

Mating season key as endangered turtles recover from mystery virus

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Credit: University of Western Sydney

For the Bellingen River Snapping Turtle, the mating season has never been so important. After a mystery virus wiped out the local population in record numbers last year, researchers from Western Sydney University were forced to relocate healthy turtles to Sydney in a bid to preserve the remnants of the species. This small population, currently at Taronga Zoo, is now the last hope for the species, and conservationists are crossing their fingers as they wait in hope for the females to start

laying eggs.

"The Bellingen River Snapping Turtle is functionally extinct, meaning that without [human intervention](#) there would be no hope," says Dr Ricky Spencer, from the Western Sydney University's School of Science and Health and Hawkesbury Institute for the Environment.

"There are few if any adult female turtles in the wild, and the population is less than 10% of what it was just two years ago. The only hope now is for the captive turtles to mate to help rebuild population numbers."

The Bellingen River Snapping Turtle is found in only one place on earth - a near pristine 30-kilometre stretch of the river on the Mid North Coast of NSW. In February 2015, a deadly virus that leaves the turtles blind and starving wiped out more than 90% of the population. But Dr Spencer says there's reason to believe the population will one day return home.

"This [mating season](#) is the first step in a process called headstarting, where scientists raise and release hatchlings into the wild. Because of the longevity and high egg production of turtles, we are optimistic they can recover, even though they are almost extinct. For example, some Galapagos tortoises were down to less than 20 animals in the 1960s, but a long-term headstarting program has seen numbers increase to several thousand. Similar programs occur throughout Asia, where turtle populations have been decimated because of poaching for food, medicine and the pet trade. So there are some precedents for helping turtles that may at first glance appear doomed."

In further good news for the turtle, this particular population has been studied by scientists since 2000, providing a vast amount of information for scientists to conduct a population viability analysis.

"While the models are relatively complex, the process is quite simple.

We take all the information on what we knew about the species before the crash, data such as population size, which was around 4,000, survival and egg production, as well as information on what happened during the three week virus outbreak to predict how the population might recover over the next 200 years. We then apply catastrophes, such as the virus outbreak, to see how the population might respond."

The predictions show that it will take over 100 years for the species to recover, but if another catastrophic event occurs then extinction could be inevitable. Dr Spencer says that not enough is known about the virus, but a coordinated team of experts from a range of agencies is doing all it can to learn more.

"We are in new territory as we have not seen a disease operate on this scale in an Australian turtle. Will it re-occur, or will we never see it again? It is important to know what it is, but it's actually far more important to understand why the turtles were affected at that particular time. If the frequency of catastrophic events is increasing, be it this virus or something else, then the species is doomed."

In the meantime, the Bellingen community is playing a vital role in the recovery of the population. The inaugural Bellingen Turtle Festival occurs over the October long weekend, where premier Australian musicians such as Mark Seymour and Katie Noonan are supporting the cause. Dr Spencer says anyone can become involved, and even become citizen scientists themselves.

"We have created an app called TurtleSAT to help log turtle sightings around Australia. It's designed for quick data entry, with picture guides to help users identify the turtle they have spotted. The phone's inbuilt GPS automatically records the location, and users can also easily adjust the coordinates on a map to make it more accurate or log previous sightings."

"We are doing our part in protecting the Bellingen River Snapping Turtle, but other turtle populations may be at risk that we don't even know about yet. By downloading the TurtleSAT app, everyone can become a field assistant in the biggest study of freshwater turtles ever undertaken in Australia."

Provided by University of Western Sydney

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