Sydenham River Watershed

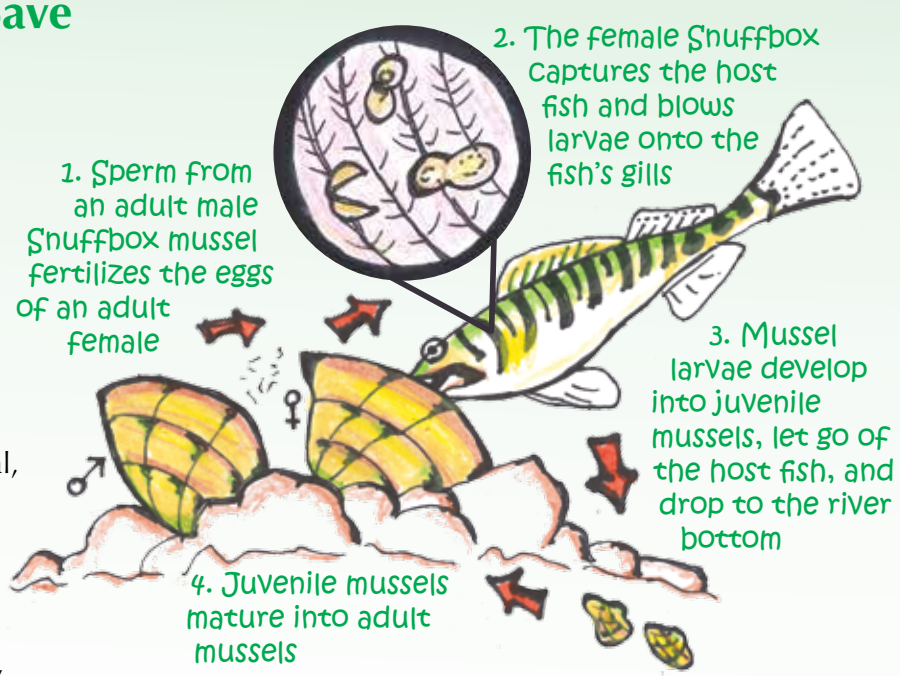
helping species at risk

June 2017

The Sydenham River in southwestern Ontario is the only major watershed that 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. At least 82 species of fish and 34 species of freshwater mussels have been found here, making it one of the most species-rich watersheds in all of Canada. Several species in the Sydenham River are found nowhere else in Canada, and some remain at only a few locations globally. Nineteen species of fish and mussels which live in and around the Sydenham River are Species at Risk nationally or provincially.

Creating Ark Populations to Save Imperilled Native Mussels

The freshwater Snuffbox mussel (*Epioblasma triquetra*) has been lost from 60 per cent of its historical range in North America. In Canada, the Snuffbox is now only known to occur in restricted reaches of the Sydenham River and at five sites within the Ausable River – this makes it one of Canada's most endangered mussels. The main threat to the Snuffbox, as with many mussel species, is habitat loss and degradation from increasing municipal, industrial, and agricultural activities. Invasive species also pose a major threat; the proliferation of the non-native Zebra mussel has devastated Snuffbox populations in the Great Lakes.



The life cycle of mussels is complex and actually requires a host fish, which means the fate of mussel populations are also closely tied to the health of fish populations. Mussel larvae attach to the gills of a host fish where they can safely develop into juveniles. This also allows them to hitch a ride and disperse to new areas. In the Sydenham River, Snuffbox are reliant on Logperch to serve as a host. The Snuffbox uses a unique technique to transfer its larvae to a Logperch – they actually grab onto the fish's nose! *Check out our website for a video of this and other amazing mussel adaptations (www.sydenhamriver.on.ca).*

SCRCA technician, Cody Coverdale, helps collect gravid (pregnant) mussels from the Sydenham for transport to hatchery for propagation. These mussels will be returned to their location in the stream.

Mussel biologists at the Ontario Ministry of Natural Resources and Forestry (MNRF) have been working to restore imperilled native mussel populations, like the Snuffbox, by using specialized techniques to raise wild mussel larvae in captivity. They have had success to date – now the next step is to see if it is possible for captive mussels to reproduce in an artificial environment. Creating these "ark" populations may become vital to the conservation of these fascinating and often overlooked animals.

Bear Creek Shows Off its "Mussels" During Barrier Removal Project

The Sydenham River is considered the most mussel diverse river system in the country, currently home to at least 34 species! When SCRCA staff came across an old metal barrier that spanned the width of the North Branch of the Sydenham, also known as Bear Creek, they decided to take action. The barrier had no current function and obstructed the movement of fish, mussels, and sediment. By removing the barrier and naturalizing the stream, this important habitat was restored.

SCRCA staff "raccooning" for mussels to relocate before the barrier removal.

Since mussels don't move quickly, staff had to remove mussels from the construction site by hand – over 300 mussels were relocated! Construction was completed in September 2016, and now fish, mussels, and other aquatic species are free to travel up- and down-stream in search of food and preferred habitats.

On the final day of the mussel relocation there was a rare find. An endangered Fawnsfoot was surveyed representing the only known individual ever found on the North Branch of the Sydenham River!

Working around the water? – New for 2017

To find out if aquatic (fish/mussel) species at risk or critical habitat are present at your work site and whether Fisheries and Oceans Canada needs to review your project, see:
www.dfo-mpo.gc.ca/pnw-ppe/index-eng.html
New maps and species at risk self-assessment criteria have been added.

These Insects Don't Bug Us!

Did you know many insects we see flying around begin their lives in the water?

