

Progress Report SP 2012-024

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. In May 2023, Matuwa Kurrara Kurrara National Park officially became a joint management site with Tarlka Matuwa Piarku Aboriginal Corporation (TMPAC). We work collaboratively with TMPAC, using science to inform management to restore ecosystem function and biodiversity on the National Park. This project seeks to reintroduce arid zone mammal species following the successful suppression of feral cats and foxes. Mammal reconstruction contributes to restoration 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 1100 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

- Refine effective feral cat control and monitoring techniques in a rangeland environment.
- Develop and refine management protocols for other introduced vertebrate pests.
- Continue to reintroduce native mammal species to Matuwa, and contribute to an improved conservation status for these species.
- Develop and refine protocols for fauna translocation and monitoring.
- Re-establish ecosystem processes and improve the condition of a rangeland conservation reserve.
- Participate in two-way science with TMPAC and Wiluna Rangers.
- Provide training opportunities for Wiluna Rangers and community members.

Progress

- Introduced predator control via aerial baiting with Eradicat continued with the track activity index suggesting we are continuing to successfully suppress feral cat numbers below our goal.
- A manuscript discussing the efficacy of various lures for camera-traps used to monitor feral cats is being prepared.
- Assessment of the susceptibility of golden bandicoots to the Eradicat bait was completed with data suggesting the bandicoots are at minimal risk from the baiting. A manuscript is being prepared.
- A manuscript describing the impact of fenced reserves on mulgara has been submitted to *Australian Mammalogy*.
- A manuscript describing the genomic diversity in golden bandicoots has been submitted to *Heredity*.
- Monitoring of boodies, golden bandicoots and mala inside the enclosure continued.
- We have improved trapping protocols for mulgara and golden bandicoots by altering bait type and shelter provisions.
- 100 mulgara were translocated from Matuwa to Dirk Hartog Island, WA.
- We have finished a new round of surveys measuring mulgara and bilby abundance on Matuwa.

Management implications

- Annual 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 confers benefits to many mid-sized and small fauna species.
- Urine lures improve the quality of data captured by camera-traps when assessing feral cat abundance.
- 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 boodies, golden bandicoot, and mulgara translocations.

Future directions

- Research new methods of re-establishing native mammals on unfenced, managed landscape.
- Develop and refine management protocols for other introduced vertebrate pests.
- Participate in two-way science with TMPAC and Wiluna Rangers.
- Provide training opportunities for Wiluna Rangers and community members.
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- Ongoing monitoring of reintroduced species and introduced predators.
- Initiate monitoring of other native arid zone species on Matuwa such as malleefowl.
- Initiate co-design of boodie release onto the unfenced landscape at Matuwa.
- Improve monitoring techniques for cryptic species such as mala.
- Complete publications on the ecology of boodies, lures for camera-traps, and the impact of baiting on golden bandicoots.
- Facilitate training in fauna handling and monitoring in stakeholder groups.