

Project Title

Darnit Brook Culvert Replacement, Nezinscot-Androscoggin River, Buckfield, ME

Project Location (State, County, Town): Maine, Oxford County, Town of Buckfield

Congressional District of Project: ME 2

Congressional District of Applicant: ME 2

NFHP/EBTJV Funding Request: \$50,000

Total of Other Federal Funding Contributions: \$5,000

Total of Non-Federal Funding Contributions: \$155,189

Total Project Cost: \$210,189

Applicant:

Project Officer: Jeff Stern
Organization: Androscoggin River Watershed Council
Street: P.O. Box 1541
City, State, Zip: Bethel, ME, 04217
Telephone Number: (207) 595-0317
Fax Number: N/A
Email Address: sternjm@hotmail.com

U.S. Fish and Wildlife Service Sponsoring Office:

Project Officer: Scott Craig
Fish and Wildlife Service Office: Maine Fishery Resources Office
Street: 306 Hatchery Road
City, State, Zip:
East Orland, ME
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x 226
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Email Address: scott_craig@fws.gov

USFWS FONS Database Project Number: 53371-2017-419

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

(Check One):

☒ **Yes** 5/9/17 **Date Coordination Began**
☐ **No**

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

A. Project Goal: The goal of the *Darnit Brook Culvert Replacement, Nezinscot-Androscoggin River, Buckfield, ME* project is to replace the rusty, damaged, undersized, unsafe and eroding pipe arch culvert at the Shedd Hollow Road crossing of Darnit Brook that creates a barrier to brook trout passage with an open bottom arch structure sized 1.2x times bankfull width and able to pass a 100-year flood event.

B. Project Description: Sub-watersheds of the Androscoggin River contain some of the finest intact and healthy brook trout habitat in the State of Maine. Darnit Brook, where this project will take place, provides important habitat for wild brook trout. This project will enhance brook trout habitat and populations in nearly eight miles of streams (perennial + intermittent) in the Darnit Brook catchment. Darnit Brook is a tributary of the Nezinscot River, which then flows into the Androscoggin River.

In this project, the Androscoggin River Watershed Council (ARWC) proposes to replace the existing the rusty, damaged, undersized, unsafe and eroding pipe arch culvert at the Shedd Hollow Road crossing of Darnit Brook that creates a barrier to brook trout passage with an open bottom arch structure sized 1.2x times bankfull width and able to pass a 100-year flood event.

This is site #22285 from the Nezinscot River barrier assessment conducted in 2015 (refer to attached map). This assessment was conducted according to established protocols and the site is listed on the Maine Stream Habitat Viewer. The bottom of the existing culvert is so rusted out that flows of Darnit Brook entering the culvert disappear halfway through because there are so many holes on the bottom that water falls through and flows underneath the culvert (refer to photographs).

Re-establishing habitat connectivity helps achieve the Maine statewide strategy 2.1.2 contained in *Conserving the Eastern Brook Trout: Action Strategies*, (Eastern Brook Trout Joint Venture, January, 2011).

In January 2017, the Town of Buckfield applied for a \$95,000 grant for “Stream Crossing Public Infrastructure Improvements” from the Maine Department of Environmental Protection for this site. The grant was awarded in April, 2017.

Shedd Hollow Road is owned and maintained by the Town of Buckfield. Replacement of the culvert with an open bottom arch structure will be done by a contractor hired by the town. Supervision will be provided by ARWC, U.S.F.W.S. and IF&W.

The Town of Buckfield Select Board adopted a resolution Sept. 19, 2017, that states the Select Board will request the remaining matching funds for project construction at the next town meeting in June 2018, and that they support this grant application by ARWC to the Eastern Brook Trout Joint Venture.

ARWC is a 501 (c)(3), non-profit organization. A SHEDS water temperature logger (tidbit) will be installed by ARWC at the site in fall 2017. SHEDS data will be public and attainable on the website: <http://db.ecosheds.org/>.

C. Project Methods/Design (Max Characters: 350): ARWC will coordinate the work. U.S.F.W.S. has conducted surveying and prepared a preliminary design. ARWC will prepare all necessary permitting. The

town will hire an engineer to do the final design. The town will hire a contractor to do the work.

