water Ford Replacement, NC	Brook Trout	Brook Trout / Wild Brook Trout Patch #2.2165262E7
Fuller Mountain Road Upstream Culvert Replacement, Pond Mountain Brook, Kent, CT	Brook Trout	Brook Trout / Wild Brook Trout Patch # 7712578
Fish Passage Project Crane Creek – Crossings 1, Sumter National Forest, SC	Brook Trout	Brook Trout / Wild Brook Trout Patch # 1.1750409E7
Fish Passage Project Crane Creek – Crossings 2, Sumter National Forest, SC	Brook Trout	Brook Trout / Wild Brook Trout Patch # 1.1750409E7

Eastern Brook Trout Joint Venture Coordination and Operations FY18
Project Rank: 1

Measurable Goals & Objectives

Goal: Healthy, fishable wild Brook Trout populations throughout their historical eastern U.S. range. Objective 1: Work towards achieving the EBTJV's range-wide habitat goals and objectives; Objective 2: Liaise and collaborate to ensure that strategic conservation actions are synchronized; Objective 3: Support priority Brook Trout conservation actions; Objective 4: Measure progress towards conserving wild Brook Trout; and, Objective 5: Promote accomplishments to targeted audiences.

Dam Removal on the Childs River, Falmouth, MA
Project Rank: 2

Measurable Goals & Objectives

Goal: Restore the Childs River for sea run Brook Trout and other fish species by improving access to upstream habitat through dam and impoundment removal and improvement of the surrounding habitat immediately upstream and downstream of the dam through channel restoration. Objective 1: Remove the earthen dam below Carriage Shop Road thus eliminating a barrier to fish passage by 2019; Objective 2: Complete channel restoration activities that provide new habitat for Brook Trout by 2019; Objective 3: Improve access to upstream habitat, including spawning habitat, by 2020; Objective 4: Increase the Brook Trout population by 2022; and, Objective 5: Reduce water temperatures to improve Brook Trout habitat by 2022.

Upper South Branch/Thorn Creek Brook Trout Patch Restoration and Monitoring, Cave, WV
Project Rank: 3

Measurable Goals & Objectives

Goal: To restore habitat in a degraded three mile section of Thorn Creek that supports strengthening the Thorn Creek Wild Brook Trout Patch and expands that patch into the South Branch of the Potomac.

Objective 1: Restore pool and run habitat within the creek; and, Objective 2: Restore riparian habitat that will stabilize banks planting native mixed hardwoods and conifers.

Bowman Creek Eastern Brook Trout Habitat Restoration
Project Rank: 4

Measurable Goals & Objectives

Goal: Restore, improve and increase connectivity of wild Brook Trout through riparian restoration and water quality pH improvements to the former Mountain Springs Lake bottom in the South Branch Bowman Creek headwater system. Objective 1: Restore riparian habitat with native seed mixtures, seedlings and green cuttings replicating the watershed vegetative composition; Objective 2: Add limestone sand soil amendments to improve stream alkalinity; and, Objective 3: Install Coir logs at critical points of erosion to reduce sedimentation.

Darnit Brook Culvert Replacement, Nezinscot-Androscoggin River, Buckfield, ME
Project Rank: 5

Measurable Goals & Objectives

Goal: Enhance Brook Trout habitat and populations in nearly eight miles of streams (perennial & intermittent) in the Darnit Brook catchment. Objective: Replace a pipe arch culvert at the Shedd Hollow Road crossing of Darnit Brook, which creates a barrier to Brook Trout passage, with an open bottom arch structure sized 1.2x times bankfull width and is able to pass a 100-year flood event.

St. Croix River Tributary Culvert Replacement, West Musquash Tributary,
Grand Lake Stream, ME
Project Rank: 6

Measurable Goals & Objectives

Goal: Provide access to 1.5 miles of Brook Trout habitat, remove an artificial heat sink, restore the stream to its natural bed, and prevent further sedimentation from entering the stream. Objective: Replace the existing culvert, which is a seasonal barrier to Brook Trout passage; causes an artificial heat sink; creates an artificial stream channel; and, introduces sediments into the stream, with an open bottom arch structure that exceeds 1.2 times the bank full width requirements and is able to pass a 100-year flood event.

