2011 Annual Performance Report
Enhancing Connectivity in the Ash-Black Rock Sub-basin of the West Branch Narraguagus River. Project Number 53371-2010-358.

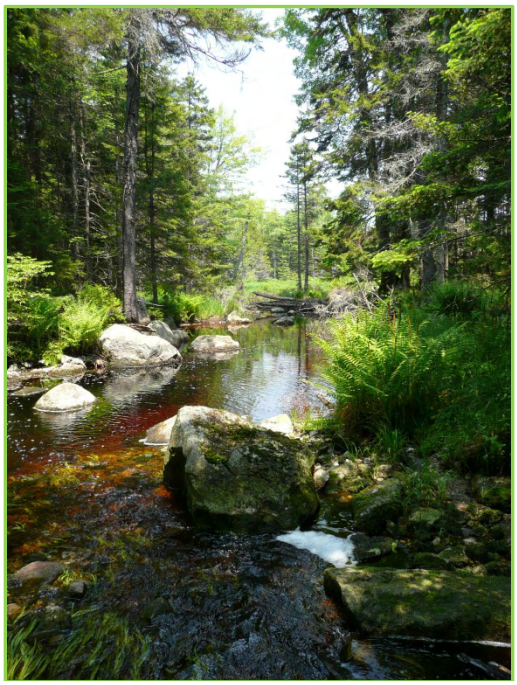

Figure 1: Ash Bog Stream. Photo by Nancy Sferra.

This 2011 Annual Performance Report summarizes the activities conducted at The Nature Conservancy's Spring River Preserve in T10 and T16, Hancock County, Maine, through our Eastern Brook Trout Joint Venture (Project # 53371-2010-358).

Project Objective: TNC and Service will work to replace two degraded stream/road crossings with bankfull channel width spanning open bottom structures (Cooperative Agreement 2011) (Figure 2).

