

## 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**

### 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**

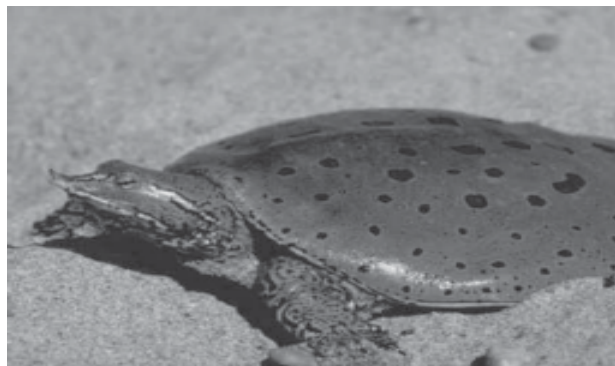
### Reptiles

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.



eastern spiny softshell turtle

## Best Management Practices Fact Sheets

### *helping species at risk series*

- Restricted Livestock Access
- Manure Application
- Manure Storage
- Well Repair and Decommissioning
- Tree Planting
- Fuel & Pesticide Storage
- Wetlands
- Bioengineering for Streambank Stabilization
- Septic Systems
- Clean Water Diversion
- Milkhouse Waste Water
- Conservation Tillage
- Exotic Species
- Riparian Buffers

### Partners in Conservation

Environment Canada  
 Department of Fisheries and Oceans  
 Government of Canada's Species at Risk Program  
 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

# Best Management Practices

## *helping aquatic species at risk*

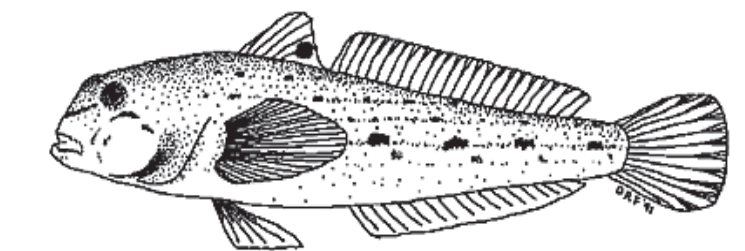
## Invasive Species

The Sydenham River in southwestern Ontario is the only major watershed which lies completely within 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. Many of these species at risk have been nationally listed as endangered, threatened, or of special concern by the Committee on the Status of Endangered Wildlife in Canada. You can help too. By adopting Best Management Practices (BMPs), you can help protect the Sydenham River and its tributaries. This series of fact sheets will assist you in deciding which BMPs are right for your property.

A special concern in the Sydenham River is the threat of invasive species and the damage that they can and do have on the river. In this case, the term invasive species refers to any of the species of fish, plants and molluscs that have been introduced to the aquatic community, usually by human means and have spread rapidly.

### Zebra Mussels

Zebra mussels are an exotic mollusc species that was accidentally released in the Great Lakes from ballast water in ocean going ships. Zebra mussels have now been found in the Thames River and they threaten to invade the Sydenham River watershed. Zebra mussels have had a devastating effect on the native populations of species in the areas where they are found. They attach themselves to native mussel species and kill them by covering the shell and shell opening so that the mussel cannot obtain food. They



*The round goby has done much damage to the populations of native fish because of its aggressive nature in taking over good fish habitat and feeding on the native fish eggs and young.*

- Technical advice and grants may be available to assist in implementing Best Management Practices on your property.
- If your project involves work in or near a watercourse, you may require permits including a Fill, Construction or Alteration to watercourse permit from the Conservation Authority.
- Call before you begin your project.



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*"Working Towards Healthy Watersheds"*

also pose the threat of transferring toxins throughout the food chain. Zebra mussels are filter feeders and they take in contaminants and chemicals from the waters that they live in. The large amount of body fat in the zebra mussel absorbs these poisons and when the mussel is eaten, each individual up the food chain is affected by the toxins.

Immature zebra mussels are very small and may be floating in the water with bait fish. An adult zebra mussel in your boat may be full of eggs and they could be released into a new water body. By properly disposing of your bait and water and taking care to inspect and clean your boat before moving to different waters, the spread of zebra mussels and other exotic species may be curbed.

