

LAKE GEORGE  
TURTLE  
MONITORING PROJECT

**2007 & 2008 Report**





## Introduction

The Lake George Turtle Monitoring Project (LGTMP) was started in 2007 in order to increase the current knowledge of the resident turtle species in the Lake George watershed, so that effective conservation measures can be implemented to ensure continued biodiversity.

Lake George is a 114 km<sup>2</sup> oligotrophic lake contained within a 606 km<sup>2</sup> watershed situated on the southeastern border of the Adirondack Park and drops 69 m into Lake Champlain through the LaChute River. The watershed is the recorded habitat for Common Musk (*Sternotherus odoratus*), Northern Map (*Graptemys geographica*), Painted (*Chrysemus picta*), Snapping (*Chelydra serpentina*), and Wood (*Glyptemys insculpta* previously *Clemmys insculpta*) turtles. There exists an anecdotal report of a spotted (*Clemmys guttata*) turtle. Currently, there is little information on the population size or movements of the turtles in the watershed.

In order to obtain more information on the turtles, trained volunteers monitor for the six different species of turtles found in the Lake George watershed to determine presence, density, range, and habitat use of the turtles. Volunteers count turtles in their chosen location for one day during each of these weeks: Memorial Day, the third week in June, Independence Day, and Labor Day.

Two seasons have been completed and a total of 795 turtles have been seen. The majority of those turtles seen have been Northern Map, Painted, and Snapping.

A watershed is an area that drains into a waterbody. The Lake George watershed is 233 square miles, which is about five times the area of the lake's surface.

The lake's elevation is 320 feet above sea level, while the highest point in the watershed is the peak of Black Mtn. At 2,646 feet.

Within the watershed, about 141 streams run into Lake George, which supply the lake with 55% of its water.

Development and other human activities have increased the amount of sediment, nutrients, and other pollutants entering streams and the lake and are contributing to the degradation of the water quality of Lake George.



## Objectives

The goal of this project is to increase current knowledge of the resident turtle species in the Lake George watershed, so that effective conservation measures can be implemented to ensure continued biodiversity. This is achieved by educating citizens about turtle ecology, aquatic biology and biodiversity conservation. Volunteers are trained and certified on sampling protocol and scientific methods in order to inventory the current populations of Musk, Map, Painted, Snapping, Wood and Spotted turtles. They then sample during four different sampling periods. Parameters measured are location of observation, maximum number of each species per location, and environmental conditions.

## Methods

Data is collected by trained volunteers. Training began in the early spring of 2007 and covered turtle ecology, morphology, and conservation biology specific to Common Musk, Northern Map, Painted, Snapping, Wood, and Spotted turtles. Consistent and accurate data collection was discussed and practice data collection was conducted. Those volunteers that completed the training session received a Certified Turtle Monitor number and a field guide.



Photo by Margaret Smith on June 26, 2007 in Forest Bay

The sampling seasons were chosen to be representative of specific seasonal habitat uses or behaviors: last week of May- spring basking season; third week of June- nesting season; first week of July- summer basking season; first week of September- fall basking season. Monitors were either picked or assigned to areas of high priority, and within the sampling week visited those sampling sites. Monitors recorded the date, location coordinates (or position on map), start time, stop time and Monitor Certification number. The maximum individuals for each species for the week during any occasion was recorded. Environmental parameters measured are: Temperature- air and water; cloud cover by category- bright (shadows), cloudy bright, heavy overcast, foggy, or raining; Wind velocity by visual clues on the Beaufort scale; and Wind direction by category- N, NE, E, etc. Adjacent disturbances are identified by code D=Development and R=Recreational and by distance code: 1=0-10ft, 2=11-25ft, 3=25-100ft, 4=101-500ft, and 5=greater than 500ft. All observations are made from a distance and at no time do the volunteer monitors handle the turtles.

Data collected by the monitors is then assessed for quality and is inputted into a database by program coordinators who then summarize the data.



