GRANT TITLE: **PROMOTING STRATEGIC FISH HABITAT CONSERVATION THROUGH REGIONAL AND COLLABORATIVE SCIENCE AND PRIORITY SETTING**

REPORT NUMBER: **SEPTEMBER 1, 2017 – MARCH 31, 2018 FINAL REPORT**

The objective of this portion of the 2017 Multistate Conservation Grant to Fish Habitat Partnerships was to have the Atlantic Coastal Fish Habitat Partnership (ACFHP), Southeast Aquatic Resources Partnership (SARP), and Eastern Brook Trout Joint Venture (EBTJV) collectively define and communicate the scientific basis of river restoration through connectivity improvement throughout the Eastern U.S.

The specific milestones outlined to address this objective included:

- Finalize a tiered listing of prioritized fish habitat connectivity focus areas.
- Coordinate with partners to identify and prioritize watersheds for conservation where fragmentation of, or barriers to, fish passage are a potentially critical threat to be addressed.
- Develop a 'standardized tool box' of fish passage technologies and guidance to assist the public in development and implementation of effective fish passage protocols.

Accomplishments to Meet the Objectives

ACFHP finalized their priority drainages (HUC8) from the original list developed in 2016 (original list: Appendix I, ACFHP's priority list: Appendix II). These priorities were based on the number of diadromous fish species present in each drainage. Alewife, blueback herring, and American shad presence data came from the alosine assessment in the Fish Habitat Decision Support Tool (www.fishhabitattool.org), which was developed by ACFHP, Downstream Strategies, The Nature Conservancy, and the North Atlantic Landscape Conservation Cooperative. Atlantic sturgeon data was based on Atlantic sturgeon Critical Habitat designations, and American eel presence was determined by expert opinion. The priority drainages were confirmed to have at least three species present, whereas the other potential drainages had only one confirmed species present or less. These priorities were approved by the ACFHP Steering Committee at their fall meeting on October 18, 2017.

The EBTJV considered the four drainages (HUC8) the ACFHP indicated were important to their partnership due to the presence of diadromous species, as it sought to assist the efforts of developing priority fish habitat connectivity focus areas. Among these HUC8 drainages identified by ACFHP, two contained wild brook trout, the Rapidan-Upper Rappahannock (02080103) and Rivanna (02080204), whereas wild brook trout were absent from the other two, Middle Potomac-Anacostia-Occoquan (02070010) and Lower Potomac (02070011).

In reviewing the EBTJV's most recent wild Brook Trout catchment assessment data (2015), the Rapidan-Upper Rappahannock drainage has nine subwatersheds (HUC12) that have catchments where wild brook trout are present, while the Rivanna had four subwatersheds (HUC12) (Appendix Table III). Additionally, the Chesapeake Bay Program's Brook Trout Management Strategy identifies ten Level 1 priority wild brook trout subwatersheds (HUC12) within these two drainages (HUC8) (Appendix Table IV). These subwatersheds are designated as a Level 1

priority because they have allopatric brook trout populations and an EBTJV Subwatershed Score $\geq$ 0.79. As a result of having these two attributes, these subwatersheds (HUC12) offer the best potential for sustaining wild brook trout populations and capitalizing on increased fish habitat connectivity.

Chesapeake Bay Fish Passage Prioritization identifies 202 dams that block passage of diadromous fish in the Rivanna (166) and Rapidan-Upper Rappahannock (36) drainages (HUC 8), and 203 dams that block brook trout passage (167 and 36, respectively). Among the Rapidan-Upper Rappahannock (HUC 8) dams, there is only one dam that blocks both diadromous fish and wild Brook Trout passage, while for the Rivanna (HUC8) dams, there are fifteen blocking both diadromous fish and wild brook trout passage (Appendix Table V).