Laurel Fork of Holly River Watershed Habitat Enhancement, WV
Project Rank: 7

Measurable Goals & Objectives

Goal: Enhance habitat for Brook Trout populations and other aquatic life in approximately 10.6 miles of the mainstem and headwater tributaries of Laurel Fork of Holly River. Objective 1: Improve water chemistry by developing two limestone sand application sites in headwater streams and apply limestone. Objective 2: Increase habitat complexity by strategically placing large wood and stone at

multiple locations over the lower 3 miles of Laurel Fork of Holly River. Objective 3: Prevent upstream movement of stocked trout by installing a barrier approximately 3 miles from the mouth of Laurel Fork.

Wilson Creek Watershed Improvement Project, Rugby, VA
Project Rank: 8

Measurable Goals & Objectives

Goal: Protect the streams in the Wilson Creek watershed that support wild Brook Trout, and because of their spring-fed sources and high elevation, will serve as quality coldwater refugia in terms of water quality, quantity, and thermal characteristics during times of climate uncertainty. Objective 1: Protect the headwaters of Wilson Creek; Objective 2: Promote spruce restoration by fencing permitted long-horn cattle, wild ponies, and horse trail users out of the high elevation bogs and seeps; and, Objective 3: Stabilize streambanks and reduce erosion from existing and user-created trails.

Fuller Mountain Road Downstream Culvert Replacement, Pond Mountain Brook, Kent, CT
Project Rank: 9

Measurable Goals & Objectives

Goal: Provide wild Brook Trout access to 3.49 miles of high-quality cold water habitat that is located in a forested watershed that is over 50% permanently protected. Objective: Replace a barrier culvert with a structure, utilizing Stream Simulation design that allows for the passage of fish and wildlife and increases flood resiliency.

Cove Creek Watershed FS Road #809 Low Water Ford Replacement, NC
Project Rank: 10

Measurable Goals & Objectives

Goal: Restore the upper Cove Creek watershed – including both Cove and Caney Bottom Creeks - to a stable, thriving allopatric wild Brook Trout stream within five years. Objective 1: Enhance habitat for southern Appalachian strain Brook Trout populations in the 3.3 mile upper Cove Creek watershed by replacing a low water ford with a stream simulation bottomless culvert. Objective 2: Assess feasibility of removing Rainbow Trout in upper Cove Creek (above natural barriers) and Caney Bottom Creek.

Fuller Mountain Road Upstream Culvert Replacement, Pond Mountain Brook, Kent, CT
Project Rank: 11

Measurable Goals & Objectives

Goal: Provide wild Brook Trout access to 3.49 miles of high-quality cold water habitat that is located in a forested watershed that is over 50% permanently protected. Objective: Replace a barrier culvert with a structure, utilizing Stream Simulation design that allows for the passage of fish and wildlife and increases flood resiliency.

Fish Passage Project Crane Creek – Crossings 1, Sumter National Forest, SC
Project Rank = 12a

Measurable Goals & Objectives

Goal: Create connectivity for wild southern strain Brook Trout within the upper reaches of Crane Creek. Objective: Replace a road crossing barrier with a structure that will allow for fish passage and simulate the stream channel.

Fish Passage Project Crane Creek – Crossings 2, Sumter National Forest, SC
Project Rank = 12b

Measurable Goals & Objectives

Goal: Create connectivity for wild southern strain Brook Trout within the upper reaches of Crane Creek. Objective: Replace a road crossing barrier with a structure that will allow for fish passage and simulate the stream channel.

8. Conservation Actions and Project Outcomes

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

- 100% (Level 3)

Eastern Brook Trout Joint Venture Coordination and Operations FY18
Project Rank: 1

Conservation Actions and Project Outcomes

The EBTJV will utilize its revised roadmap for wild Brook Trout conservation as our framework for collaborating and coordinating strategic conservation actions among our partners. This will result in our partners being better positioned to direct their valuable resources to essential wild Brook Trout conservation efforts and build stewardship support for wild Brook Trout more effectively.

Dam Removal on the Childs River, Falmouth, MA
Project Rank: 2

Conservation Actions and Project Outcomes

Removal of the dam, along with the impounded sediment upstream and downstream of this structure, in conjunction with constructing a new channel through the former impoundment, restoring riparian habitat, and incorporating large wood to create habitat complexity and refugia for Brook Trout will result in providing access to new and existing coldwater habitat in the upper Childs River and increasing the river's Brook Trout population abundance.

Upper South Branch/Thorn Creek Brook Trout Patch Restoration and Monitoring, Cave, WV
Project Rank: 3

Conservation Actions and Project Outcomes

Restoring habitat structure, enhancing riparian areas, and reconnecting floodplains will improve conditions for wild Brook Trout along a 3-mile stretch of Thorn Creek by providing pool and run habitat, stabilizing stream banks, reducing stream power, and diffusing erosional forces.

