

# WEST HUMBER RIVER HABITAT REHABILITATION PROJECT



Stream bank erosion in Kilmanagh Creek (2012), resulting in stream widening and sediment being washed downstream.

## PROJECT GOAL

Kilmanagh Creek, a tributary of the West Humber River, is unique in this watershed as it supports cold water fish species, including the provincially endangered Redside Dace.



Photograph by Ontario Streams

Informative sign for Redside Dace installed along Kilmanagh Creek.

Kilmanagh Creek originates in Caledon where it flows through north Brampton to its confluence with the West Humber River. Increasing urbanization has

had significant impacts on this creek by altering stream flows, creating erosion, and increasing sedimentation. These changes threaten existing populations of Redside Dace and other sensitive cold water fish species, such as Brook Trout. Ontario Streams and its partners, working under the Redside Dace Habitat Rehabilitation Initiative, have endeavored to enhance and rehabilitate Kilmanagh Creek to protect existing Redside Dace populations, while also improving habitat for other native fish species.

## THE NEED

The impacts of poor agricultural practices in the headwaters and increased urbanization in the City of Brampton are the main issues faced by Kilmanagh Creek. These impacts include:

- Alterations to flows from storm events that are intensified by the increase in impervious surfaces, resulting in increased sedimentation and erosion;
- The build-up of woody debris resulting in complete blockages to the stream and barriers to fish migration;

- Loss of riparian vegetation along many sections of the watercourse, particularly due to agricultural activities and cattle access to the streams, leaving banks vulnerable to erosion and creating a rise in water temperatures due to a lack of shading;
- Online ponds that create both physical and thermal barriers to fish movement.

## ACCOMPLISHMENTS

Ontario Streams began assessments of Kilmanagh Creek in 2008. Opportunities were found to conduct rehabilitation along this creek near its confluence with the West Humber River. Working with the support of the City of Brampton, habitat rehabilitation was initiated in 2009 and continues to this day. During this time, Ontario Streams staff completed the following tasks:

- Mapping of over 3.6km of stream to identify the quality of habitat available to Redside Dace and to assess any rehabilitation opportunities; resulted in the development of a rehabilitation plan that will directly address the improvements that must be made to increase habitat quality in Kilmanagh Creek.
- Removal of over 45 bags of garbage and debris from areas surrounding the creek; this work was mostly completed with the help of community members who volunteered their time to improve their local environment. Overall, over 4.5km of stream was cleared of garbage including items such as shopping carts, microwaves, computer monitors, car tires, bicycles, and many other miscellaneous dumped items.
- Removal of numerous debris jams within the stream that were blocking both stream flow and the ability for fish to migrate between different stream segments. In Kilmanagh Creek, debris removal allowed stream flows to return to normal and barriers to fish passage were removed.
- Aquatic habitat enhancement through the creation of habitat and stabilization of eroding stream banks including the installation of cabled debris jams, cabled log jams, and the installation of anchored logs and root wads. Ontario Streams installed over 36 structures that will provide the stream bank with protection from erosion and cover and habitat for fish. In many cases, these construction projects were completed using naturally occurring woody

debris that had been found in the stream. This recycling of material allowed us to keep much of the large woody material in the stream, which is so important to the aquatic environment, as it provides cover, traps spawning gravel and creates a more complex system.

- Over 1500 native trees and shrubs were planted in the riparian zone of Kilmanagh Creek totalling over 600m of stream bank planted. These plants will stabilize the stream bank, provide habitat for both aquatic and terrestrial species, and decrease water temperatures by shading the stream.
- Monitoring of benthic invertebrates, fish community, and water temperature was completed over several years. This information was compiled and used to determine the overall health of the stream.

## PARTNERS



Sandalwood Heights Second School volunteers with the Redside Dace informative sign, 2009.

Through the Redside Dace Habitat Rehabilitation Initiative, Ontario Streams aims to raise awareness and promote stewardship activities to protect this endangered and sensitive fish species. Ontario Streams worked with stewardship groups, government agencies, and volunteers to raise awareness of the Kilmanagh Creek restoration project. A variety of community groups were vital in the completion of this project including Sandalwood Heights Secondary School.

Working with the Halton-Peel Stewardship Council, the City of Brampton, and other partners, Ontario Streams placed an informative sign along Kilmanagh

Creek with the help of Sandalwood Heights students. We would like to officially thank the hard work of Trevor Rodie's environmental science class and the time and commitment given by Derek Konieczny in creating the Redside Dace informative sign.

Vital support for this project was provided by the Ontario Ministry of Natural Resources and Forestry Aurora District office, the City of Brampton, and Fisheries and Oceans Canada. Funding for this extensive multi-year program was granted from several governmental and private sources including: Community Fish and Wildlife Involvement Program, Species at Risk Stewardship Fund, Walmart-Evergreen Green Grants Program, and Habitat Stewardship Program, and Great Lakes Green Community Fund.