When considering all of these factors collectively, the EBTJV, SARP, and ACFHP have designated the Rivanna drainage (HUC8) as the highest priority fish habitat connectivity focus area, followed closely by the Rapidan-Upper Rappahannock (HUC8). The dams listed in Appendix Table III are likely places to initiate joint efforts to address fish passage issues that affect both diadromous fish and wild brook trout.

SARP has a standardized culvert assessment protocol to address the small barriers to aquatic organism passage as well as the large dams prioritized in the SEACAP and Chesapeake Fish Passage Prioritization tool. There have been multiple trainings conducted throughout the Southeast U.S. conducted by SARP Staff. These trainings have occurred in GA, NC (scheduled for early 2018), Puerto Rico, MS with others conducted by our partners in the North Atlantic Connectivity Collaborative conducted in VA and FL. Through SARP's efforts, we have modeled potential stream crossing in an effort to better assess aquatic habitat fragmentation that includes both large and small barriers as well as road related potential barriers.

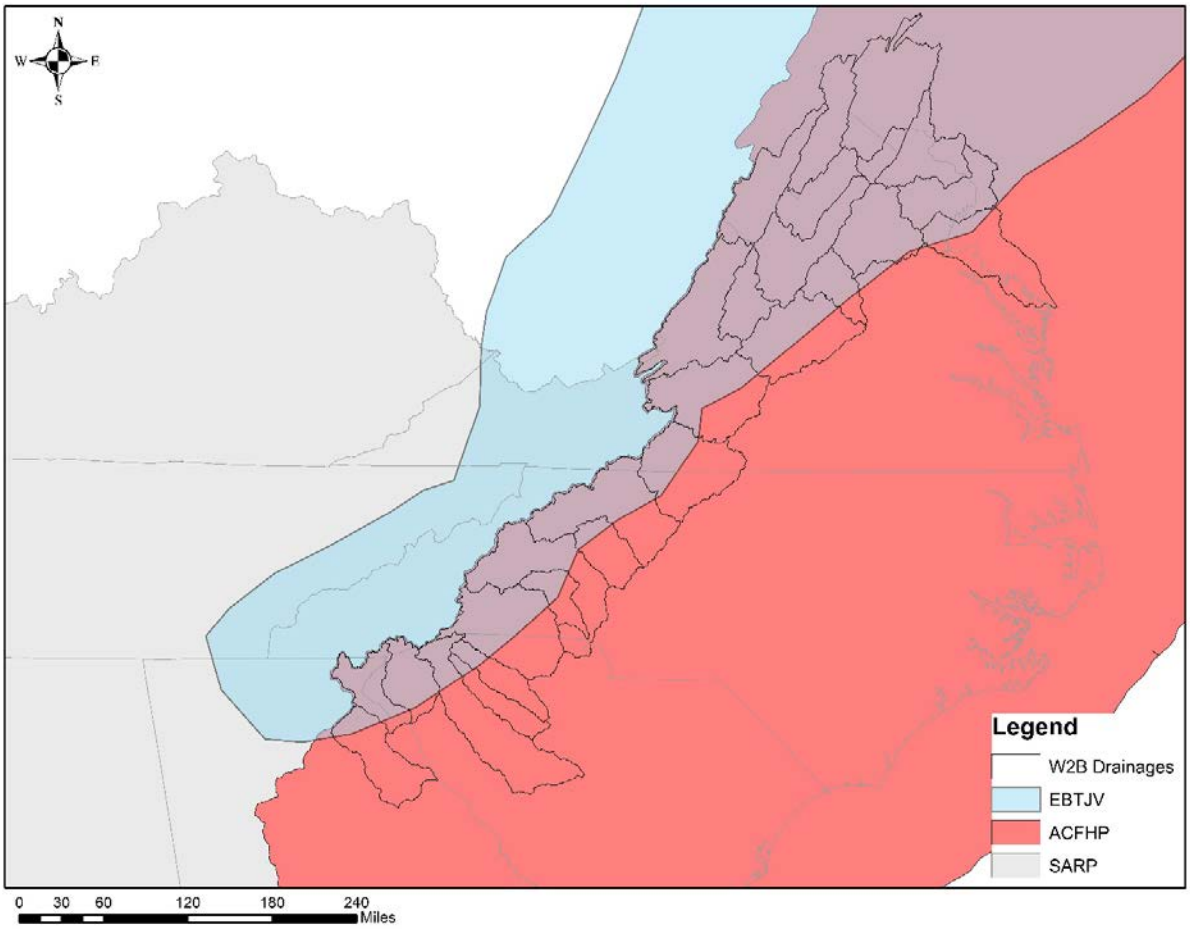
To facilitate collaboration among partnerships, SARP has modeled crossings in the HUC8s and priority watersheds identified by EBTJV. In the Rapidan-Upper Rappahannock HUC8 there are approximately 7481 road crossings with close to 900 of those crossings falling within the smaller priority watersheds identified above. In the Rivanna HUC8 there are 3759 crossings with 178 of these falling within the brook trout priority areas.

