



**2008**

**Report to the Nova Scotia  
Sportfish Habitat Fund**



*Bluenose Coastal Action Foundation summer crew and volunteers floating rocks across the Mushamush to backfill one of deflectors installed to narrow and deepen the channel.*

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## Executive Summary

In 2008 the Adopt-A-Stream program celebrated its 10<sup>th</sup> anniversary with the Nova Scotia Salmon Association, which administers the program on behalf of the recreational fishing community. Funding received from the Nova Scotia Sportfish Habitat Fund is distributed to community groups for habitat restoration projects approved through the review committee process.

This year Adopt-A-Stream supported the project work of 22 community groups. Fish habitat restoration was conducted in 45 watercourses. As a result, approximately 85,000 square metres of in-stream fish habitat was restored and 73,000 square meters of riparian habitat protected and revegetated. There were 6645 trees planted in riparian zones.

The Nova Scotia Sportfish Habitat Fund contributed \$240,000. An additional \$878 was carried over from previous years, making the total funds available to projects \$240,878. Community groups secured matching cash and in-kind contributions of \$494,797. The volunteer commitment to the projects included more than 8000 hours of volunteer time.

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*The Salmon River Salmon Association crew members finish a digger log installation on Belliveau Brook, Digby Co.*



*The habitat crew of the Inverness South Anglers Committee of the Mabou & District Community Development Association have been a team for the past several years.*

## **Introduction**

In 2008 the Nova Scotia Salmon Association marked its 10<sup>th</sup> anniversary at the helm of the Adopt-A-Stream program. This program, designed to help community-based volunteer organizations carry out projects to restore fish habitat and increase fish populations, has contributed to the restoration of more than *one million square meters of fish habitat* over the past decade.

Adopt-A-Stream serves as a catalyst and facilitator for broad-based community watershed management, with a two-fold strategy. The program encourages and supports communities working on long-term land and water use issues to ensure that best management practises are adopted; and it provides direct assistance in the form of project funding and technical advice for hands-on projects that physically restore ecological function and productive capacity to aquatic and riparian habitats.

Since 2005, the Nova Scotia Sportfish Habitat Fund (NSSHF) has been the primary source of project funding. Having this directed revenue available annually, from the \$5 habitat stamp on recreational fishing licenses, provides a foundation community groups can build upon to undertake increasingly comprehensive fish habitat restoration in their local watersheds all across the province.

The following report summarizes the activities of the Adopt-A-Stream program in 2008, detailing project results of the contribution provided through the Nova Scotia Sportfish Habitat Fund.

## **Background**

The past 200 years of human activity in the Maritimes has made drastic changes to watersheds, resulting in severely degraded freshwater habitats. Land clearing, log driving, agriculture, road construction, and urban and industrial development have changed the shape of stream channels, and have introduced excessive silt, nutrients, and other pollutants to our watercourses. It is estimated that most gravel bed streams in Nova Scotia are only 5 to 20% as productive as they once were. Once abundant, the clean cool gravel-bed stream needed for spawning and rearing of juvenile fish is in increasingly short supply. Cold water species, particularly Atlantic salmon, sea run, brook and brown trout, suffer as a result of habitat degradation. All aquatic life benefits from habitat conservation and improvement that restores the ecological function of watercourses. Habitat restoration, when properly designed and applied, can result in dramatic improvements in spawning success and increases in juvenile salmon and trout densities.

Across Nova Scotia, volunteer-based community groups have demonstrated the long-term commitment and effort needed to bring their rivers back to health and productivity. River associations, angling clubs, and wildlife organizations have shown the leadership and the tenacity to see their projects through. But in order to be successful, groups require funding and technical advice.

