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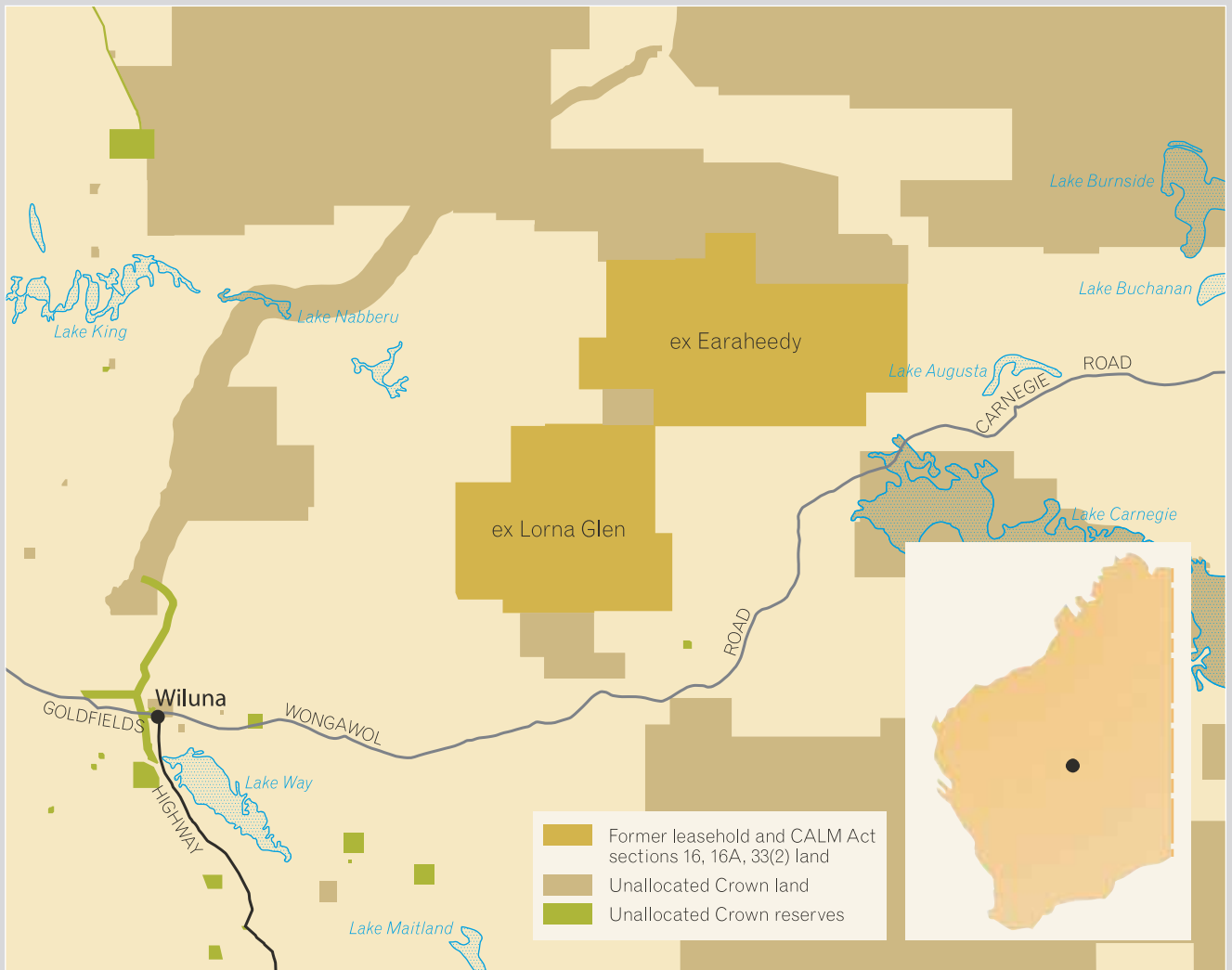
OPERATION RANGELANDS RESTORATION

A 2020 VISION



Department of
Environment and Conservation

Our environment, our future 



Breakaway, Lorna Glen

Over the past 200 years, Australia has experienced a higher rate of mammal extinctions than any other continent. Arid regions, including much of the Western Australian rangelands, have been most affected. Of the 85 species of native mammals (excluding bats) known to have once occupied the arid zone, 11 are now extinct, six are extinct on the mainland and are found only on off-shore islands and 16 are now severely restricted in their range.

Preventing further extinctions and reversing the rate of decline of biodiversity and ecosystem health in the rangelands will require proactive and determined intervention. Conservation and natural resource management (NRM) agencies such as the Western Australian Department of Environment and Conservation (DEC) will work in partnership with neighbouring landholders, traditional owners, regional NRM groups, research institutions such as universities and CSIRO, resource developers and other businesses that have interests in the rangelands.



Brushtail possum



European fox

What is the goal of Operation Rangelands Restoration?