D. Project Timeline: Planning has already started: Applied for and received \$95,000 grant from the Maine DEP to repair this site in winter/spring 2017. Surveying was completed in June, 2017. A preliminary design that meets EBTJV and USFWS specs for restoring aquatic connectivity has been prepared in September 2017 to guide the project (*Town of Buckfield Crossing #22285 – Darnit Brook at Shedd Hollow Road*, by Alex Abbott, U.S.F.W.S. Gulf of Maine Coastal Program). In the fall and winter of 2017-18, permitting will be done, final design work completed and the project will be put out to bid by the Town of Buckfield. Construction work will be done in summer 2018.

E. Describe the Problem and Specific Cause of the Problem (Max Characters: 350): The rusty and damaged pipe arch culvert at this location blocks fish passage. There is so much rust on the bottom that flows only make it halfway through before dropping out. Because the culvert is undersized it causes erosion on both upstream and downstream sides, which reduces water quality.

F. Summarize the Project's Expected Outcomes (Max Characters: 350): Restore brook trout passage to 8 miles of headwater streams (perennial + intermittent) by replacing the failing pipe arch culvert at this site with an open bottom arch structure that is sized 1.2x bankfull and sized to pass the 100-year flood event.

G. Partner Information:

Partner Name	In-Kind Contribution	Cash Contribution	Federal or Non- Federal Contribution	Partner Category
Maine DEP		\$95,000		State Agency
U.S.F.W.S.	\$5,000			Federal Agency
Town of Buckfield		\$56,800		Local Government
Maine IF&W	\$2,000			State Agency
AVCOG	\$389			Local Government

II. PROVIDE A MAP OF THE PROJECT AREA

see attached

III. PROVIDE PHOTOGRAPH(S) OF THE PROJECT AREA

see attached

IV. PROJECT BUDGET

see next page

IV. Project Budget Table

Partner Name	Partner Category *	Activity of Partner **	Budget Category***	EBTJV NFHAP Request	Non-Federal Contribution		Federal Contribution		Total Contribution	Acres/Miles Affected
					In-Kind	Cash	In-Kind	Cash		
ARWC	Conservation Group (Local)	Culvert removal	Admin., Technical Services	\$3,500						
		Culvert removal	Travel - Mileage (600 @ .50)	\$300						
Maine DEP	State Agency	Culvert removal	Construction			\$95,000			\$95,000	8 miles of stream (perennial + intermittent)
		Admin., Technical Services	Other (Engineering)	\$8,000						
U.S. Fish & Wildlife Service	Federal Agency	Culvert removal	Other (Surveying, preliminary design)				\$5,000		\$5,000	
Maine IF&W	State Agency	Culvert removal	Other (monitoring & oversight)		\$2,000				\$2,000	
AVCOG	Local Government	Culvert removal	Admin., Technical Services		\$389				\$389	
Town of Buckfield	Local Government	Culvert removal	Admin., Technical Services		\$1,000				\$1,000	
		Culvert removal	Construction	\$38,200		\$56,800			\$56,800	
Total Contribution				\$50,000	\$3,389	\$151,800	\$5,000		\$160,189	8 miles of stream (perennial + intermittent)

*Partner Categories - Federal Agency, State Agency, Local Government, Conservation Group (Local), Conservation Group

(National), Native American Tribe, Private Landowners, Corporations/Businesses

**Activity - Acquisition, Fish Ladder, Dam Removal, Culvert Removal, Restoration, Monitoring

***Budget Categories – Administration/Technical Services, Construction Material, Construction Labor, Equipment, Contractual, Travel, Supplies, Other.

NOTE: This is not a Federal Grant program and therefore does not exclude non-federal match used here from being matched to other Federal Grant sources to leverage funds for the project. Indicate if partnering contributions are in-kind or new cash. NFHAP requests should illustrate how the dollars will be spent and by what organization. Overhead such as utilities, office space, and salary to prepare applications and develop partnerships will not be funded with NFHAP funds and should not be a line item or built into the project. Activities that directly relate to completion of the project such as travel and salary to do design work let and/or monitor contracts are allowable expenses with NFHAP funds but should not constitute more than 10% of the funding request. For more information on the use of NFHAP funds, please see <http://www.fws.gov/policy/717fw1.html>.

