

Background

The Rideau Valley Conservation Authority in partnership with the Otty Lake Association collaborated on a project to enhance fish habitat for the Otty Lake fishery. Two site visits were conducted between RVCA staff (J Lamoureux and A Lewis), staff from Ministry of Natural Resources (J Cote), and a representative from Otty Lake (W Robins) who is extremely knowledgeable of the fish movements and habitat usage on Otty Lake on June 10th and on July 17th 2013 to observe bass during the spawning and nursery time period to confirm and prioritize the fish habitat enhancement opportunities. Potential locations were mapped by RVCA staff and then transferred into a digital file creating a series of maps.



Project Overview

Following a similar project that was implemented by the Mississauga Bassmasters, Credit Valley Conservation and the Ministry of Natural Resources titled “Bass Spawning Habitat Enhancement Project Lakefront Promenade Park, Lake Ontario” the project aims to enhance spawning, nursery and feeding habitat conditions in the lake for smallmouth bass and largemouth bass. A review of the habitat requirements for smallmouth and largemouth bass including the type of stone and water depths were taken from the MNR document titled “Ecological Impacts of Fish Introductions: Evaluating the Risk” and a paper prepared by Cindy Chu titled “Population Dynamics of smallmouth bass in response to habitat supply”. To conserve or rehabilitate a smallmouth bass population, emphasis should be placed on the nesting and recovery habitat. Nesting habitat may be restored or improved by filling regions of a lake to increase the area between the 0.5 – 2.5m depth contours that is, the area available for nesting, introducing shelters from wave action (Chu, 2001).

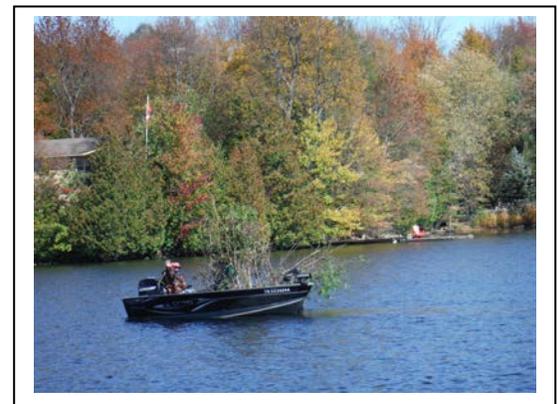
Gravel Bed Installation

- 1) Gravel bed installation was completed in water depths between 1 to 5m in depth.
- 2) Round river wash stone sized 1-2.5 inches in diameter
- 3) Dimensions of each spawning bed were approximately 1 X 1 meters with a thickness of approximately 10cm.
- 4) Installation was from a pontoon boat by dumping a pail/tote of stone over the side at the desired location.
- 5) The nesting sites were spread out a minimum of 30 feet.



Sunken Wood Installation

- 1) Branches and trees approximately 6 ft in height were cemented into 2 gallon plastic flower pots.
- 2) The plastic flower pots were removed prior to installation.
- 3) Installation was from a boat and pontoon boat by dumping the trees over the side at the desired location and depth of 17 to 22 feet.



Project Goals and Benefits

Gravel Bed Installation

- To provide an increased number of suitable spawning beds for smallmouth bass over existing conditions.
- Provide improved substrate conditions for increased productivity of benthic invertebrate populations which are an important food source for bass.



Sunken Wood Installation

- To increase the amount of cover in the form of sunken wood for post spawning.
- Provides areas for smaller fish to hide from top predators.
- Provides feeding areas for adult fish as smaller fish will populate the wood complexes.
- Provide complex habitat in areas that are adjacent to spawning habitats for smallmouth and largemouth bass.

Implementation

The Project was implemented on October 7th and 8th from the Maple Glen Estates Community boat launch. The wood was set in the 2 gallon pots with concrete on day one. The focus of day two was the installation of the gravel and the sunken wood by using a pontoon boat and a volunteers boat.



92 bass nests



160 Volunteer Hours



150 Branches and Christmas Trees



Total Value of Project

Item	Cost
Materials/Services	\$2,240
Volunteer Time	\$2,240
Staff Time (planning/design)	\$9,800
Total Value	\$14,280

Monitoring

RVCA and lake volunteers will monitor the success of the project during the first two years (minimum). Site visits will be conducted in the spring and summer of 2014 and 2015:

- Count the number of active nests from those that have been installed.
- Make observations of the integrity of the material (gravel) that was installed.
- Observe the use of the wood structure using an underwater camera.

Future Phases

More enhancement opportunities in the form of sunken wood installation, nesting areas and fish sticks along the shoreline have been identified and mapped for future phases of the project.