The Nova Scotia Salmon Association (NSSA), founded in 1963, is a not-for-profit, charitable conservation organization whose goal is the wise management of Atlantic salmon and trout. The NSSA is the regional council of the Atlantic Salmon Federation, and has 25 local affiliates across the province. The NSSA is a member of the Inland Fisheries Advisory Committee (IFAC), as are the NS Federation of Anglers and Hunters, Trout Nova Scotia, the Atlantic Salmon Federation (ASF), and the Canadian Association of Smallmouth Anglers (CASA). It was through discussions at this committee, in late 1997, that the NSSA assumed the lead role in the delivery of the Adopt-A-Stream program on behalf of the member organizations.

### **2008 Adopt-A-Stream Program**

Frequent rains throughout much of the 2008 field season certainly resulted in good conditions for fish, but the high flows hampered project work. Although a few of the projects were not fully completed, many groups were still able to accomplish a great deal of quality habitat restoration work.

The effectiveness and efficiency of the Adopt-a-Stream program continued to benefit from two positive developments initiated in 2006.

One was the continued financial commitment of the Inland Fisheries Division of the Nova Scotia Department of Aquaculture and Fisheries, in the form of a service contract with the NSSA for providing technical and administrative support to the projects. As a result of this, all the funding received from the Sportfish Habitat Fund was distributed directly to the community groups undertaking approved projects.

Also beneficial was the renewal of the NS Department of Environment “blanket” approval for most types of watercourse alterations associated with projects under Adopt-A-Stream. The confidence in both the AAS project review process and technical field support provided by the program allows NS Environment to offer this as an alternative to individual groups making application for individual site approvals. This approach saves community groups money and time that is better spent on their projects.

The Nova Scotia Sportfish Habitat Fund (NSSHF) was the main source of project funding and was used to support a large number of projects across the entire province. The NSSA also managed several habitat restoration projects with habitat compensation funds, as well as a voluntary project with a private developer, under the Adopt-A-Stream program. Most of these were done in partnership with community groups, resulting in work that would not have been done otherwise.

#### *Project Proposal Review and Selection*

The Adopt-A-Stream program strives to ensure high quality work and equitable distribution of resources (both funding and technical assistance) to community groups undertaking fish habitat restoration projects. This is achieved through a multi-agency proposal review process and technical support during the design, layout, and implementation of projects.

All proposals made to Adopt-A-Stream are subject to a review process that assesses them for technical feasibility and effectiveness and ensures projects are consistent with sound fisheries management goals. Review committee members include representatives from government agencies with jurisdictional interests – NS Aquaculture and Fisheries (Inland Fisheries Division), NS Environment, and Fisheries and Oceans Canada (both Habitat and Fisheries Management divisions) – and the NSSA.

Committee members determine a reasonable and fair distribution of available funds among recommended projects.

### *Field Support*

Throughout the field season, the Adopt-A-Stream program manager, as well as the AAS committee chair, provide technical support as needed to participating groups, including watercourse assessment, project design and layout, and training in the installation of habitat structures (such as digger log / deflector sequences, rock sills, boulder groups, and bank stabilization via rocking, bank logs, live sills and/or other vegetation). Adopt-A-Stream personnel coordinate with DFO Habitat officers to ensure groups are getting all the help they require to be successful.

Follow-up monitoring and evaluation of completed projects will ensure anticipated results are achieved over time.

## **2008 Project Results**

### *Ecological Impact*

During the 2008 field season, 22 community groups involved in the Adopt-A-Stream program were allocated funding from the NSSHF for in-stream habitat restoration projects, improving 45 watercourses, from main rivers to headwater streams. Approximately 85,000 square meters of in-stream habitat was restored. Many, many kilometers of stream were made accessible for migrating fish with the removal of debris jams and old beaver dams. More than 73,000 square meters of riparian habitat was protected by livestock fencing, bank stabilization, and the planting of 6645 trees and shrubs. Volunteers gave more than 8000 hours towards habitat restoration in their local watersheds.

For the most part, groups either completed their projects as planned or revised their work plans to accommodate high water levels through much of the field season. In cases where projects were not completed, the work has been scheduled for the 2009 season. The table below outlines the projects undertaken through Adopt-A-Stream with the support of the Nova Scotia Sportfish Habitat Fund.