Spotted Turtles are identified by their small, smooth carapace with yellow spots on their scutes. They are a New York State Species of Special Concern since their populations are declining due to habitat loss and degradation.

## Turtles of the Lake George Watershed

New York State is home to 12 species of turtles. These 12 species include the Eastern Mud, Spotted, Common Map, Common Musk, Spiny Softshell, Blanding's, Box, Snapping, Bog, Painted, Wood, and Diamondback Terrapin. Within the 618 square km (238.4 square mi.) area of the Lake George Watershed, 6 species of turtles reside. These include the Map, Musk, Snapping, Painted, Wood, and Spotted.

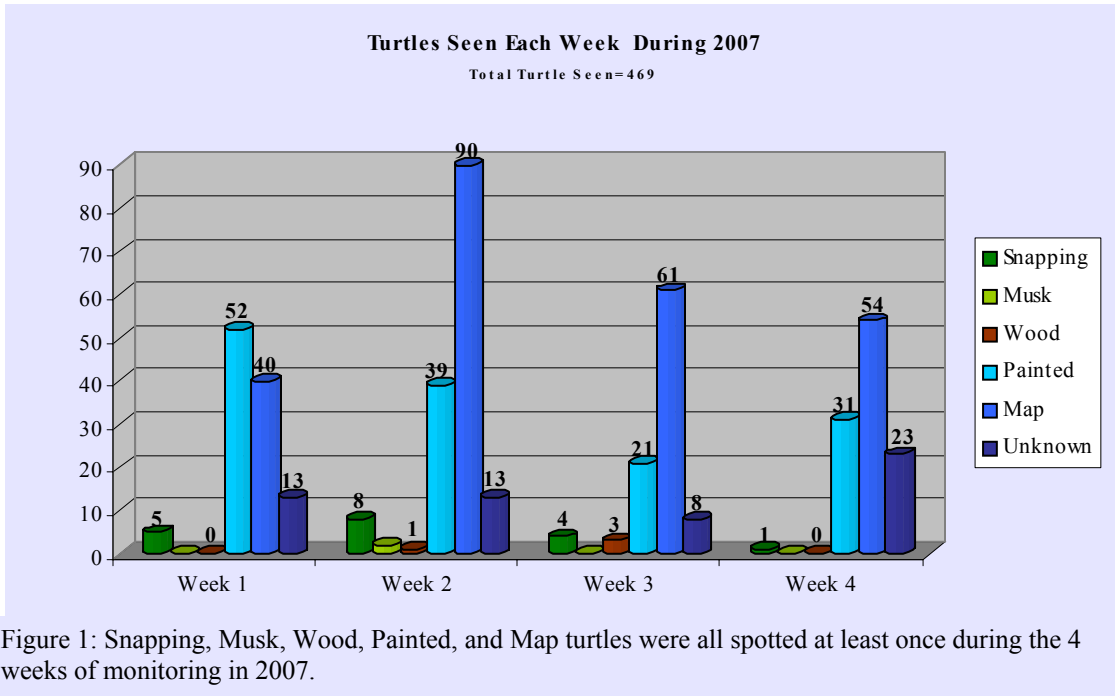


Snapping turtles are known to live for 35 years and can grow up to 75 lbs.

