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Understanding and reducing python predation of the endangered Gilbert's potoroo

Animal Science

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Context

Carpet pythons are predators of a range of threatened mammal fauna, including the endangered Gilbert's potoroo (*Potorous gilberti*). Python predation can reduce adult survival and curtail recruitment. Current 'predator proof' fences, while effective at reducing or eliminating predation by foxes and feral cats, are likely to have little or no effect on levels of python predation.

Python predation has been identified as a significant threat to the Gilbert's potoroo population in the Waychinicup National Park enclosure. In a review of options following the 2015 fire that impacted the only known wild population at Two Peoples Bay, it was considered that management intervention is required to reduce python predation of potoroos within the enclosure. It appears that python predation is limiting population growth and hence the production of individuals for translocation.

Aims

- To determine the most effective ways to locate and remove carpet pythons from within and around Gilbert's potoroo populations and so reduce the current level of predation of this critically endangered mammal.

Progress

- Active searching by day and night for pythons resulted in few captures.
- Intensive radio-tracking during the November breeding season was successful in locating more pythons with a total of 11 captured in November 2018 (eight males and three females). All were fitted with transmitters.
- A total of five large females were relocated from the potoroo enclosure to distant sites in the national park to reduce predation of potoroos.
- A trial of shelter box traps was completed. No pythons were detected using them.

Management implications

- A reduction in the abundance of carpet pythons in and around the Waychinicup enclosure should reduce the incidence of potoroo predation and allow potoroo population growth.
- The best means to locate and remove pythons is to radio-track male pythons to locate reproductive females each November. Probably about a third of adult female pythons breed each year and since the existing fence is not a barrier to python movement, annual removal of pythons is likely to be required.
- The results of the study could have application for controlling python predation of other threatened species.

Future directions

- If a suitable heat pad can be developed, shelter box traps may aid in helping capture pythons in the cooler months.
- Results of the radio-telemetry and the relocation of female pythons will be written up for publication.
- Male pythons are assumed to not be serious predators of potoroos on account of their small size; however, some dietary analysis is needed to establish if they are indeed predators of potoroos or similarly-sized mammals.