

Petrie Island Turtle Nesting Survey Report - 2007

**Friends of Petrie Island (FOPI)
in cooperation with
Ottawa Stewardship Council (OSC)
1 August 2007**



Table of Contents

Introduction	1
Project Purpose	1
Turtle Species of Petrie Island	1
Survey Scope and Methodology	1
Results and Analysis	3
Turtle Species Observed	3
Daily Nesting Turtle Observations	3
Table 1 Daily Nesting Observations	4
Nesting Areas	5
Nest protection	5
Comparison between 2006 and 2007	6
Recommendations	7
Appendix A Survey Log	8
Appendix B Ottawa River Water Levels 2006 and 2007	9

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PETRIE ISLAND TURTLE NESTING SURVEY REPORT – 2007

Reference: Petrie Island Turtle Nesting Survey Report 2006, Joffre Côté, Ottawa Stewardship Coordinator, Kemptville District OMNR, September 2006
<http://www.fallingbrook.com/petrieisland/documents/PetrieTurtleNestingSurveyReport2006.pdf>

INTRODUCTION

In 2006, the Friends of Petrie Island (FOPI) and the Ottawa Stewardship Council (OSC) identified the need for information about the turtle population nesting information on Petrie Island. In response to this need, FOPI and OSC conducted a survey of the nesting population in June 2006.

The 2006 survey report (see reference above) recommended that the survey be repeated in 2007 and 2008. It also recommended the development of protection measures for turtle nests at the Island's west end nesting habitat locations.

This report summarizes the results of the Petrie Island Turtle Nesting Survey conducted in June 2007.

PROJECT PURPOSE

To survey the turtle populations nesting at Petrie Island, and to protect nesting turtle species and their nesting habitat, with special emphasis on Species at Risk.

TURTLE SPECIES ON PETRIE ISLAND

Four native species of turtle and one non-native species have been observed on Petrie Island, two of which have been designated by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC):

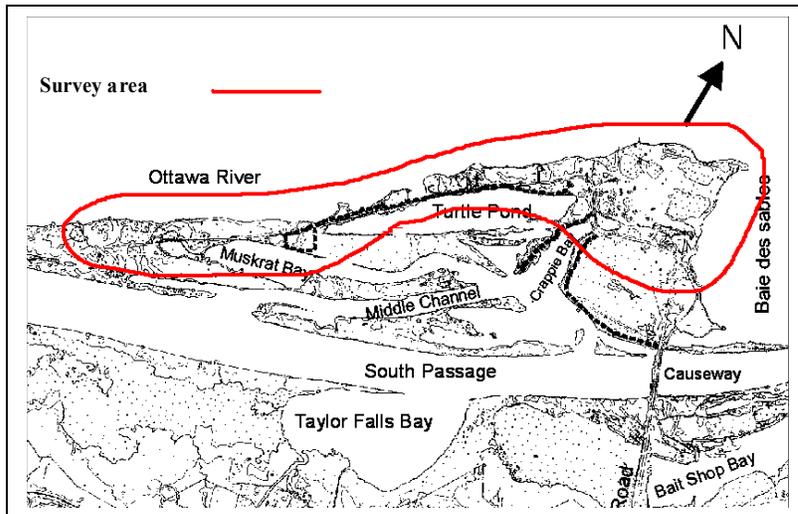
Blanding's Turtle *Emydoidea Blandingii* – Status: **Threatened**
Northern Map Turtle *Graptemys Geographica* – Status: **Special Concern**
Snapping Turtle *Chelydra Serpentina Serpentina* – Status Under Review
Midland Painted Turtle *Chrysemys Picta Marginata* – Status: Not Assessed
Red-eared Slider *Trachemys scripta* – Status: Non-Native

SURVEY SCOPE AND METHODOLOGY

General The 2007 survey was conducted by volunteers and staff from the Friends of Petrie Island and the Ottawa Stewardship Council. The Ottawa Stewardship Council provided a loan of two GPS units for recording nest locations, as well as facilitating coordination with the Kemptville District, OMNR, for obtaining the necessary permits for nest protection.

Scope The scope of the 2007 survey was similar to that of 2006, i.e. to determine where the turtles are nesting. The survey also included, to a very limited extent, a trial of nest protection techniques in an attempt to reduce loss due to depredation.

Study Area Petrie Island (45°30' 75°29') is situated on the Ottawa River, approx. 2 kms downstream of the City of Orleans (Ottawa). The study area was the same as that of 2006, i.e. the Holland trail, the sandy dunes at the western extremity of the Holland trail, the River Loop trail shoreline, Stuemmer Park, the main beach, and the parking lots. This area was determined to be the principal turtle-nesting habitat based on historical observations by the Friends of Petrie Island.