A Snapping Turtles seen by monitors Bob and Jen Metivier

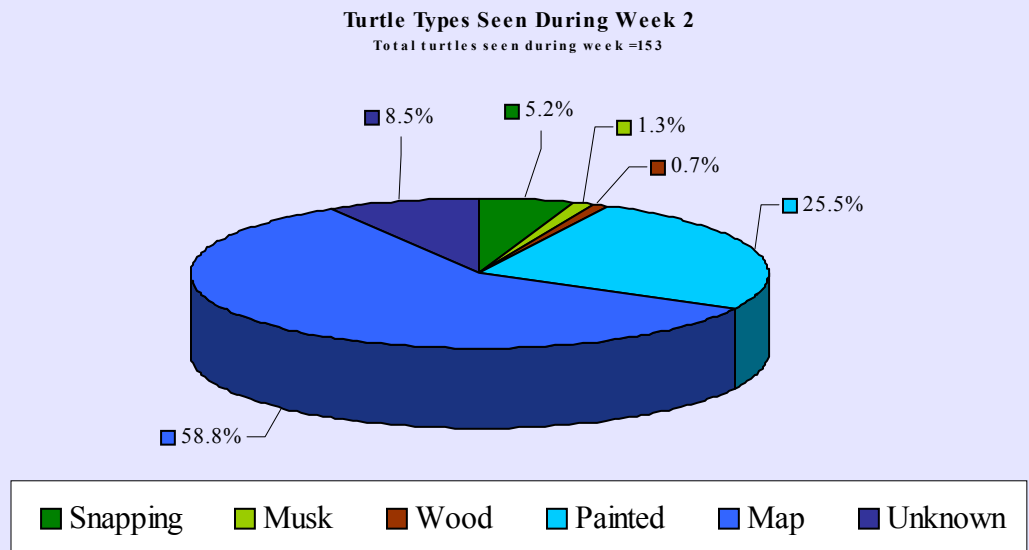
## Season 1- 2007

The first season of the Lake George Turtle Monitoring Program came to a close with great success. Over the 4 weeks, 469 turtles were seen. These 469 turtles were seen at 33 locations in the Lake George area. Areas where the most turtles were seen included Crow Island, Clark Island, Lamb Shanty Bay, Log Bay, the Million Dollar Beach wetlands, and Paradise Bay. This was a great start to collecting data about the turtle population in the Lake George area.



### Weeks 1 & 2

During week one, 110 turtles were seen. Of those 110, 5 were Snapping, 52 were Painted, 40 were Map, and 13 were unknown turtles. Then week two brought in an additional 153 turtle sightings, which was made up of 8 Snapping, 2 Musk, 1 Wood, 39 Painted, 90 Map, and 13 unknown.





A Map Turtle during Week 2 of Monitoring taken by Martha VanVleet.

A Map Turtle's name comes from the network of lines on its carapace that resemble the contour lines of a topographical map.

### Weeks 3 & 4

Week three had 97 turtle sightings while week four had 104. Four Snapping, 3 Wood, 21 Painted, 61 Map, and 8 unknown turtles were reported for week three while week four had 1 Snapping, 31 Painted, 54 Map, and 23 unknown turtles reported.

### Environmental Conditions

Map and Painted turtles were seen during weeks 1 & 2 basking, swimming and moving in air temperatures ranging from 60 ° F to 90 ° F and water temperatures from 56 ° F to 78 ° F. Individuals were seen with both recreational and development disturbances within 0ft- 25ft of them.

Weeks 3 & 4 also had individual Map and Painted turtles seen with disturbances within 0-25ft of them. During this second half of monitoring for 2007, the map and painted turtles were seen during air temperatures ranging from 65 ° F to 86 ° F and water temperatures from 66 ° F to 82 ° F.

Wood turtles are the most terrestrial of the Lake George turtles and are found upland, away from water, during the summer.

Their orange limbs are a key identification characteristic as well as their heavily keeled carapace.



A Wood Turtle Seen By Sue Pierce in 2008

## Season 2- 2008

The LGA's second season of the Lake George Turtle Monitoring Program added an additional 326 turtle sightings to the data. Thirty-two locations were monitored at least once during the 2008 four week program. Several turtles were seen at Crow Island, Clark Island, Dunham's Bay, and Ticonderoga Beach.

