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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 (*Natator depressus*). Python predation can reduce adult survival and may curtail recruitment. This is particularly problematic when threatened mammals are confined by habitat availability or if housed in enclosures. 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 growth of 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 without management intervention, python predation was likely to cause potoroo extinction 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, trap 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 searches for pythons were most successful at night; none were located during daytime searches; two pythons were obtained when they ate potoroos fitted with tail radio-transmitters.
- Five carpet pythons were surgically implanted with radio-transmitters and tracked within the enclosure, some had sizeable home ranges and two crossed through or over the enclosure fence.
- A trial of shelter box traps was undertaken and no pythons have been detected using them. Their elevation off the ground has prevented the many mammals in the pen from setting up dens in the boxes.
- A heat pad/battery/solar combination that could make the shelter boxes more attractive to pythons is under investigation.

Management implications

- Carpet pythons are predators of Gilbert's potoroo and some control of their activities in the Waychinicup National Park will reduce the incidence of predation events.
- The reduction of carpet python predation could result in an increase of potoroos within the enclosure.
- The results of the study could have application for controlling python predation of other threatened species.

Future directions

- Continuing searches will be undertaken to locate pythons and fit them with radio-transmitters. In particular, searches for male pythons should also detect female pythons during the spring mating season.
- Trials of the shelter box trap will continue, with the incorporation of heat pads and other possible attractants for pythons.
- Other potential python attractants will be examined that could aid in the capture and removal of pythons.