SARP has adopted and adapted the North Atlantic Aquatic Connectivity Collaborative (NAACC) Culvert Assessment Protocol to gather information on road stream crossings to produce an Aquatic Organism Passage (AOP) score. This score is used to more strategically identify potential projects based on the severity of the barrier to priority species. Some culverts create as severe of a barrier as a dam does but these are often overlooked. In the past calendar year, SARP staff attended two culvert trainings in VA and FL and conducted an additional training in GA. SARP also worked with partners to secure additional funding to support culvert assessments in the Black River basin, NC as well as culvert assessments in priority forest units with the USFS in VA and GA. Additionally, surveys are continuing to be conducted in FL supported by a separate but complementary grant. Trained participants are equipped with the information necessary to conduct assessments, enter data into SARP's Comprehensive Barrier Database, and to train others in an effort to expand the Network throughout the Southeast. SARP will continue to work with our partners in VA to identify priority crossings for removal or

remediation. This is currently underway in the North and South Fork Shenandoah on Forest Service land providing additional upstream connectivity.

Prior to this funding, the passability score was produced in a very inefficient manner through an Excel spreadsheet individually. Support from the MSCG allowed the creation of a python script that can be run to help automate the scoring process. Further refinement is necessary before it can be delivered to partners. However, through additional funding an online-based tool is currently being produced that will incorporate this scoring tool within the infrastructure so partners can add data and obtain their score in real time.

Appendix 1



Map illustrating the HUC 8 drainages that cross ACFHP, SARP, and EBTJV geographic boundaries.

List of HUC8 drainages that overlap the three partnership boundaries.

HUC 8 Number	Name	HUC 8 Number	Name
03040101	Upper Yadkin	02070004	Conococheague-Opequon
03040102	South Yadkin	02070005	South Fork Shenandoah
03050101	Upper Catawba	02070006	North Fork Shenandoah
03050102	South Fork Catawba	02070007	Shenandoah
03050105	Upper Broad	02070008	Middle Potomac-Catoctin
03050107	Tyger	02070010	Middle Potomac-Anacostia-Occoquan
03050108	Enoree	02070011	Lower Potomac
03050109	Saluda	02080103	Rapidan-Upper Rappahannock
03060101	Seneca	02080201	Upper James
03060102	Tugaloo	02080202	Maury
03060104	Broad	02080203	Middle James-Buffalo
02070001	South Branch Potomac	02080204	Rivanna
02070003	Cacapon-Town	03010101	Upper Roanoke
		03010103	Upper Dan

Appendix Table II – Priority HUC8 drainages for ACFHP based on strong diadromous fish presence.