V. PROJECT EVALUATION QUESTIONS

1. **What are the GPS Coordinates for the Project site (please use UTM NAD 83):**
0385616E, 4907171N
2. **List the type of Project that will be implemented (protection, enhancement, restoration; see definitions in the Appendix A).** This is a restoration project.
3. **Are Brook Trout currently present at the Project site or have access to the Project site? If not, were Brook Trout historically present?** According to Maine IF&W, wild brook trout are currently present at the project site.^{1,2}
4. **Please describe how the Project will conserve Brook Trout and/or its habitat?** Habitat will be improved by re-establishment of connectivity and reduction of sedimentation to Darnit Brook. Fragmentation will be eliminated in the upper Darnit Brook Sub-watershed and wild brook trout will have free access to coldwater tributary habitats. Removal of this barrier will open up almost eight miles to brook trout colonization, movement and migration (perennial + intermittent streams). The project will result in the expansion of existing brook trout habitat and populations.
5. **Is the Project site located on/along private or public land? Is the land currently under any form of protection (e.g. conservation easement)?** Project is on town-owned land. The land is not under protection at this time.
6. **What percentage of the watershed above the Project site is protected in perpetuity?** Approximately 20% of the watershed above the project site is protected in perpetuity by the Western Foothills Land Trust. The trust has a conservation easement known as the Ackley Forest.³
7. **List the specific EBTJV range-wide habitat goal(s) and objective(s) addressed by the Project and describe how the Project will contribute towards achieving them (refer to the list of EBTJV range-wide habitat goals and objectives in the Appendix B).** This project addresses the following EBTJV range-wide habitat goal: “Increase connectivity within and among wild Brook Trout catchments”. It addresses the following objective: “Complete Aquatic Organism Passage projects within 45 wild Brook Trout catchments by 2022”. The project helps to achieve this goal and objective by removing a barrier to brook trout and other aquatic organism passage.
8. **List the EBTJV key conservation action(s) the Project addresses (refer to the list of EBTJV key conservation actions in the Appendix C).** The project addresses the following EBTJV key conservation actions: 1) Increase recreational fishing opportunities for wild Brook Trout, 2) Conserve and/or increase habitats that support robust wild Brook Trout populations, 3) Restore and reconnect suitable habitats adjacent to robust wild Brook Trout populations.
9. **What are the EBTJV Feature ID# and Classification Code for the catchment(s) where the Project work will be implemented (see Appendix D for a description on how to determine both items)?**

- **Catchment Feature ID#:** 6711875
- **Catchment Classification Code:** 1.1

10. Will the Project result in re-establishing wild Brook Trout within the catchment? No, wild brook trout are already present.

11. Is/are the catchment(s) where the Project work will be implemented located in a Wild Trout Patch; if so what is the Wild Trout Patch Feature ID# and Classification Code (see Appendix E for a description on how to determine both items)? Yes.

- **Wild Trout Patch Feature ID#:** 6711881.0
- **Wild Trout Patch Classification Code:** 1.1

12. Will the Project benefit any federally listed threatened or endangered species or FWS priority species (refer to the list of FWS priority species for Region 4 and Region 5 in Appendix F)? Yes, brook trout are a FWS priority species in both R4 and R5. This site is located within the distinct population segment of endangered Gulf of Maine Atlantic Salmon (ATS), and the West Branch Nezinscot River (of which Darnit Brook is a Sub-watershed) is a priority 1 ATS Watershed.

13. Will the Project benefit any state listed threatened or endangered species or species of greatest conservation need? Wild brook trout are a SGCN according to the Maine Wildlife Action Plan.

14. What are the root causes of degradation in the catchment(s) where the Project is located and which of these are addressed by the Project? Degraded and inadequately-sized culvert is a barrier to brook trout and other aquatic life passage. Culvert bottom is so rusty that flows drop out the bottom and don't make it all the way through the culvert. Erosion from the unstable road shoulder introduces sediment and asphalt into the brook which degrades water quality. Culvert is not adequately-sized to pass the 100-year flood event.

15. Describe the plans for measuring the Project's success in meeting its goals and objectives. Post-construction monitoring will be minimal (simple post-construction longitudinal profile) because the culvert replacement has been designed by the Stream Simulation methodology. Our design shows the stream channel under the road will be identical to the reference reach – which is not a barrier to the target species (brook trout).

16. Does the Project support any goals in existing action plan(s) (e.g. state fish & wildlife, watershed protection, water quality improvement, land or water-use plan(s), or other regional plan(s))? The project supports existing goals identified in Maine's Wildlife Action Plan. Habitat stressors associated with poorly designed road-stream crossings is a high priority Conservation Action for aquatic habitats and many SGCN species, including brook trout.

