

Surveillance in the Simpson suggests a new take on threat to native animals

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(Phys.org) —A photographic pursuit that would put the paparazzi to shame has captured the private life of wildlife in the Simpson Desert, during both its 'big wet' and dry seasons.

The University of Sydney research suggests a more effective approach to controlling the devastating impact of the feral cat and red fox on Australian native wildlife.

"This research suggests that instead of the ongoing costly effort of trying to control these species it might be more worthwhile to concentrate our control efforts on the large rainfall 'boom' events in central Australia," said Aaron Greenville, from the University's School of Biological Sciences.

Greenville is the lead author on a paper just published in the journal *Oecologia* (attached). Co-authors, Professor Chris Dickman, Associate Professor Glenda Wardle and Bobby Tamayo are all collaborators from the Desert Ecology Research Group at the University of Sydney.

"The fox and feral cat have had a drastic effect on the native animals of the interior and have contributed to the extinction of native species. The impact of cats and [red foxes](#) is well documented. Feral cats place at least 34 threatened native species at high risk of extinction while foxes threaten an estimated 76 [native species](#)," Greenville said.

"Despite dingoes also being legally defined as native wildlife, they are

deliberately killed in some areas of Australia because of their threat to livestock."

For twenty-four hours a day over two years the researchers used sophisticated camera 'traps' placed across an 8000 kilometre area that respond to animals' movement and body heat. The resulting photos provide a detailed visual log of animal activity.

During the research the Simpson Desert experienced the rare event of flooding rains with an accompanying boom in wildlife.

"Our research reveals that when the Simpson Desert experiences such a wet season, currently about every ten years, dingo, cat and fox populations increase but so too do those of all their prey animals. This includes populations of wild mice which have an estimated 60 fold increase in their numbers," said Greenville.

During dry times the dingo is effective at suppressing populations of cats and foxes but with the big increases in prey during the boom time the dingoes are not able to keep up.

So while it might have been expected that dingoes would kill with feral cats and red foxes more during a 'boom and bloom' period, this is in fact when they have least impact because they are faced with much bigger populations and have easier meals, especially rodents, to consume. That is precisely the time when control programs could be most effective.

"The dingo is an unpaid pest species manager that works every day. If we leave them alone, they can help control populations of cats and foxes for free during non-boom periods when prey populations are low and potentially vulnerable. The role of dingoes in suppressing the numbers of [feral cats](#) and foxes during non-boom periods combined with alternate pest control methods during periods after rains could become an overall

management strategy."

Given 70 percent of Australia is semi-arid desert the research in these conditions has widespread relevance, Greenville suggests. There is a concern that the fox will get a permanent foothold on the driest regions of Australia, just as the feral cat population has done.

"In an echo of our relationship with sharks, it is time to decide how we co-exist with this top predator or whether we want the dingo to go the way of the Tasmanian tiger - which by 1936 had been hunted to extinction," said Greenville.

"In fact this research and these debates have significance to similar debates around the world - the leopard in Africa and the grey wolf in North America and Europe."

More information: "Bottom-up and top-down processes interact to modify intraguild interactions in resource-pulse environments." Aaron C. Greenville, Glenda M. Wardle, Bobby Tamayo, Chris R. Dickman *Oecologia*. June 2014. link.springer.com/article/10.1007/s00442-014-2977-8

Provided by University of Sydney

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