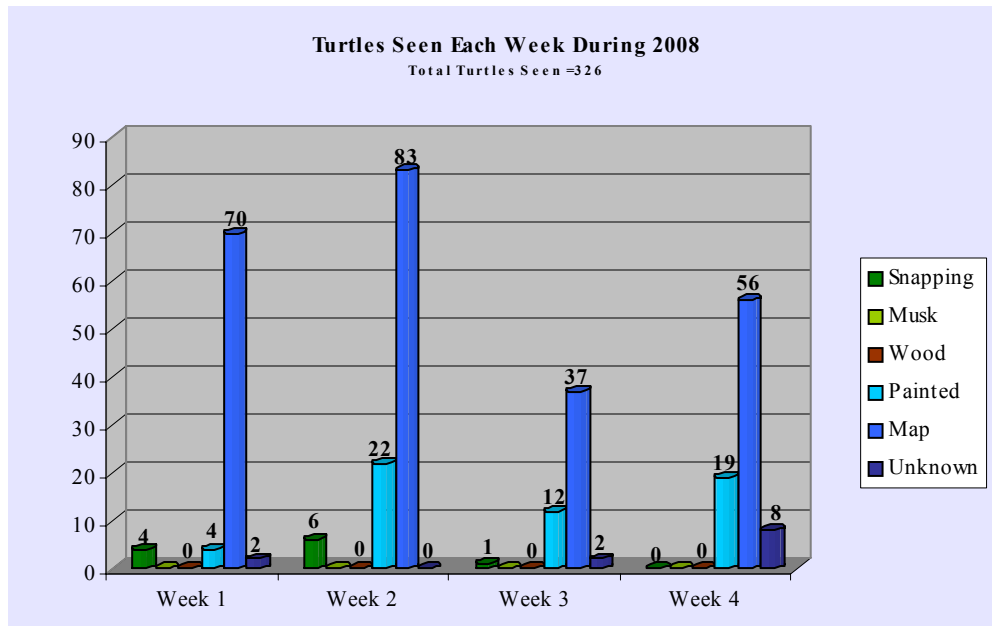


Figure 3: Snapping, Painted, and Map turtles were seen during the 4 weeks of monitoring. There weren't any reported sightings of either Musk or Wood turtles.

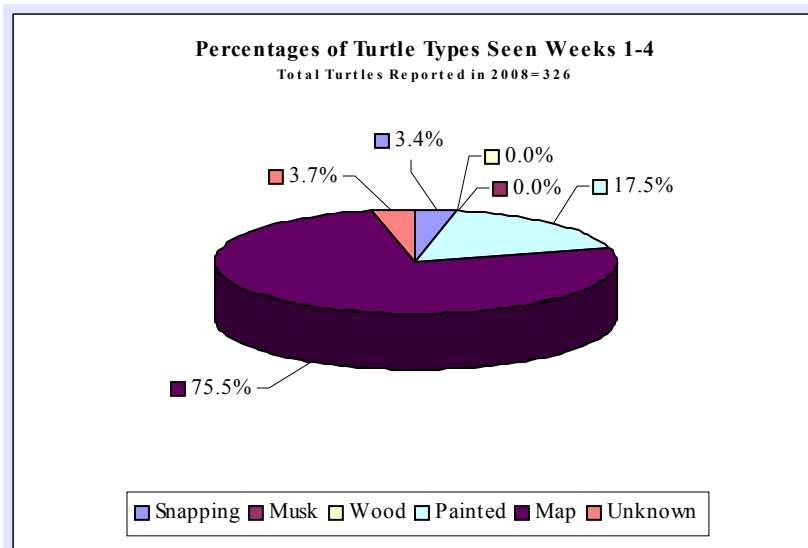


Figure 4: Out of the 326 turtles seen during monitoring in 2008, 75.5% were Map turtles and 17.5% were Painted turtles.

## Weeks 1 & 2

A total of 191 turtles were reported for weeks 1 and 2. Eighty of those were during week 1 where 4 Snapping, 4 Painted, 70 Map, and 2 unknown turtles were seen. The other 111 turtles were spotted during week two. Six Snapping turtles, 22 Painted and 83 Map were reported for that week. Week 2 turned out to have the highest number of turtles seen out of the four weeks of reporting.