17. Are there invasive fish species within the Project site or have access (no barrier) to

it? None.

18. Are hatchery-reared salmonids stocked at the Project site or that have access (no barrier) to it? None. Darnit Brook has not been stocked since 1971 and currently supports a wild brook trout population.⁴

19. Please describe the current status of the Project. Is it planned, permitted, and ready to begin? A \$95,000 grant for this project has been secured from the Maine DEP fund for Stream Crossing Public Infrastructure Improvements. Surveying has been completed as well as a preliminary design. Permitting, final engineering and bidding for a contractor will be done in winter/spring 2017-18. Additional fundraising from the town, as needed, is planned for early summer 2018. Construction is planned for late summer 2018.

20. Will public access be allowed at the Project site? If so, what kinds of recreational activities are allowed – fishing, hiking, camping, wildlife viewing, etc.? The site is publically accessible to recreational angling. Public access is allowed and uses include: fishing, wading, paddling, hiking and hunting.

21. Will the Project improve recreational fishing opportunities for wild Brook Trout? If so, please describe the improvement and how the improvement will be measured? This project is more likely to improve fishing *quality* rather than fishing *opportunity*. We expect to see improvements in overall fish numbers, their size, quality and condition. We may detect improvements through IF&W creel census data or through the agency's Volunteer Angler Book Keeper Program.

22. Please describe the outreach or educational components associated with the Project. Outreach will be via press releases to area newspapers, and website postings on the ARWC and town websites. Delivery of results to the town Select Board and public will also present opportunities to raise public awareness about fish passage issues. The project will also be publicized at ARWC's annual conference, which attracts 70-80 participants each year. In addition, it will be publicized during ARWC's annual "Source to Sea" canoe and kayak trek. The Trek attracted close to 400 paddlers in 2017. There are no specific plans at this time to involve student groups. However, ARWC anticipates taking area students on occasional tours of the completed project.

23. Please describe how this Project lessens the effects of climate change on Brook Trout. This project will improve the ability of wild brook trout to access cooler waters higher up in the Darnit Brook Sub-watershed during times of thermal stress. Climate models for Maine predict longer summer warm spells and increasing amounts of annual precipitation. By replacing the existing structure at this site changes in local hydrology due to climate change will be remediated in addition to increasing accessibility to cold water habitat for wild brook trout.

24. Please explain how this Project is a good investment of funds, particularly in terms of its recreational and/or economic value. By replacing the existing structure at the Shedd Hollow Road crossing of Darnit Brook with an appropriately sized structure, the town's annual maintenance costs will be greatly reduced. In addition, improvements to the fishery in this sub-watershed due to greater habitat accessibility for wild brook trout will ensure that it continues to be a local angling draw, benefitting the local economy.

Costs associated with chronic maintenance and repair will decline while additional dollars brought into the community by destination anglers should increase.

VI. SUPPORTING DOCUMENTATION:

Eastern Brook Trout Joint Venture, *Conserving the Eastern Brook Trout: Action Strategies*, January, 2011

Alex Abbott, U.S.F.W.S. Gulf of Maine Coastal Program, *Town of Buckfield Crossing #22285 – Darnit Brook at Shedd Hollow Road*, September, 2017

¹ Phone conversation with Brian Lewis, Fisheries Biologist, Gray Regional Office, Maine Department of Inland Fisheries & Wildlife, January 13, 2017.

² Email communication with James Pellerin, Regional Fisheries Biologist, Maine Department of Inland Fisheries & Wildlife, September 5, 2017.

³ Email communication with Lee Dassler, Director of the Western Foothills Land Trust, August 29, 2017.

⁴ Email communication with James Pellerin, Regional Fisheries Biologist, Maine Department of Inland Fisheries & Wildlife, September 5, 2017.

Appendix A

Definitions

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

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

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

Appendix B

EBTJV Range-wide Habitat Goals and Objectives

GOAL	OBJECTIVE
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.
Restore wild Brook Trout to catchments where they were extirpated	Establish wild Brook Trout in 15 extirpated catchments by the year 2022.
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 connectivity within and among wild Brook Trout catchments	Complete Aquatic Organism Passage projects within 45 wild Brook Trout catchments by 2022.