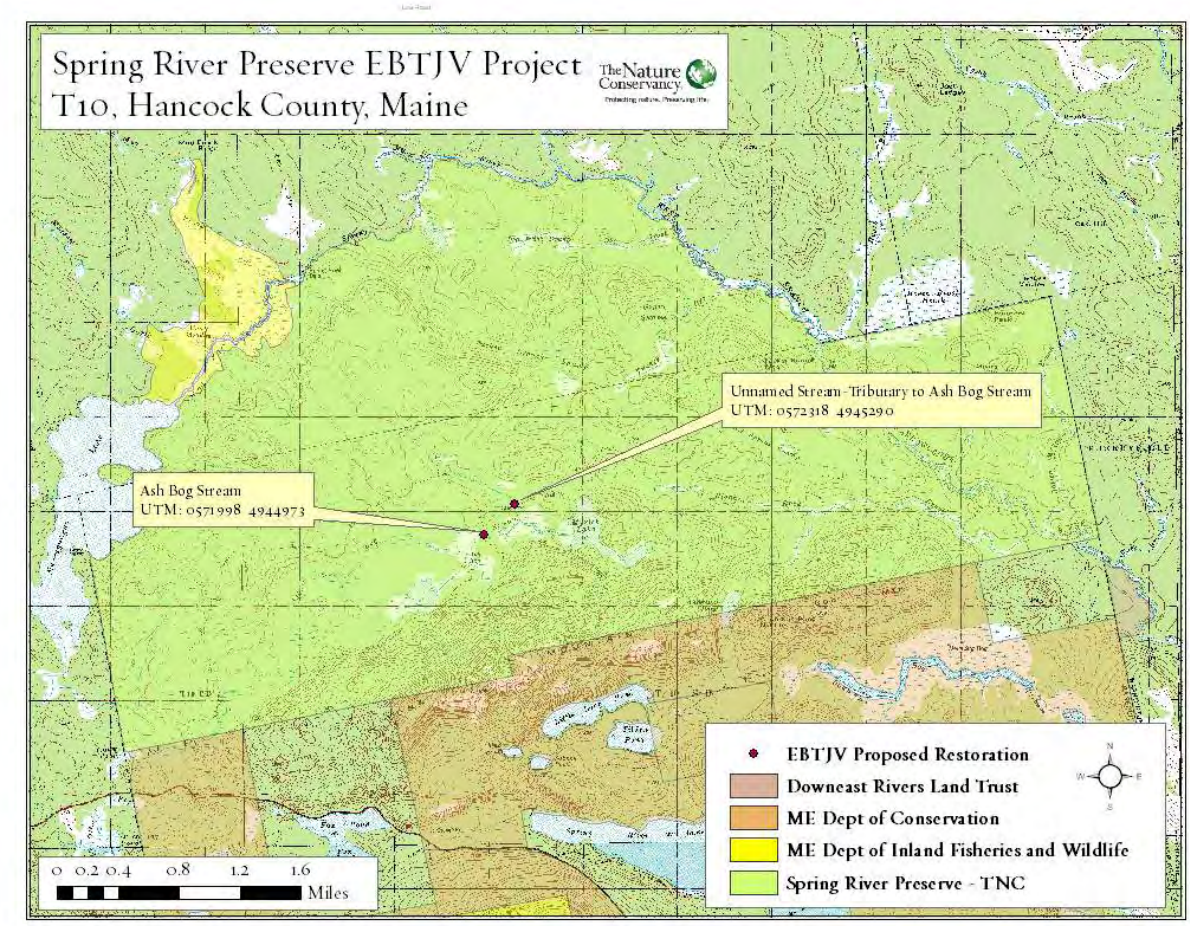

Figure 2: Map showing locations for culvert replacements on Ash Bog Stream and Black Rock Brook on The Nature Conservancy's Spring River Preserve.

Pre-construction Activities: With the help of Scott Craig, USFWS, and Steven Koenig, Project Share, stream simulation data for engineering the replacement of the existing round culverts were documented for both stream locations (Black Rock Brook and Ash Bog Stream) on June 10, 2011. Water surface profiles and culvert sizing was completed by Steve Koenig in July. In addition, water temperature recorders were placed downstream of each project, set to collect water temperature every 30 minutes. The data loggers were downloaded on October 18, 2011, and the logger at the Ash Bog Stream was removed.

Culverts were purchased from ConTech. In order to minimize the amount of fill required at the Black Rock Stream culvert, a compressed half pipe was used. A 9 foot span, 3' 11' high was used at Black Rock Brook. A 15 foot span, 6' 7" high was used at Ash Bog Stream. Both culverts utilized steel footing pads. The engineering work was done prior to the execution of the Cooperative Agreement and the cost of this activity is not included in the financial report.

Summary of Water Temperature Data

Water temperature data and summary was provided by Scott Craig, US Fish and Wildlife Service. Maximum water temperature in 2011 coincided with the day of maximum air temperature (obtained at

the Old Stream USGS stream gage). Maximum water temperature occurred on July 22 when the air temperature reached 35.7 ˚C. The tributary high temperature was 30.7 ˚C and the mainstem 28.5 ˚C. Mean water temperature throughout the summer (June 15 to August 31) at the tributary was 19.8 ˚C and the mainstem 20.5 ˚C. Combined warm water temperatures and low pH (<4.5) appear to limit aquatic fauna in these two streams. Specifically, high water temperatures (>24˚C) reflect potential impediments to sustained brook trout residence.

Table 1: 2011 temperature summary downstream from each culvert.

Time Frame	Temperature Parameter (˚C)	Black Rock Brook	Ash Bog Brook
June 15 - Aug 31	Mean	19.8	20.5
	Max	30.7	28.5
	# Hours >24˚C	140.5	171
	% time >24˚C	7.5%	9.1%