Survey Dates The survey was conducted from June 4 to June 23, 2007.

Nesting Turtle Population Assessment Methodology The survey methodology was identical to that used in 2006, with a modified log form (Appendix A). The methodology was as follows:

- The survey was conducted daily, by teams of one or two persons, from approx. 5:00 am until approx. 8:00 am. This timeframe was determined in the 2006 survey to be the most likely period for daylight nesting activity. Some observations were also made during the day by FOPI summer student staff and volunteers on an ad hoc basis
- The survey team walked the survey area, looking for nesting turtles and/or signs of nesting activity or depredated nests
- The locations of nesting turtles, confirmed nests, and depredated nests were recorded using GPS. If a GPS unit was not available, the locations were recorded as accurately as possible on a map of the Island.
- The information was entered on the Turtle Survey Log Form (Appendix A)
- In order to minimize double-counting, depredated nest sites were smoothed over with a light rake and exposed egg shells covered with soil.

Nest Protection For the 2007 survey, rudimentary nest protection measures were conducted on a trial basis. This consisted of raking a light cover of soil over observed nesting sites in an attempt to disperse scent and to camouflage the nest site. It was also planned to install a protective cover made of wire screen over confirmed nesting sites of species of risk turtles. A permit was obtained from OMNR for the nest protection work. Nevertheless, as will be discussed later in the report, the wire screens were not used.

Survey Limitations and Variables

While the 2007 survey attempted to be as consistent as possible in scope, methodology, and timeframe as the 2006 survey, neither the 2006 nor the 2007 surveys were scientifically controlled. Survey volunteers had varying degrees of skill in identifying turtles species and nests, in using a GPS, and in plotting locations on a map; the time taken to travel the survey area varied from one volunteer to another; and the start and end dates for the survey were determined by consensus of the volunteers, based on informal observations of nesting activity.

In addition, high water levels in the Ottawa River limited the survey team's access to sections of the survey area for several days, as well as potentially rendering some sites unsuitable for nesting. Ottawa River levels at Hull for June 2006 and June 2007, as reported by Environment Canada, are shown at Appendix B.

RESULTS AND ANALYSIS

Turtle Species Observed

Three native species were observed nesting on Petrie Island during the survey. Snapping Turtles made up the majority, 28 individuals (80%) of the total nesting observations. Midland's Painted Turtle, 4 individuals (11%) and Northern Map Turtle, 3 individuals (9%) accounted for the remainder.

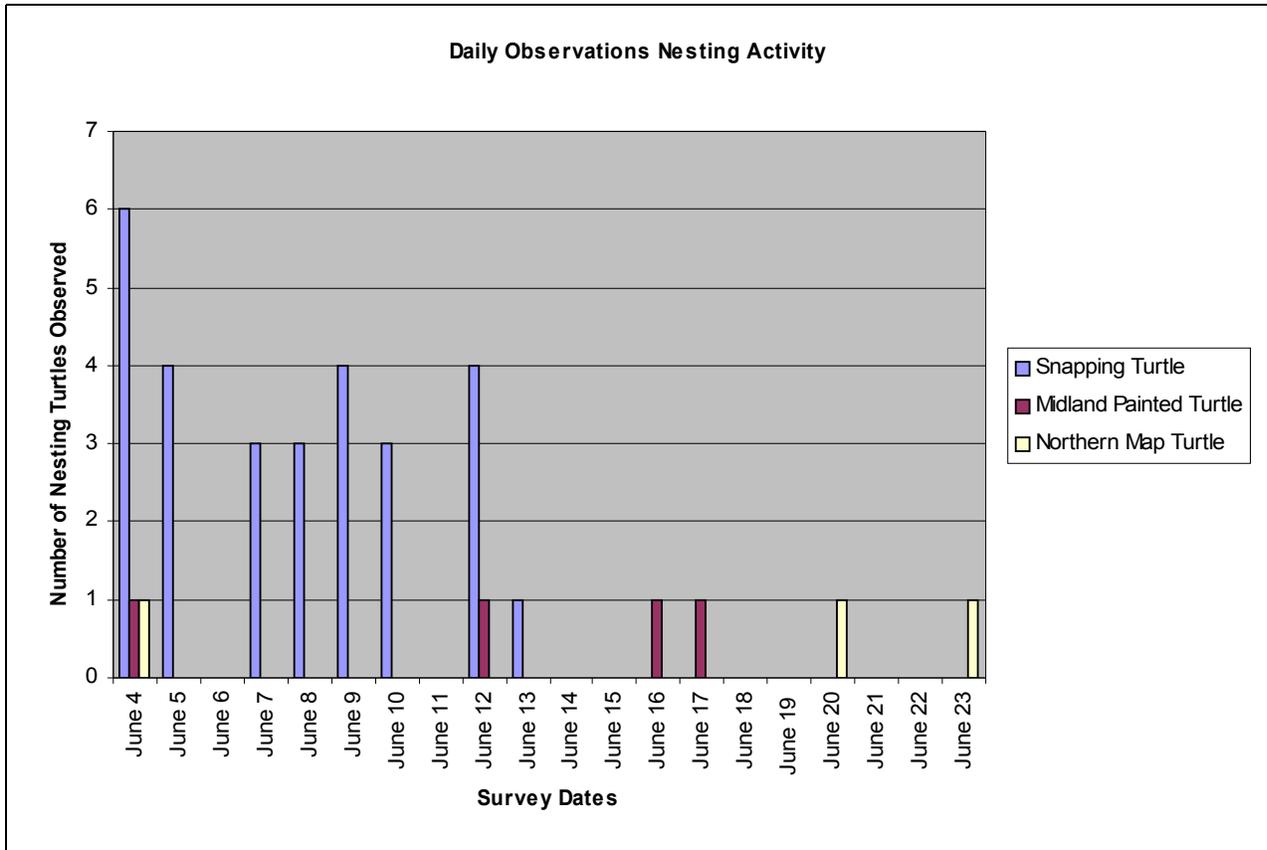
One Blanding's Turtle was seen on the Island during the survey but it was not observed nesting.

