

The turtles of Royal Botanical Gardens

In the early days of the European settlement of the western shore of Lake Ontario, Cootes Paradise was noted for its abundance of turtles. During a visit to the area in 1796, Elizabeth Posthuma Simcoe wrote in her diary that Cootes Paradise “abounds with wild fowl and tortoises” and in fact, upon returning to her local lodgings she “found a salmon and tortoise ready dressed for ... dinner.” (The “tortoises” mentioned in the quote are in actual fact turtles; no native tortoises have ever been found in Canada.)

The main cause for the current diminished turtle population around Cootes Paradise is the decrease in quality and quantity of local wetland habitats. Urban and industrial pollution, encroachment, and habitat isolation have caused an approximate 85 percent loss of wetland plant cover in Cootes Paradise, and severely decreased its water quality. While Project Paradise has helped to improve wetland habitat, the effects of habitat isolation and urban encroachment are difficult to combat. (See page 5 for more about Project Paradise.)

Meet the residents

Currently there are six native species and one introduced turtle species living in Cootes Paradise and along Grindstone Creek.

The two most numerous species are midland painted turtle (*Chrysemys picta marginata*) and common snapping turtle (*Chelydra serpentina serpentina*). Midland painted turtles can be found basking on logs and rocks emerging from the water. Common snapping turtles, while abundant, are less often observed since they bask infrequently.

Common map turtles (*Graptemys geographica*) are less common as they are more often associated with larger bodies of water such as Hamilton Harbour.

Blanding's turtles (*Emydoidea blandingii*) have been reduced to two small sites. They prefer flooded forest habitat and are frequently difficult to spot. They have not reproduced successfully in the Gardens for over 10 years and their dwindling numbers are cause for alarm. An estimated 10 individuals remain.

Common musk turtles (*Sternotherus odoratus*) and eastern spiny softshells (*Apalone spinifera spinifera*) are both known locally through single individuals recorded at the Fishway. The common musk turtle, long thought extirpated from a small population resident in Grindstone Creek estuary, was captured in 2001, while the eastern spiny softshell, also once thought to be extirpated, was recorded in 1997. Both species are classified as “threatened” in Canada.

The red-eared slider (*Pseudemys scripta elegans*), native to south-central United States, was sold locally in pet stores. Many pet owners released unwanted sliders into the wild. Several can be found in Cootes Paradise and Hendrie Valley. Red-eared sliders may present a risk to native species through the spread of diseases against which native turtles are defenseless.

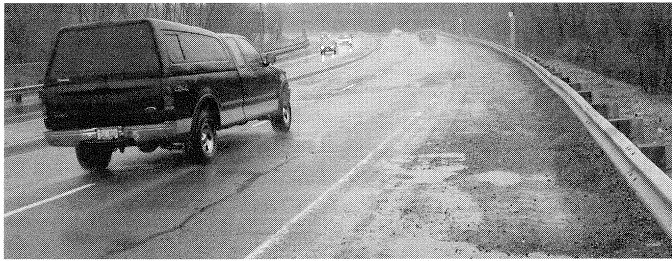


A common snapping turtle hatchling.

Turtle research

The effects of urban encroachment and traffic on local roads and railways upon resident wildlife populations are a growing concern. Much of the Gardens' properties are located in urban centres and it is likely that all resident wildlife populations suffer some degree of negative impact from urban pressures.

Running along the western portion of Cootes Paradise, Cootes Drive in Hamilton is a busy four-lane roadway with over 16,000 vehicle trips daily. The road margins are mostly lined with gravel, well drained, easy to dig into, and exposed to the sun, making them attractive turtle nesting habitat. Unfortunately, by nesting so close to the road, female turtles are often killed by traffic.



Cootes Drive.

In 1999, the Gardens established a monitoring program investigating turtle mortality along Cootes Drive. Portions of the road were monitored from April through September and any remains found were identified, recorded and removed.

Common snapping turtle accounted for more than 80 percent of dead turtles recorded. They were mainly found in June when females nest, and August when hatchlings emerge. Several more common snapping turtle hatchlings were found trapped in the road median, fatally dehydrated and apparently untouched by vehicle traffic.

In 2001, the turtle mortality study was repeated. The study conditions had changed from the 1999 monitoring—the westbound lanes (which accounted for the majority of the vehicle-induced

Dead turtles found during
Cootes Drive Vehicle-Related Mortality Study

SPECIES:	common snapping turtle	midland painted turtle	Blanding's turtle	unidentified turtle	
1999:	66	11	1	2	total: 80
2001:	8	17	-	-	total: 25

mortality) of Cootes Drive were closed from July to September for construction. This change likely caused the smaller number of dead individuals recorded in 2001. However, common snapping turtle mortality in 2001 followed the same pattern as in 1999, with the majority of individuals recorded in June and August.