Group	Watershed	Project Description
ACAP Cape Breton	Mira / Salmon River Stewart Brook	This project was partially completed - debris jams were removed, and the digger long design and lay-out completed, trees cut and prepared. Due to high water conditions, structure installation is postponed to 2009.
Antigonish Town & County Anglers Association	South River: Two unnamed tributaries (one along Fraser's Mill Hatchery & one crossing Dunmore Rd)	Not completed in 2008
Bear River First Nation	Bear River - Franklin brook	The BRFN crew completed repairs to 53 digger logs installed in the early to mid '90s, undertook bank stabilization at 6 sites and debris removal at several sites, and began thalweg step pool development.
Bluenose Coastal Action Foundation	Mushamush R; between Hwy 103 and former NSP dam site	Two large deflectors were partially completed; more rock and back logs needed. Rock sills were not undertaken due to high water levels throughout the field season.
Chelsea Fish Ladder and Dam group	Medway (Molega Lake); Chelsea (Hanley) Brook	Maintenance (10 year) repairs on the fish ladder and dam were completed as planned.
Cheticamp River Salmon Association	Cheticamp River, Aucoin, Fiset; Farm Brooks	15 new structures were installed and repairs were made to previously installed work. Approximately 150 m of bank stabilization was done in the brooks. 3000 trees were planted in the Fiset and Aucoin floodplains including 500 by a group of 80 youths from the Atlantic Provinces.
Clean Annapolis River Project	Annapolis various streams on farm sites	Riparian restoration work was undertaken on 6 agricultural properties adjacent to the river and some of its tributaries. Work included nearly 2 km of fencing to exclude livestock from waterways, 2020 willow trees and live stakes planted to stabilize and revegetate banks. Stewardship agreements with 5 landowners were signed to ensure long-term protection of improved sites. In all, 73,120 square meters of riparian zone was protected and under restoration.
Clean Nova Scotia	Cole Harbour; two streams in Cole Harbour Heritage Park (Stinky & Brook Trail)	Work on two Cole Harbour Heritage Park brooks (Stinky & Brook Trail) involved removing large blow-down (Juan) debris impeding brook flow and access, thalweg development to increase step pool depths and consolidate flow to a single channel and area residents education and awareness.
Cobequid Salmon Association	Stewiacke-Shubenacadie Little River Stewiacke	3 of the 5 extra long (one is 21 meters in length and 2 in the 12 to 14 meter range) diggers planned were installed. Reoccurring high water conditions throughout the summer hampered progress; the two remaining sites will be done in 2009.

Cumberland County River Enhancement Assoc.	River Philip, 2nd River, Polley Brook, Little River, Black River	Additional habitat structures were installed on 2nd River, Polley Brook and Little River. In all, 24 devices: digger logs, deflectors, silt traps, and artificial under-cut banks. On Black Brook, this year's work focussed on opening up some of the large debris jams that would cause long-term problems to channel stability and processes. On River Philip, between Oxford and Collingwood, 60 m of bank rocking was undertaken to cover a recently exposed very large clay lens in the bank to prevent continual sedimentation.
Friends of the Cornwallis River Society	Cornwallis Golf Link Brook	This project focused on Golflinks brook and successfully worked with the developers of the Home Depot property and the Ken Wo golf course to minimize runoff, to plan proper drainage design, and to create adequate riparian setbacks.
Habitat Unlimited	West R. Antigonish. & Rights R : Brierly, Hartshorn, James River, South Rights River	On Hartshorn Brook, 19 structures were installed. On James River a large bank crib was installed by hand to protect an eroding bank and shift the river slightly eastward. On Brierly Brook, a bank crib, tree planting (9 trees over 15m) and hand rocking were used to stabilize banks and establish riparian zone adjacent to a new housing development. Maintenance was done on over 300 structures in 6 different watercourses. The crew removed 14 abandoned beaver dams and 3 debris jams in tributaries. Bank rocking stabilized 60 m along the South Rights River.
Mabou & District Community Development Association	Mabou-Mull River: Shea's Brook tributaries,: McQuarries and unnamed; More Brook, Captain's River; and Broad River	The crew removed debris jams and performed bank stabilization on More Brook, Inverness. In the Shea's system, 28 new deflectors and digger logs were installed and 6 major debris jams removed. Bank rocking was done at sites along the brook.
Margaree Salmon Association	NE Margaree: Big Brook	Restoration in Big Brook extended a further 2 km from last year's work. 19 new structures were installed and previously placed structures were upgraded.
Middle River Watershed Society	Middle R. (CB) Cold and unnamed (Angie's) brooks	The blockages on Cold Brook and Angie's Brook were all either removed or substantially reduced to permit a better flow of water. Seventeen digger logs were installed throughout Angie's Brook. After clearing the channel of overgrown by alders, brush and debris, a crib structure was built to re-direct Cold Brook into its original watercourse and away from the meadow.
Mulgrave and Area Lakes Enhancement	St. Francis Harbour R.	Project work included installing 18 digger logs and deflectors in 2 km of river and to increase spawning and rearing habitat. Spawning sized gravel was added to previously installed structures in upper section of river. Pool development work scheduled in 2007 was completed in 2008.