Bowman Creek Eastern Brook Trout Habitat Restoration
Project Rank: 4

Conservation Actions and Project Outcomes

A combination of riparian restoration plantings and limestone supplements will transform the former Mountain Springs Lake bottom to an accelerated vegetated riparian zone, which will reduce water temperatures, sedimentation and increase water pH levels thereby increasing habitat connectivity for wild Brook Trout.

Darnit Brook Culvert Replacement, Nezinscot-Androscoggin River, Buckfield, ME
Project Rank: 5

Conservation Actions and Project Outcomes

Replacing the existing undersized culvert at the Shedd Hollow Road crossing over Darnit Brook, which creates a barrier to Brook Trout passage, with an open bottom arch structure sized at 1.2 times bankfull width will enhance Brook Trout habitat and populations in nearly eight miles of streams (perennial + intermittent) within the Darnit Brook catchment.

St. Croix River Tributary Culvert Replacement, West Musquash Tributary,
Grand Lake Stream, ME
Project Rank: 6

Conservation Actions and Project Outcomes

Replacing the existing undersized culvert at the West Musquash Tributary stream crossing with a >1.2 bankfull-width open bottom structure will allow aquatic organism passage at all flows, decrease the amount of sediment entering the stream, restore the stream to its natural bed, and open up 1.5 miles of Brook Trout habitat.

Laurel Fork of Holly River Watershed Habitat Enhancement, WV
Project Rank: 7

Conservation Actions and Project Outcomes

Installing two limestone sand application sites in headwater streams and applying limestone will

improve water chemistry for wild Brook Trout, while adding large wood and stone at multiple locations over the lower 3 miles of Laurel Fork of Holly River will increase habitat complexity and provide Brook Trout refugia during high-stress, low-flow conditions.

Wilson Creek Watershed Improvement Project, Rugby, VA
Project Rank: 8

Conservation Actions and Project Outcomes

Building a fence around headwater bogs and seeps, re-establishing appropriate drainage structures along hiking/horse trails, and gravel stream approaches, closing and rehabilitating unauthorized user-created trails, and girdling hardwood trees competing with young red spruce to promote spruce growth and recruitment will protect the streams in the Wilson Creek watershed that support wild Brook Trout, and because of their spring-fed sources and high elevation, will provide quality refugia in terms of water quality, quantity, and thermal characteristics during times of climate uncertainty.

Fuller Mountain Road Downstream Culvert Replacement, Pond Mountain Brook, Kent, CT
Project Rank: 9

Conservation Actions and Project Outcomes

Replacement of this fish barrier culvert with a structure utilizing Stream Simulation Design will reconnect 3.49 miles of high-quality cold water habitat for wild Brook Trout in a forested watershed that is over 50% permanently protected.

Cove Creek Watershed FS Road #809 Low Water Ford Replacement, NC
Project Rank: 10

Conservation Actions and Project Outcomes

Replacing a low water ford with a stream simulation designed bottomless culvert enhances habitat for southern Appalachian strain Brook Trout populations in a 3.3 mile upper section of Cove Creek; and, performing a field assessment and analysis on the potential of removing exotic Rainbow Trout through electro-fishing or chemical means is expected to determine the feasibility of this conservation action and confirm the existing wild Brook Trout population is able to expand as a result of eliminating this competitor.

Fuller Mountain Road Upstream Culvert Replacement, Pond Mountain Brook, Kent, CT
Project Rank: 11

Conservation Actions and Project Outcomes

Replacement of this fish barrier culvert with a structure utilizing Stream Simulation Design will reconnect 3.49 miles of high-quality cold water habitat for wild Brook Trout in a forested watershed that is over 50% permanently protected.

Fish Passage Project Crane Creek – Crossings 1, Sumter National Forest, SC
Project Rank = 12a

