FAUNA

NESTWATCH PROJECT: THE OBLONG TURTLE

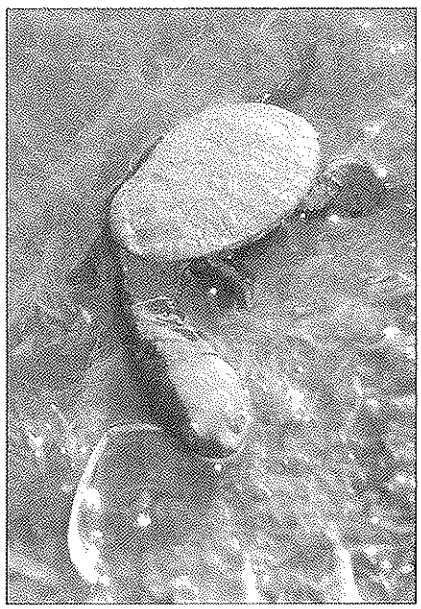
Elaine Lewis, Catherine Baudains and Caroline Mansfield

Herdsman Lake has a large population of oblong turtles (long-necked tortoise, *Chelodina oblonga*) but recently local residents have noted that they seem to be decreasing in numbers. Why? The lake is surrounded by busy roads, could it be an increase in roadkills? Or is something affecting nesting success, predators perhaps, or weeds making it difficult to dig burrows? The 'Nestwatch Project' was set up to investigate some possibilities. It ran from March 2006 to February 2008 and produced some worrying results.

Oblong turtles are semi-aquatic freshwater turtles that may live for many decades. They are carnivorous, eating water bugs, tadpoles, small fish, crustaceans, ducklings and even carrion. Oblong turtles are at the top of the under-water food chain and provide a meaningful indicator of environmental quality. Their well-being can be viewed as a means of monitoring changes to the aquatic ecosystem since all members of this ecosystem are interdependent.

Juvenile oblong turtles may take over two decades to reach sexual maturity and adult size. Females are larger than males and are mature when the carapace length is over 17 cm. They mate in winter and spring when the daily maximum temperatures remain above 17.5°C and rain is expected. Females will travel from several to 500 m to find suitable nesting sites.

Open, comparatively flat sunny sites that are above the high water mark, with little vegetation except for native grasses, are preferred. Furthermore, they prefer to make nests at a structural edge, such as the interface between sand and a log or sand and low grass. Evidence suggests that the density of one of the edges may maintain a micro-climate with added moisture, which has been found to be important for the developing embryo, in that hatchlings are larger in moister environments.



A hatchling oblong turtle. (Photo: E. Lewis)

Female turtles leave the water in spring and summer to lay their eggs. The first wave of females leaving the water occurs in the September/November period, frequently in the first week of October and another wave in December/January. They lay 25-40 eggs per year and it has been observed that larger females lay larger and heavier eggs than smaller females. The eggs incubate for 200-230 days, although the maximum incubation time recorded was 291 days.

It appears that varying conditions at the different lakes in the Perth metropolitan area result in a range of hatchling emergence times. In a study of the oblong turtle at the Blue Gum, Booragoon and Piney Lakes in the City of Melville, hatchlings started appearing in May, but have been found as late as November/December. At Thompson and Bonganup Lakes in the City of Cockburn, there is evidence that the young usually emerge about mid-August, with slight variations depending on seasonal conditions, irrespective of whether the eggs were laid in the spring or summer nesting period.

The Nestwatch Project consisted of three main phases: site identification, weed control and monitoring the site and surrounds. The site was selected by the DEC Regional Parks Officer responsible for the region. It was located on the north-eastern side of Herdsman Lake in a comparatively flat, open, rectangular (50 m x 25 m) area about 30 m from the water. Grass weed species dominated the site.

Weed control at the site was important because the dense weed cover prevented female turtles from readily accessing their preferred nesting ground. In addition, weeds at a nesting site have been found to confuse hatchlings, causing disorientation and preventing their safe return to the water. The first spraying of the grass weeds was undertaken in October 2006 and re-spraying occurred periodically, determined by the amount of weed re-growth.

Throughout the project the site and surrounds were monitored weekly. At the start of the project there was dense growth of grass weeds at the site and no evidence of turtle nests. The spraying of the weeds exposed the ground and this appeared to facilitate nesting activity by the turtles.

continued on page 9

continued from page 8

FAUNA

Oblong turtles

A nest that has been dug out (predated). (Photo: E. Lewis)

Predated eggs. The dark smear on the shell is blood. (Photo: E. Lewis)

The trial site was used for nesting by oblong turtles some time during the September 2006 – January 2007 nesting period. Site visits in May and June 2007 showed that 20 nests had been dug out by predators. These predated nests were located in open sandy soil and at structural edges. During the September 2007 – January 2008 nesting period another 11 predated turtle nests were found, making a total of 31 predated nests observed at the trial site during the project.

A characteristic shape to the predated nests was observed: the holes had a steep back and a shallow slope down at the front. This shape suggested they were dug by paws. However no predators were observed at or near the site during the day or on night visits.

A wide range of birds and other animals have been reported predating turtles and their eggs and hatchlings. Introduced predators, particularly the fox, have been found to kill turtles and destroy eggs. However, the species of the predator (or predators) that destroyed the turtle eggs at the trial site was not determined.

No turtle hatchlings, or evidence of hatchlings, were observed at the trial site at any stage during the project. However, between June and September 2007, nine live hatchlings and one dead hatchling were observed in the surrounding area. This hatching period appears to support the evidence mentioned previously, that different environments in the various wetlands of the Perth metropolitan area result in a wide range of hatching times for the oblong turtle.

What could be done to protect the nests from predation? Should they have physical protection, a metal gate, for example? Discussions with the land manager (DEC) are exploring what might be possible. Further study is also required to determine the identity of the predator/s to enable targeted management action.

Can you help? Do you visit Herdsman Lake? Could you please note any turtle sightings in the study area and let Elaine know? She can be contacted through email on: 19105349@student.murdoch.edu.au. DEC staff at the Community and Regional Parks Branch can be contacted on 9431 6500.

Many thanks to DEC staff for supporting the project.

Elaine Lewis is a doctoral candidate at Murdoch University, investigating aspects of Education for Sustainability. Catherine Baudains and Caroline Mansfield lecture at Murdoch University.

WILDFLOWER SOCIETY OF WA

BUSHLAND PLANT SURVEY PROGRAMME

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To find out more about the programme, including what has been achieved in the past 20 years, contact:

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