

Wood Turtle (*Glyptemys insculpta*)

A species at risk

Ecology

Species at risk status

Threats

Recovery initiatives



NOVA SCOTIA
HABITAT
CONSERVATION
FUND

Contributions from Hunters and Trappers

This project was undertaken with the financial support of:
Ce projet a été réalisé avec l'appui financier de :



Environment and
Climate Change Canada

Environnement et
Changement climatique Canada



**Clean
Annapolis
River Project**

Wood turtle description and ecology

The wood turtle (*Glyptemys insculpta*) is a medium-sized, semi-aquatic turtle, ranging in size from 16 to 25 cm in length as adults (COSEWIC 2007; MacGregor & Elderkin, 2003). The carapace is gray-brown in colour with a sculptured woody appearance, caused by pyramidal circular rings or growth lines. The plastron is yellow with a pattern of black or dark coloured blotches and has no hinge. The skin on the head and upper body of the wood turtle is often dark brown, while the skin on the throat, tail and undersides of the legs is often yellow, orange or red in colour. They are a long-lived species, reaching sexual maturity between the ages of 11 to 22 (with 16 years being the average). In the wild, wood turtles have an average lifespan of 30 years, but can live beyond 50.

The wood turtle can be found distributed throughout northeastern North America (MacGregor & Elderkin, 2003). In Canada, the wood turtle can be found in Nova Scotia, New Brunswick, Quebec and Ontario. In the United States (US), the wood turtle can be found in Virginia, New York, Wisconsin, Minnesota and Iowa (MacGregor & Elderkin, 2003; Ernst & Lovich, 2009). In Nova Scotia, wood turtles have been reported in over 30 watersheds throughout the province, although little is known about their abundance in many of these areas (MacGregor & Elderkin, 2003). The estimated population in Nova Scotia is between 2000 to 7000 individuals (Environment Canada, 2015).

The wood turtle is the most terrestrial of the four freshwater turtle species in Nova Scotia, but still requires water for many of its seasonal activities (COSEWIC 2007; MacGregor & Elderkin, 2003) such as thermoregulation (Dubois et al., 2009), mating (Ernst & Lovich, 2009) and hibernation (Greaves & Litzgus, 2007). In Nova Scotia, the wood turtle requires a stream or river that is clear, meandering and moderately flowing (COSEWIC 2007; MacGregor & Elderkin, 2003). A sandy or sand-gravel area is required for nesting although wood turtles will also make use of artificial nesting sites such as gravel pits, road shoulders and residential sites. Riparian areas and forested habitat are preferred wood turtle habitat; however they are also found in habitats such as flood plains, meadows, hay and agricultural fields, oxbows and beaver ponds.

Wood turtles in Nova Scotia face a variety of natural and anthropogenic threats. Anthropogenic threats include accidental mortality as a result of vehicles or agricultural equipment, habitat loss and degradation, such as residential and commercial development, forestry practices, water management, and changes in ecological dynamics or natural processes, such as subsidized predation (Environment Canada, 2015). Illegal collection as pets or for consumption has also been identified as a potential threat. In the Annapolis River watershed, which includes extensive road networks and a relatively large amount of land in agricultural production, accidental mortality as a result of collisions with vehicles or farming equipment are significant threats to wood turtles (Environment Canada, 2015; MacGregor & Elderkin, 2003).

Note: It is illegal to kill, harm or harass wood turtles. It is also illegal to keep turtles as pets in Nova Scotia.



Identifying features of the wood turtle...

Top: Red-orange on neck and limbs;
Middle: Carapace (top-shell) grey-brown with a rough texture;
Bottom: Plastron (bottom-shell) yellow with black blotches



New hatchlings are approximately the size of a toonie, and typically emerge in September-October.

Photos: Clean Annapolis River Project

Species at risk status

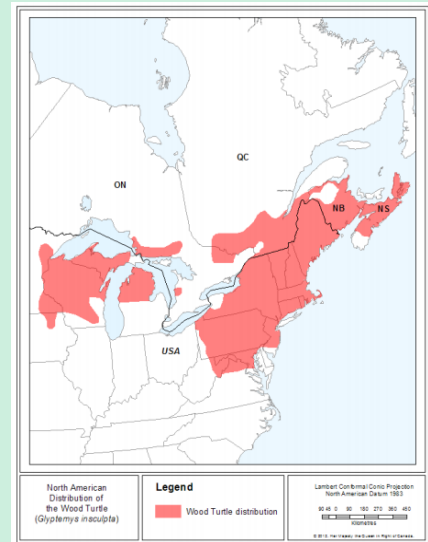
In Canada, the wood turtle is currently listed as *threatened* under the Federal Species at Risk Act (SARA). The wood turtle was first added to the SARA Registry in 1996 as a species of special concern, and re-examined and listed as threatened in Schedule 1 of SARA in 2010.

Environment Canada (2015) has determined the recovery of the wood turtle in Canada to be both technically and biologically feasible. In 2015 a draft Recovery Strategy for the Wood Turtle (*Glyptemys insculpta*) in Canada was released, and open to public comment until April 1, 2016. Once a final Recovery Strategy has been approved, Wood Turtle Action Plans will be posted to the Species at Risk Public Registry. These Action Plans are due for submission by 2020 and will guide conservation actions.

