

# CREDIT RIVER ATLANTIC SALMON HABITAT RESTORATION PROJECT



## Project Goal

Since 2007, Ontario Streams has worked on the Atlantic Salmon Habitat Restoration Project in the Credit River watershed. The goal of this project was to restore and rehabilitate habitat for Atlantic Salmon, an extirpated (locally extinct) species. Through these actions, public awareness and the stewardship of local streams was also promoted. Overall, the hope is to successfully reintroduce Atlantic Salmon within the watershed as part of the larger Lake Ontario Atlantic Salmon Restoration Program.

## THE NEED

Atlantic Salmon are Ontario's only native salmon. They were extirpated from Lake Ontario by the late 1800s, primarily due to the loss of spawning and nursery habitat in the streams. In early 2003, research concluded that restoration of Atlantic Salmon to Lake Ontario was possible. Restoring Atlantic Salmon recovers an important part of Ontario's natural and cultural heritage, as they are an indicator of healthy watersheds and streams. Today, this species is highly valued by anglers in Ontario and their presence adds a unique fishing experience to the diversity of Lake Ontario angling

opportunities.

The Credit River watershed is home to over 70 different species of fish, and is a highly diverse cold water fishery in one of the most important river systems in Ontario. Fish health is directly related to how we control or minimize cumulative impacts to our streams and is also an indicator of the watershed's overall health. The Credit River watershed covers 860 km<sup>2</sup> and includes areas within the cities of Brampton, Orangeville, Georgetown, and Mississauga. This project has primarily focused on areas in the Towns of Caledon and Halton Hills. These areas have recently experienced rapid residential, recreational, and industrial development. Some of the impacts include:

- A loss in the quality of riparian areas due to urban growth and poor agricultural practices. This results in loss of habitat and food for terrestrial and aquatic species, as well as an increase in water temperatures, erosion, and sedimentation of in-stream habitat and a widening of the stream channel.

- An increased amount of paved, impervious surfaces that cause damage to watercourses from flash storm water runoff and snow melt. This results in garbage and debris collecting in streams, as well as increased sedimentation and erosion of stream banks.
- Other threats include ground water pumping for municipal wells, water taking from the river, storm sewers, sewage treatment plants, and industrial pollution.

- Native shrubs and trees have been planted at various sites within the Credit with the help of volunteers. These plantings within the riparian zone provide food and cover for Atlantic Salmon and other aquatic and terrestrial species. The vegetation also helps to stabilize banks, reduce stream temperatures, and filter runoff.
- In-stream spawning habitat was created in Rogers creek.
- Ontario Streams has participated in Atlantic Salmon egg and fry stocking as part of the Ontario Ministry of Natural Resources and Forestry (MNRF) and the Ontario Federation of Anglers and Hunter's (OFAH) Atlantic Salmon Reintroduction Program. Between 2008 and 2011, we have experimented with different in-stream egg incubation methods(e.g. the In-Stream Incubation System and direct deposit into gravel method) in Little East Credit, Silver Creek, and Black Creek.

## ACCOMPLISHMENTS

Since 2007, Ontario Streams has been working in the Credit River Watershed on Atlantic Salmon projects. Many monitoring and rehabilitation projects have been completed in tributaries of the Credit such as Black Creek, Silver Creek, Rogers Creek, and Second Creek including:

- Aquatic habitat enhancement projects that have involved cedar sweep installations, debris clearing, and channel definition.



Shallow water in this perched culvert prevented the movement of fish upstream



Baffle system installed in a culvert to increase water depth and provide fish passage

- Bank stabilization projects to repair erosion that have included the installation of cabled debris and cabled log jams; banks have also been re-graded using various bioengineering techniques.
- As of 2011, one online pond has been taken off-line by creating a by-pass channel around the pond. Two perched culverts were mitigated through the installation of baffles within culverts on Rogers and Second Creek.

- Regular monitoring in the Credit River helps to assess the quality and quantity of available stream habitat and to determine Atlantic Salmon presence/absence. Fisheries monitoring, benthic invertebrate sampling, and water temperature monitoring are all methods that have been used to provide important information on the health of the aquatic environment in the Credit watershed.
- Ontario Streams assisted with the implementation of the Atlantic Salmon

Classroom Hatchery Program in partnership with MNR, OFAH, and the Toronto Zoo to educate elementary school students about this extirpated species through its curriculum-based programs. The classroom hatchery program is one of the educational components of the Atlantic Salmon program. It gives participating students, teachers, and parents a close-up view of hatching Atlantic Salmon and emphasizes the importance of protecting our natural resources and the biodiversity of the Lake Ontario watershed. Each classroom hatchery kit includes a fish tank, a water cooler, and aquarium equipment. The class receives 100 eggs that are then placed in an incubator tray. The students and school staff care for the eggs until the fry stage. At this point, they are released into local watersheds as part of the overall number released into the target streams annually. Each classroom hatchery has the Atlantic Salmon juveniles for five months. During that time, the students develop a long-term awareness and respect for the environment. The students are responsible for checking daily temperature, water level, removal of deceased fry, and recording of any observations.

#### **PARTNERS**

The Atlantic Salmon Habitat Restoration Project in the Credit watershed receives regular financial support from the Ontario Ministry of Natural Resources and Forestry's Aurora District office. Many other partners have provided financial and in-kind support over the years including: the Ontario Ministry of Natural Resources and Forestry's Species at Risk Stewardship Fund and Canada-Ontario Agreement funding, OFAH, Fisheries and Oceans Canada, Credit Valley Conservation, and Halton Peel Woodlands and Wildlife Stewardship.

For more information about the Atlantic salmon please also visit Bring Back the Salmon at [www.bringbackthesalmon.ca](http://www.bringbackthesalmon.ca).