

Progress Report SP 2012-024

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

Animal Science

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Project Team	granted
Program Leader	granted
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Context

Operation Rangelands Restoration commenced in 2000 with the acquisition of Lorna Glen and Earraheedy pastoral leases by the Western Australian Government. This 600,000 ha area lying across the Gascoyne and Murchison IBRA regions 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 Lorna Glen and Earraheedy.

The area around Lorna Glen 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 the next ten years. Between 2010-2012, mala, Shark Bay mice, boodies and golden bandicoot were translocated into an 1100 ha introduced predator proof fenced enclosure.

Aims

- Reintroduce 11 native mammal species to Lorna Glen by 2020, to improve the conservation status of 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

- Monitoring of mulgara populations inside and outside the enclosure.
- Ongoing monitoring of bilbies and possums outside the enclosure.
- Ongoing, biennial monitoring of boodies and bandicoots inside the enclosure.
- Planning for the release of 100 golden bandicoots outside the fenced enclosure undertaken, taking into account the lessons learned from previous releases. The first adult golden bandicoot was trapped outside the fenced enclosure, most likely as a result of young, small animals moving through the fence.
- Effects of bilby, boodie and varanid digging activity on soils and plants examined. A study of relic bilby burrows found they could potentially provide more suitable habitats for the establishment and productivity of other species by moderating microclimates, accumulating nutrients and soil moisture, and ameliorating the potentially detrimental effects of bio-available aluminium.
- Eradicat baiting in 2013 reduced cat abundance by 60-70%.
- In 2014, 14 feral cats and 18 dingoes were fitted with satellite collars and their survivorship and movements will be monitored before, during and after the planned feral cat baiting.
- Business Plan prepared for the expansion of the fenced enclosure.

Management implications

- Fauna reconstruction and monitoring techniques for arid zone rangelands developed by this project will have broad state and national application for the conservation of threatened fauna.

- The outcomes of the project will contribute to the management of Parks and Wildlife's rangeland properties and provide guidance for future fauna reconstruction, e.g. Dirk Hartog Island. It will also demonstrate effective partnership models with traditional owners and facilitate collaborative management with traditional owners.

Future directions

- Finalise a 10-year fauna translocation plan.
- Ongoing monitoring of bilbies and possums outside the enclosure, and of bandicoots, boodies, mala and Shark Bay mice inside the enclosure.
- Commence monitoring mulgara at Earraheedy (no cat control) for comparison with Lorna Glen.
- Undertake release of golden bandicoots outside the fenced enclosure subject to adequate feral cat control, and monitor survivorship.
- Develop strategies for releases of boodies and bandicoots outside the enclosure in the presence of low densities of feral cats.
- Investigate the influence of reintroduced mammals on soils and plants and their potential to facilitate restoration.