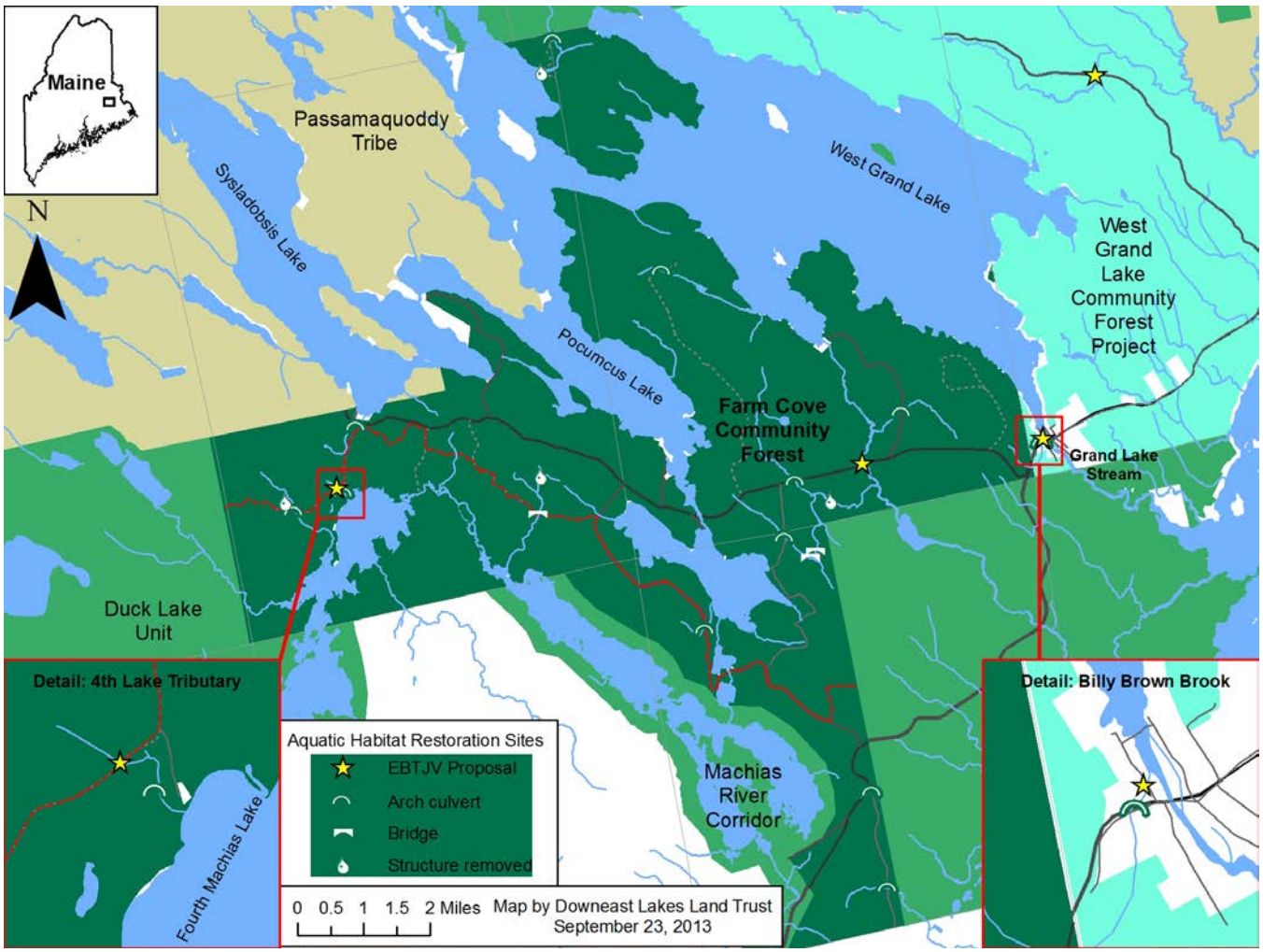
Conservation Actions and Project Outcomes

Replacing a culvert, which serves as a fish passage barrier, with a 10 foot wide by 5 foot tall open bottom precast reinforced concrete box culvert will provide habitat connectivity for southern strain Brook Trout within the upper reaches of Crane Creek.

Fish Passage Project Crane Creek – Crossings 2, Sumter National Forest, SC
Project Rank = 12b