North Colchester River Restoration Project	Waughs R Mackay's , Miller Brooks	Work in the Upper Waugh's River included 15 structures and debris jam removals sites. In MacKay's Brook 10 designed structures and debris removal sites were completed. Structures included digger logs and deflectors. A 100m section on Miller Brook was rocked with a kicker to provide some erosion protection for a bank which supported 800 square meters of habitat. Debris jam removal along another 1000m section of the Upper Waugh's River opened another 6000 square meters of habitat.
Pictou County Rivers Association	Merigomish Harbour Pine Tree Brook, tributaries of West & East River Pictou	The crew installed 40 new structures in Pine Tree Brook and undertook maintenance on all previous project sites.
Sackville Rivers Association	Sackville: Little Sackville River	Project involved relocation/re-alignment of 15 digger logs in 1 km of the LSR.
Salmon River Salmon Association	St. Mary's Bay: Belliveau Brook	Earlier in-stream work was reassessed and structures' spacing determined to be incorrect. Old structures were removed and 11 new digger logs with deflectors installed based on the new design lay-out.
St. Mary's River Association	St. Mary's R - Indian Man, Glencross, Clarks and Tait Brooks	A large abandoned beaver dam was removed on Tait Brook. Pool development below previously installed structures continued. Assessment of erosion sites on East Branch St. Mary's undertaken.
Trout Unlimited Tusket River Chapter	West Barrington River, Beaver River, and Broad Brook	The project was undertaken by high school students to remove debris in Barrington River. 100 trees were planted and water quality assessed. This was the first year for project; plans are to develop it further.

### *Community Commitment*

Volunteers are the driving force behind the success of Adopt-A-Stream. This past year, committed individuals contributed more than 8000 hours to project planning, administration, and delivery. They managed books, attended meetings, supervised workers, and undertook much of the hands-on labour needed for restoration projects. In addition to their own labour, volunteer organizations sought to hire local people, often youth, to work on summer crews doing useful, meaningful work with lasting impacts. A number of groups have been able to hire crew members for consecutive years, increasing the effectiveness of their projects.

The hands-on work of repairing degraded habitat bolsters a group's credibility, allowing community organizations to increase public awareness of aquatic ecosystems and the consequences of improper land-use activities and the need for good stewardship.

### *Adopt-A-Stream Workshop*

In January 2009, the Nova Scotia Salmon Association hosted an Adopt-A-Stream Workshop in Truro. The event offered an opportunity for community groups and others involved or interested in fish habitat restoration and other aspects of watershed management to meet, discuss, and provide input.

The workshop aimed to showcase habitat restoration and other initiatives related to watershed management; identify the needs of community groups; and solicit key issues, topics, and training requirements as a step in planning future sessions and conferences to help non-profit groups work more collaboratively and effectively.

