

Australia's most endangered snake might need burning

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Conserving Australia's most endangered snake might mean lighting more bush fires, ecologists have proposed.

The last remaining populations of broad-headed snakes are being threatened by encroaching woodland that is destroying their habitat, a study by scientists from the [University of Sydney](#) and Stanford University (USA) has shown.

"Broad-headed snakes are only found living in small pockets within 200 km of Sydney, and those small communities are fast becoming extinct or increasingly more rare," said Professor Rick Shine from the School of Biological Sciences at the University of Sydney, co-author on the new paper published online in British Ecological Society's *Journal of Applied Ecology*.

As part of a 17-year study investigating causal factors in the decline of the colourful broad-headed snake, Professor Shine and colleague Dr Jonathan Webb, also from the University of Sydney, with Rob Pringle and Mindy Syfert of Stanford University, examined trends in habitat availability of Australia's most [endangered snake](#).

Using historical and current images of Morton National Park, 160 km south of Sydney, the research team compared [aerial photographs](#) taken in the 1940s and 1970s with satellite images taken in 2006 to ascertain the relative coverage of vegetation and bare sandstone in each year.

"The results indicate that the amount of bare sandstone, which is critical habitat for broad-headed snakes and their prey, has decreased steadily over the past 65 years," Professor Shine said.

The study also showed that total vegetation cover in Morton National Park - an area currently inhabited by broad-headed snakes - has increased over the same 65-year interval.

"The reason for the proliferation of vegetation is not known. In other parts of Australia, vegetation thickening has been attributed to altered Aboriginal fire regimes or to 20th-century climatic change," said Professor Shine.

Dr Jonathan Webb believes increased plant cover may be a problem for this endangered species due to the increased shading conferred by the vegetation.

"Prior studies have shown that broad-headed snakes require sunny, hot-rocks for shelter. Shaded rocks do not reach sufficiently high temperatures for the snakes to hunt their lizard prey effectively in the evenings," he said.

"The trend is clear - as the vegetation cover increases, the snakes' available habitat decreases. Our results indicate that active management is required if the nation's most endangered snake species is to be saved from extinction," Dr Webb said.

Such management might take several forms, say the study's authors. Regular, [controlled burns](#) might open up the forest canopy and prevent tree seedling establishment on the westerly rock escarpments favoured by the reptiles. Alternatively, if controlled burns are deemed too expensive or too dangerous to implement, then foresters might clear overhanging vegetation in areas known to be important to the snakes.

Although broad-headed snakes would benefit from controlled burns, the extreme risks of bushfires in Australia must be weighed against the expected gains.

"As with all decisions in environmental management, the decision should be made on the basis of the best available information about the likely costs and benefits of the different strategies. This includes the potential collateral impacts upon other species of concern," warns Professor Shine.

Source: Wiley ([news](#) : [web](#))

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