HUC 8 Number	Name
02070010	Middle Potomac-Anacostia-Occoquan
02070011	Lower Potomac
02080103	Rapidan-Upper Rappahannock
02080204	Rivanna

Appendix Table III - Subwatersheds (HUC12) in the Rapidan-Upper Rappahannock (02080103) and Rivanna (02080204) drainages that have wild brook trout present

Subwatershed Name	HUC 12 Code	Number of Catchments with wild Brook Trout Present
Jordan River	020801030102	3
Piney River-Thornton River	020801030301	3
Covington River	020801030302	2
Hughes River	020801030401	7
Sams Run-Hazel River	020801030402	1
Garth Run-Rapidan River	020801030701	12
Conway River	020801030702	5
South River-Rapidan River	020801030703	7
Rose River-Robinson River	020801030901	3
North Moormans River-Moormans River	020802040103	8
Doyles River	020802040104	7
Lynch River-North Fork Rivanna River	020801040301	4
Swift Run	020801040302	6

Appendix Table IV - Chesapeake Bay Program Level 1 priority wild brook trout subwatersheds (HUC12).

Subwatershed Name	HUC 12 Code	EBTJV Subwatershed Priority Score
Jordan River	020801030102	1.10
Piney River-Thornton River	020801030301	1.30
Covington River	020801030302	1.31
Hughes River	020801030401	1.10
Sams Run-Hazel River	020801030402	1.16
Garth Run-Rapidan River	020801030701	1.21
Conway River	020801030702	1.16
South River-Rapidan River	020801030703	0.84
Rose River-Robinson River	020801030901	1.24
Doyles River	020802040103	0.88

Appendix Table V - Dams blocking passage of both diadromous fish and wild brook trout in the Rapidan-Upper Rappahannock (02080103) and Rivanna (02080204) drainages.

CFPPP Unique ID	Dam Name	Latitude	Longitude
CFPPP_336	Unknown	38.31997384	-78.39243375
VA_301	Sugar Hollow Dam	38.26646025	-78.52934412
VA_362	Blue Ridge School Dam	38.26533718	-78.55651566
VA_367	Twin Lakes Dam #2	38.27902001	-78.53786798
VA_368	Twin Lakes Dam #1	38.26338101	-78.52306324
VA_369	Twin Lakes Dam #3	38.19689883	-78.49868729
VA_370	Greene Mountain Lake Dam	38.20562794	-78.51548984
VA_371	Wildwood Valley Lake Dam	38.21386475	-78.5347661
VA_888	Wilsdorf Dam	38.20205487	-78.50661872
VA_908	Allens Dam	38.27462321	-78.51810484
VA_913	Chisholm Dam Upper Farm	38.13645596	-78.73824695
VA_VA07918	Poplar Lake Dam	38.25615913	-78.43389949
CFPPP_735	Unknown	38.24986349	-78.441234
CFPPP_881	Unknown	38.24304605	-78.44203489
CFPPP_882	Unknown	38.26106376	-78.43346776
CFPPP_883	Unknown	38.27020957	-78.4369656

Atlantic States Marine Fisheries Commission

1050 N. Highland Street • Suite 200A-N • Arlington, VA 22201
703.842.0740 • 703.842.0741 (fax) • www.asmfc.org

James J. Gilmore, Jr. (NY), Chair *Patrick C. Keliher (ME), Vice-Chair* *Robert E. Beal, Executive Director*

Vision: Sustainably Managing Atlantic Coastal Fisheries

INVOICE

To: National Fish Habitat Board
C/O John Bloom
Association of Fish & Wildlife Agencies
444 North Capitol Street, NW
Suite 725
Washington, DC 20001

Date: March 30, 2018

Invoice #: 1

Expenses for the Multistate Conservation grant Program project entitled,
"Promoting Strategic Fish Habitat Conservation",

National Fish Habitat Partnership
Promoting Strategic Fish Habitat Conservation
Fund 0103-NFHB-ASMFC 2017

