

Sydenham River Watershed

helping species at risk

March 2023

The Sydenham River in southwestern Ontario is the only major watershed which lies completely in the Carolinian Life Zone and is relatively undisturbed by industrial and urban development. The Sydenham is a biological treasure – it supports an incredible variety of aquatic life, or what we call biodiversity. An array of freshwater species, including at least 34 mussel species and 80 fish species reside in the Sydenham River, making it one of the most species-rich watersheds in Canada. Several species are found nowhere else in the country, and some remain at only a few locations globally. More than 20 species of fish and mussels that live in and around the Sydenham River are nationally or provincially Species at Risk.

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A Collaborative Summer Field Season

SCRCA works with conservation partners to advance freshwater mussel research

It is always an exciting field season when the St. Clair Region Conservation Authority (SCRCA) Biology Team can collaborate with

conservation partners! In 2022, St. Clair biologists worked alongside the Department of Fisheries and Oceans Canada (DFO), Bkejwanong Eco-Keepers, the University of Windsor Healthy Headwaters Lab, and the University of Guelph to assist with several exciting projects focussing on freshwater mussels in the Sydenham River.

To further fill knowledge gaps on the distribution of freshwater mussels and track population trends, SCRCA staff assisted DFO with mussel monitoring at three locations along the East Sydenham River. Biologists would scan the bottom of the river looking for signs of mussels and dig through the bottom sediment using the "raccooning" method to locate them. A total of 2,196 live mussels were collected, consisting of 28 different species. Ten species observed were provincially recognized Species at Risk (SAR).

Raccooning

(verb) A tactile survey method (performed by trained biologists with permits) involving sifting through the riverbed's substrate to find mussels.

Measuring and Identifying Freshwater Mussels

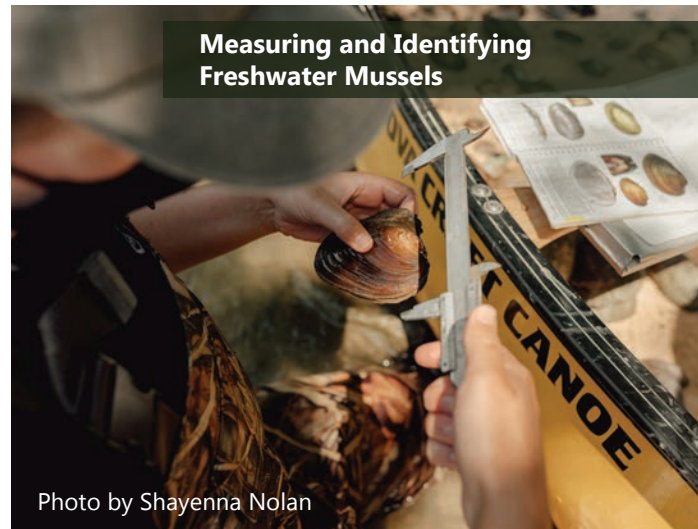


Photo by Shayenna Nolan

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SCRCA staff also continued collaborating with the University of Windsor Healthy Headwaters Lab and Bkejwanong Eco-Keepers, a group that facilitates environmental and conservation initiatives for the youth of Walpole Island First Nation. A hands-on, day in the field was organized and consisted of educating the participants on what a day of mussel monitoring involved. It was a great opportunity to connect with and inspire the younger generation and exchange western and Indigenous knowledge.



Collaboration opportunities are an important component of the SCRCA's freshwater mussel work as it helps build and strengthen partnerships, expands education opportunities, and increases the success of conserving and protecting mussels in the Sydenham River watershed.

To learn more about these collaborations visit the stories tab on our website at www.sydenhamriver.on.ca.



Goby! Goby! Goby!

Spread of an Invasive Species in the Sydenham River

Since 2020, the Biology Team at the SCRCA has monitored 10 long-term index sites annually along the East Sydenham River to map freshwater fish communities and document the spread and density of the invasive Round Goby. The Round Goby can negatively affect native populations of fishes by outcompeting them for food sources and devouring their eggs and young. This has contributed to the fate of the provincially endangered Eastern Sand Darter, a small, cryptic species native to the Sydenham that has only been detected once during the three-year project.

The Round Goby first invaded North America in 1990 when it was discovered in the St. Clair River. Eight years later it was first recorded in the lower East Sydenham River. Today, it can be found as far upstream as the Head Street Dam in Strathroy – a staggering 156 km from the river's mouth at the Chancel Ecart! The information gathered from this project will help monitor the population and distribution changes of invading and native fishes, which is essential for conserving the aquatic biodiversity in the St. Clair Region.

Sydenham River Aquatic Species at Risk Threat Inventory

The SCRCA is working on a three-year project to catalogue threats that are experienced by 22 aquatic Species at Risk that are found in the Sydenham River, including five globally threatened species. The threat inventory will help scientists, land managers, policymakers, and communities better understand and reduce the local threats experienced by these animals as well as the aquatic environment overall. This project is being undertaken by the SCRCA with funding from the Habitat Stewardship Program for Aquatic Species at Risk.

Unique Features of the Spiny Softshell Turtle

More than just a Soft Shell

The SCRCA sees many turtles throughout the summer, whether through the Captive Hatch and Release Program, working with landowners to create habitat, or monitoring turtle behaviour. Combined, these efforts aim to boost turtle populations and increase survival. The St. Clair Region watershed is home to the endangered Eastern Spiny Softshell Turtle, a species of focus for the Biology Team due to its status and limited distribution. There are many unique features of the Spiny Softshell Turtle, one of which is genetic sex determination.