One of the problems faced by turtles attempting to cross busy roadways was forcefully highlighted in 2001. A motorist was observed deliberately aiming for and hitting a midland painted turtle crossing Cootes Drive.

A change in the gravel road margin adjacent to President's Pond at the western end of Cootes Paradise may prove beneficial to the nesting turtles. After the road construction, the westbound lane road margins were approximately two to three times the width they were previously. The greater width may decrease the exposure of nesting turtles to vehicle traffic. Studies in summer 2003 will examine this possibility.

Artificial nesting habitat

The effects of vehicle-related mortality on the long-term health and sustainability of the Gardens' turtle populations are negative. Since the majority of the dead turtles are females and hatchlings, populations will gradually dwindle through the loss of reproductive capacity and offspring.

In an effort to reduce vehicle-related mortality, the Gardens science staff has created artificial turtle nesting beds away from the hazards of vehicle traffic.

The Laking Garden was chosen as the site for the artificial turtle habitat pilot project. Every year, some common snapping turtles build nests in the garden beds, which are inevitably disturbed by Gardens' visitors and through garden maintenance. The artificial beds are strategically located along the edge of a south-facing slope to intercept turtles coming into the Laking Garden and to encourage them to build their nests before reaching the garden plots. Two experimental nesting beds were constructed using material donated by Dundas Quarries, LaFarge Canada.

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Monitoring of the artificial nesting sites began in summer 2003. Also, any turtle nests found within areas prone to disturbance in the Laking Garden's beds will be transferred to the artificial beds.

If hatchlings successfully emerge from the artificial beds, other beds will be constructed throughout the Gardens, especially where female turtles are affected by vehicle-related mortality.



A view from artificial turtle nesting beds, overlooking Blackbird Marsh. PHOTO: MARY POMFRET

2003 monitoring program

The Ministry of Natural Resources' Community Fisheries and Wildlife Involvement Program (CFWIP) has provided funding for the Gardens to monitor turtles along Grindstone Creek and into Carroll's Bay. In addition to monitoring the nesting beds in Laking Garden, turtles will be captured, tagged and released within Grindstone Creek estuary in an effort to learn more about the various populations, their composition, dynamics and age structure. This information will help identify possible threats and downward trends, which will help direct the development of conservation plans to save turtle species at risk. Most importantly, Gardens' science staff hope to learn more about the number of eastern spiny softshell and common musk turtles remaining in the area, as they are only known from single sightings and are most likely in need of special measures to preserve and promote their populations.

For more information about turtle monitoring, download a detailed version of this article at www.rbg.ca/pdf/Turtles.pdf.

Turtle identification resources

The Peterson Field Guide, *Reptiles and Amphibians Eastern/Central North America* contains a variety of useful illustrations of all the turtles found at the Gardens.

The Toronto Zoo's Adopt-A-Pond Web site, www.torontozoo.com/adoptapond/guide/turtles.html has an excellent guide to the turtles of Ontario, and much valuable information.

References

(City of Hamilton Traffic Department 1998).

Get out your scope and hiking boots!

Cootes Paradise has long been known as a significant area for birds.

In the late 1700s the vast number of waterfowl in the marsh attracted the attention of military officer and outdoorsman Captain Thomas Coote. He so often frequented the area on his leaves that it soon became known as Cootes Paradise.

Today, Cootes Paradise is the largest coastal marsh in western Lake Ontario and an important staging area for migrating waterfowl.

Several sites in the marsh afford good views of the many species that use Cootes Paradise as a migratory stop-over point.

The waters around Hickory Island yield flocks of northern shoveler and gadwall, while Princess Point frequently has bufflehead, ruddy duck and red-breasted merganser. The mudflats that are visible from the Marsh Boardwalk along the north shore contain American green-winged teal, tundra swan and great egret.

Check our Public Programs calendar and register for an Autumn Bird Walk with one of our resident bird experts. Plus, don't miss the great guided hikes lined up for BirdFest on Sunday, October 5. Don't forget to bring your binoculars, scopes and guide books!

Help us monitor turtles next spring

With your assistance we can learn more about the number of turtles here at the Gardens, which will be invaluable in the development of future conservation projects.

Sightings can be reported via:

E-mail: sightings@rbg.ca

Telephone: 905-527-1158, ext. 248

Mail: Turtle Sightings

Royal Botanical Gardens

P.O. Box 399

Hamilton, Ontario L8N 3H8

Please include the following information in your sighting reports:

- your name and contact information;
- date and specific location of your observations;
- number of turtles;
- species (if known, or a brief description); and
- what the turtles were doing (basking, swimming, laying eggs etc.).

The Gardens' science staff, and our native turtle populations, thank you for your assistance! 🌸