

Progress Report SP 2012-024

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

Animal Science

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Project Team	granted
Program Leader	granted
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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 Earahedy (Kurrara Kurrara) pastoral leases by the Western Australian Government. This 600,000 ha area lying across the Gascoyne and Murchison bioregions is now the site for an ecologically integrated project to restore ecosystem function and biodiversity in the rangelands. This is being undertaken in collaboration with the traditional owners. In 2014 Native Title (exclusive possession) was granted over Matuwa and Kurrara Kurrara.

The area around Matuwa once supported a diverse mammal fauna that was representative of the rangelands and deserts to the north and east. These areas have suffered the largest mammal declines in Western Australia. This project seeks to reintroduce 11 arid zone mammal species following the successful control of feral cats and foxes, and contribute significantly to the long-term conservation of several threatened species. Mammal reconstruction in this area will also contribute significantly to the restoration of rangeland ecosystems through activities such as digging the soil and grazing/browsing of vegetation, and assist in the return of fire regimes that are more beneficial to the maintenance of biodiversity in the arid zone.

The first of the mammal reintroductions commenced in August 2007 with the release of bilby (*Macrotis lagotis*) and wayurta (*Trichosurus vulpecula*). Another nine species of mammal are proposed for reintroduction over ten years. Between 2010-2012, mala, Shark Bay mice, boodies and golden bandicoots were translocated into an 1100 ha introduced predator proof fenced enclosure. The intention is to use these as a source for translocations to areas of Matuwa outside the enclosure where cats have been effectively controlled, and ultimately the establishment of free-ranging self sustaining populations.

Aims

- Develop effective feral cat control techniques in a rangeland environment.
- Reintroduce 11 native mammal species to Matuwa by 2020, 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.
- Study the role of digging and burrowing fauna in rangeland restoration.

Progress

- Track and scat/DNA surveys have established widespread presence of bilbies across the Bullimore sand plain land system.
- A landscape scale camera trap system to identify threatened fauna and predator activity across Matuwa has been installed and is being used to monitor effectiveness of feral cat baiting.
- Feral cat reduction in 2017 was 30-40%. Cat baiting in 2018 compared the efficacy of aerial and ground baiting.
- Different monitoring methods for golden bandicoots and boodies inside the fenced enclosure were trialed.
- Ongoing presence and sightings of mala adults and juveniles were detected inside the enclosure.
- Presence of golden bandicoots at release sites from the 2015 reintroduction has declined significantly in last 12 months in absence of ongoing intensive predator management. However, bandicoots are persisting outside the fenced enclosure albeit at low densities.
- A study to examine the use of warrens by related boodies inside the enclosure was undertaken to provide information useful for any translocations to warrens outside the fenced enclosure.
- Brushtail possums are persisting at Matuwa but would probably benefit from a supplementation.
- Martu ranger groups continue to be involved in fauna monitoring activities.
- Analysis of 10 years of translocation and monitoring data is being undertaken.

Management implications

- Fauna reconstruction is an important component of threatened species conservation and broader habitat management and increases probability of species persistence through establishment of multiple populations where threats can be managed.
- Flexibility in timing is a key consideration in the planning of reintroductions, which should also take into account the effects of environmental conditions (droughts) and annual cycles of reproduction/behaviour in potential predators/competitors on reintroduction success.
- Detailed monitoring to identify causes of mortality and the subsequent identification of predators and their removal in a timely fashion are critical to the success of reintroduction programs. Monitoring has demonstrated that additional cat control techniques to landscape scale baiting are required to successfully re-establish fauna in the rangelands.
- Sourcing founder animals from multiple locations has proven to be valuable in establishing and maintaining healthy genetic diversity in reintroduced species (e.g. brushtail possums).
- Increased involvement of traditional owner rangers with fauna monitoring will assist future collaborative management arrangements.

Future directions

- Development of further engagement and cooperation with traditional owners in management and monitoring activities.
- Ongoing monitoring of bilbies and possums outside the enclosure, and of bandicoots, boodies, mala and Shark Bay mice inside the enclosure.
- Ongoing translocations will be postponed until an Indigenous Land Use Agreement is negotiated and joint management arrangements finalised.
- Respond to ongoing presence of low density bandicoot population outside the fenced enclosure, with targeted small-scale reinforcement.
- Complete analysis of last 10 years of monitoring data, revise Science Project Plan.