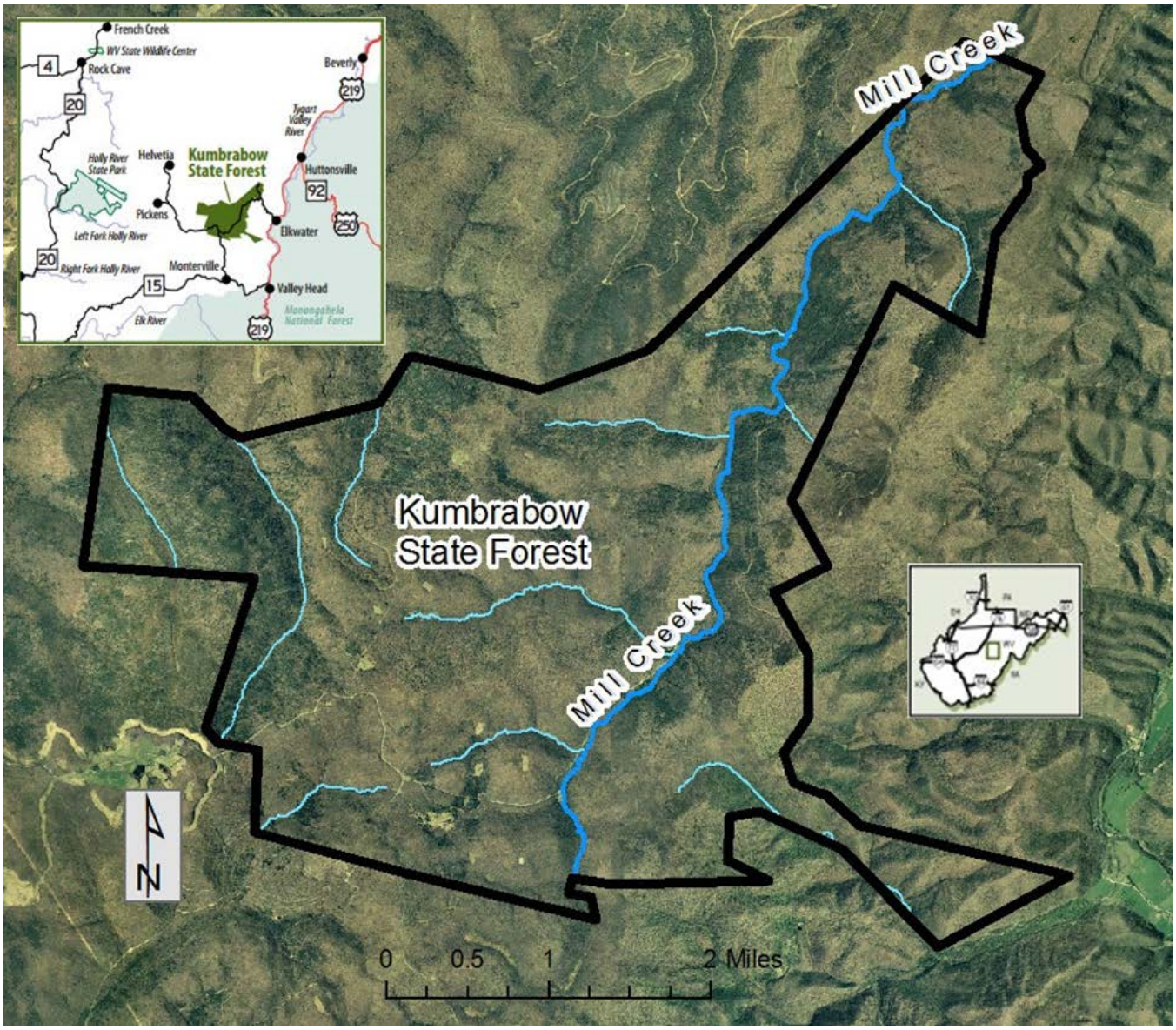
Conservation Actions and Project Outcomes

Replacing a culvert, which serves as a fish passage barrier, with a 10 foot wide by 5 foot tall open bottom precast reinforced concrete box culvert will provide habitat connectivity for southern strain Brook Trout within the upper reaches of Crane Creek.

