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Mississippi Valley
Conservation Authority



Rideau Valley
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Sustainable Fisheries Work in Conservation Authorities





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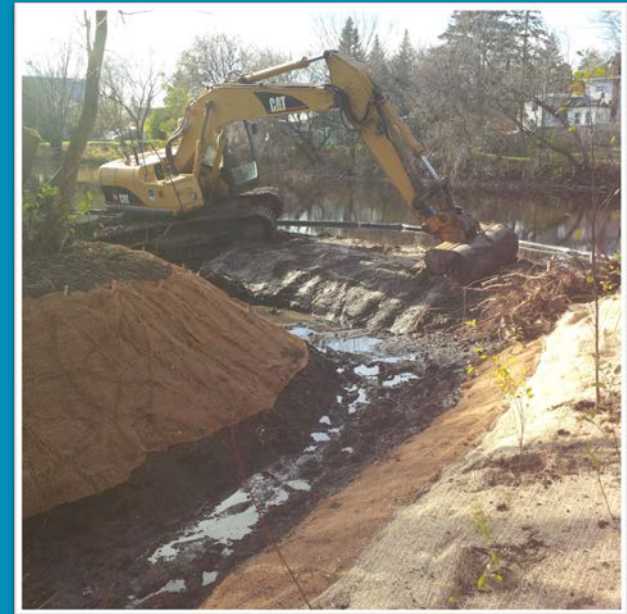


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Fish Habitat Enhancement in the Rideau Valley Watershed

Habitat Enhancement in Lakes:

- Wolfe Lake Walleye Spawning Bed Enhancement (2019)
- Otty Lake Fish Habitat Enhancement (2013 – 2018)
- Otter Lake Fish Habitat Enhancement (2017-2018)



Habitat Enhancement in Streams:

- Jebbs Creek Wetland Embayment/Fish Habitat Creation (2018)
- Jock River Shoreline Embayment/Fish Habitat Creation (2014)



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Otty Lake Fish Habitat Enhancement

Objective: To enhance spawning, nursery and feeding habitat conditions in the lake for smallmouth and largemouth bass



Fish Habitat Enhancement in the Rideau Valley Watershed



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Otty Lake Fish Habitat Enhancement



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Otter Lake Fish Habitat Enhancement

Objective: To enhance fish habitat in the lake by providing complex habitat features for fish, turtles, invertebrates and more.



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Otter Lake Fish Habitat Enhancement



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Wolfe Lake/Scanlan Creek Walleye Bed Enhancement

Objective: Rehabilitation of a documented Walleye spawning bed on Scanlan Creek (approximately 100m upstream of the outlet to Wolfe Lake) and create complex habitat for fish with the use of brush bundles.



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Jock River Shoreline Embayment

Objective: To create spawning, nursery and feeding habitat for the fish community in the Jock River while improving the riparian habitat for other aquatic species

Implementation:

- Remove fill from existing shoreline and create an embayment with a minimum 2:1 slope and a central depth of 1.5m
- In-water planting of aquatic vegetation known to be favorable for pike/muskie spawning
- Installation of wood structure to further enhance nursery habitat
- Re-vegetate riparian area with native vegetation





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Jock River Shoreline Embayment



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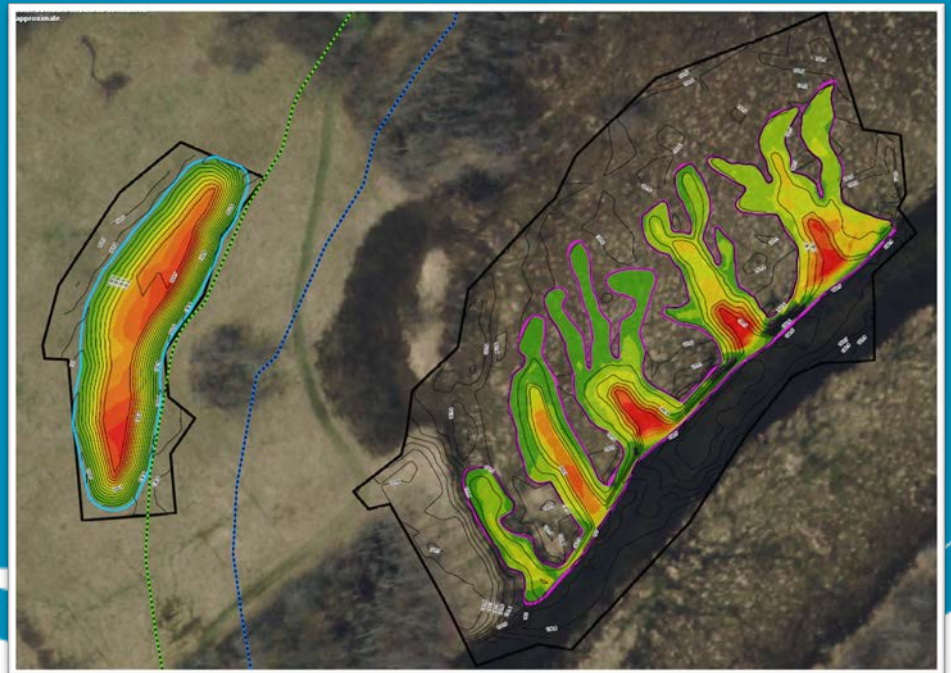
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Jebbs Creek Wetland Embayment

