

## **Progress Report SP 2012-024**

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

**Animal Science**

### **Project Core Team**

<b>Supervising Scientist</b>	Colleen Sims
<b>Data Custodian</b>	Colleen Sims
<b>Site Custodian</b>	Colleen Sims

### **Project status as of March 22, 2018, 12:31 p.m.**

Approved and active

### **Document endorsements and approvals as of March 22, 2018, 12:31 p.m.**

<b>Project Team</b>	granted
<b>Program Leader</b>	granted
<b>Directorate</b>	granted

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

C Sims, M Blythman, K Morris, N Burrows

## 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 (Matuwa) and Earraheedy (Kurrara Kurrara).

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 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 Lorna Glen 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 Lorna Glen 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

- Development of positive relationships and joint management activities with the Martu traditional owners of Matuwa Indigenous Protected Area (ex Lorna Glen).
- Annual monitoring of mulgara (*Dasyercus blythi*) populations inside and outside the enclosure indicate that this species continues to be abundant and has responded positively to feral cat control.
- Track and scat/DNA surveys have established widespread presence of bilbies across the Bullimore sand plain land system.
- Persistence of possums in core habitat has been determined and collection of DNA has been made for comparisons of genetic diversity with other Western Australian populations.
- Ongoing monitoring of boodies and bandicoots inside the enclosure indicates good population numbers and reproductive rates persist.
- Increased presence and sightings of mala inside enclosure.
- Successful *Eradicat*® baiting in 2015, resulted in a 60-70% reduction in cat numbers across the property, demonstrated by both Track Count Indices and Infra-Red camera grids.
- Successful reintroduction of golden bandicoots into two sites outside the enclosure. Success was measured through persistence of founders and presence of new recruits (F1), and increased dispersal of bandicoot tracks across the Bullimore sand plain habitat.

## 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.
- Monitoring has demonstrated that additional cat control techniques to landscape scale baiting are required to successfully re-establish fauna in the rangelands.

## Future directions

- Development of future 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.
- Develop plan for reintroductions of red tailed phascogales in 2017.
- Investigate the genetic health of possum population and assess need for future genetic supplementation.
- Assess the need for restocking the bandicoot population outside the fenced enclosure.