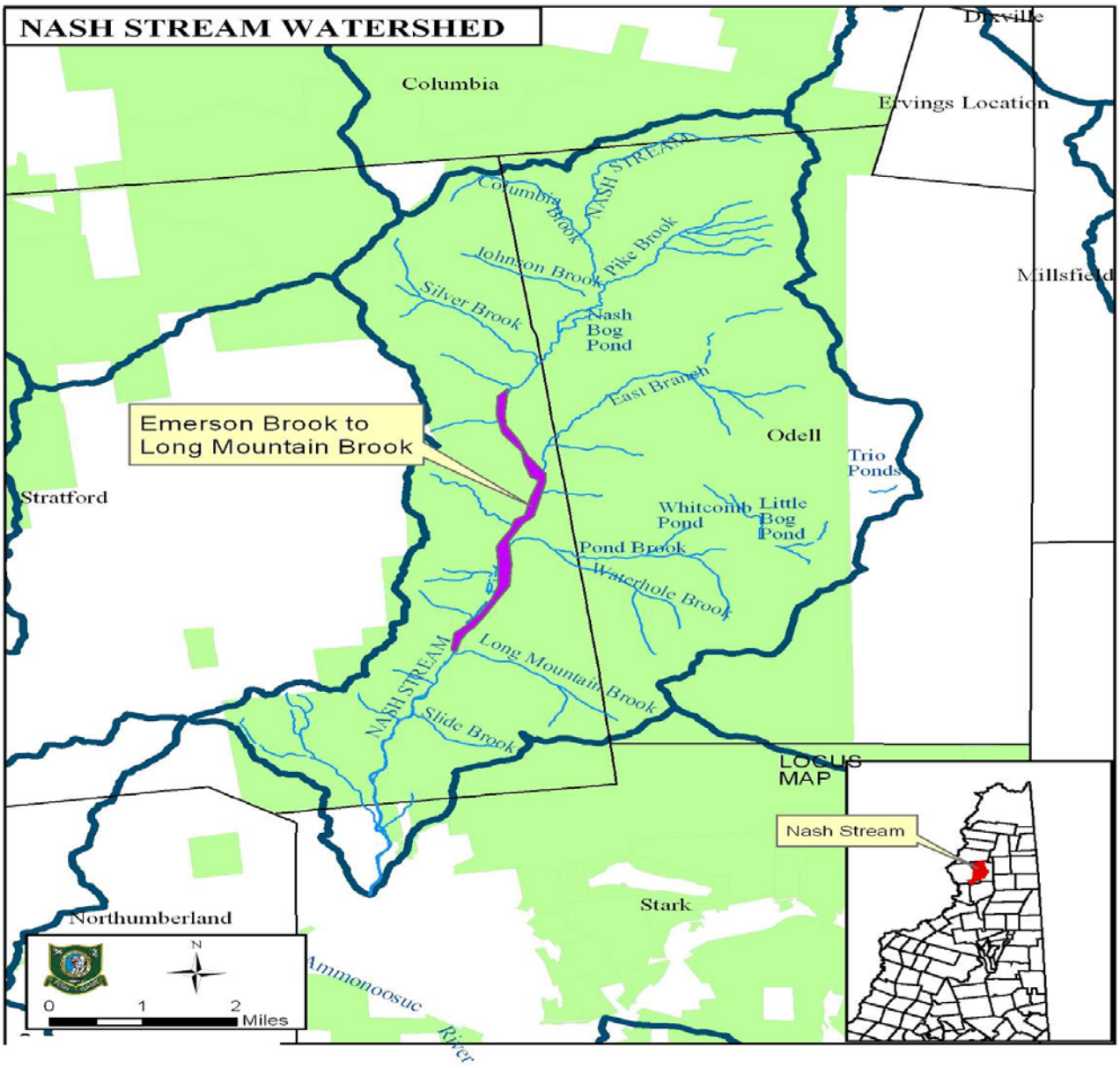


Map 1: Machias & Saint Croix River (ME) Project. Sites: West Branch Amazon Brook; subwatershed #230400; EBTJV priority score = 1.63 (highest rank category). Grand Lake Brook; subwatershed #230458; EBTJV priority score = 1.61 (highest rank category). Billy Brown Brook; subwatershed #230425; EBTJV priority score = 1.36 (highest rank category). 4th Machias Lake tributary; subwatershed #230477; EBTJV priority score = 1.63 (highest rank category). Site coordinates:

Site	Lat	Long
West Branch Amazon Brook	45.2586	-67.7600
Grand Lake Brook	45.1746	-67.8337
Billy Brown Brook	45.1795	-67.7778
4th Machias Lake Trib	45.1709	-67.9961