Objective: To create spawning, nursery and feeding habitat for the fish community in Jebbs Creek (target species northern pike) while improving the aquatic habitat for other aquatic species

Implementation:

- Remove fill from existing shoreline and create a series of small embayment features with a variety of depths and side slopes
- Installation of woody debris and boulders to further enhance nursery habitat
- Re-vegetate riparian area with native vegetation





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Jebbs Creek Wetland Embayment



Fish Habitat Enhancement in the Rideau Valley Watershed



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Data Collection with Cataraqi Conservation

- New method of fish monitoring for hard to sample areas: Fish Trap Camera
- Stream temperature data collection/thermal classification
- Sampling for invasive Water Soldier using eDNA
- Electrofishing surveys for fish community data in wadeable streams



Sustainable Fisheries Work in the Cataraqi Region Watershed



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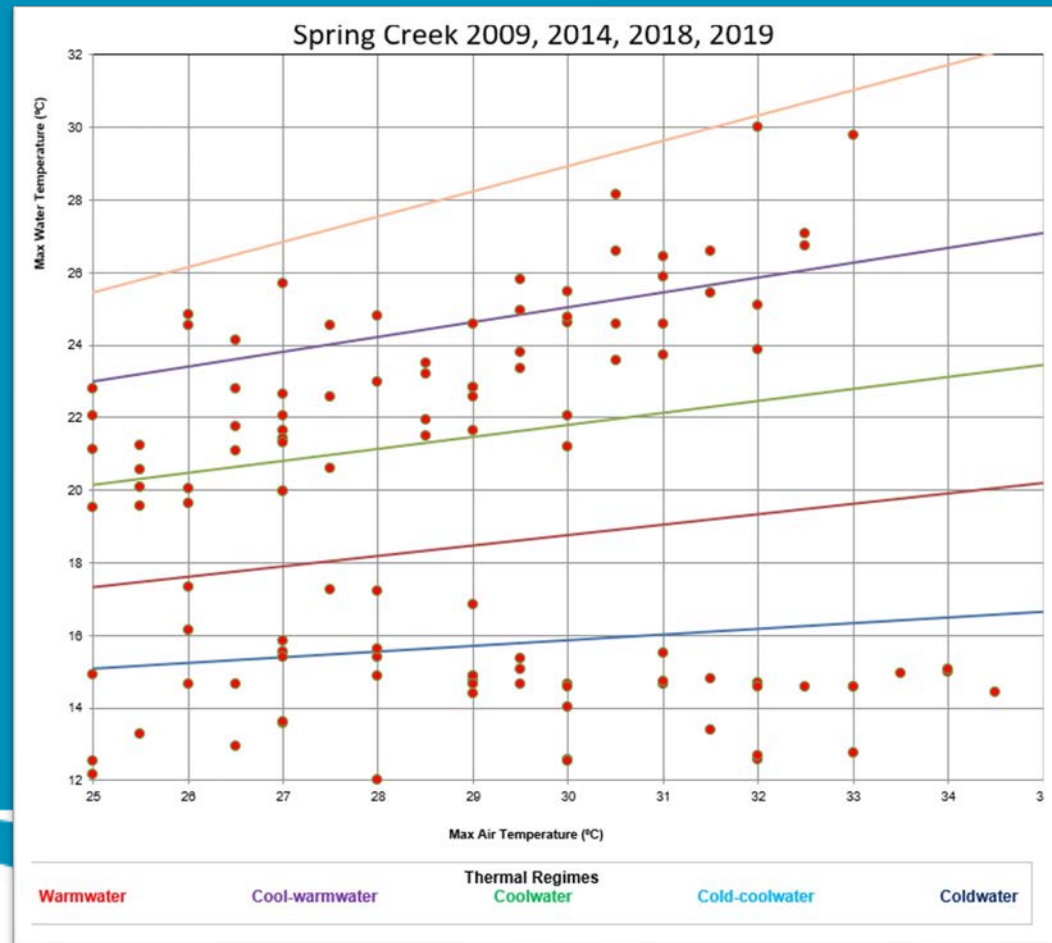
Thermal Classification in Streams