NFHB-ASMFC 2017

Budget Category	Budget	Expense
Personnel	$4,927	$4,928
Fringe Benefits	$1,478	$1,478
Contractual SARP	$7,686	$7,686
Contractual EBTJV	$7,686	$7,686
Cost Total		$21,778
ASMFC Indirect	$1,281	$1,280
Invoice TOTAL		**$ 23,057.75**

Atlantic States Marine Fisheries Commission
Normal Trial Balance - Billing Monthly
103 - AFWA Multistate Conservation Grant
From 7/1/2017 Through 3/31/2018

Account Code	Account Title	Debit Balance	Credit Balance
6005	Subcontracts	15,372.00	
6010	Salaries	4,928.00	
6012	Fringe Benefits	1,478.00	
	Balance 103 - AFWA Multistate Conservation Grant	21,778.00	
Report Total		21,778.00	0.00
Report Difference		21,778.00	

Atlantic States Marine Fisheries Commission
Expanded General Ledger
103 - AFWA Multistate Conservation Grant
Expenses
From 7/1/2017 Through 3/31/2018

GL Code	Task...	ID	Name	Documen...	Debit	Credit
6005	EBT	EASTERN...	Opening Balance		0.00	
6005	EBT	EASTERN...	Stephen G. Perry, DB...	3/13/2018	7,686.00	
			Transaction Total		7,686.00	0.00
	Bala...				7,686.00	
6005	SAR	SEAFWA	Opening Balance		0.00	
6005	SAR	SEAFWA	SEAFWA	12/30/2017	7,686.00	
			Transaction Total		7,686.00	0.00
	Bala...				7,686.00	
Balanc...					15,372.00	
Report Opening/Current Balance					0.00	0.00
Report Transaction Totals					21,778.00	0.00
Report Current Balances					21,778.00	0.00
Report Difference					21,778.00	

Payment Request - Invoice

Eastern Brook Trout
JOINT VENTURE
A Fish Habitat Partnership

STEPHEN G. PERRY
350 Hunkins Pond Road
Sanbornton, NH 03269

Name of the Project: Promoting Strategic Fish Habitat Conservation Through Regional and Collaborative Science and Priority Setting

Contract Number: 017-0902

Tax Identification Number: xxx-xx-0145

Invoice Date: March 13, 2017

Dates of Service: September 1, 2017 – March 13, 2018

Payment Requested: $7,686.00

POSTED 18-060

V03141807

Financial Report:

Line Item	Total Cost	Payment Request	Amount Spent to Date	Balance Remaining
Contractual	$7,686.00	$7,686.00	$0.00	$0.00

APPROVED
MAR 14 2018
BY
103 6005 5 EBT

PAID MAR 14 2018

3/13/18

SOUTHEASTERN
ASSOCIATION OF FISH AND WILDLIFE AGENCIES

INVOICE

BILL TO: Atlantic States Marine Fisheries Commission
1050 N. Highland Street, Suite 200 A-N
Arlington, VA 22201

Invoice Date: 12/30/17
Invoice #: 017-0901-001

REMIT TO: **Southeastern Association of Fish and Wildlife Agencies**
PO Box 646
Hartwell, GA 30643
angelynm@southeastaquatics.net

Payment Requested: **$7,686.00**

Contract #: 017-0901 - Promoting Strategic Fish Habitat Conservation through Regional and Collaborative Science and Priority Setting

Period of Performance: 9/1/17 through 12/31/17

Expenditure Categories:	Contract Budget	Expenses for 6/1/16 - 12/31/16	Budget Balance
Travel		$ (4,575.22)	$ (4,575.22)
Supplies		$ (125.00)	$ (125.00)
Equipment	$ -	$ -	$ -
Contractual	$ 7,686.00	$ (2,985.78)	$ 4,700.22
TOTAL	**$ 7,686.00**	**$ (7,686.00)**	$ -

#11277

APPROVED
MAR 14 2018
BY

PAID MAR 14 2018

POSTED 18.060

APPROVED
MAR 14 2018
BY
10360055SAR

3/13/18