Johnson Creek Fish Hatchery Park Habitat Restoration

Project Partners:

In 2018 the Alliance of Rouge Communities (ARC) received $1.1M in grant funding from the Great Lakes Restoration Initiative (GLRI) U. S. Environmental Protection Agency (USEPA) for the Johnson Creek – Fish Hatchery Park Habitat Restoration design and implementation project as part of its effort to restore the only remaining cold-water fishery in the Rouge River.

The Rouge River watershed is a designated Area of Concern (AOC) under the Great Lakes Water Quality Agreement (GLWQA) and has three Beneficial Use Impairments (BUIs) associated with fish and wildlife habitat: *Degraded Fish and Wildlife Populations, Degradation of Benthos, and Loss of Fish and Wildlife Habitat*. The Rouge River Advisory Council (RRAC), the Public Advisory Council (PAC) for the Rouge AOC, in March 2016 approved a list of projects that need to be completed to remove the Rouge AOC habitat BUIs. The Johnson Creek Fish Hatchery Park Habitat Restoration Project is considered to have a significant impact on the removal of the BUIs.

To restore the habitat at Johnson Creek, the project naturalized the streambanks, removed accumulated sediment in the pond, modified the pond outlet to create a fish passage channel between the pond and the creek, and installed a vegetated bioswale to improve water quality of runoff. In addition to these improvements, the project included the planting of over 250 native trees and over 300 native shrubs.


Restored Johnson Creek

History

The only public access point to Johnson Creek is Fish Hatchery Park, which was the first registered fish hatchery in the nation. Fish and wildlife habitat associated with Johnson Creek had been lost and impacted by sedimentation, loss or conversion of riparian vegetation, and streambank armoring, reducing its viability as a cold-water fishery (the only one remaining in the Rouge River). A spring-fed pond, which flows into Johnson Creek, had been degraded by sediment-laden stormwater runoff from the unimproved parking lot at Fish Hatchery Park. The resulting sediment had been deposited into the pond to a point where it was less than 18 inches deep. This sediment escaped from the pond through an outlet structure and was impairing the stream bottom habitat in Johnson Creek. In addition to this, streambanks in the park had been impacted by the removal of native vegetation and historic placement of a concrete wall.

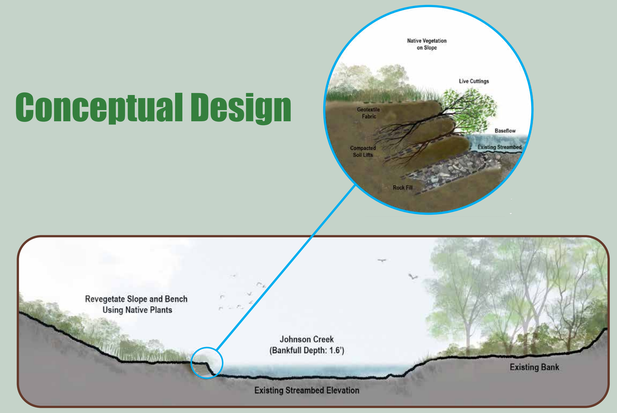
Conditions Before Restoration


Concrete wall channelizing creek


Existing outlet


Existing pond conditions

Conceptual Design



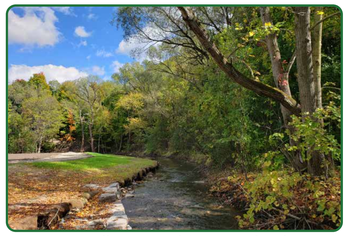
Vegetated mechanically stabilized earth detail

Restoration Activities


Project sign installed


Inspection of brush layering separation blanket


Installation of brush layering


Concrete wall removed & streambank naturalized

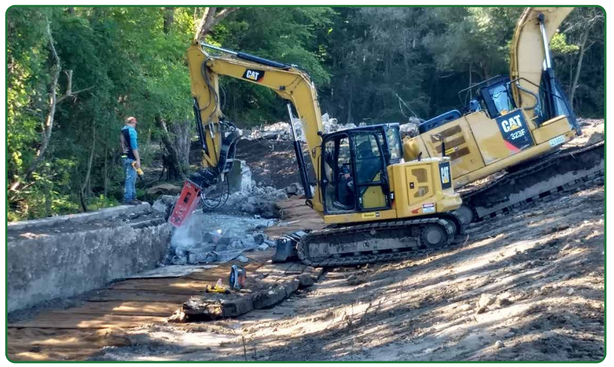

Creation of floodplain bench


Trees & shrubs planted


Vegetation establishing along river


Planting of shrubs & trees


Vegetation establishment


Removal of concrete wall


Restored Johnson Creek

Project Outcomes

- Naturalized & stabilized 1,250 ft. of Johnson Creek's streambank for improved wildlife habitat
- Removed 2,000 cubic yards of sediment in Fish Hatchery Pond to create deeper water for fish habitat
- Modified the outlet of the pond to create a fish passage channel between the pond & the creek
- Installed vegetative swale to filter stormwater from the parking lot before entering the pond

This project was funded through a grant from the Great Lakes Restoration Initiative Environmental Protection Agency (grant number GL-00E02344-0 & GL-00E02478-0)