

# CARLTON CREEK REHABILITATION PROJECT



## PROJECT GOAL

Cachet Creek and Carlton Creek are tributaries of the Rouge River in the City of Markham where they historically provided cold water fish habitat. Redside Dace can still be found within the main branch of Carlton Creek. The Carlton Creek Rehabilitation Project began in 1999 in response to the impacts of development on these important headwater streams. Work was completed in the hopes that past damages to the system could be reduced, and that future effects could be lessened or avoided.

## THE NEED

Severe habitat degradation resulted from development in the Cachet Woods area in Markham, west of Warden Avenue and north of 16<sup>th</sup> Avenue. Cachet and Carlton Creeks were directly impacted by increased storm water, excess sediment, and other pollutants entering the streams. The historically cold water habitat was downgraded to cool water.

An in-depth habitat assessment was conducted on the area in 1999 and several issues were noted:

- A series of low head dams were found to be blocking fish from reaching their headwater spawning grounds.
- Online ponds were backing up flow at several locations, resulting in warmer water temperatures and lower oxygen content. The water flowing from the ponds then caused unsuitable habitat for native cold water aquatic species further downstream.
- Due to urbanization activities, the surrounding land lacked riparian vegetation. Adjacent private property owners exacerbated this issue by mowing their lawns to the edge of the stream.
- Construction debris had been left in the streams and surrounding areas.
- The existing storm water retention ponds used to treat runoff from the Cachet Woods development site were ineffective and their on-site sediment controls at surrounding construction sites were inadequate.

## ACCOMPLISHMENTS

The necessary habitat assessment was conducted in 1999 and an extensive monitoring program ran from 1999 to 2000. Between 2000 and 2002, the resulting rehabilitation plan was implemented. The largest component of this project was to take a large

pond offline. Ontario Streams worked in partnership with the private landowner in this instance. The pond water level was lowered to build an earthen berm separating the pond from a new stream channel. The berm was stabilized with erosion control matting and native plants.



Bypass channel allowing stream to flow around the pond

After the construction of the berm, the stream no longer flowed through the pond. Instead, the stream flowed uninterrupted around the pond in a 100m bypass channel. Stream temperatures and water quality improved in Carlton Creek and 100m of fish habitat was created within the bypass channel itself.

In addition to this online pond mitigation, the following projects were also completed:

- Over 1000 native trees and shrubs were planted to help regenerate the riparian buffer surrounding the creeks.
- With the help of volunteers, several truckloads of construction debris were removed from 800m of Cachet Creek.
- Three low head dams were mitigated through the construction of a rocky ramp fishway, a small bypass channel, and a step-pool fishway.
- Supplementary in-stream habitat improvements included the addition of spawning gravel, the construction of rock vortex weirs, and the placement of submerged woody debris within the channel.



Small Step-pool fishway to allow passage by fish over a dam

## PARTNERS

Throughout the course of this project, important partnerships were established with landowners. Project funding was provided by the Ontario Ministry of Natural Resources and Forestry's Community Fisheries and Wildlife Involvement Program and Natural Areas Protection Program, Environment and Climate Change Canada's EcoAction Program, and the Rouge Park Alliance. In-kind contributions were made by the Ontario Ministry of Natural Resources and Forestry's Aurora District Office, the Town of Markham, and Save the Rouge Valley System. Volunteer support was provided by students from the University of Toronto, Milliken Mills High School's TEAM Program, Second Chance, American Express, and other community volunteers.