Representatives from 19 community groups attended, giving them a chance to learn from each other's experiences and to share ideas. Altogether there were more than 50 participants, including staff from federal and provincial fisheries departments and members of the NSSA Board of Directors.

It was made clear at this event that more opportunities for training and networking are needed, and the hope is to be able to provide these more regularly.

### *2008 Financial Summary*

The Nova Scotia Salmon Association made an application to the NS Sportfish Habitat Fund in April 2008, following which a commitment of \$217,000 was made to the Adopt-A-Stream Program. A second request for funding was made in August. Confirmation of an additional \$23,000 contribution from the Fund was received in September. The total allocation from the Fund in 2008 to Adopt-A-Stream was \$240,000. The unspent carry-over from 2007 (\$878) was allocated to projects. The minimum requirement of a 50/50 cost share on projects was far exceeded; other cash and in-kind contributions totalled \$494,797.

Of the 2008 funding commitment, \$10,636 will be carried over to 2009. Of this, \$9,636 is allocated for project work that had to be postponed to the coming year. Only \$1000 remains unallocated, and will be put towards the overall project budget in 2009.

There is also a carry-over from 2007 of \$13,870 for work committed to by the Sackville Rivers Association and the Stewards of the River Denys for project work in 2009. It was not included in this year's budget.

Please see Appendix A for the detailed financial statement.

### **Concluding Remarks**

In 2008, the Nova Scotia Salmon Association celebrated 10 years with Adopt-A-Stream. Since first taking on the administration of the program, 40-plus community groups have been involved in restoring their local watersheds. To date one million square meters of fish habitat has been restored.

Our goal for the coming decade is to continue to be an effective model for funding allocation and support for quality community-based fish habitat restoration, and to seek ways of expanding the program to more watersheds and to offer a broader range of services to communities. The support from the Nova Scotia Sportfish Habitat Fund is an essential component of Adopt-A-Stream's continuing success in protecting and improving fish habitat across the province.

## Appendix A – 2008 Financial Statement

### SUMMARY

<b>REVENUE</b>	
<b>2008 NS Sportfish Habitat Fund</b>	<b>\$240,000</b>
2007 Unallocated Funds Carried-over by NSSA **	\$878
<b>Total</b>	<b>\$240,878</b>

<b>EXPENDITURES - Actual and Allocated</b>	See detail
Actual Project Expenditures 2008	\$230,242
Unspent portion of Project Funding Advances (extensions to - held by groups)	\$4,436 (1)
Unspent portion Project Allocations (extensions to - held by AAS)	\$5,200 (2)
<b>Total Allocation to Projects</b>	<b>\$239,878</b>

Unallocated Carry-over	
2007 Funds Carried-over by NSSA	\$878
2008 Funds Carried-over by NSSA	122
<b>Difference or Unallocated Carry-over to 2009</b>	<b>\$1,000</b>

<b>2007 Funds allocated and carried over to 2009</b>	
Unspent portion of Project Funding Advances (extensions to - held by groups)	\$10,390 (3)
Unspent portion Project Allocations (extensions to - held by AAS)	\$3,480
	<b>\$13,870</b>

