



Group:	Inverness South Angler Association (aka ISAA)
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PROJECT BRIEF:

PART A: Project Description

Watershed(s):	Mabou Harbour, Broad Cove River, Graham River
Watercourse(s):	MacQuarrie Brook, Little Shea Brook, Glendyer Brook, Miramichi Brook, Rosedale Brook, Roseburn Brook, More Brook, Loch Ban Brook, Fraser’s Brook, MacLean Brook, Broad Cove River, Graham River

Project description and objectives:

<p>What habitat issues is this project addressing?</p> <p>The habitat restoration component of this project works to expand and enhance migratory access, holding capacity, and spawning areas alongside the continuous improvement of water quality in the Mabou Harbour, Broad Cove River, and Graham River Watersheds. The work being done builds upon two decades of continuous community stewardship that has resulted in a dramatic increase in recreational angling, water quality, and economic benefits to the host communities.</p> <p>There were two major projects that the ISAA and funding partners took on this season. The first was the installation of fish tubs and passage baffles through the culvert on Deepdale road where More Brook (tributary to Broad Cove River) passes through. This area had been a complete passage blockage for decades. There were many components that created the blockage including a perched culvert, low flows through the culvert and a meter drop on the downstream end of the culvert. The other project was the installation of armour stone on three sections of bank in the mid-section of Graham River. Kickers and boulder groupings were also incorporated into the bank stabilization design to slow the flow of water and two rock sills were constructed to dissipate energy levels.</p>
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Specific restoration work done this year i.e. techniques used, scale of structures, hand or machine work etc:

- Removal of debris jams, beaver dams and flood deposits
- Installation of digger and deflector logs; rock deflectors, sills, weirs
- Bank rock stabilization by hand and by machine using class 2 armour rock
- Majority of work done by hand, but three bank stabilization sites done by machine using class 2 armour rock

Project Design and Results:

LOCATION INFORMATION	
Watercourse:	MacQuarrie Brook
Watershed:	Mabou Harbour
Location:	West River/ Hays River
Nearest Community:	Centerville
Road Crossing [access point]	Unnamed Road connecting Lake Ainslie Chapel Brook Village Road and East Sky Glen Road
Map # [NS Topo series 1:50,000]	Lake Ainslie 11K/3
Coordinates: UTM 20 T / Lat. & Long.	
Downstream project limit: Easting	634970 / N 46°04'16.3"
Downstream project limit: Northing	5103439 / W 61°15'16.85"
Upstream project limit: Easting	635199 / N46°04'19.35"
Upstream project limit: Northing	5103538 / W 61°15'06.09"

Other Instream Habitat Restoration Measure Taken:

Type of Action Taken:	Debris/windfall & Beaver Dam Removal upstream from Jeff Lee's culvert under his driveway
Design Width:	3-4m
Total Length of Stream Restored:	206.67m
Area Restored:	2432m ²

Project Design and Results:

LOCATION INFORMATION	
Watercourse:	Little Shea Brook
Watershed:	Mabou Harbour (Tributary to Shea Brook)
Location:	Old Mull Road
Nearest Community:	Brook Village
Road Crossing [access point]	Old Mull Road
Map # [NS Topo series 1:50,000]	Lake Ainslie 11K/3
Coordinates: UTM 20 T / Lat. & Long.	
Downstream project limit: Easting	630609 / N 46°02'20.66"
Downstream project limit: Northing	5099774 / W 61°18'43.4"
Upstream project limit: Easting	631363 / N 46°02'04.6"
Upstream project limit: Northing	5099294 / W 61°18'08.8"

Other Instream Habitat Restoration Measure Taken:

Type of Action Taken:	Debris/windfall removal upstream from Old Mull Rd. culvert (signage posted near road)
Design Width:	4-5m
Total Length of Stream Restored:	1030m (1.03km)
Area Restored:	59551.61m ²

Project Design and Results:

LOCATION INFORMATION	
Watercourse:	Glendyer Brook
Watershed:	Mabou Harbour
Location:	Smithville Road
Nearest Community:	Mabou
Road Crossing [access point]	Smithville Road
Map # [NS Topo series 1:50,000]	Lake Ainslie 11K/3
Coordinates: UTM 20 T / Lat. & Long.	
Downstream project limit: Easting	630139 / N 46°07'01.36"
Downstream project limit: Northing	5108431 / W 61°18'56.71"
Upstream project limit: Easting	630524 / N 46°07'02.4"
Upstream project limit: Northing	5108471 / W 61°18'38.7"

Bank Stabilization & Other Instream Habitat Restoration Measures Taken:

Type of Action Taken:	Debris Removed, Original Channel Restored, Bank Stabilized with rock to prevent further erosion/scouring
Design Width:	4m
Total Length of Stream Restored:	408.25m
Length of Bank Stabilized:	150m
Height of Bank Stabilized:	0.2-0.5m
Method of Stabilization:	Hand Rocking
# Trees Planted:	N/A
Width of Watercourse:	2-4m
Area in Sq. Meters Restored:	13671.13m ²

