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Rangelands restoration: reintroduction of native mammals to Matuwa (Lorna Glen)

BCS Animal Science

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Rangelands restoration: reintroduction of native mammals to Matuwa (Lorna Glen)

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Context

Operation Rangelands Restoration commenced in 2000 with the acquisition of Lorna Glen (Matuwa) and Earaaheedy (Kurrara Kurrara) ex-pastoral leases by the WA Government. We are working in collaboration with the traditional owners, Tarlka Matuwa Piarku Aboriginal Corporation, who were granted native title (exclusive possession) over the area in 2014, to restore ecosystem function and biodiversity in the rangelands. Matuwa once supported many mammal species, that have suffered large declines. This project seeks to reintroduce 11 arid zone mammal species following the successful suppression of feral cats and foxes. Mammal reconstruction will also contribute to the restoration of rangeland ecosystems through re-establishment of ecosystem services such as digging, grazing/browsing of vegetation and seed dispersal.

The first mammal reintroductions commenced in August 2007 with the release of bilby (*Macrotis lagotis*) and brushtail possums (*Trichosurus vulpecula*). Between 2010-2012, mala (*Lagorchestes hirsutus*), Shark Bay mice (*Pseudomys fieldi*), boodies (*Bettongia lesueur*) and golden bandicoots (*Isodon auratus*) were translocated into a 1,100 hectare introduced predator-free fenced enclosure. The enclosure is intended to provide species with an opportunity to acclimatise to the desert environment. The ultimate goal is to release animals outside the enclosure and establish free-ranging, self sustaining populations of these species.

Aims

- Develop effective feral cat control techniques in a rangeland environment.
- Reintroduce 11 native mammal species to Matuwa by 2023, and contribute to an improved conservation status for these species.
- Re-establish ecosystem processes and improve the condition of a rangeland conservation reserve.
- Develop and refine protocols for fauna translocation and monitoring.
- Determine the role of digging and burrowing fauna in a rangeland ecosystem.

Progress

- A manuscript discussing the advantages and disadvantages of using camera-traps and track-transects to monitor feral cats was published in *Animals*.
- A manuscript comparing differences in feral cat diet at Matuwa and in the Kimberley was published in *Sustainability*.
- A project reassessing the genetic profile of the brushtail possums translocated to Matuwa has been completed and a manuscript is being prepared.
- Monitoring of boodies, golden bandicoots and mala inside the enclosure continued.
- 27 golden bandicoots were translocated from Matuwa to a fenced reserve, 'Wild Deserts', in NSW. This translocation marks the first time golden bandicoots have been present on the east coast of Australia since the natural population was extirpated.
- 25 boodies were translocated from Matuwa to the Australian Wildlife Conservancy's New Haven fenced reserve in NT. This translocation marks the first time boodies have been present in Australia's north since the natural population was extirpated.
- Introduced predator control via aerial baiting with Eradicat continued.
- Assessment of the susceptibility of golden bandicoots to the Eradicat bait was initiated.

Management implications

- Ongoing landscape scale feral cat baiting plus additional control techniques are required to successfully re-establish threatened vertebrate fauna in the rangelands.
- Long-term feral cat control is likely to confer benefits to small mammal species.

- At Matuwa, track counts proved to be cheaper to implement and more effective at detecting feral cats than camera traps, especially when feral cat density was very low.
- Increased involvement of traditional owner rangers with fauna monitoring has assisted collaborative management arrangements.
- Potential over-abundance of boodies in the enclosure needs to be carefully managed.
- Matuwa has become a source site for boodie and golden bandicoot translocations.

Future directions

- Ongoing monitoring of reintroduced species and introduced predators.
- Complete publications on the impact of fenced reserves on mulgara, the ecology of boodies, population genetics of brushtail possums, and the impact of baiting on golden bandicoots.
- Facilitate training in fauna handling in stakeholder groups.