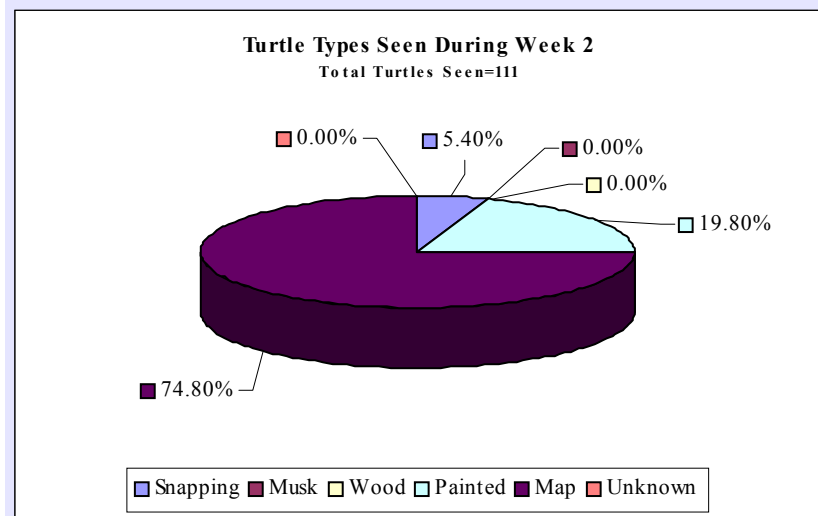


Figure 5: One hundred and eleven turtles were reported during week 2 of the 2008 program making this the most successful of the 4 weeks.

## Weeks 3 & 4

Week 3 had 52 turtle sightings while week 4 had 83. One Snapping, 12 Painted, 37 Map, and 2 unknown turtles comprised the 52 turtles seen during week 3. Nineteen Painted, 56 Map, and 8 unknown turtles comprised the 83 seen during week 4.

## Environmental Conditions

Air temperatures for Map and Painted turtle sightings during the first two weeks of monitoring in 2008 ranged from 53 °F to 84 °F with the majority of turtles seen during temperatures between 70 °F and 80 °F. Water temperatures ranged from 50 °F to 82 °F and the majority of the Map and Painted turtle sightings occurred between water temperatures of 60 °F to 70 °F. As for disturbances, Map turtles were seen with either recreational or development disturbances within 25 feet of them. However, the closest disturbance for Painted turtles during the two weeks was between 25 and 100 feet.

Weeks 3 & 4 had both Map and Painted turtles seen with disturbances within 25 feet of them. Air temperatures ranged from 69 °F to 90 °F while water temperatures ranged from 62 °F to 80 °F. The majority of the sightings occurred between 70 °F and 80 °F for both air and water.



Painted Turtles are the most common species in New York State. They have a smooth oval shell with red markings (painted) on margins of the shell and over the yellow striped neck.

A Painted Turtle seen by Joe Harrigan while monitoring in 2007.

## **Volunteers**

There are currently 56 certified turtle monitors. For 2007, out of 23 groups of volunteers monitoring (some “groups” are just one person, some are 2 or more), 11 groups reported results for all 4 weeks and 8 groups reported for 3 out of 4 weeks. 2 groups only turned in 2 weeks of data, and 2 groups decided not to monitor after attending the training session.

For 2008, 21 groups reported data. Of those groups that reported data, 7 reported results for all 4 weeks and 6 reported results for 3 weeks. The rest of the data came from 4 groups that reported for 2 weeks and 4 groups that recorded for 1 week.

## **Conclusion**

The two seasons of the Lake George Turtle Monitoring Program have brought in information from 795 turtle sightings. The majority of those sightings have been Map and Painted turtles. Occasional Snapping turtle sightings have occurred in both 2008 and 2009 while Wood and Musk turtles were only seen in 2007. Currently there is not enough data to draw conclusions about the turtle populations in the Lake George watershed. We are still collecting important baseline data at this point. With continued efforts of the volunteers, enough data will eventually be generated in order to fully understand the 6 species in the watershed, how they are affected by the lake’s water quality, and implement conservation measures in order to ensure continued biodiversity.