Appendix C

EBTJV Key Conservation Actions

- Increase recreational fishing opportunities for wild Brook Trout
- Conserve and/or 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)

Appendix D

To determine the EBTJV Feature ID# and Classification Code for the catchment where your Project work will be implemented, please follow these steps:

1. Click on this [Brook Trout Integrated Spatial Data and Tools](#) link;
2. Put a $\sqrt{}$ mark in the box next to the Legend label EBTJV Classified Catchments to display this data layer;
3. Locate the catchment where your Project work will be implemented; you can increase or decrease the map scale by selecting the appropriate map scale (see drop down menu located in the lower left hand corner) or use the wheel on your mouse. You can also change the layer's transparency by clicking the yellow light icon that is associated with this layer in the Legend and sliding the opacity bar.
4. Once you have located the Project's catchment, find the Identify Features button at the top of the page (hovering your cursor over each button will identify its function). Open the drop down menu for this function and select the EBTJV Classified Catchments layer, and then click the Identify Features button once to turn it on.
5. Next move your cursor within the boundary of the project's catchment and click once. A Feature Information box will appear on your screen and you will see the catchment's "featureid" number and "ebtjv_code". Record both numbers in the appropriate locations in the Project Application Form.

Appendix E

To determine the EBTJV Wild Trout Patch Feature ID# and Classification Code for the catchment where your Project work will be implemented, please follow these steps:

1. Click on this [Brook Trout Integrated Spatial Data and Tools](#) link;
2. Put a $\sqrt{}$ mark in the box next to the Legend label Wild Trout Habitat Patches to display this data layer;
3. Locate the catchment where your Project work will be implemented; you can increase or decrease the map scale by selecting the appropriate map scale (see drop down menu located in the lower left hand corner) or use the wheel on your mouse. You can also change the layer's transparency by clicking the yellow light icon that is associated with this layer in the Legend and sliding the opacity bar.
4. Once you have located the Project's catchment, find the Identify Features button at the top of the page (hovering your cursor over each button will identify its function). Open the drop down menu for this function and select the Wild Trout Habitat patches layer, and then click the Identify Features button once to turn it on.
5. Next move your cursor within the boundary of the Project's catchment and click once. A Feature Information box will appear on your screen and you will see the catchment's "feat_id" number and "ebtjv_code". Record both numbers in the appropriate locations in the Project Application Form.