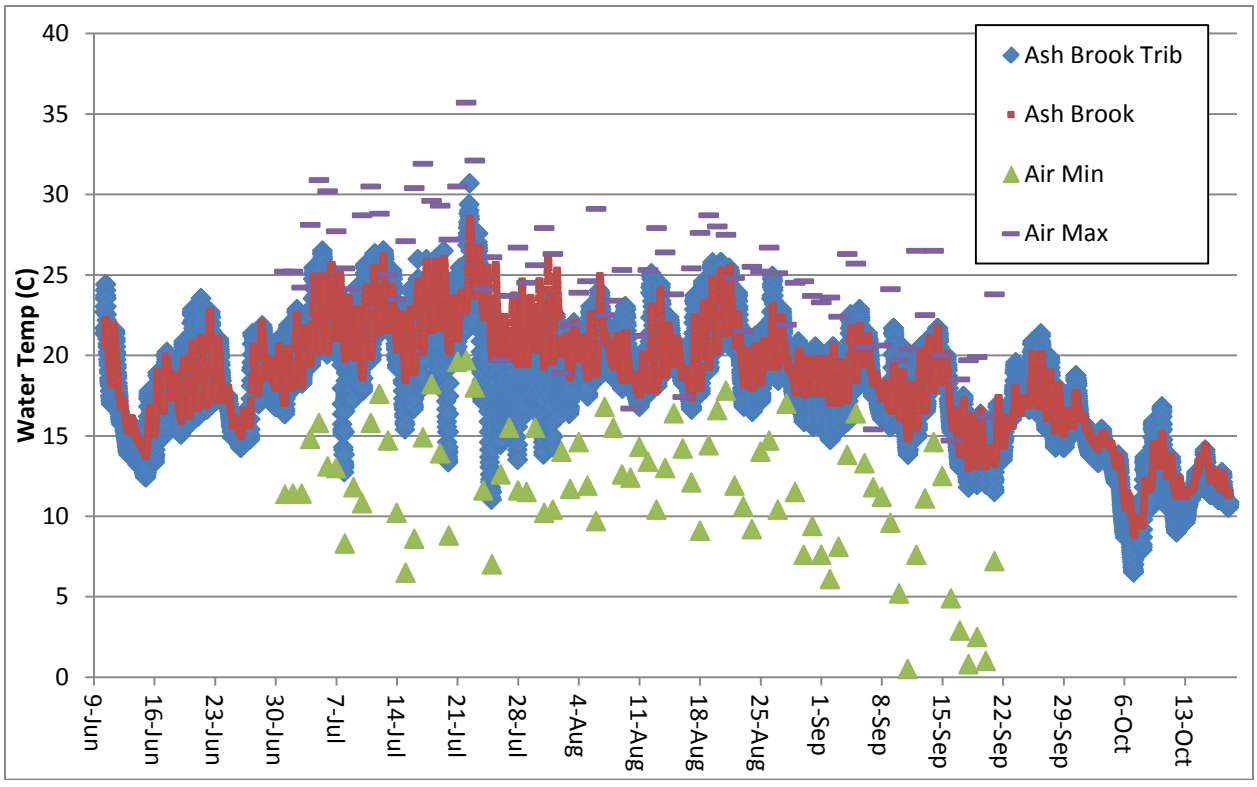

Figure 3: Instantaneous water temperature at the two locations and daily air (max.-min) temperature.

Figure 4: Scott Craig, USFWS, taking stream elevations on Ash Bog Stream. Photo by Nancy Sferra.

Figure 3: Ash Bog Stream culvert. Photo by Dan Grenier.

Construction Activities: Hanscom Construction installed the two culverts in mid-October following delivery of the culverts from ConTech. Hanscom Construction has done previous road retirement on Spring River Preserve, including the restoration of stream crossing, and has extensive experience with Project Share in the installation of open bottom arch culverts. Joseph McKerley (USFWS Maine Fishery Resources Office) removed fish from the project area and helped construction crews for 2.5 days (October 17-19).

No fish were captured at the Ash Bog Stream location. The backpack electrofishing sampling length included 20 meters upstream and 45 meters downstream from the culvert. The pH at this site was 4.3 and the water temperature was 10 °C. Seven fish and three crayfish (unknown genus) were captured at the Black Rock Brook location with all species obtained upstream of the culvert. 30 meters of stream was sampled via backpack electro fishing upstream and 10 meters down. The pH at his site was 4.6 and the water temperature was 9.5 °C.

