

Climate change threatens endangered freshwater turtle

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Young Mary river turtles (*Elusor macrurus*) that were incubated at temperatures predicted under climate change showed reduced mobility and preference for shallow water. Credit: Mariana A. Micheli-Campbell

The Mary river turtle (*Elusor macrurus*), which is restricted to only one river system in Australia, will suffer from multiple problems if temperatures predicted under climate change are reached, researchers from the University of Queensland have shown.

The scientists, who are presenting their work at the Society for [Experimental Biology](#) Annual conference in Glasgow on 3rd July 2011, incubated [turtle eggs](#) at 26, 29 and 32°C. Young turtles which developed under the highest [temperature](#) showed reduced swimming ability and a preference for shallower waters.

This combination of physiological and behavioural effects can have dual consequences for survival chances. "Deeper water not only provides the young turtles with protection from predators but is also where their food supply is found," explains PhD researcher, Mariana Micheli-Campbell. "Young turtles with poor swimming abilities which linger near the surface are unable to feed and are very likely to get picked off by birds. These results are worrying as climate change predictions for the area suggest that nest temperatures of 32⁰C are likely to be reached in the coming decades."

The Mary river turtle is already listed as endangered by the IUCN Red List and the population has suffered a large decline over the past decades. Some factors known to have affected the population include collection of the eggs for the pet trade and introduced predators such as foxes and dogs. "Whether climate change has already contributed to the decline is not clear," says Ms. Micheli-Campbell. "But these results show it may be a danger to this species in the future."

These findings may be shared by other species of turtle, but the outcome is likely to be more extreme in the Mary River turtle as climatic warming is particularly pronounced for this area and the relatively shallow nests of freshwater turtles are more susceptible to changes in ambient temperature than the deeper nests of sea turtles. Further research is needed to understand the effects of [climate change](#) on incubation in other [turtles](#).

Provided by Society for Experimental Biology

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