Analysis of thermal data using the five-class method (adapted from Stoneman and Jones (1996) by Chu et al. (2009))

Example: Spring Creek

Annual Results:

- 2009 (cool-warm)
- 2014 (coldwater)
- 2018 (coolwater)
- 2019 (warmwater)
- Overall: coolwater



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Invasive Phragmites Removals

Protecting the biodiversity of nearshore areas from Phragmites invasions through:

- Offering lending kits to lake residents to borrow during growing season
- Offering staff support for Phragmites 'work bees' removals



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Invasive Phragmites Removals

Phragmites Removal Kit Checklist



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- 1 Storage Bag - to store equipment
- 8 Raspberry Cane Cutters - to remove phragmites using the cutting to drown method
- 1 Tarp - to place the phragmites stalks on and transport them
- 8 Safety Glasses - to protect eyes when removing phragmites
- 3 Bypass Pruners - to remove phragmites seed heads if they are present
- Paper Yard Waste Bags - to place the phragmites seed heads in
- Phragmites Removal Quick Guide
- 2 Spade Shovels (Optional) - to remove phragmites stalks by spading



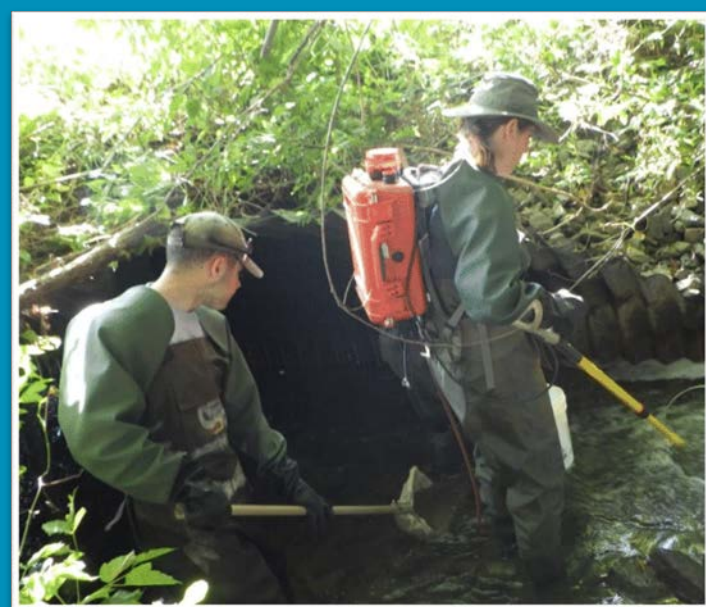


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Data Collection with Mississippi Valley Conservation

- Lake sampling for total phosphorus analysis, dissolved oxygen and temperature profiles to understand stress at depth for cold water fish
- Stream temperature data/thermal classification
- Electrofishing surveys for fish community data in wadeable streams



Sustainable Fisheries Work in the Mississippi Valley Watershed



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Stewardship with Mississippi Valley Conservation

- Lake Shoreline Planting Program
- ALUS Lanark County
- Private Land Forestry Program – in partnership with RVCA



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Landscaping with Native Species

- A successful first year of a new Pollinator Garden at the MVCA office in Carleton Place
- Funding support came from Canadian Wildlife Federation's Monarch Restoration Program



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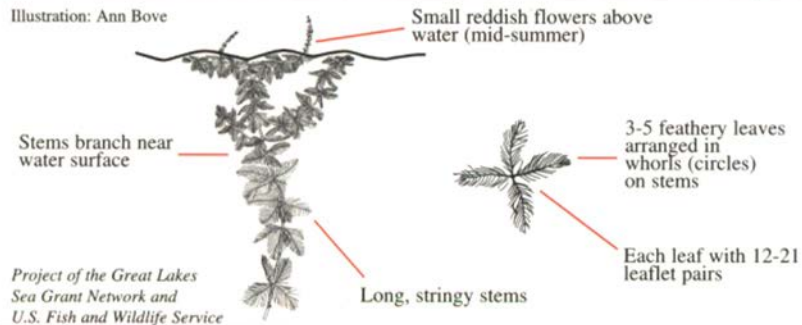
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Invasive Species Work

- Many lakes are reporting positive ID of Eurasian Milfoil in our area
- MVCA provides education and ID resources at the MVCA office and any public events that are attended

How to Identify Eurasian Watermilfoil (*Myriophyllum spicatum*)

Illustration: Ann Bove



Project of the Great Lakes
Sea Grant Network and
U.S. Fish and Wildlife Service

General Characteristics

- Found in waters less than 20 feet (6 meters) deep
- May form mats in waters less than 15 feet (4.5 meters) deep
- A native look-alike, northern watermilfoil, has fewer (5-10) leaflet pairs



Photos from invasingspecies.com

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Thank you!