Figure 4: Crayfish from Ash Bog Brook site. Photo by Nancy Sferra.

Table 2: Species collected during electrofishing at Black Rock Brook in October 2011.

Species	Total Length (mm)	Weight (g)
Nine Spine Stickleback	45	
	48	
	44	
	49	
	51	
Common Shiner	37	
	41	
Crayfish	55	3.6
	68	3.9
	46	1.6

Gravel fill for the project was obtained on-site from previously retired logging roads near the construction sites. Gravel from the road surface was scraped to the natural substrate and trucked to the construction site. Bedrock beneath the Black Rock Brook culvert created some challenges in the installation of that culvert but they were able to break apart the bedrock with the equipment on hand without having to elevate the culvert. Construction took two days at each site.

Photographs including time-lapse and movie imagery were obtained pre and post project. These media products have been forwarded to a USFWS contractor for education and outreach purposes. The contact information for this person is James Boehmer- jamesboehmer@comcast.net.

Figure 5: Construction work at Black Rock Brook site, October 2011. Photo by Dan Grenier.

Results: No changes were observed at Ash Bog Stream following construction. The stream flow was relatively unchanged due to the volume of water still flowing through the culvert at the time of construction. However, the new bottom arch culvert will allow for unrestricted fish passage in all seasons. The sedge meadow above the Black Rock Brook culvert is significantly changed due to the culvert. The restriction created by the road surface and undersized culvert has been eliminated and the standing water upstream of the culvert has drained out. There is a clear thread of the stream in the sedge meadow with sections of exposed mud flat where there had been pooled water. It is likely that the reforestation of the sedge meadow can be accelerated through tree planting in the spring – northern white cedar and black and red spruce will likely do the best in the restoration area until the site can be colonized by red maple. Additionally, 2011 was an exceptional seed year for white cedar and spruce, both of which are abundant along the wetland edge. There may be some natural regeneration on the mud flats from seed drift of the fringing forest.

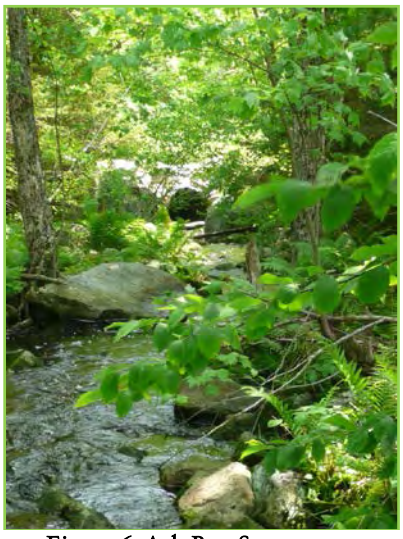

Figure 6: Ash Bog Stream downstream section before culvert replacement. Photo by Nancy Sferra.

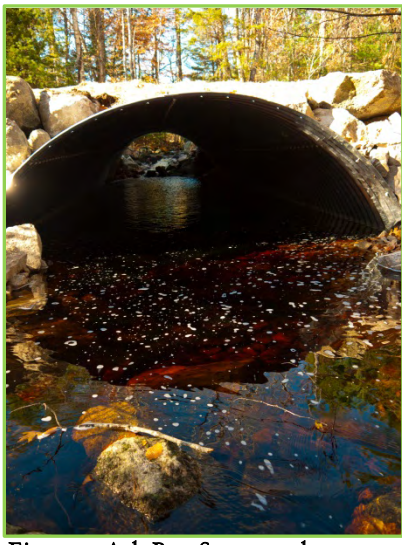

Figure 7: Ash Bog Stream culvert outlet following construction. Photo by Nancy Sferra.