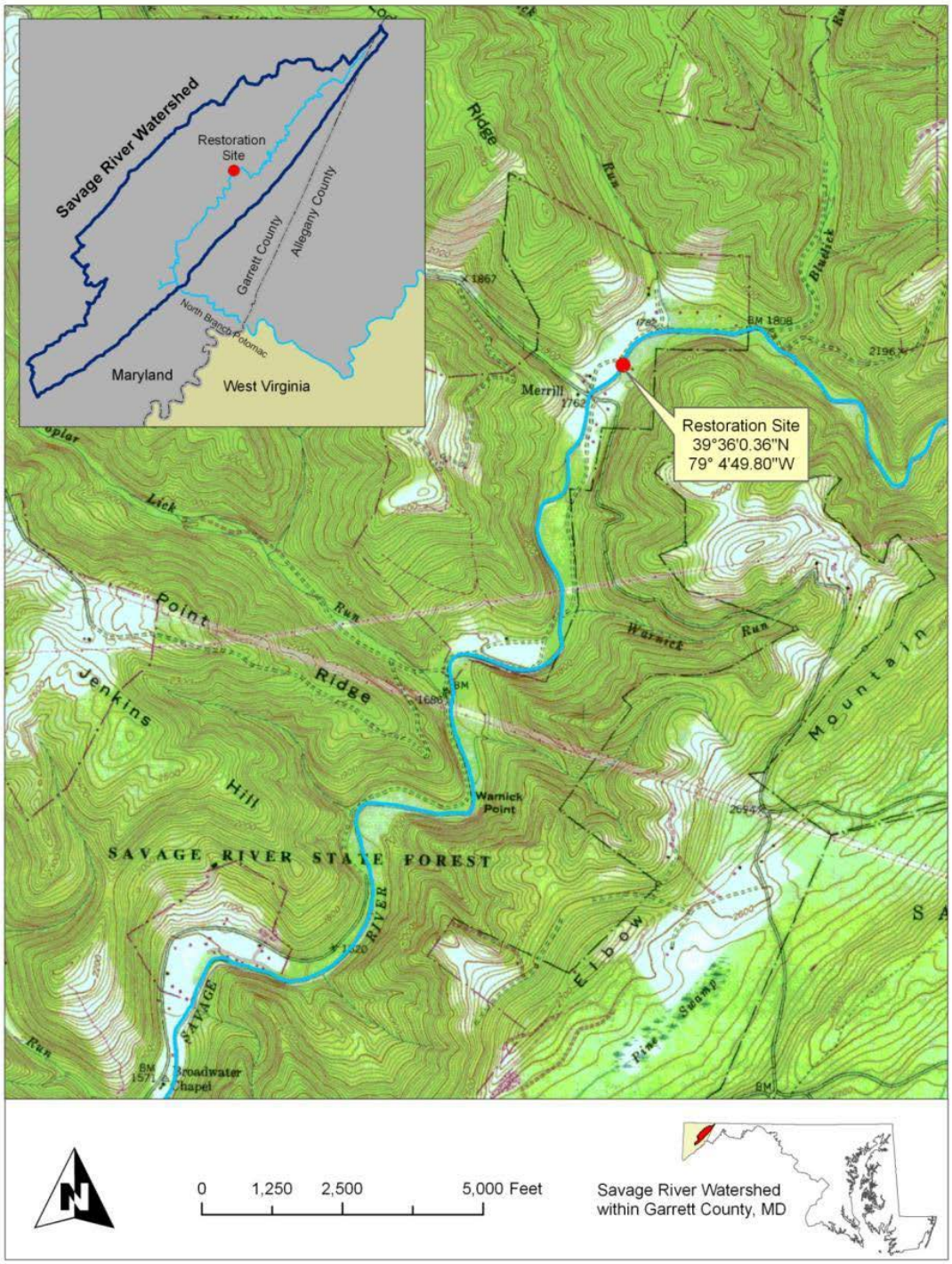


Map 2: Mill Creek (WV) Project. Subwatershed #540367; EBTJV priority score = 1.00 (high rank category); Site coordinates: 578792E, 4274272N to 582842E, 4282124N.