Daily Nesting Turtle Observations - 2007

The daily observations of nesting turtles and depredated nests are shown in Table 1 and on the Chart below. River levels were visibly higher in June 2007 than they were in 2006, and water level was therefore a new addition to the survey log. The high water levels impeded access by the survey team to the extreme western edge of the survey area and to the River Loop shoreline. High water may also have had an impact on nesting activity. See Appendix B for additional information on the water levels.

Table 1: 2007 Petrie Island Summary of Daily Nesting Turtle Observations

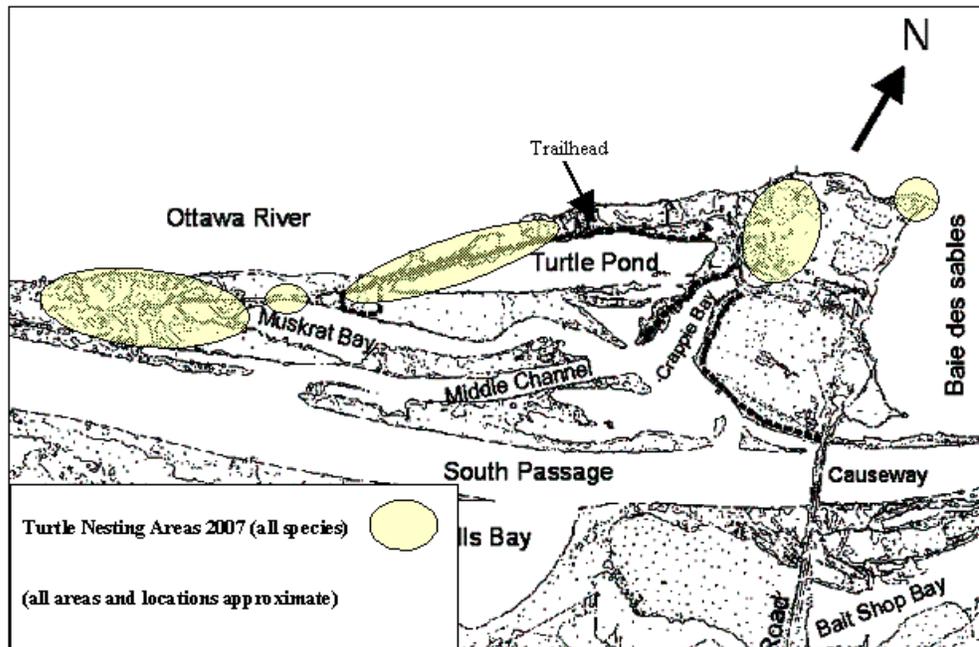
Date (2007)	Morning Temperature	Weather	# of Nesting Turtles Observed				# of Depredated Nests Observed	River level
	Celsius		S	P	M	B		
June 4	18	Rain	6	1	1	0	9	Normal
June 5	15	Rain	4				16	
June 6								
June 7	5	Cloudy	3				25	High
June 8	14	Clear	3				20	Very High
June 9		Sunny	4				9	Very High
June 10	10	Clear	3				1	Very High
June 11								
June 12	17	Clear	4	1			9	Very High
June 13	Warm	Sunny	1				5	Very High
June 14							2	Very High
June 15	Warm	Sunny						
June 16	Warm	Sunny		1				Very High
June 17				1			2	Very High
June 18	Warm	Sunny					4	Very High
June 19								
June 20	18	Clear			1		6	High
June 21	12	Cloudy					6	High
June 22	12	Cloudy					1	High
June 23					1			
Total			28	4	3	0	115	



Nesting Areas

The areas in which nesting was observed are shown below. Due to the inherent inaccuracies of the GPS units (from 6 to 25 metres), individual nest sites are not shown.