Project Design and Results:

LOCATION INFORMATION	
Watercourse:	More Brook
Watershed:	Broad Cove River
Location:	Deepdale Road
Nearest Community:	Inverness
Road Crossing [access point]	Deepdale Road
Map # [NS Topo series 1:50,000]	Lake Ainslie 11K/3
Coordinates: UTM 20 T / Lat. & Long.	
Downstream project limit: Easting	632058 / N 46°13'34.4"
Downstream project limit: Northing	5120408 / W 61°17'15.12"
Upstream project limit: Easting	633353 / N 46°13'33.6"
Upstream project limit: Northing	5120610 / W 61°16'14.7"

Bank Stabilization & Other Instream Habitat Restoration Measures Taken:

Type of Action Taken:	Debris/windfall removed, bank stabilization via hand rocking thus preventing further erosion/scouring
Design Width:	4-6m
Total Length of Stream Restored:	1500m (1.5km)
Length of Bank Stabilization:	300m
Height of Bank Stabilization:	0.2-0.6m
Method of Stabilization:	Hand Rocking
# Trees Planted:	N/A
Width of Watercourse:	2-3m
Area in Sq. Meters Restored:	67042.78m ²

Project Design and Results:

LOCATION INFORMATION	
Watercourse:	More Brook
Watershed:	Broad Cove River
Location:	Deepdale Road
Nearest Community:	Inverness
Road Crossing [access point]	Deepdale Road
Map # [NS Topo series 1:50,000]	Lake Ainslie 11K/3
Coordinates: UTM 20 T / Lat. & Long.	
Downstream project limit: Easting	632915 / N 46°13'29.35"
Downstream project limit: Northing	5120471 / W 61°16'35.3"
Upstream project limit: Easting	632931 / N 46°13'29.44"
Upstream project limit: Northing	5120474 / W 61°16'34.5"

Fish Passage Remediation & Bank Stabilization

Type f Barrier:	Perched Creosote Timber Culvert that is estimated by locals to be about 60 years old. The upstream end of the culvert was level with the stream bed, but on the downstream end there was over a meter drop from the culvert into the plunge pool.
Action Taken:	Will Daniels, Habitat Restoration Technician, put together a design to remediate the fish passage. One fibre glass tub split in half and connected in the middle and on the entrance and exit of flow by 3 chutes spread out vertically to allow for easy fish passage through. The chute on the culvert end sits right on the side edge of the culvert. From the entrance through to the very end of the culvert, baffles were installed to create deeper, more passable backwater
Upstream Habitat Gain:	3150m (3.15km)
Length of Bank Stabilization:	12m
Height of Bank Stabilization:	3m
Method of Stabilization:	Armour Stone (Class 1-2) strategically placed
Width of Watercourse:	2-3m
# Trees Planted:	None this year

Project Design and Results:

LOCATION INFORMATION	
Watercourse:	Loch Ban (Tributary to More Brook)
Watershed:	Broad Cove River
Location:	Deepdale Road
Nearest Community:	Inverness
Road Crossing [access point]	Deepdale Road
Map # [NS Topo series 1:50,000]	Lake Ainslie 11K/3
Coordinates: UTM 20 T / Lat. & Long.	
Downstream project limit: Easting	632564 / N 46°13'31.67"
Downstream project limit: Northing	5120535 / W 61°16'51.58"
Upstream project limit: Easting	623662 / N 46°13'42.15"
Upstream project limit: Northing	5120672 / W 61°23'46.8"

Fish Passage Remediation:

Type of Barrier:	Debris/windfall
Action Taken:	Cleared all debris and windfall by hand and with chainsaw
Upstream Habitat Gain:	2110m

Project Design and Results:

LOCATION INFORMATION	
Watercourse:	Frasers Brook
Watershed:	Broad Cove River
Location:	Foot Cape Road
Nearest Community:	Inverness
Road Crossing [access point]	Foot Cape Road
Map # [NS Topo series 1:50,000]	Lake Ainslie 11K/3
Coordinates: UTM 20 T / Lat. & Long.	
Downstream project limit: Easting	630980 / N 46°11'25.57"
Downstream project limit: Northing	5116607 / W 61°18'09.4"
Upstream project limit: Easting	630596 / N 46°11'37.6"
Upstream project limit: Northing	5116971 / W 61°18'26.9"

Fish Passage Remediation:

Type of Barrier:	Debris/windfall
Action Taken:	Cleared all debris and windfall by hand and with chainsaw
Upstream Habitat Gain:	1770m

Project Design and Results:

LOCATION INFORMATION	
Watercourse:	Graham River
Watershed:	Grahame River
Location:	Route 19
Nearest Community:	Judique
Road Crossing [access point]	Route 19 & Campbell Road
Map # [NS Topo series 1:50,000]	Whycomomagh 11F/14
Coordinates: UTM 20 T / Lat. & Long.	
Downstream project limit: Easting	620871 / N 45°51'27.36"
Downstream project limit: Northing	5079405 / W 61°26'34.7"
Upstream project limit: Easting	621673 / N 45°51'19"
Upstream project limit: Northing	5079163 / W 61°25'57.8"

In Stream Habitat Structures

Design Width:	4-6m
Distance Between Structures:	30-60m
Number & Type of Structures	15 Deflectors
Total Length of Stream Restored:	1240m (1.24km)
Area Restored:	73839.65m ²

Design Width:	4-6m
Distance Between Structures:	30-60m
Number & Type of Structures	21 Groynes
Total Length of Stream Restored:	1240m (1.24km)
Area Restored:	73839.65m ²

Project Design and Results:

LOCATION INFORMATION	
Watercourse:	Graham River
Watershed:	Graham River
Location:	Route 19
Nearest Community:	Judique
Road Crossing [access point]	Route 19 & Campbell Road
Map # [NS Topo series 1:50,000]	Whycomagh 11F/14
Coordinates: UTM 20 T / Lat. & Long.	
Downstream project limit: Easting	617714 / N 45°51'36.55"
Downstream project limit: Northing	5079628 / W 61°29'01"
Upstream project limit: Easting	617855 / N 45°51'36.7"
Upstream project limit: Northing	5079635 / W 61°28'54.4"

Bank Stabilization & Riparian Restoration

Length of Bank Stabilization:	60m x1; 20m x2
Height of Bank Stabilization:	3.5m for 60m length bank; 3m for 20m length banks
Method of Stabilization:	Armor rock; Class 2 rip rap with kickers and boulder groupings included in the design to avoid displacing the energy downstream.
Width of Watercourse:	10-12m
# Trees Planted:	20 (18 Oak + 3 Black Ash) only on the 3 rd site, furthest downstream

OVERALL PROJECTS RESULTS

Total Number and Type of Structures:	~50: Deflectors, Groynes, Weirs, Sills, Bank Rocking
Total length (meters) of stream restored:	4384.92m
Total Stream Area in Sq. meters:	142, 697m ²
Total Riparian Area in Sq. meters:	4.43m ²
Total Number of Trees planted:	20 (18 Oak and 2 Black Ash)

Past Work & Future Plans:

Has habitat work been done on the watercourse(s) in previous years? Which? How much?
Yes, habitat work has been done in the past on all the above-mentioned watercourses. All work completed by ISAA has been inventoried dating back to 2009.
Is further additional work planned or anticipated?
All the previously installed structures require assessment and maintenance work each year, therefore providing ISAA ongoing work regarding existing structures. Additional armour stone banks are in the plan for the 2017&2018 work season for Graham’s River along with a fish ladder and culvert baffles for a perched culvert in the upper reaches of the Graham’s River. The 2017 work season will be focusing on the remaining armour stone bank work and fish culvert n Graham’s River along with the establishment of a long term plan for the Southwest Mabou River.

PART B: Project Delivery (Overall project, not by watercourse)

PEOPLE POWER

VOLUNTEERS	
Describe how volunteers contribute to your Adopt-A-Stream project and to your organization in general.	<p>ISAA volunteers have been working since 2004 with AAS funds and knowledge to fulfill our missions. The success of our partnership has been instrumental in attracting the long-term interest and investment of other partners. They include the Atlantic Salmon Conservation Foundation, the Recreational Fisheries Conservation Partnership Program, and Wild Salmon Unlimited. Volunteers with ISAA have contributed to:</p> <ul style="list-style-type: none"> • Fish Stocking

	<ul style="list-style-type: none"> • Coordinating the Fishing Derby • Brood Stock Collection • Restoration Work • Conference Attendance • Mileage (Transportation)
# People volunteering on all aspects of the project:	24
Total Volunteer Hours	
Approximate breakdown of roles	
Management / Supervision:	
Labour:	
Other:	

PAID PERSONNEL	
Number of project workers:	
Total Tally Weeks of work:	
Start Date:	
End Date:	
Other Paid staff contributing to the project:	

Other Information

Other Project Contributors	Contribution Description	Cash	Inkind
Recreational Fisheries Partnership Program	Cash	40,000	
Wild Salmon Unlimited	Cash	50,000	
Landowners	Material		
Mabou River Inn	Meeting Room		
Mileage	km		

Please convey any other additional activities undertaken to support the project (education, promotion, population assessments etc.) even if not directly funded by NSLC Adopt A Stream.
The annual Fishing Derby was held this season to promote outdoor activity and responsible angling.

IMPORTANT -

- **PLEASE SEND PHOTOS AS SEPARATE FILES NOT JUST EMBEDDED IN THE REPORT. These may be also be used for publication and promotion purposes.**
- **Please also include copies of any media articles about the project**
- **Attach completed detailed Financial Statement**