Sydenham River Watershed

helping species at risk

September 2019

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. This has made the river a biological treasure. The Sydenham River supports an incredible variety of aquatic life, or what we call biodiversity. A great diversity of freshwater species, including 35 species of mussels and 80 species of fishes reside in the Sydenham River, making it one of the most species-rich watersheds in Canada. Several species in the Sydenham River are found nowhere else in Canada, and some remain at only a few locations globally. Twenty-one species of fish and mussels which live in and around the Sydenham River are nationally or provincially Species at Risk.

Diving Deep into the Mussels of the North Sydenham

The results are in! For the past two years, St. Clair Region Conservation Authority (SCRCA) has surveyed the North Sydenham River to see what freshwater mussels are living there. The project is now complete and we are excited to share what we found!

Historically, at least 35 different mussel species have been found in the Sydenham River. There have been many mussel surveys completed on the East Sydenham in the past, but very few had been done on the North Sydenham. For that reason, SCRCA staff began a two-year study of Bear Creek and Black Creek – two tributaries of the North Sydenham River – to see what species we could find.
St. Clair staff spent hours in the water "racooning" for mussels. "Racooning" is a way of looking for mussels like a racoon would – crawling through the water while digging with your hands!

Mapleleaf Mussel

Threehorn Wartyback

Two years of hard work paid off, as the North Sydenham produced some fascinating results. Eight Species at Risk (SAR) were found with Mapleleaf Mussel being the second most abundant species. A Lilliput was found in Black Creek in both 2017 and 2018. This is a significant finding as the last recorded Lilliput found in the North Sydenham was in 1967. Four species were found for the very first time in the North Sydenham, two of which were SAR: Kidneyshell and Threehorn Wartyback. Threehorn Wartyback populations are declining throughout the Great Lakes Region, so this observation expands the known range of this species.

With this information, we hope to continue creating an inventory of the mussel species in the Sydenham River, and in other parts of our watershed.

The Search for the Elusive Salamander Mussel

The Sydenham River is a unique place, and many aquatic species call it home. One notable resident is the Salamander Mussel. This Endangered species is extremely sensitive to water pollution, and its numbers have declined drastically throughout Ontario. The East Sydenham River is now the only place left in Ontario where the Salamander Mussel can still be found.

This species is having a tough time, but help is on the way! Scientists at Fisheries and Oceans Canada (DFO) are working to better understand how this species lives, and if it can be found in other parts of Ontario. Lead scientists, Dr Isabel Hannes and Dr Todd Morris are testing different methods of mussel collection to see which one is the most effective and efficient. The three methods are:

1. **"Raccooning"** - The most common method used to locate mussels, "racooning" involves crawling on all fours through the water, digging for mussels in the sediment with your hands. This method is very time consuming and requires plenty of manpower to complete.
2. **Monitoring for Host Species** - In the early stages of life, mussel larvae attach to the gills of fish where they are able to use nutrients from their host to grow. Unlike most species, however, Salamander Mussel larvae attach to an aquatic salamander called a Mudpuppy (hence the name!). As such, scientists can identify Salamander Mussel larvae presence by monitoring Mudpuppies. Recent sampling suggests a decline in Mudpuppy populations which may spell trouble for Salamander Mussels who depend on healthy Mudpuppy populations to survive.
3. **Environmental DNA (eDNA)** - Scheduled for testing in 2019, this method extracts mussel DNA found in the water column (e.g., dead skin cells, waste) to identify which mussels are present in a waterway. Scientists will be able to determine if Salamander Mussels are present or not by simply analyzing water samples.

By the end of summer 2019, DFO scientists will identify which method of collecting mussels works best. They plan to use the winning method to search other rivers in Ontario for Salamander Mussels in 2020.

Turtle-mania!

The summer of 2018 was a turtle-y awesome success for the SCRCA's Reptiles at Risk Program. Each year, St. Clair staff monitor turtle nests within our watershed and rescue eggs at risk of being destroyed by predation, flooding or vehicular traffic. The eggs are transported to Salthaven Wildlife Rehabilitation and Education Centre, where they are incubated until they hatch.

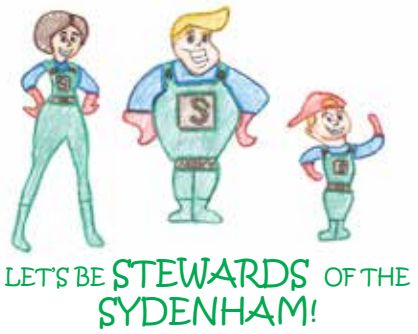
Staff collected a record total of 920 eggs last year! Among the hatchlings were 282 Eastern Spiny Softshell Turtles, 389 Northern Map Turtles, 73 Snapping Turtles, and 12 Midland Painted Turtles. All of these turtles are SAR in Ontario.