All of the nesting areas seen in 2007 were identified as nesting sites in 2006. In 2007, however, there was very little nesting activity observed along the River Loop Trail shoreline (due to high water) and no nesting activity observed in the SE quadrant of the East Beach (Stuemer Park).



Nest protection

It was planned to trial two different nest protection techniques during the survey.

The first technique was to lightly rake over the soil covering nests in order to disperse the scent and camouflage the nest from predators. Depredated nests were also raked over in order to minimize double counting.

To the extent practicable, all nesting sites were raked. Most nesting sites, however, were heavily disturbed both by predators and by turtles seeking suitable sites, and it was not possible to determine whether or not there were any nests containing eggs, since this would have caused more disturbance and potentially damaged nests in the process.

While it was not possible to determine whether or not raking improved nest survivability, raking did not appear to result in any measurable reduction in “return visits” by predators and most sites appeared to have been dug over several times.

The second technique (planned but not implemented) was to install a light wire screen over confirmed nest sites of species at risk turtles in order to deter predators. The screen was to be left in place for several weeks, and be removed in August, well before hatchlings were expected to emerge.

The screens were not used for several reasons. A nesting turtle can take several hours to complete a nesting and it was simply not practical to wait until the turtle had finished nesting and then return to the nest later to protect it with the wire screen.

In addition, while it had been hoped to record the location of the nest and/or nesting turtle in an unobtrusive and non-invasive manner using the GPS such that the nest could be located later to emplace and remove the protective screen, this was found to be impractical due to the fact the inaccuracy of the GPS, which varied from plus/minus 6 to 25 metres.

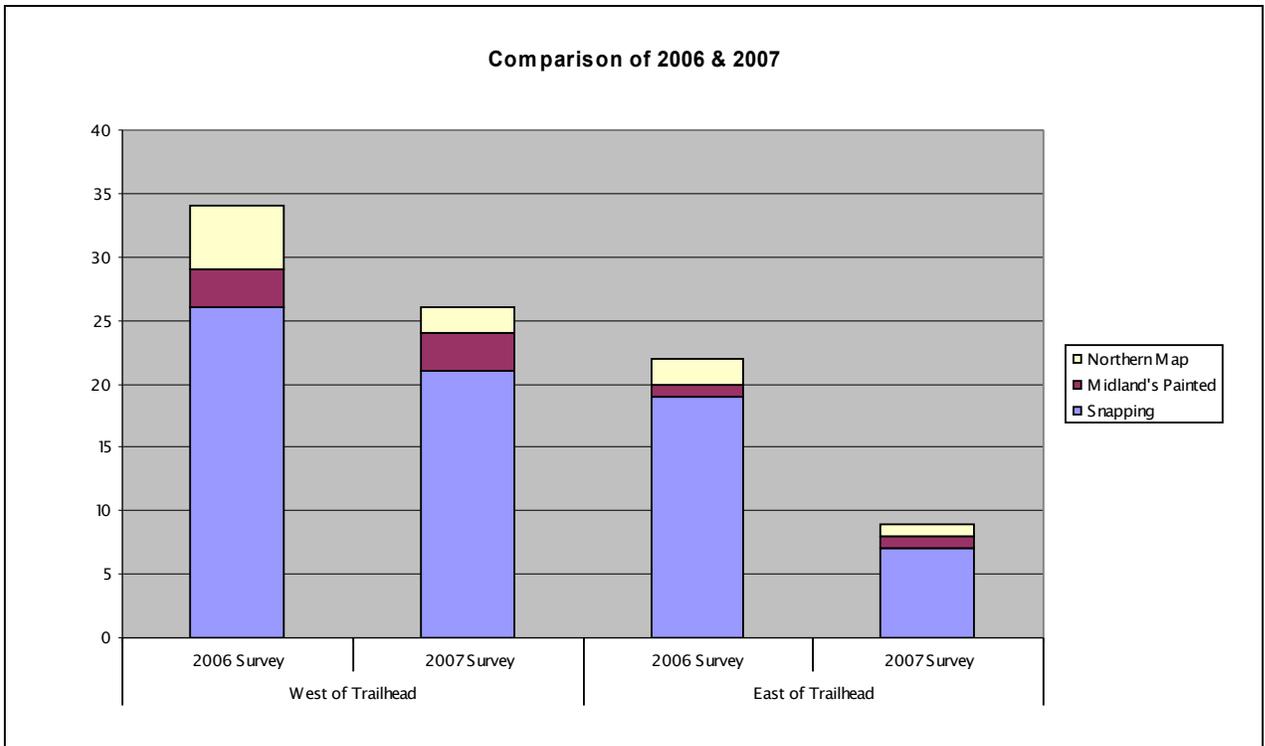
These questions will need to be addressed if nest protection measures are implemented in future years.