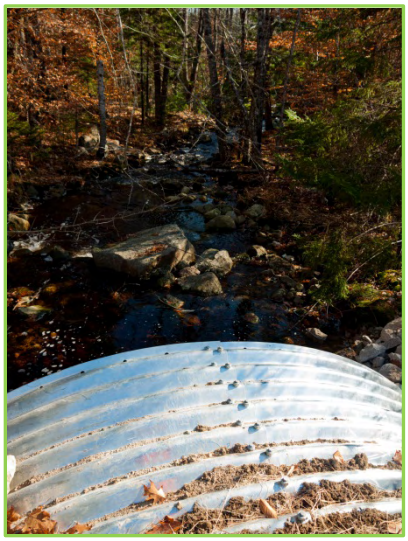

Figure 8: Ash Bog Stream downstream of new culvert outlet. Photo by Nancy Sferra.

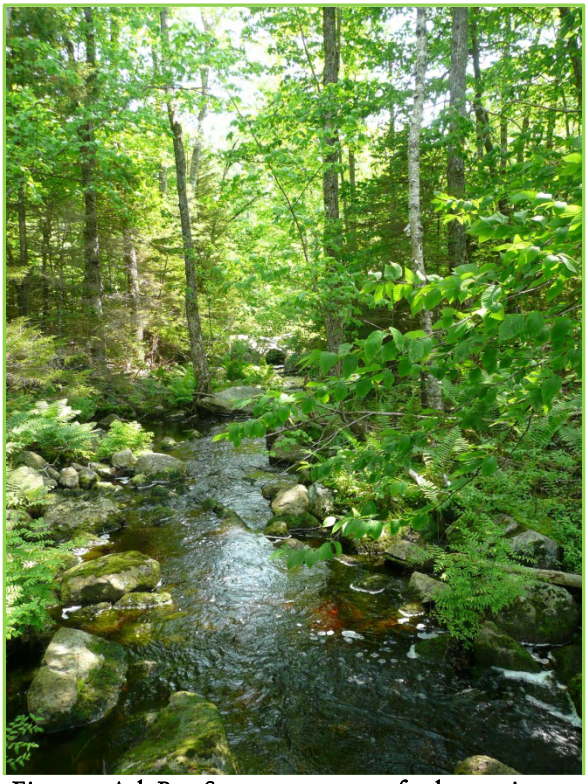

Figure 9: Ash Bog Stream upstream of culvert prior to construction. Photo by Nancy Sferra.

Figure 10: Ash Bog Stream upstream of culvert following installation of new culvert. Photo by Nancy Sferra.

Figure 11: Black Rock Brook upstream before construction. Photo by Nancy Sferra.

Figure 13: Black Rock Brook downstream following installation of new culvert. Photo by Nancy Sferra.

Figure 12: Black Rock Brook upstream of culvert before restoration. Photo by Scott Craig.

Figure 14:Black Rock Brook downstream following culvert installation. Photo by Nancy Sferra.

Figure 15: Black Rock Brook culvert looking from the upstream side. Photo by Nancy Sferra.

Figure 16: Black Rock Brook culvert looking from downstream side. Photo by Nancy Sferra.

FINANCIAL ANALYSIS THROUGH 12/16/11

BILLABLE

	BUDGET	TOTAL SPENT	FUNDS REMAINING
TNC Project Mgmt-Personnel	$1,050.00	$174.45	$875.55
TNC Project Mgmt-Travel	$0.00	$0.00	$0.00
TNC Project Mgmt-Supplies	$0.00	$0.00	$0.00
TNC Culvert and Construction-Contracts	$46,174.00	$29,000.00	$17,174.00
TNC Culvert and Construction-Supplies	$0.00	$2,736.35	($2,736.35)
	$0.00	$0.00	$0.00
	$0.00	$0.00	$0.00
	$0.00	$0.00	$0.00
Total Direct Charges	$47,224.00	$31,910.80	$15,313.20
Indirect Charges	$0.00	$0.00	$0.00
Grand Total	$47,224.00	$31,910.80	$15,313.20