In Nova Scotia, the wood turtle was first listed under the Nova Scotia Endangered species act as *vulnerable* in 2000. After re-examination this designation was changed to threatened in 2013. These designations are largely imparted because of the wood turtle's sensitivity to human activities and land use practices.

Between 2005 and 2008 NS DNR completed wood turtle surveys within the Annapolis River watershed and 75 wood turtles were recorded. CARP initiated surveys in 2012 to re-assess the population and has developed a monitoring and stewardship program that is ongoing. There are a number of remaining data gaps regarding the local population of wood turtles, including the full extent of their range, and population size and structure.

To learn more about the Species at Risk designation process in Canada, visit: <http://www.sararegistry.gc.ca/>



Distribution of the Wood Turtle in North America (COSEWIC, 2005)

The full *Recovery Strategy for the Wood Turtle (Glyptemys insculpta) in Canada [Proposed]* is available through the Species at Risk Public Registry

Threats to the Wood Turtle in Canada

Threat	Level of Concern	Extent	Occurrence	Frequency	Severity	Causal Certainty
Accidental mortality						
Road networks	High	Widespread	Current	Seasonal	High	High
Agricultural practices	High	Widespread	Current	Seasonal	Moderate	High
Off-road vehicles	Low	Local	Current	Seasonal	Low	Medium
Sand and gravel pits	Low	Local	Current	Seasonal	Unknown	Low
Biological resource use						
Illegal collection as pets and for consumption	Medium	Local	Current	Continuous	Low	High
Habitat loss or degradation						
Residential and commercial development	Medium	Local	Current	Continuous	Low	High
Forestry practices	Medium	Widespread	Current	Recurrent	Moderate	Low
Water management	Low	Local	Current	Continuous	Low	Medium
Pollution and sediment input	Low	Local	Current	Continuous	Unknown	Low
Changes in ecological dynamics or natural processes						
Subsidized predation	Medium	Widespread	Current	Seasonal	Moderate	Medium

Threat Assessment Table (Environment Canada, 2015)

How is CARP supporting species recovery initiatives?

The overall goal of CARP's Wood Turtle Monitoring and Stewardship project is to ensure the long-term persistence of the wood turtle and its habitat in the Annapolis River watershed. More broadly, the project aims to engage community members in environmental conservation and stewardship activities, using the wood turtle as a focal species.

Current project objectives include:

- Monitoring the movement patterns and distribution of wood turtles in the watershed through the use of radio telemetry (e.g. travel routes among habitat types, distance traveled, etc.).
- Assessing habitat use by sub-populations in the Annapolis river watershed (e.g. nesting, overwintering, copulating, year round use, etc.).
- Implementing an outreach program to engage communities within the watershed to create awareness and promote education about the ecological needs and importance of the wood turtle.
- Recruiting, training and re-training volunteers in wood turtle surveying, monitoring and stewardship activities such as nest protection, in order to build organizational capacity and develop a skilled and engaged volunteer base.
- Engaging landowners and stakeholders in the development and adoption of stewardship activities tailored to land uses around confirmed wood turtle habitat in the watershed.
- Contributing to a provincial wood turtle recovery strategy through participation in wood turtle recovery team meetings in NS, and sharing CARP's work and data with academic, government and community partners.
- Contributing new data to the central wood turtle database maintained by the Mersey Tobeatic Research Institute (MTRI) and to the Atlantic Canada Conservation Data Center.



As CARP's wood turtle monitoring and stewardship program continues in future year's project objectives and activities will be developed to align with and support recovery strategies outlined in the *Recovery Strategy for the Wood Turtle (Glyptemys insculpta) in Canada (Environment Canada, 2016)* and any Action Plans that are developed in the future. CARP is a member of the provincial wood turtle recovery team, and works collaboratively with Department of Natural Resources and other partner organizations to meet common objectives.

Wood Turtle Habitat Stewardship Planning

Wood turtle stewardship plans are voluntary documents that outline actions that landowners can take to help protect and maintain habitat that supports wood turtles, a species at risk. CARP staff work with landowners to develop stewardship plans that are property specific. Interested landowners are encouraged to contact CARP to discuss the opportunity to develop a stewardship plan.

References

- Committee on the Status of Endangered Wildlife in Canada [COSEWIC]. 2007. COSEWIC assessment and update status report on the wood turtle *Glyptemys insculpta* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. Vii+42 pp.
- Environment Canada. 2015. Recovery Strategy for the Wood Turtle (*Glyptemys insculpta*) in Canada [Draft]. *Species at Risk Act Recovery Strategy Series*. Environment Canada, Ottawa. v + 54 pp.
- Ernst, C.H. and J.E. Lovich. 2009. *Turtles of the United States and Canada*, Second Edition. Baltimore, MD: The Johns Hopkins University Press, pp. 250-262.
- Greaves, W.F. and J.D. Litzgus. 2007. Overwintering ecology of wood turtles (*Glyptemys insculpta*) at the species' northern range limit. *Journal of Herpetology*, 41: 32-40.
- MacGregor, M.K. and M.F. Elderkin. 2003. Protecting and conserving wood turtles: a stewardship plan for Nova Scotia. Nova Scotia Department of Natural Resources. 23pp.

Clean Annapolis River Project

annapolisriver.ca

PO Box 395

314 St. George St.

Annapolis Royal, Nova Scotia

B0S1A0

(902)-532-7533

carp@annapolisriver.ca