

## Friends of the Sydenham Hold First Event

Cold rain and snow greeted volunteers who showed up last April to plant shrubs along the shore of the Head Street Reservoir in Strathroy. Twenty hearty people planted over 75 shrubs to help naturalize the shoreline of the Sydenham River.



## New Mussel Poster Available

A new mussel poster is available from the SCRCA office. The poster, produced by Environment Canada, shows all 41 species of native freshwater mussels found in Ontario rivers and lakes. To obtain a poster, contact Muriel Andreae, Biologist, at 245-3710 ext. 22



## Learning about Mussels

Fisheries and Oceans Canada held a second Ontario Freshwater Mussel Identification workshop in the waters of the Sydenham River. The Sydenham is home to at least 34 species of freshwater mussels, more than any other river in Canada.



For more information contact  
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## Janice Metcalfe-Smith Receives Award

Janice Metcalfe-Smith received a Conservation Award from Arthur Parkes, Vice Chair of the St. Clair Region Conservation Authority based on her lifelong research in aquatic ecology and specifically for her efforts in uncovering the secrets of the Sydenham River Mussels. Ms Metcalfe-Smith is an Aquatic Research Biologist with the National Water Research Institute of Environment Canada in Burlington, Ontario. She has a B.Sc. (Hons.) in Zoology from the University of Manitoba and 29 years of experience as a technologist and biologist with Fisheries and Oceans Canada and Environment Canada. Her professional interest and personal enthusiasm for mussels was key to initiation of Recovery Teams for Aquatic Species at Risk on the Sydenham, Thames and Ausable Rivers. She recognized that an ecosystem-wide strategy for protecting aquatic Species at Risk was the most effective approach to species recovery. This led to Canada's first recovery strategy on an aquatic ecosystem basis, which was completed for the Sydenham River Watershed in 2003. This recovery strategy provides a model for other strategies across the country. Janice's contribution to the science of mussels has helped place the Sydenham River on the national map.



## Partners in Conservation

Environment Canada's Habitat Stewardship Program for Species at Risk  
Fisheries and Oceans Canada  
Middlesex Stewardship Committee  
Natural Heritage Information Centre  
Ontario Great Lakes Renewal Foundation  
Ontario Ministry of Natural Resources  
Royal Ontario Museum  
Rural Lambton Stewardship Network  
St. Clair Region Conservation Authority  
Stewardship Kent  
University of Guelph  
World Wildlife Fund Canada



Canada

Ontario



www.sydenhamriver.on.ca

# Aquatic Species at Risk

## *in the Sydenham River Watershed*

March, 2006

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 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. Seventeen of these species have been nationally listed as endangered, threatened or of special concern in the federal Species at Risk Act.

## Habitat Stewardship Program for Species at Risk

Environment Canada provided a \$197,500 grant in 2005 to the St. Clair Region Conservation Authority through the Habitat Stewardship Program for Species at Risk. The grant was used to help farmers implement Best Management Practices on their farms and to provide information to the public on aquatic Species at Risk in the Sydenham River.

## No Live Bait

Stop the spread of invasive species into our region. Invasive species are commonly transported in bait buckets and enter the river when people dump their left-over bait and water. Once unwanted species enter the system they aggressively compete with native species for food and habitat. The Thames River has been invaded by zebra mussels, which were first identified in Fanshawe Reservoir in 2003. Since that time, zebra mussels have been steadily expanding their range in the Thames. We need the Sydenham to be free of invasive species and healthy for years to come. The diversity of Sydenham aquatic species is unique in Canada. For more information about the threat of aquatic invasive species visit [www.invadingspecies.com](http://www.invadingspecies.com) or [www.mnr.gov.on.ca](http://www.mnr.gov.on.ca)

## Photo Field Guide to the Freshwater Mussels of Ontario

It is clear that the Sydenham River is nationally significant for its mussel populations. The first field guide to Ontario's 41 species of freshwater mussels has recently been released. Many of the photographs are from the Sydenham River. The guide has colourful photographs of live specimens along with life history and conservation information. The \$10 book is available for sale at the Conservation Authority Office in Strathroy.



## Looking for Turtles

Over a nine day period, staff and volunteers travelled by canoe from Melwood Drive in Adelaide-Metcalf Township to the Community of Florence in Dawn-Euphemia Township looking for turtles. Not just any turtles – they were on the hunt for turtles that are listed as Species at Risk. They observed a total of 45 eastern spiny softshell turtles and 32 map turtles. The locations of the turtle sightings, basking and nesting sites were recorded using a GPS unit. Information from this survey is useful to determine if the populations of these species are remaining stable. It also provides valuable insight into the specific habitat needs of these special turtles.