Comparison between 2006 and 2007

Comparisons between the 2006 and 2007 surveys are approximate at best, and due to the many variables inherent in the surveys, should not be considered indicative of long-term trends. The discussion below presents the facts as observed, and does not attempt to rationalize the reasons for the differences from one year to the next.

There was a significant difference in the number of nesting turtles observed in 2007 as opposed to 2006. In 2007, only 35 nesting turtles (28 Snapping, 4 Painted, and 3 Map) were observed, as compared to 56 (45 Snapping, 4 Painted, and 7 Map) over the same number of days in 2006 (using the same methodology and the same survey area).

The decline in observed nesting activity was more substantial in the developed areas on the eastern side of the Island, i.e. Stuemmer Park, the beach, and the parking lot than it was in the less disturbed areas west of the Holland trail trailhead, as shown on the chart below.



RECOMMENDATIONS

The following are recommended:

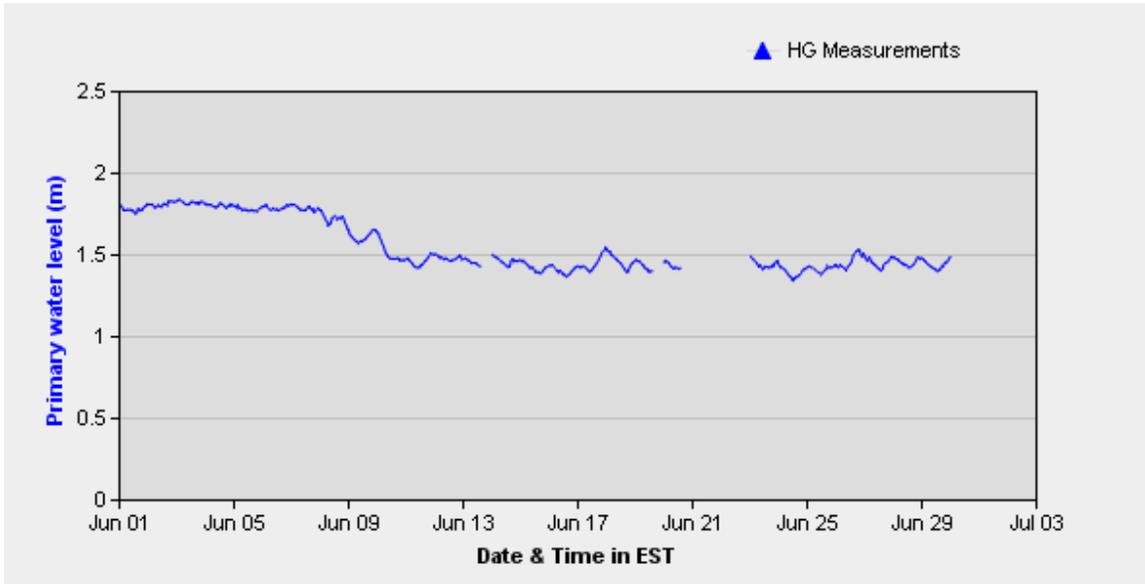
1. Present survey results to PIAC and to City of Ottawa.
2. Conduct the same nesting survey in 2008 in order to monitor overall trends for all turtle species.
3. Re-evaluate, in consultation with subject matter experts, the development and implementation of turtle nest protection measures for species at risk turtles.
4. In consultation with subject matter experts, consider how best to re-orient the survey, if appropriate, to the study and protection of species of risk turtles on Petrie Island, i.e. Blanding's and Northern Map.

Appendix B

Ottawa River Water Level at Hull

Source: Environment Canada, <http://scitech.pyr.ec.gc.ca/waterweb/fullgraph.asp>, downloaded on 1 August 2007 (see also http://www.ec.gc.ca/copy_e.html)

1-30 June 2006



1-30 June 2007

