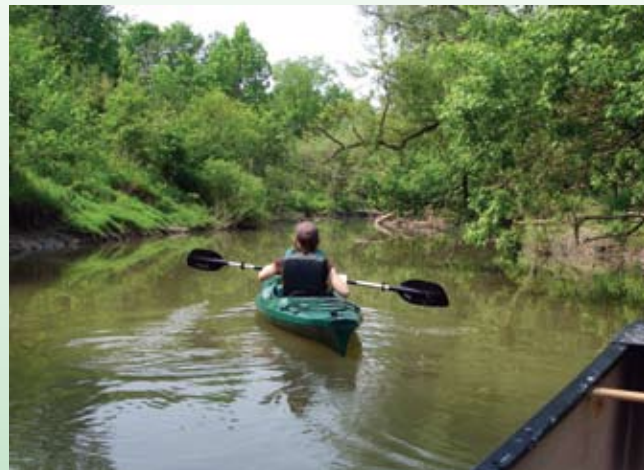


## Looking for Turtles

Over a seven-day period, staff and volunteers travelled the Sydenham River by canoe from Hardy Creek Bridge to Dawn Mills Road looking for turtles. The turtle sightings, basking and apparent nesting sites were recorded using a GPS unit. A total of 38 eastern spiny softshell and 31 northern map turtles were found. In addition, 4 potential nesting areas were identified. Information from this survey is useful to determine if the populations of these species are stable and provide valuable insight into the habitat needs of these special turtles. This is the sixth year of surveying the river for turtles. The surveys show that eastern spiny softshell turtles use flat areas below sandy banks for basking, and gravelly river islands for nesting activity. Shortage of these habitats may limit the population of the spiny softshell. Egg destruction by raccoons, and nest flooding by extreme summer rain events may also reduce the nesting success of this species. Creation of more gravelly nesting sites will be investigated in 2008.



Volunteers, (left to right) Janice LeBoeuf, Harry Denkers, John Harris and Janice Harris assisted Conservation Authority staff in finding populations of the eastern spiny softshell turtle (above). Lawrence Denkers and Paul LeBoeuf also were volunteer turtle hunters but were not available for the photo.



### Available from the St. Clair Region Conservation Authority

- A Photo Field Guide to the Freshwater Mussels of Ontario - cost \$10
- Freshwater Mussels of Ontario Poster - Free

for more information, e-mail [stclair@scrc.ca](mailto:stclair@scrc.ca) or call 519 245-3710

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### 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



# Aquatic Species at Risk

## *in the Sydenham River Watershed*

March, 2008

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

### Stokeman Creek Planting Improves Environment

The St. Clair Region Conservation Authority used funds received through the EcoAction Community Funding Program, a program of Environment Canada, to involve the local community in naturalizing shorelines of the Sydenham River. In May of 2007, 200 elementary and secondary students planted native species along more than 100 metres of stream bank in Strathroy. Plantings included dogwoods, viburnum, elderberries, black willows, cedars and ten species of wetland plants. In total, 730 trees, shrubs and wetland plants were planted by volunteers and the Conservation Authority as part of the annual Strathroy Community Clean Up and Planting Day.

These native plantings will help to stabilize the stream banks, gradually provide shade and cover for fish and wildlife and reduce erosion and sedimentation in the watercourse. Equally important, the community involvement demonstrates that local citizens can make a difference for healthier habitats in the Sydenham River watershed.

### Thanks to TD Friends of the Environment Foundation

TD Friends of the Environment Foundation has been a supporter of the aquatic Species at Risk program for several years. Each year they donate between \$8,000 - \$12,000 to support activities such as this newsletter, conservation education programs, displays and the Species at Risk signs that are distributed throughout the region in Conservation Areas, municipal parks and access points to the Sydenham River. In recognition of this support, the St. Clair Region Conservation Authority prepared posters and staffed a display highlighting their contribution. The posters were put on display in each of the region's branches.





## Research Continues to Unlock Mussel Mysteries

by Kelly McNichols, M.Sc.

Unionid mussels (commonly known as clams) play an important role in aquatic ecosystems, and they are indicators of the overall health of an ecosystem. Unfortunately, they are also among the most endangered groups of organisms in the world. These unique animals develop indirectly via a complex life cycle that involves the use of a host, usually a fish. Since the Sydenham River contains the highest number of unionid species in Canada (including a number of mussel Species at Risk), it is the ideal spot for recovery research.

The focus of my M.Sc. (2005-2007) at the University of Guelph was to aid in recovery efforts for mussel Species at Risk through the identification of host fishes, elucidation of population dynamics, and determination of potential sites for reintroduction and augmentation of mussel Species at Risk. As such the title of my thesis was "Implementing Recovery Strategies for Mussel Species at Risk in Ontario."

