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STUART DAWSON, TRISH FLEMING, BOB HUSTON & PETER ADAMS

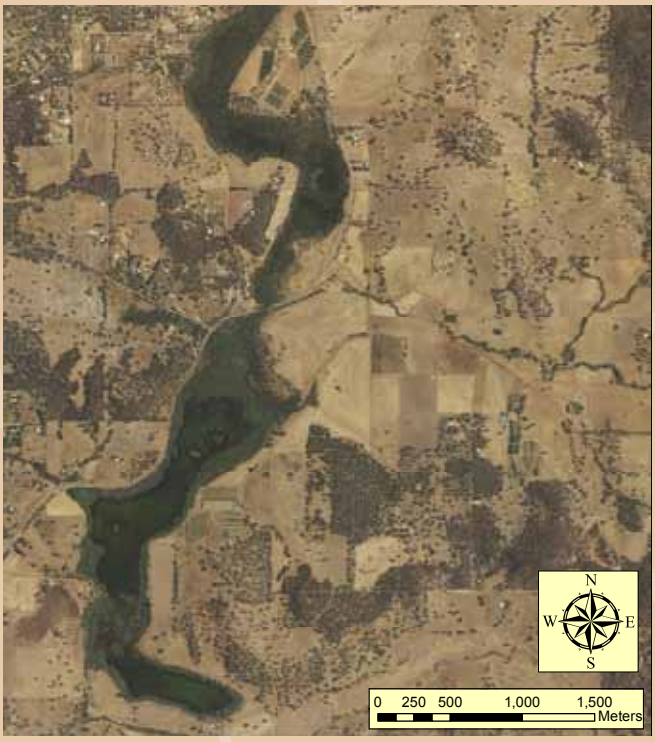
Turtle predation by red foxes at Lake Chittering Nature Reserve, Bindoon WA

Oblong turtles grow to a size of 30cm carapace length (top of the shell) and have a long neck, often as long as their shell, giving rise to their alternate name of as the western snake-necked turtle. They are carnivorous, eating small fish, crustaceans, detritus and, on rare occasions, small birds.

CHELODINA COLLIEI

The oblong turtle (*Chelodina colliei*) is native to freshwater systems throughout the south west of Western Australia. Females leave the water between September and December, often travelling up to 1km, to lay nests of up to 25 eggs. This is the time in which females are often hit by cars, or attacked by predators. The nests themselves are often predated too, being relatively easy to access and an ideal source of nutritious food.

It is natural for the nests of many turtle species throughout the world to be predated. However the fox is an introduced predator against which many of our native animals do not have adequate defences and consequently they are particularly susceptible to fox predation.



This research project set out to answer three key questions regarding foxes and turtles at Lake Chittering Nature Reserve.

1. *Who is predating turtle nests around Lake Chittering?*

Using motion sensing cameras, forensic DNA analysis and fox faecal analysis we identified which species were responsible for predating turtle nests.

- Only foxes were detected on cameras as predating turtle nests.
- Fox DNA was detected from 7 of 13 (54%) predated turtle nests and from swabs of a freshly predated turtle shells.
- Turtle remains were also present in fox faeces collected from around Lake Chittering Nature Reserve.

Caught in action — a red fox predating a buried nest.

Dead turtles all found on one day in close vicinity to each other. Measurements suggest these are females that would have left the water to lay their eggs.

2. What makes a nest susceptible to fox predation?

To quantify the level of nest predation and identify the culprits, 450 artificial turtle nests were placed around the lakes using chicken eggs (to simulate turtle eggs) and 'turtle scent' (water collected from a turtle enclosure). Control nests had neither cue.

Over 40% of these artificial 'nests' were predated.

80% of predations of artificial nests occurring within 30 days of nests being installed (see Figure 1). The majority of these predations (68%) occurred within 24 hours of nests being installed.

- Nests were significantly more likely to be predated if they were in open vegetation and closer to the lake shoreline. Nests were also more likely to be predated after rainfall.
- Furthermore, nests containing eggs were more likely to be predated than those without eggs, indicating foxes could differentiate between nests with and without eggs, even though all nests were well buried.

3. What effect is this predation having on the turtle population?

A survey of the turtle population found that the large, breeding females were missing, as were juvenile turtles.

Searches of the Lake Chittering Nature Reserve located 61 turtle remains, which were predominantly large animals, suggesting that the reason the large breeding females are absent from the live population is that they are often predated when they leave the water to nest.

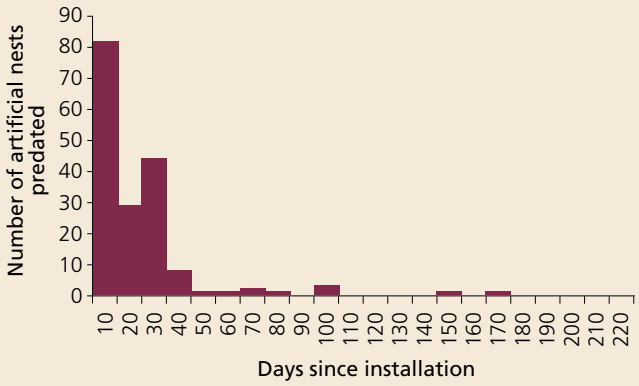


Figure 1 The majority of artificial nest predation occurs within days of nest installation

Conclusions

- Nest predation is greater in more open areas, closer to shore and after rainfall.
- Foxes predate both adult turtles and their nests (including hatchlings still in the nest).
- Foxes can predate many nests in a small time period.
- Foxes were the only species identified predating oblong turtles and their nests.
- Fox predation is having an unsustainable negative effect on the oblong turtle population in the Lake Chittering Nature Reserve.

FREQUENT QUESTIONS

What do I do if I find a turtle?

Please leave the turtle alone, and keep pets away. If the turtle is on the road, it may be necessary to move the turtle in order to avoid it being hit by a car. However, if the road is quiet, it is best to stop, assist the turtle to cross, and then leave it be. If you catch a turtle and return it to the water, it will only have to make the dangerous trip again, increasing the chance of being injured or killed. If you find an injured turtle, please contact the Wildcare Helpline (**9474 9055**) who can put you in touch with a wildlife carer. Turtles can make remarkable recoveries from serious injuries.

Why is there a turtle in my lawn/shed/garden?

Female turtles leave the water to nest, often travelling up to 1km in search of an appropriate area to dig a nest and lay her eggs.

How long do turtle eggs take to hatch?

Turtle eggs take between 210 and 220 days, often hatching in June or July.

How long do turtles live for?

Turtles are very long lived, often over 40 years.

How do they get killed if they have a shell?

The notion that turtles can retreat into their own shell is a common misnomer fuelled by cartoons. Only very short-necked species can retract their head to protect it from predators; most species cannot retract their head or limbs much at all. Oblong turtles cannot retract their head or limbs into their shell.

What is the difference between a turtle and a tortoise?

The descriptors 'turtle' and 'tortoise' are interchangeable and can be used to refer to marine, freshwater or terrestrial species.

How many species of turtle are there in Australia?

There are 32 species of freshwater turtle in Australia, with two found in the Southwest, the oblong turtle, and the critically endangered western swamp tortoise.

For more information on this project please contact Peter Adams

E: p.adams@murdoch.edu.au