Appendix F

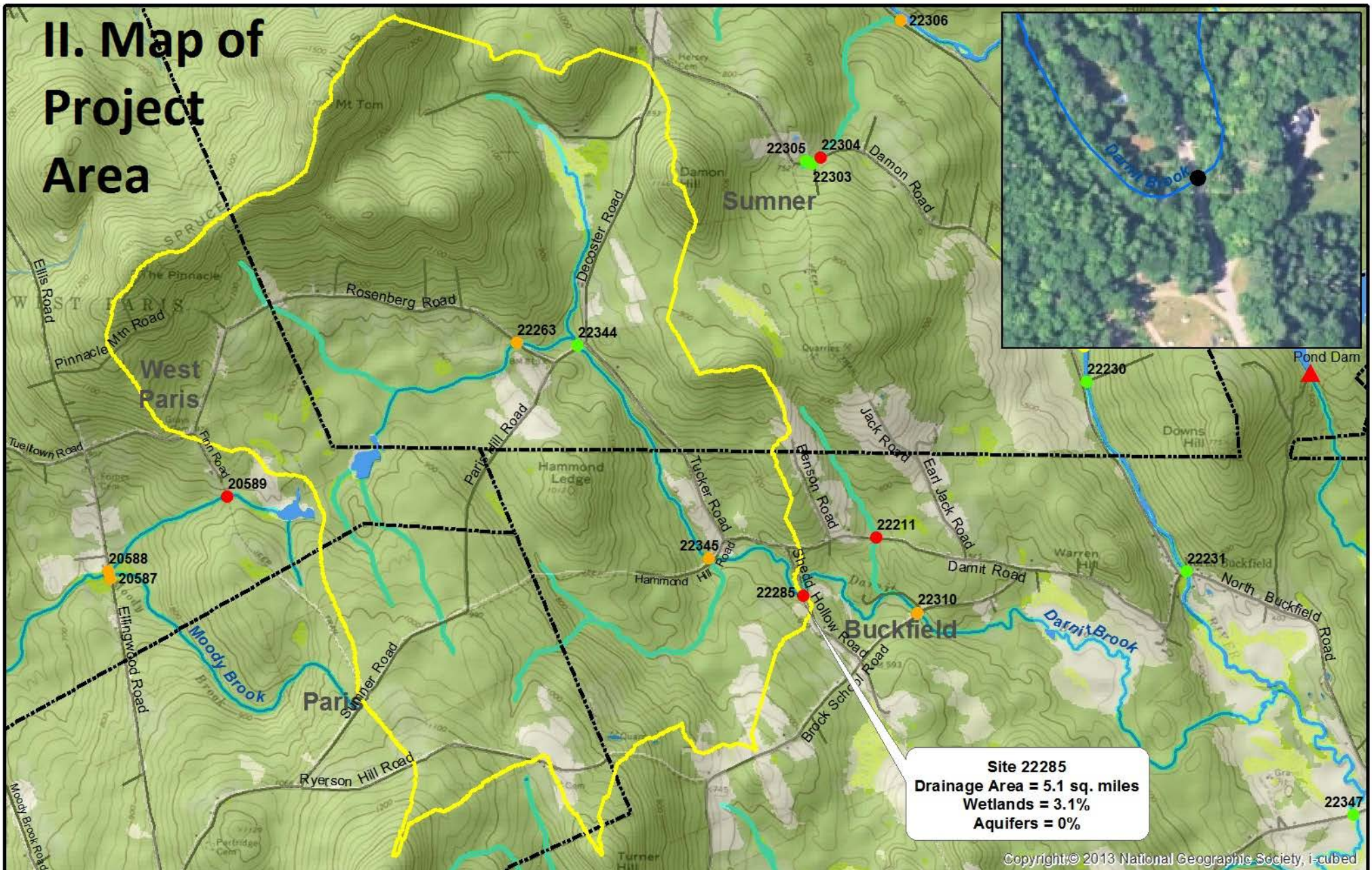
FWS Priority Species

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

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

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

II. Map of Project Area



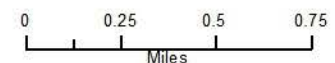
Buckfield Crossing 22285 - Darnit Brook at Shedd Hollow Road

Crossings

- Barrier
- Potential Barrier

- No Barrier
- Unknown

- Drainage Area Boundary
- ~ Known Brook Trout Habitat



Map created by A. Abbott 1/9/17





PAUL R. LEPAGE
GOVERNOR

STATE OF MAINE
DEPARTMENT OF
INLAND FISHERIES & WILDLIFE
284 STATE STREET
41 STATE HOUSE STATION
AUGUSTA, ME 04333-0041
TEL: 207-287-8000

CHANDLER E. WOODCOCK
COMMISSIONER

September 19, 2017

Jeff Stern
Androscoggin River Watershed Council
PO Box 1541
Bethel, ME 04217

Dear Mr. Stern:

As Maine's primary coordinator for implementing the Eastern Brook Trout Joint Venture (EBTJV) Conservation Strategy, I and the Maine Department of Inland Fisheries and Wildlife (MDIFW) greatly support your ***'Darnit Brook Culvert Replacement, Nezinscot-Androscoggin River, Buckfield ME'*** proposal for funding under the National Fish Habitat Partnerships. Replacing the current failing and improperly designed crossing structure on Darnit Brook with an open bottomed arch culvert design that attains a 1.2 times the bank-full width span and will pass a 100 year flow event. This appropriately sized and placed structure will improve the ability of wild Eastern brook trout to access their historic headwater spawning, nursery and cold-water refugia areas of this system. Improving this crossing will strengthen wild brook trout status in Darnit Brook especially during periods of stressful flows when the existing culvert is too often left high and dry with little to no flow making it impossible for trout and other fishes to pass. It will also help terrestrial organisms move along the riparian zone under the road and hence reduce road mortality for other sensitive aquatic organisms, and improve downstream spawning area condition by reducing sedimentation. The goals of this project are consistent with those of Maine's Strategies for the Eastern Brook Trout Joint Venture's Conservation Strategy, MDIFW's Brook Trout Management Plan, Maine's Wildlife Action Plan and the range-wide goals of the EBTJV.

I encourage you to seriously consider this project, and its partners, for your funding program. If you have any further questions regarding this project, please do not hesitate to contact me.