Host fishes were identified or confirmed for a number of mussels found in the Sydenham River including: northern riffleshell, snuffbox, round hickorynut, kidneyshell, and rayed bean. Importantly, the absence of a host fish may help to explain the Species at Risk status of certain mussel species. Generally, the hosts were found to be species of darters (Percidae fish family) and these results indicate that there are systematic relationships among mussels and their host fish.

In addition, I found that juvenile production rates differ among host fishes. For example, certain hosts produce a higher number of juvenile mussels than other hosts. Finally, I found that there are site specific differences in the abundance estimates (range: 3-10,974 individuals), sex ratios, proportion of gravid (pregnant) females (10-40%), and growth rates (0.2-0.4 cm/year) for the mussel Species at Risk in the Sydenham River.

This information is required for not only understanding the biology of these organisms but also for helping facilitate their recovery and in doing so, the recovery of the Sydenham River.



## Students Learn about Species at Risk

The St. Clair Region Conservation Authority offers three Species at Risk education programs to students and community groups. Two of the programs are offered free of charge, in school, to elementary and secondary students. All of the programs are closely linked to the Ontario school curriculum. Students not only learn about the species, they are introduced to a number of Best Management Practices and they discover how they can help as well.

### Elementary School Program

Following a Power Point presentation where elementary participants learn about endangered species and threats to their survival, preserved samples of fish and mussels from the Sydenham River are examined. An energetic game of "Turtle Hurdles" is then enjoyed by the students where they role play the life of the spiny soft shell turtle. The "turtles" are required to overcome loss of habitat and lurking predators as they "swim" from their bathing zone to nesting areas and attempt to successfully lay their eggs.

### Endangered Species Game:

This exciting game of tag, which is played as part of our outdoor education program, introduces students to the endangered species of Ontario. "Endangered" students are required to find food and water, while avoiding threats such as habitat destruction, poaching, and invasive species. One of the program's goals is to have a positive effect on students' value systems, and attitudes towards the environment, ecology and wildlife.

### Secondary School Program:

The secondary in-school program provides more in-depth discussion of local endangered species. Students learn about the fascinating life cycle of mussels and their internal organ systems. Invasive species are also discussed with respect to their effect on native species. Students learn about local projects such as shoreline protection and the creation of turtle habitat along the Sydenham River.



## Habitat Stewardship Program for Species at Risk

Environment Canada provided a \$147,000 grant to the St. Clair Region Conservation Authority in 2007 through the Habitat Stewardship Program for Species at Risk. These funds helped to finance the following projects:

**In the classroom** - Students participated in programs about local Species at Risk.

**Getting the message out** - It is important to keep our watershed residents up to date about the efforts that are being undertaken to help Species at Risk.

- An annual Species at Risk newsletter is distributed to 49,000 homes each year in early April.
- A number of signs have been erected throughout the region describing the Species at Risk in the Sydenham.
- A public service announcement is aired on the A Channel over a two-week period each year with funds from the St. Clair Region and Upper Thames River Conservation Authorities promoting the availability of grants for landowners.

**On the farm** - In 2007, \$87,800 was provided to farmers to help them implement 27 conservation projects which help improve the quality of the Sydenham River and its tributaries. Projects include such initiatives as tree planting, streambank stabilization, wetland creation and enhancement and retention ponds. Grants are still available for projects. For more information contact Steve Shaw at the Conservation Authority at 519 245-3710 ext. 13.

## Trees at Risk

Through funding from the Ministry of Natural Resources, the St. Clair Region Conservation Authority is implementing a program to address woodland species at risk including the Kentucky coffee tree, American chestnut, blue ash, butternut, shumard oak and dwarf hackberry. Specifically, the project involves:

- inventory of woody species at risk on Conservation Authority owned properties
- development of a species at risk education program focusing on woody species
- creation of a website
- development of a presentation that can be given to groups throughout the region

## Did You Know

- That the only place in Canada that you can find the Rayed Bean Mussel (the smallest mussel) is in the East Sydenham River. This mussel buries itself deep in the river substrate and is difficult to find.
- Unlike most fish species the Northern Madtom Males are very protective parents. They build nests for the eggs under large rocks so predators won't see them and they guard the eggs as well as the newly hatched babies (fry).

## 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**  
rainbow mussel - **Endangered**  
mapleleaf mussel - **Threatened**

### 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**  
grass pickerel - **Special Concern**

### Reptiles

eastern spiny softshell turtle - **Threatened**  
Blanding's turtle - **Threatened**  
northern map turtle - **Special Concern**

**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.