## Invasive Fish Species

There are several species of invasive fish that are causing problems in surrounding waters and are threatening to do the same to the Sydenham River. The round goby is an invasive fish species found in the St. Clair River. This species has damaged populations of native fish because of its aggressive nature in taking over ideal fish habitat and feeding on the native fish eggs and young. It has a high reproductive rate, which is a quality similar to another invasive fish in the area, the Ruffe. The Ruffe also thrives in the St. Clair River and will eat the eggs of other fish. Since these invasive species reproduce and grow at a rapid rate, they compete with native fish for food and habitat.

Carp was introduced to North America in the 1800s as a food fish. The common carp has increased the turbidity levels of the river by uprooting submerged vegetation. The damage caused by the uprooting of vegetation results in a loss of habitat and food for the native species of fish in the river. Native fish such as the smallmouth bass need to see their prey. In the turbid waters of the Sydenham, the smallmouth bass population is almost gone. Aquarium pets may also be invasive species.

Aquarium species of fish, turtles and reptiles should not be released or flushed into the watercourses for their own well being and that of the aquatic community in the watercourse. Goldfish, like carp, increase the turbidity levels of the river. The alternatives to release of aquarium pets are to return the animal to your local pet shop, give it to another hobbyist, or donate it to a public institution like a school or library. If these options are not available, contact the Fish Rescue Program at 1-800-563-7711.

## You Should Know

- It is illegal to release live bait-fish into waters other than that which they came from.
- It is illegal to release aquarium fish into Ontario waters.
- It is illegal to import live fish, live crayfish, or live salamanders into Ontario for use as bait.
- It is illegal to possess a ruffe, except when transporting a dead specimen to a Ministry of Natural Resources office.

A licence is required to:

- stock fish into Ontario waters
- ship or transport live fish other than bait-fish taken from a water body
- transfer and deposit fish taken from one water body into another
- import leeches into Ontario for use as bait - only the holder of a commercial bait licence may bring live leeches into Ontario for use as bait.

Follow these guidelines to reduce the spread of exotic species:

- inspect boat and equipment and remove any mussels or aquatic plants/animals that are attached, before leaving the water body.
- drain water from motor, wells, and bilge on land before moving to a new water body
- wash/dry your boat and equipment before entering another water body - this can be done by:
  - rinsing boat and equipment with hot tap water
  - spraying with high pressure water (250 psi)
  - allowing boat and equipment to dry for at least 5 days before transporting to another water body
  - empty bait bucket on land before leaving a water body

## Invasive Plants

Invasive plants have also invaded areas surrounding the Sydenham River. Many invasive species of plants such as purple loosestrife and phragmites have been transported by humans for transplanting into gardens. These species can spread to other locations and crowd out native plants.

Phragmites is an invasive species of grass that can cause problems when introduced to an area. It is a tall grass, up to 6 metres in height, that thrives in wet conditions and threatens native plant species by reducing the nutrients and moisture in the soil. It will also shade the smaller native plants in the area, reducing the amount of sun light they receive. Once introduced to an area, it quickly takes over, killing native vegetation and spreading into further areas. Phragmites can be eliminated by spraying with glyphophate (a

herbicide) after it has flowered in August as long as it is still green. There are restrictions, however, on the use of herbicides near open water.

Purple loosestrife is a very hardy perennial which can quickly invade and take over a wetland. Wetlands are very diverse ecosystems with many different species of plants to provide food and shelter for wildlife. Once purple loosestrife takes over a wetland, the diversity is reduced and wildlife habitat becomes degraded.

Pulling purple loosestrife by hand is the easiest way to remove young plants. Older plants with a deep root system will need to be dug out. Cutting off the flower spike before the plant goes to seed is a way to limit the spread of the plant. Scientists have been experimenting with the release of the purple loosestrife beetle which is a natural predator of the plant. This type of control would be beneficial in areas where there is a large expanse of purple loosestrife. The application of herbicide is another method but should be done only over dry land and applied only to the loosestrife.



purple loosestrife



phragmites

The Ontario Federation of Anglers and Hunters has excellent information on invasive species. For more information on this and other projects used to control the spread of exotic species, call the Invasive Species Hotline at 1-800-563-7711, or check the Ontario Federation of Anglers and Hunters web page at [www.invadingspecies.com](http://www.invadingspecies.com).