Genetic sex determination means that the sex (male or female) of the turtle is determined at the time of fertilization, which differs from most turtle species in Ontario. Species such as the Common Snapping Turtle and Blanding's Turtle have their sex determined by the temperature of the nest! If the nest is slightly warmer in one spot, those turtles are likely to become female and in the slightly cooler areas, hatchlings are more likely to be male. While determining the sex of baby turtles ("hatchlings") in most turtle species is nearly impossible with the naked eye, it is possible to visually identify the sex of Spiny Softshell Turtles by the spots on their shells!



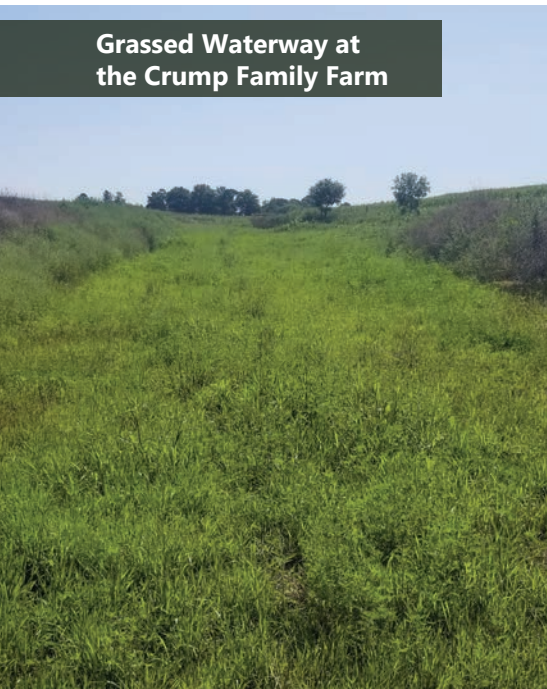
Female Eastern Spiny Softshell Turtle



Male Eastern Spiny Softshell Turtle

Male Eastern Spiny Softshell Turtles are identified by spots with solid black outlines. As males age, these solid lines get thicker and stay as distinct spots. Females, on the other hand, have spots with broken or blurred lines. As a female Eastern Spiny Softshell Turtle ages, spots continue to blur and resemble a brown camouflage pattern.

Grassed Waterway at the Crump Family Farm



Landowner Spotlight

The Crump Family Farm

Chris and Vivian Crump have been operating their agricultural businesses since they married in 1990, starting with a pick-your-own strawberry and vegetable farm, to their current operation and market. The Crump Family are passionate about the environment and over the course of just a couple of years have completely reworked their family farm. In 2019, the Crumps started implementing several different best management practices on their farm. It started with a grassed waterway and settling ponds to slow down water that comes through their property. It's grown to include a snake hibernaculum, the addition of 3,000 trees, restricting cattle from the waterway, cover crops, and more!

To honour their efforts, Chris and Vivian were awarded with a "Conservation Award" by the SCRCA in 2023.



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Partners in Conservation

Department of Fisheries and Oceans Canada

Environment and Climate Change Canada

Ontario Ministry of Natural Resources and Forestry

Ontario Ministry of the Environment, Conservation, and Parks

Ontario Ministry of Agriculture, Food, and Rural Affairs

Aamjiwnaang First Nation

Chippewas of Kettle & Stony Point First Nation

Walpole Island First Nation

Chippewas of the Thames First Nation

Caldwell First Nation

Delaware Nation

Munsee-Delaware Nation

Oneida Nation of the Thames

Upper Thames River Conservation Authority

Salthaven Wildlife Rehabilitation and Education Centre

Ontario Nature

Ducks Unlimited Canada

Wildlife Habitat Canada

Forests Ontario

University of Windsor Healthy Headwaters Lab

FishCAST

TD Friends of the Environment

Rural Lambton Stewardship Network

Ontario NativeScape

ALUS (Middlesex, Lambton, Kent)

Enbridge

Friends of the St. Clair River

St. Clair Region Conservation Foundation

Healthy Watershed Program

Landowners living on or around the Sydenham River and its tributaries can help improve aquatic Species at Risk habitat (and health of the watershed in general) by restoring and/or conserving marginal land. The Authority's Healthy Watershed Program provides technical and financial support for several projects including wildlife habitat creation, planting riparian buffers (native grasses, shrubs, and/or trees), reducing erosion on farmland, creating wetlands, fencing livestock from watercourses, and more! These projects aim to improve and protect rural water quality while improving aquatic and wildlife habitat.

As part of this program, SCRCA staff will meet with landowners on their property, offer advice, and assist with project design and the coordination of contractors and materials. The SCRCA is able to obtain grant funding or direct landowners to funding opportunities to offset the cost of implementing stewardship projects that benefit Species at Risk and improve water quality.

Want to learn more about projects that may qualify for funding and how to become a steward of the Sydenham? Contact Jeff Sharp, Conservation Services Specialist at the St. Clair Region Conservation Authority (519-245-3710 ext. 217) or visit www.sydenhamriver.on.ca to find out more about stewardship projects in the watershed.

Species at Risk Art Contest

Photo and Art Contest 2023

The SCRCA is bringing back the Species at Risk Art Contest for 2023! We invite participants to showcase a Species at Risk or the Sydenham River in their creation. The open art contest is open to participants of all ages and will be judged in two categories – 12 years of age and under, and 13 years of age and up. Additionally, we have a colouring contest featuring two of our local Species at Risk – the Blackstripe Topminnow and the Eastern Hog-Nosed Snake (recommended for those 12 and under). Entries are due by **May 1, 2023**. For full details, downloads, and prizes visit www.sydenhamriver.on.ca/2023-art.



"Mishiikenh waasechigan (Turtle window)"
By 2022 winner Michael Robert