## (2) Detailed Project Allocation and Expenditure 2008

Group	2008 AAS Allocation of NSSHF	Actual \$ Spent by group.	Amount rec'd by group unspent (deferred for 2009)	Amount NSSA AAS defers to 2009)	Total deferred to 2009	Match Cash	Match In-kind	Project Total
ACAP Cape Breton	\$9,000	5,964.00	1,236.00	1,800.00	3,036.00	8,050.00	5,341.80	19,355.91
Antigonish Town and County Anglers Assoc	\$4,000		3,200.00	800.00	4,000.00			
Bear River First Nation	\$9,500	9,500.00				22,947.20	8,100.00	40,547.20
Bluenose Coastal Action Foundation	\$12,000	12,000.00				28,324.01	44,069.00	84,393.01
Chelsea Fish Ladder and Dam group	\$1,058	1,058.00				0.00	1,650.00	2,708.00
Cheticamp River Salmon Association	\$12,000	12,000.00				7,614.88	5,715.00	25,329.96
Clean Annapolis River Project	\$10,000	10,000.00				6,139.48	10,300.00	26,439.93
Clean Nova Scotia	\$4,700	4,700.00				7,860.17	2,050.00	14,610.17
Cobequid Salmon Association	\$13,000	10,400.00		2,600.00	2,600.00	688.22	12,687.12	23,775.34
Cumberland County River Enhancement Assoc.	\$24,000	24,000.00				15,789.10	65,638.05	105,427.15
Friends of the Cornwallis River Society	\$9,800	9,800.00					9,800.00	19,600.00
Habitat Unlimited	\$20,000	20,000.00				15,000.00	5,000.00	40,000.00
Mabou & District Community Development Association	\$17,000	17,000.00				20,374.18	10,225.00	47,599.18
Margaree Salmon Association	\$18,000	18,000.00				10,377.00	19,900.00	48,277.00
Middle River Watershed Society	\$8,920	8,920.00				5,294.00	4,294.00	18,508.00
Mulgrave and Area Lakes Enhancement	\$12,000	12,000.00					12,000.00	24,000.00
North Colchester River Restoration Project	\$14,000	14,000.00				21,994.00	35,822.00	71,816.00
Pictou County Rivers Association	\$8,000	8,000.00				4,727.06	6,170.00	18,897.06
Sackville Rivers Association 1 (LSR)	\$8,000	8,000.00				14,400.00	2,060.00	24,460.00
Salmon River Salmon Association	\$12,500	12,500.00				1,335.54	12,219.17	26,054.71
St. Mary's River Association	\$9,400	9,400.00				3,846.00	7,595.00	20,841.26
Trout Unlimited Tuskent River Chapter	\$3,000	3,000.00				7,000.00	12,400.00	22,400.00
<b>Total</b>	<b>\$239,878</b>	<b>230,242.00</b>	<b>4,436.00</b>	<b>5,200.00</b>	<b>9,636.00</b>	<b>201,760.84</b>	<b>293,036.14</b>	<b>725,039.88</b>

## Explanation of variation between Allocation and Actual Expenditure

<b>(1) Amount of 2008 project advance groups holding and carrying for project completion / expansion (i.e. earmarked )</b>	Amount	Rationale
ACAP Cape Breton	\$1,236	Project work plan only partial completed due to high water conditions, project to continue in 2009
Antigonish Town and County Anglers Assoc	\$3,200	Project postponed to 2009
	<b>\$4,436</b>	

<b>(2) Amount NSSA / AAS holding for project completion / expansion (i.e. earmarked ) 2007</b>	Amount	Rationale
ACAP Cape Breton	\$1,800	Project work plan only partial completed due to high water conditions and other compounding factors, project to continue in 2009
Antigonish Town and County Anglers Assoc	\$800	Project postponed to 2009
Cobequid Salmon Association	\$2,600	High water prevented full completion of work plan - postponed to 2009
	<b>\$5,200</b>	

<b>(3a) Amount of 2007 project advance groups holding and carrying for project completion / expansion (i.e. earmarked )</b>	Amount	Rationale
Sackville Rivers Association	\$7,920	SRA has alternate source of funds for main river work. Therefore 2007 project funds of \$10000 total will be used in 2009 on habitat restoration in tributaries
Stewards of the River Denys Watershed Association	\$2,470	Group will be encouraged to utilize remaining funds in 2009.
Subtotal	\$10,390	

<b>(3b) Amount NSSA / AAS holding for project completion / expansion (i.e. earmarked ) 2007</b>	Amount	Rationale
Sackville Rivers Association	\$2,080	Project in main river postponed to 2008
Stewards of the River Denys Watershed Association	\$1,400	Project completed under budget - holding for work elsewhere in watershed
Subtotal	\$3,480	
<b>Total Carried to 2009</b>	<b>\$13,870</b>	