Species at Risk in the Sydenham River**

Mussels
Eastern Pondmussel – Special Concern *
Fawnsfoot – Endangered
Kidneyshell – Endangered
Lilliput – Threatened
Mapleleaf Mussel – Special Concern
Northern Riffleshell – Endangered
Rainbow Mussel – Special Concern
Rayed Bean – Endangered
Round Hickorynut – Endangered
Round Pigtoe – Endangered
Salamander Mussel – Endangered
Snuffbox – Endangered
Threehorn Wartyback – Threatened
Wavy-rayed Lampmussel – Threatened

Fish
Blackstripe Topminnow – Special Concern
Eastern Sand Darter – Endangered
Grass Pickerel – Special Concern
Northern Madtom – Endangered *
Pugnose Minnow – Threatened
Spotted Gar – Endangered *

Reptiles
Blanding's Turtle – Threatened
Eastern Musk Turtle – Special Concern
Northern Map Turtle – Special Concern
Snapping Turtle – Special Concern
Spiny Softshell – Endangered
Eastern Foxsnake – Endangered



Endangered: A species facing imminent extirpation or extinction.
Threatened: A species that is likely to become endangered if limiting factors are not reversed.
Special Concern: A species with characteristics that make it particularly sensitive to human activities or natural events.

** Very few historical records*
*** Provincial status*

Can you tell the difference between a Milksnake and a Foxsnake?

Juvenile Eastern Foxsnakes are commonly misidentified as Milksnakes. One key characteristic to look for – a defined "Y" on the back of the head. If the snake has one, you have yourself a Milksnake!

Who's Who?

Did you know, you can tell the difference between individual snakes by the patterns on their back? The stripes of an Eastern Foxsnake are as unique as human fingerprints and allow us to distinguish one snake from another. Over the years, the SCRCA has compiled a collection of Foxsnake photos. Now, we're embarking on the task of identifying each snake from their unique patterns. This identification process will help us determine how many individual Foxsnakes are using our nesting boxes and cover boards.

Compare the patterns on these two Foxsnakes. How many differences can you spot?

Species at Risk Contest

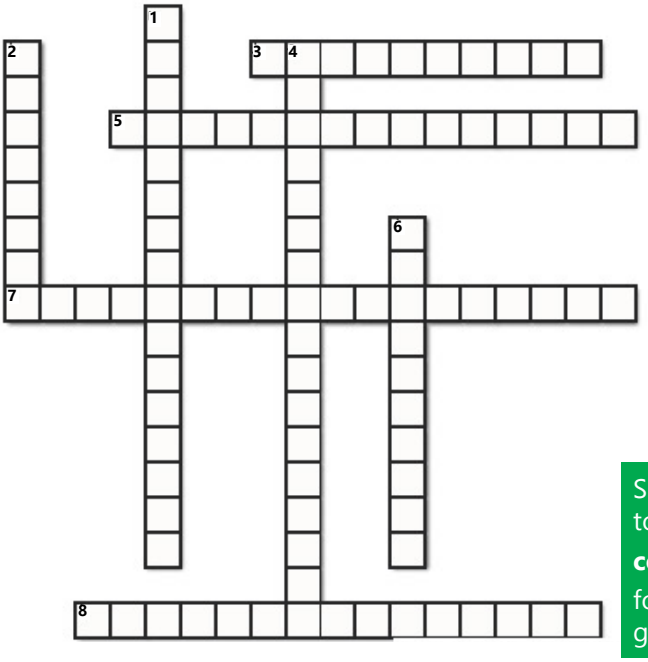
Across

3. A species facing imminent extirpation or extinction.

5. This snake has a yellow body with dark brown or black spots and a copper-coloured head.

7. This species was found for the first time in the North Sydenham River, which expands its known range.

8. This mussel was the second most abundant species found during our 2017-2018 mussel surveys.



Down

1. This mussel gets its name from its host species, and is only found in the East Sydenham River.

2. This mussel was found last year in the North Sydenham River for the first time since 1967!

4. Most of the turtle hatchlings released in 2018 were of this species.

6. A species that is likely to become endangered if limiting factors are not reversed.

Submit your answers by November 15th to

contests@scrca.on.ca

for your chance to win one of three great prizes!

Wetlands and Rural Stewardship

Wetlands act like a watershed's kidney – they filter nutrients and contaminants out of water as it leaves to enter nearby watercourses. Wetlands also offer flood protection by storing excess water and gradually releasing it during a storm event. Rural landowners and farmers can retire marginal land to wetlands as a means to improve water quality in the Sydenham River watershed. Wetlands adjacent to farm fields can filter nutrient-laden runoff which reduces the risk of eutrophication (nutrient enrichment) and algal blooms.

The SCRCA encourages the conservation and restoration efforts of landowners along the Sydenham River. The Authority's Healthy Watershed Program can provide technical and financial support for projects including creating and enhancing wetlands and wildlife habitat, planting riparian buffers (e.g., native grasses, shrubs), reducing erosion on farmlands, fencing and more! The goal of these projects is to improve and protect rural water quality while also improving local habitats.

In the past year, over 10 hectares of rural land has been retired and returned to a natural state. Staff meet with landowners to offer advice and assistance related to project design and the coordination of contractors and materials.

Have some land you are interested in retiring to wetland or trees? Contact Jessica Van Zwol, Healthy Watershed Specialist at 519-245-3710, Ext. 241.

For more information

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