Best Regards,

Merry Gallagher
Native Fish Conservation Biologist

RESOLUTION

AT A MEETING OF THE BUCKFIELD, MAINE BOARD OF SELECTMEN HELD AT THE TOWN MUNICIPAL CENTER ON SEPTEMBER 19, 2017,

RESOLUTION – SUPPORTING THE SUBMISSION OF A GRANT APPLICATION FOR THE EASTERN BROOK TROUT JOINT VENTURE GRANT

WHEREAS, The Board of Selectmen of the Town of Buckfield, Maine, does hereby find as follows:

WHEREAS, the Buckfield Board of Selectmen understand that the culvert that carries Darnit Brook under the Shedd Hollow Road is in extremely poor condition. The bottom is completely rusted such that the brook passes under the culvert in several locations. In addition, the culvert is of insufficient length to contain the road and therefore creates a safety hazard for vehicles passing over it. Furthermore, the road over the culvert regularly collapses and needs substantial temporary repairs.

WHEREAS, The Board also realizes that the culvert is grossly undersized. The culvert cannot pass high brook flows and therefore relief culverts were installed. However, there is still flooding and erosion issues. In addition, the size and condition of the culvert create a significant barrier to the passage of fish and other aquatic life.

WHEREAS, in order to support fish passage and provide connectivity to approximately 7 upstream miles of Darnit Brook and tributaries, we understand that the replacement should be in the order of 26 to 30 feet wide and have a natural stream bottom. We further understand that the replacement cost for such a structure, whether bridge or pipe arch, would be in the order of \$210,000. We have obtained a grant of \$95,000 from the Maine DEP and are searching for other possible funding sources. We are also prepared to request the necessary matching funds for the project at the next annual town meeting in June of 2018. We will proceed with further analysis, design and permitting prior to town meeting, so that the project will be able to be constructed in the summer of 2018.

WHEREAS, we also support the Androscoggin River Watershed Council in their efforts to obtain an Eastern Brook Trout Joint Venture grant to assist with this project.

THEREFORE BE IT RESOLVED that the Buckfield, Maine Board of Selectmen is officially supporting the submission of the grant application and agrees to follow through as defined in this document.

Signed Maida Somers Dobson

Signed Cheryl Coffin

Signed DR 2

III. Photographs



Inlet

August 14, 2015.
Photograph taken during
Nezinscot River Watershed
Barrier Assessment by Jeff
Stern, Androscoggin River
Watershed Council. This is
site #22285. Note how
stream flows halfway
through culvert before
“disappearing” through
holes caused by rust in the
bottom. Also, note erosion
from road.



March 14, 2016. Outlet
of culvert. Photograph
by Jeff Stern,
Androscoggin River
Watershed Council.



Upstream

August 14, 2015. View upstream from culvert. Photograph taken by Jeff Stern, Androscoggin River Watershed Council, during the Nezinscot River Watershed Barrier Assessment.



Downstream

August 14, 2015. Photograph taken by Jeff Stern, Androscoggin River Watershed Council, during the Nezinscot River Watershed Barrier Assessment. Note chunks of tar in the culvert that have eroded from the road surface. Drop to stream surface from culvert outlet on this date was 4 inches.



Other1

August 14, 2015.
Photograph by Jeff Stern, Androscoggin River Watershed Council, taken during the Nezinscot River Watershed Barrier Assessment. View is looking upstream toward inlet of culvert. Note how stream flow goes halfway through culvert before falling through corroded bottom. Lower half of culvert was dry.



June 16, 2016. Photograph by Ferg Lea, Androscoggin River Watershed Council, showing upstream erosion. Road is in upper portion of photograph.



June 16, 2016. Photograph by Ferg Lea, Androscoggin River Watershed Council, showing downstream erosion.

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Service Representative: Androscoggin River Watershed Council (ARWC)

Office and Phone: P.O. Box 1541, Bethel, ME 04217, (207) 595-0317.

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I agree to the above full copyright release: Jeff Stern (Signature)

or

Special Agreement Instructions (purchase information, usage restrictions, etc.):

Product Description (image number, subject, horizontal/vertical, location, title, etc.):

MS Word document: "Darnit Brook 22285pix" (9/17/17)

Name: Jeff Stern (ARWC)

Address: P.O. Box 1541, Bethel, ME 04217

Phone: (207) 595-0317

Signature: Jeff Stern

Date: 9/19/17