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

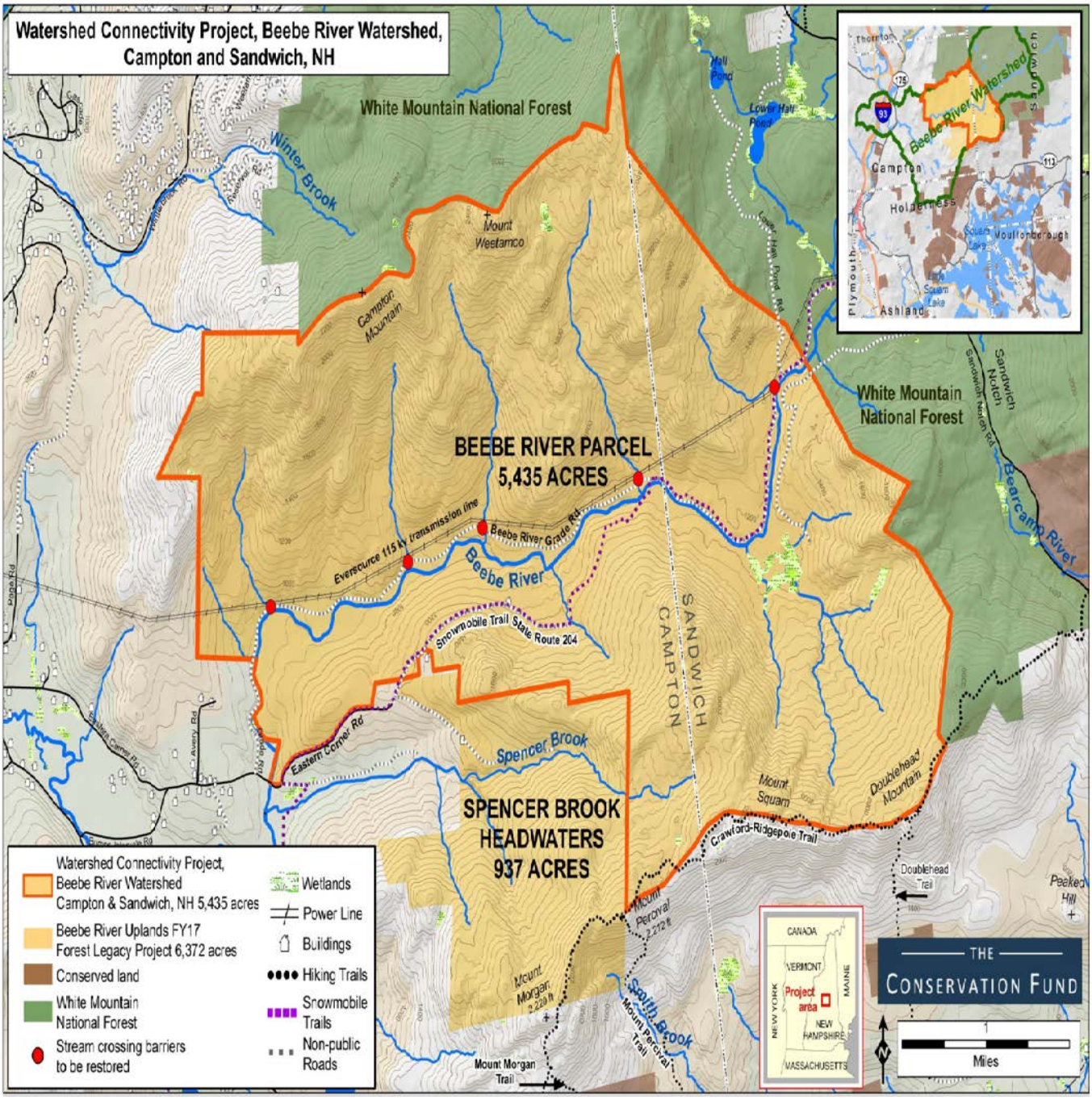
Map 3: Nash Stream Restoration & Columbia Road Culverts, Odell, Coos County, NH. Subwatershed #33096; EBTJV priority score = 1.00 (high rank category); Site coordinates: Upper Columbia Road-Nash Stream Crossing Decimal degree longitude: (NAD-1983) 44.7706, Decimal degree latitude: (NAD-1983) -71.4253. Lower Columbia Road-Nash Stream Crossing Decimal degree longitude: (NAD-1983) 44.7669, Decimal degree latitude: (NAD-1983) -71.4236. Nash Stream Mainstem Decimal degree longitude (NAD-1983) Upstream 44.6787, Decimal degree latitude: (NAD-1983) Upstream -71.4498, Decimal degree longitude: (NAD-1983) Downstream 44.6481, Decimal degree latitude: (NAD-1983) Downstream -71.4654.



Map 4: Upper Shavers Fork Instream and Riparian Habitat Restoration, Randolph County, WV. Subwatershed #540417; EBTJV priority score = 0.34 (low rank category); Site coordinates: 591010.39E, 4257010.23N.

Map 5: Sparta Glen Brook Restoration, NJ. Subwatershed #34050; EBTJV priority score = 0.20 (low rank category); Site coordinates: 41.038547, -74.615776.

Map 6: Great Pond Tributary Culvert Replacement, Little Cards Brook, Franklin, ME. Subwatershed #230706; EBTJV priority score = 1.51 (highest rank category); Site coordinates: 44.603244, -68.274786.



Map 7: Watershed Connectivity Project, Beebe River Watershed, Campton and Sandwich, NH. Subwatershed #330215; EBTJV priority score = 0.45 (low rank category); Site coordinates: GR1 = 43.82797 -71.59911; GR2 = 43.8306 -71.58268; GR3 = 43.83261 -71.57375; GR4 = 43.83549 -71.55509; GR5 = 43.84089 -71.53878.