Does this critter look familiar? You've seen him before... it's a dragonfly in its larval form. In fact, most of a dragonfly's life is spent in the water (up to 5 years) and they are only in their adult form, as we know them, for a few weeks! (Photo credit: J. Hamrsky)

Notes from our biologist: Aquatic, bottom dwelling (benthic), spineless (invertebrate) organisms that are visible to the naked eye (macro-) are known as "benthic macroinvertebrates," or "benthos" for short. Their presence, or lack thereof, can tell us many things about the health of the watercourse in which they live. Different kinds of benthos are sensitive to different water conditions – some require clean, cool, highly oxygenated rivers to meet their needs while other benthos can live just about anywhere, even in water that is degraded by pollution.

SCRCA technician, Kelli Smith, using a D-net to collect benthos.

Changes to the benthic community over time can indicate a change in water quality. Studies of these aquatic "bugs" can warn us about problems and help us keep our rivers healthy.

Dobsonfly larvae may not be pretty but we are always pleased to see them because they indicate clean water! They are also sought after by bass anglers as they make excellent bait.

Species at Risk Update: The Spiny Softshell turtle (*Apalone spinifera*) was uplisted from threatened to endangered in mid-2016. This nationally rare species occurs within the St. Clair Watershed and the SCRCA is working to preserve this quirky turtle. (Photo credit: S. Gillingwater)

Invasive Species Update: Round Goby, an invasive fish species native to the Black and Caspian Sea region, was previously un-established in most of the Sydenham River. Before 2016, they were only detected in watercourses close to Lake Huron, Lake St. Clair, and the St. Clair River. Recently, there was a drastic change: biologists detected Round Goby along the entire East Branch of the Sydenham from Lake St. Clair to Napier Road, about three quarters of the way up the river!

This change in distribution is significant for the Sydenham River because Round Goby is identified as a potential threat to the river's freshwater mussels. This invading fish could compete with host fishes and feeding juvenile mussels including the Snuffbox.

What can you do to get involved?

The SCRCA will be hosting two BioBlitzs this July in order to assess aquatic health in the Sydenham watershed. Please contact Kelli Smith at ksmith@scrca.on.ca for event details.

You can also report any Species at Risk sightings to stclair@scrca.on.ca – be sure to include a photo, the date and location. The information you provide will help inform our conservation programs!

Aquatic Species at Risk in the Sydenham River

Mussels

Eastern Pondmussel – Endangered **
Fawnsfoot – Endangered
Kidneyshell – Endangered
Mapleleaf Mussel – Threatened
Northern Riffleshell – Endangered
Rainbow Mussel – Endangered
Rayed Bean – Endangered
Round Hickorynut – Endangered
Round Pigtoe – Endangered
Salamander Mussel – Endangered
Snuffbox – Endangered
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 – Threatened **
Spotted Sucker – Special Concern

Turtles

Blanding's Turtle – Threatened
Eastern Musk Turtle – Special Concern
Northern Map Turtle – Special Concern
Snapping Turtle – Special Concern
Spiny Softshell – 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.

** The wavy-rayed lampmussel is no longer found in the Sydenham River*
*** Very few historical records*

2017 participants at our annual Canoe & Kayak Race on the Sydenham River in April.

Species at Risk Contest

Solve our riddles!

This mussel likes to play “got your nose.”

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This turtle is prickly yet smooth.

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Bass anglers and biologists alike are happy to see this insect.

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This *rotund* fish is eating native species out of house and home.

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Another name for this turtle is “stinkpot.”

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Where can you go to paddle?

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First Prize: Binoculars and a SCRCA Weekend Camping Pass

Second Prize: “A Blanding’s Turtle Story” (children’s picture book) and a SCRCA Weekend Camping Pass

Third Prize: SCRCA Gift Bag

Submit your answers by e-mail to **contests@scrca.on.ca**
or mail your answers to:
St. Clair Region Conservation Authority
205 Mill Pond Cres
Strathroy ON N7G 3P9

Be sure to include your contact information so we can notify the winners.

Draw will be held August 31, 2017

For more information
St. Clair Region Conservation Authority
205 Mill Pond Cr. Strathroy, ON N7G 3P9
519 245-3710 stclair@scrca.on.ca
www.scrca.on.ca

Healthy Watersheds Program

The St. Clair Region Conservation Authority encourages the conservation and restoration efforts of landowners along the Sydenham River. Staff meet with landowners on-site, offering advice, assistance with project design, and coordination of contractors and materials like trees and shrubs.

SCRCA staff seek out stewardship grant funding from a variety of sources to pass on to our landowners. Over the past year, we have assisted landowners with grants totalling over $360,000! A large portion of those grants are directed towards the East Branch of the Sydenham River coming from programs like Environment and Climate Change Canada’s Habitat Stewardship Program (Aquatic Species at Risk) and Wildlife Habitat Canada; Ontario Ministry of Natural Resources and Forestry Species at Risk Program; Ontario Ministry of Agriculture, Food, and Rural Affairs Canada Ontario Agreement; Ontario Soil & Crop Improvement Association Species at Risk Farm Incentive Program; and Ducks Unlimited Canada.

If you are interested in a wetland, riparian buffer, fencing livestock from watercourses or woodlots, tree planting and/or erosion control projects in the watersheds of either the North and East Branch of the Sydenham River, contact Jessica Van Zwol, Healthy Watershed Specialist, at jvanzwol@scrca.on.ca

Partners in Conservation

Environment and Climate Change Canada
Fisheries and Oceans Canada
Ontario Ministry of Natural Resources and Forestry
Ontario Ministry of the Environment and Climate Change
Ontario Ministry of Agriculture, Food and Rural Affairs
Ontario Trillium Foundation
St. Clair Region Conservation Authority
St. Clair Region Conservation Foundation
Ducks Unlimited Canada
Wildlife Habitat Canada
Carolinian Canada Coalition
Forests Ontario