

Roadsides Provide Preferred Nesting Sites for *Chelydra serpentina*

Theresa Black¹ and Tom Langen²

Department of Biology

There are fourteen species of turtles in the United States listed as endangered or threatened by the US Fish and Wildlife Service. Declines in these species have been linked to factors such as habitat destruction and fragmentation, introduced species, and environmental pollution.

Increasing roadways and traffic volume has added to these problems. Roadways intersecting turtle habitat will force turtles to cross roads during seasonal movements, resulting in mortality. Turtles move several times a year for hibernating, mating, and nesting.

Turtles seek open, sunny nesting sites with soft, moist soil or sand. Human altered habitats such as road berms provide attractive nesting sites. However, nesting near roads results in increased mortality rates of nesting females. Roadside nesting has also been linked to a decrease in nest survival due to predation. Temperatures at road nesting sites tend to be higher than those at natural nesting sites, which can result in a change in the sex ratio of hatchlings.

In this study, we investigated the movement patterns of nesting *Chelydra serpentina*, commonly known as the snapping turtle. Snapping turtles have been found to travel up to one kilometer to nest. The goal of this experiment is to determine the distance turtles are traveling to nest on the roadside to determine if they may be bypassing natural nesting sites in favor of road sites. We can also use this data to determine the size of the turtle population affected by the road.

We captured a total of five snapping turtles that were nesting on the roadside on Route 68, which bisects the Upper and Lower Lakes Wildlife Conservation Area. We then recorded the size, weight, sex, and age of the turtles and attached a radio to each turtle's shell, which broadcasted a unique radio frequency pulse for each individual. The turtles were released at the location from which they were captured. We radio tracked the turtles once a week for four weeks, by walking or

¹ Class of 2005, Biology major, Lycoming College, REU, Oral presentation

² Project Mentor, Tom Langen, Assistant Professor of Biology, Clarkson University

canoeing to the location of each turtle as indicated by the unique radio signal, and then recording the position of the turtle using a hand-held Garmin geographic positioning system (GPS) device. These coordinates were used to create a map with ArcGIS geographic information systems (GIS) computer software. Using this program, we determined the distance traveled by each turtle. Throughout the four weeks, the distances traveled ranged from 356 to 1762 meters. One turtle traveled over a kilometer from the nesting site within the first week, which is further than expected from previous studies. The data also shows that three of the turtles did not nest on the road nearest to the swamp to which they returned. Two turtles that nested almost 800 meters apart were found one week later within close proximity to each other. This data indicates that snapping turtles are traveling long distances to nest along roadsides and therefore are choosing the roadside over natural areas for nesting. This also indicates that turtles within a broad area are influenced by the road.

Turtle Movements from Road Nesting Sites