MATCH

	TNC MATCH BUDGET	TOTAL SPENT	FUNDS REMAINING
TNC Project Mgmt-Personnel*	$3,500.00	$294.51	$3,205.49
TNC Project Mgmt-Travel	$0.00	$0.00	$0.00
TNC Project Mgmt-Supplies	$0.00	$0.00	$0.00
TNC Culvert and Construction-Contracts	$37,670.00	$0.00	$37,670.00
TNC Culvert and Construction-Supplies	$0.00	$25,966.11	($25,966.11)
FWS 3rd Party	$9,100.00	$2,625.00	$6,475.00
Project SHARE 3rd Party	$500.00	$967.20	($467.20)
DIFW 3rd Party	$1,000.00	$0.00	$1,000.00
Total Direct Charges	$51,770.00	$29,852.82	$21,917.18
Indirect Charges	$0.00	$0.00	$0.00
Grand Total	$51,770.00	$29,852.82	$21,917.18
*Includes estimated November benefits			

Current Cash Balance in center

Billable Expenses subtotal from above table	($31,910.80)
Match Expenses subtotal from above table	($29,852.82)
3rd Party Match	$3,592.20
Grant Income received	-
EBA Assessment	($105.68)
Ending Cash Balance as of 12/16/11	($58,277.10)

FEDERAL FINANCIAL REPORT

(Follow form instructions)

1. Federal Agency and Organizational Element to Which Report is Submitted	2. Federal Grant or Other Identifying Number Assigned by Federal Agency (To report multiple grants, use FFR Attachment)	Page	of
U.S. Fish and Wildlife Service	53371-B-J002	1	1 pages

3. Recipient Organization (Name and complete address including Zip code)

The Nature Conservancy
14 Maine Street, Suite 401
Brunswick, ME 04011

4a. DUNS Number	4b EIN	5. Recipient Account Number or Identifying Number (To report multiple grants, use FFR Attachment)	6. Report Type	7. Basis of Accounting
072656630	53-0242652	1190143810-01	☐ Quarterly ☐ Semi-Annual X Annual ☐ Final	X Cash ☐ Accrual

8. Project/Grant Period From: (Month, Day, Year)	To: (Month, Day, Year)	9. Reporting Period End Date (Month, Day, Year)
July 26, 2011	December 31, 2014	December 16, 2011

10. Transactions	Cumulative
(Use lines a-c for single or multiple grant reporting)	
Federal Cash (To report multiple grants, also use FFR Attachment):	
a. Cash Receipts	
b. Cash Disbursements	
c. Cash on Hand (line a minus b)	$ -
(Use lines d-o for single grant reporting)	
Federal Expenditures and Unobligated Balance:	
d. Total Federal funds authorized	$ 47,224.00
e. Federal share of expenditures	31,910.80
f. Federal share of unliquidated obligations	
g. Total Federal share (sum of lines e and f)	$ 31,910.80
h. Unobligated balance of Federal funds (line d minus g)	15,313.20
Recipient Share:	
i. Total recipient share required	$ 51,770.00
j. Recipient share of expenditures	29,852.82
k. Remaining recipient share to be provided (line i minus j)	$ 21,917.18
Program Income:	
l. Total Federal program income earned	
m. Program income expended in accordance with the deduction alternative	
n. Program income expended in accordance with the addition alternative	
o. Unexpended program income (line l minus line m or line n)	$ -

11. Indirect Expense	a. Type	b. Rate	c. Period From	Period To	d. Base	e. Amount Charged	f. Federal Share
	N/A						$ -
				g. Totals:	$ -	$ -	$ -

12. *Remarks: Attach any explanations deemed necessary or information required by Federal sponsoring agency in compliance with governing legislation:*

13. Certification: By signing this report, I certify that it is true, complete, and accurate to the best of my knowledge. I am aware that any false, fictitious, or fraudulent information may subject me to criminal, civil, or administrative penalties. (U.S. Code, Title 218, Section 1001)

a. Typed or Printed Name and Title of Authorized Certifying Official	c. Telephone (Area code, number and extension)
Sue Downs, Grant Specialist	207-729-5181
	d. Email address: sdowns@tnc.org
b. Signature of Authorized Certifying Official	e. Date Report Submitted (Month, Day, Year): December 16, 2011
	14. Agency use only:

Standard Form 425
OMB Approval Number: 0348-0061
Expiration Date: 10/31/2011