## Benthic Sampling

Benthic macroinvertebrate sampling is the collection of aquatic "bugs" for biological analysis. These organisms live in the substrate of water bodies and are easily netted by disturbing the sediment. The St. Clair Region Conservation Authority has been collecting and analyzing samples from many locations in our region, since 1999. The analysis of the data has shown that only a small percentage of the sites are "Fair" or "Good" quality, which means most of the aquatic habitats are in poor condition. The best way to improve these sites is by Best Management Practices on the land.



## Mussels for Monitors

Researchers have developed water quality guidelines for contaminants such as metals by testing the survival rate of aquatic organisms such as mussel larvae or "glochidia". Work by Dr. Patty Gillis of McMaster University using glochidia harvested from Sydenham River mussels in 2005 has found that the rare species of mussels are much more sensitive to copper than are the glochidia of the common mussel species. This research into metal toxicity will help the provincial and federal governments develop water quality guidelines to protect all the aquatic life forms in our rivers. If we want a healthy watershed, we need to keep all the parts healthy! If we want to drink the Great Lakes waters, we need to keep the rivers healthy!

## Did you know?

- Mussels can live up to 100 years.
- Mussels disperse by attaching developing larvae, known as glochidia, on to passing fish.
- A black sandshell mussel can be up to 200 mm (8") long, while an adult lilliput mussel is only 25 mm (1") long. Both species are known from the Sydenham.

- The eastern spiny softshell turtle naturally has a soft shell, which feels like thick leather.



M. Oldham, OMNR

- Some mussel species can wiggle the edge of their mantle to attract a fish. The wavy-rayed lampmussel mantle can look like a minnow, and the rainbow mussel's mantle can look like a crayfish. Visit <http://unionid.missouristate.edu> to see videos of mussels in motion.

- Mucket mussels were once harvested in Canada to make pearl buttons.

- The blackstripe topminnow feeds at the top of the water column. That's why it's called a "top" minnow.

The Sydenham is the only river in Canada with this attractive little fish.



Joseph R. Tomelleri ©

- The mudpuppy mussel is unique among freshwater mussels in that its only known host is an amphibian, the mudpuppy, rather than a fish.



J. Metcalfe-Smith, NWRI

## Healthy Watersheds

Water is a precious resource. The Conservation Authority's Healthy Watersheds Program is an initiative that provides technical and financial assistance to improve and protect rural water quality. The SCRCA actively seeks grants that will bring dollars into the region to support the conservation efforts of landowners. Grants supporting the program in 2005 included funds from the Ontario Great Lakes Renewal Foundation for projects for the St. Clair River Area of Concern; the Clean Water Project for Middlesex County; and the Habitat Stewardship Program for Species at Risk for the Sydenham River watershed. Grants for landowners were also available through the St. Clair Stewardship Initiative administered by the Rural Lambton Stewardship Network.

Over the last five years, the Conservation Authority has distributed more than \$1,185,000 in grants to landowners which has resulted in 466 projects worth more than \$4.15 million. The projects include such Best Management Practices as streambank stabilization, tree planting, wetland creation, retirement of fragile land, livestock fencing from watercourses and well decommissioning.



This project involved retiring a cattle pasture in the floodplain of the Sydenham River. 5,900 trees and shrubs were planted to provide a buffer along the river.



Joseph R. Tomelleri ©

The greenside darter is one of the Sydenham's most colourful fish. It inhabits rocky riffles and spends most of its time on the bottom. It is widespread in the Sydenham.

## Aquatic Species at Risk in the Sydenham River

### Mussels

northern riffleshell - **Endangered**  
wavy-rayed lampmussel - **Endangered**  
rayed bean - **Endangered**  
snuffbox - **Endangered**  
mudpuppy mussel - **Endangered**  
kidneyshell - **Endangered**  
round hickorynut - **Endangered**  
round pigtoe - **Endangered**

### Fish

northern madtom - **Endangered**  
eastern sand darter - **Threatened**  
spotted gar - **Threatened**  
blackstripe topminnow - **Special Concern**  
pugnose minnow - **Special Concern**  
bigmouth buffalo - **Special Concern**  
spotted sucker - **Special Concern**  
greenside darter - **Special Concern**

### Reptiles

eastern spiny softshell turtle - **Threatened**

**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 is of special concern because of characteristics that make it particularly sensitive to human activities or natural events.



S. Staton, NWRI

The northern riffleshell is a small colourful freshwater mussel, that lives in highly oxygenated riffle areas of rivers and streams. The northern riffleshell is globally rare. The Sydenham population is thought to be one of only three reproducing populations left in the world.