St. Mary's River Wood Turtles

A Species at Risk, A Population in Decline?

By Mark Pulsifer, Jody MacEachern and Lauren Allen



From left: A female Wood turtle nesting, a juvenille Wood Turtle, and a depredated nest.

Wood turtles (Glyptemys inscupta) are an omnivorous semi-aquatic medium-sized turtle found throughout most of Nova Scotia that typically inhabit slow moving, intervale streams and rivers with sand and gravel banks, bars, and beaches. Wood turtles seem to prefer riparian areas, although they do live in a wide variety of habitats including forests and agricultural areas. Their Canadian range also includes New Brunswick, southern areas of Ontario and Quebec.

Wood turtles are distinguished from other turtles by the "sculpted" raised pyramid-like shields on their shell, and the distinctive orange colour of their legs, and neck.

Wood turtle populations throughout much of their range are at risk from a variety of factors. Habitats are fragmented, destroyed or degraded as the result of road and bridge construction, watercourse channelization, poor forestry and agricultural practices, pollution, and some forms of recreation. Furthermore, road and highway construction contributes directly to vehicle related fatalities in areas where roads intersect or are adjacent to wood turtle habitat. Today, many traditional wood turtle habitats have been converted to agricultural land, which leaves individual turtles vulnerable to machinery related injuries and death.

Losses from predation are among the main reasons for declines in wood turtle populations. Raccoons, skunks, coyotes, fox, ravens, and crows are the principle predators of wood turtles at all stages of their development and growth. Juveniles are especially vulnerable to predation, adults are frequently maimed, and a high percentage of nests are destroyed annually.

In many jurisdictions, wood turtles are collected from the wild and kept or sold as pets. This practice seldom results in the death of the animal, but in many cases the animal is released at a future date in a different location from where it was originally collected. These translocations greatly affect the genetic integrity of wood turtle populations that either lose or receive an individual turtle that does not belong.

Wood turtles are listed as a "species at risk" in a number of areas at provincial, national, and international levels. In Nova Scotiathey are a "vulnerable"species because of their particular sensitivity to human activities and natural events, and their lifestyle and habitat choices constantly put them in danger of being killed or injured over the course of their 60 year life span.

Anecdotal evidence suggests that the St Mary's River wood turtles have been in decline for the past 30 years. In response to these declines, a provincial conservation and stewardship plan has been developed to better inform land owners and

Help Wood Turtles By Following These Guidelines

- Do not keep wood turtles as pets, or move them from their habitat.
- When driving near watercourses be on the lookout for turtles. If you see a turtle on the road, carefully move it to the ditch, or side of the road.
- Never disturb turtles that are nesting on beaches.
- Discourage predators such as crows, skunks and raccoons, by keeping riverbanks and other turtle habitat free from garbage.
- Do not drive ATVs along riverbanks, or beaches where turtles may be basking or nesting.
- Maintain adequate riparian areas along riverbanks.
- Report wood turtle sightings to your local DNR office.

The Wood Turtle's natural habitat

users of the reasons why these declines may have occurred, and what steps can be taken to try to stop further losses.

With these concerns in mind, DNR set out to conduct a study of wood turtles in eastern Nova Scotia. The project entailed locating, capturing, measuring and marking as many wood turtles as possible to assess population size, sex ratio, age structure, morphological variation, levels of injury, and nesting success, as well as to identify critical habitats such as nesting beaches. The project also intended to increase community awareness about wood turtles and the threats that are contributing to their decline.

Results from last summer's work were both encouraging and concerning. On the positive side, surveys from May through early July resulted in the location of 143 turtles within the study area. These numbers suggest that the population may be bigger than originally thought, although it is difficult to know how much bigger at this time. Each turtle was aged, sexed, and measured, before being individually marked and released. The data also suggested that the population is made up of equal numbers of males and females, and that adult turtles (19+ years) comprised a significantly greater proportion (72%) of the sample than juvenile turtles. The high percentage of adults is likely a reflection of factors such as low juvenile survival rates,

and adult longevity; although, some of this difference may be the result of sampling bias. Juvenile turtles are smaller, harder to see, and may use different habitats than adult turtles.

On the down side, physical examination of captured wood turtles revealed that approximately 70 per cent of all turtles had sustained some form of injury, ranging from relatively minor chipped shells, to major life threatening injuries such as major shell damage from vehicles, or machinery, the loss of one or more limbs, or the loss of an eye. Thirty one per cent of all turtles were missing at least one half of their tails, presumably from encounters with predators, such as raccoons. Finally, five per cent of the turtles had drill holes in their shells, indicating that they had been captured and kept as pets for some period in their lives.

Knowing the location of critical habitats such as nesting beaches is very important for the conservation of this species, and is a foundation for future stewardship and community outreach projects. In any given year, predators destroy upwards of 85 per cent of all wood turtle nests. Within our study area we were able to locate several nesting beaches, and protect a number of nests with screened predator excluders. Although we were able to protect a number of nests until the hatchlings emerged, we still found more than 40 nests which had been destroyed.

Effective conservation requires both public education and local community involvement. In addition to DNR support at various levels, we were fortunate to have the help and support of the St. Mary's River Association who fielded phone calls and recorded information on wood turtle sightings, and provided educational display space at their interpretive center in Sherbrooke. They also kindly provided promotion and a venue for community meetings to discuss the wood turtle project.

Of the 31 watersheds in Nova Scotia where wood turtles have been reported, the St. Marys River watershed is believed to have the largest, and therefore, the most important population in the province. Results from this study and new information learned from future work will be used to help make sound integrated resource management decisions in this watershed, and other watersheds within the Atlantic region. Future conservation efforts directed towards this species are contingent on comprehensive demographic information for this population, and strengthening the commitment of individuals and organizations that have the ability to affect wood turtles in the watershed through stewardship and education initiatives.

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From left: One year old Wood Turtles, a predator screen to protect the Wood Turtle eggs untill they are hatched, abandoned wood turtle nest site.