

A new approach to judging the impact of invasive species

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The native lace monitor competes with the invasive fox for the same food, and is not faring well.

(Phys.org) —The impact an introduced species can have on Australian native animals should take into account possible long-term stress not just numbers of outright deaths, University of Sydney research has shown.

"We also showed that sometimes 'the hunted' adapt more successfully to the introduction of a [predator](#) than competing hunters," said Dr Jennifer Anson, from the University's School of Biological Sciences and lead author of the study published last month in *PLOS One*.

"Research in Australia has never focused on how reptile predators, as opposed to mammalian predators, are affected by the presence of an introduced predator. Our study shows a reptile predator coping less well in the presence of a non-native predator than a target [prey species](#) does."

The research looked at lace monitors and common ringtail possums in East Gippsland, Victoria.

It shows that ringtail possums are no more vigilant in the presence of foxes, introduced to Australia more than 150 years ago, than in the presence of other native predators, but still survive in high numbers.

"By comparison the lace monitor, which competes for prey with the fox, is faring less well," said Dr Anson.

The native lace monitor competes with the invasive fox for the same [food resources](#), in particular the ringtail possum. The fox hunts at night and lace monitors hunt during the day.

The study found that in response to increased competition with the fox, the lace monitor took more risks to get food.

"This increase in risk behaviour led to a reduction in body condition of the lace monitor. This means they are smaller or weigh less than they should for their size," said Dr Anson.

"A lot of studies only look at whether a [species numbers](#) are being reduced but not at more subtle long-term threats such as deterioration in body condition. But loss of condition is a trend that could have an impact on how many young are born and on vulnerability to disease, presenting a potential danger to the [species](#) overall."

Another implication of the research is the suggestion ringtails are

capable of rapidly evolving in response to an invasive predator, something that other small-sized to medium-sized mammals have not had the opportunity or ability to do.

More information: www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0060916

Provided by University of Sydney

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