The goal of this unique, ecologically integrated project is to restore natural ecosystem function and biodiversity, including the reintroduction of 11 arid zone mammal species, to almost 600,000 hectares of rangelands in the north-eastern Goldfields of Western Australia by 2020. As well as tangible conservation outcomes, the knowledge and management experience gained from this project will have application across the semi-arid and arid rangelands of Australia.

This will be achieved by:

1. Controlling introduced herbivores including feral camels and feral goats.
2. Controlling introduced predators – feral cats and foxes.
3. Implementing ecologically appropriate fire regimes to maintain functioning habitats and to reduce the risk of large, damaging wildfires.
4. Reintroducing native mammals that have become extinct or have severely declined due to introduced predators and herbivores and altered fire regimes. These reintroductions will improve the conservation status of arid zone mammals and, in doing so, return many important ecological functions such as soil cultivation through digging and burrowing, nutrient recycling, seed dispersal and grazing and browsing.
5. Monitoring reintroduced fauna, introduced predators and herbivores and biodiversity and ecosystem health.



Red-tailed phascogale



Boodie



Sydney Heads, Earraheedy

Recognised as a world leader in fauna conservation through the widely acclaimed *Western Shield* program, and having a strong wildlife conservation science and management capability, DEC is well placed to work towards preventing further declines in biodiversity and restoring the former native mammal diversity of the WA rangelands. In addition to conserving some of Australia's most rare and endangered native animals, Operation Rangelands Restoration will develop science-based technologies and tools for conservation and environmental management in the rangelands.

The project builds on more than a decade of research and operational experience by DEC, which has resulted in the successful development of an introduced predator baiting strategy for the arid zone, including a strategy to control feral cats, and fire management guidelines for hummock grasslands.

Mammal reintroductions in the arid zone, except for fenced areas, have not been successfully achieved before in Australia primarily because of an inability to control feral cats. Given recent advances by DEC scientists in feral cat control techniques, this project represents an opportunity to take a leap forward in the conservation of Australian mammals.

Where will Operation Rangelands Restoration take place?

Operation Rangelands Restoration will be carried out on adjoining ex-pastoral leases – Lorna Glen (Matuwa) and Earraheedy (Kurrara Kurrara) – some 150 kilometres north east of Wiluna. Comprising some 565,000 hectares within the Gascoyne and Murchison Interim Biogeographic Regionalisation for Australia (IBRA) regions, the Lorna Glen-Earraheedy complex was acquired by the WA Government in 2000 for the conservation reserve system under the auspices of the Gascoyne-Murchison Strategy. The properties have been reverted to unallocated Crown land with the intention they will be made into a conservation park. The Lorna Glen-Earraheedy complex has characteristics that make it highly suitable for this project, including:

- it is a large area and is typical of the arid zone rangelands ecosystems from which medium size native mammals have declined;
- it contains diverse landform systems and associated diversity of habitats representative of much of the Murchison-Gascoyne rangelands;
- the vegetation is mostly in good condition with good diversity of plants, reptiles and small mammals;
- there is a good knowledge base including landform system maps, extensive biological survey, sub-fossil and other evidence of mammals that once occurred in the area, fire history and fire ecology;
- introduced herbivores have been virtually eradicated;



Feral cat

- sustained control of introduced predators (feral cats, foxes and wild dogs) by aerial baiting has been demonstrated over the past four years;
- a fire management plan has been prepared and is being implemented;
- a network of biodiversity monitoring sites has been established;
- there is good infrastructure including an airstrip, buildings and on-site caretakers;
- there is good access by way of existing roads and tracks; and
- boundary fences have been upgraded.



Bilby

What is the project time frame?

A considerable amount of preparation, planning and ground work has been undertaken in the project area during the past four years. An intensive level of activity will occur over the next two to three years (2007-2009) associated with Stage 1 of the mammal reintroductions (reintroduction of bilbies and brushtail possums). Following the success of Stage 1, reintroduction of another nine arid zone mammals is scheduled over the period 2009-2020. Introduced predator and herbivore control, fire management and monitoring will be on-going.



Western barred bandicoot

Who is involved with Operation Rangelands Restoration?

The Operation Rangelands Restoration project was initiated by DEC, through a project team that includes staff from its Goldfields Region (Kalgoorlie), Science Division and Nature Conservation Division. The Wiluna traditional owners, who are excited by the prospect of the return of native mammals, are involved through a joint management MoU with DEC. In addition, the project has attracted the involvement of students and academics from local and international universities. Perth Zoo will breed some of the animals to be reintroduced.



Traditional owners burning at Lorna Glen



Numbat



Chuditch



Shark Bay mouse



Golden bandicoot

Which mammals are being reintroduced?

Sub-fossil evidence and Western Australian Museum records provide detailed insight to native mammals that occurred in the area until recently, but which are now locally extinct. The long-term goal is to re-establish viable populations of a suite of mammals. Reintroductions will be staged, beginning with species that are known to be quite robust, that will act as ecosystem engineers and will have the greatest chance of persistence. Candidate species for reintroduction include:

- Bilby (*Macrotis lagotis*) – Vulnerable; locally extinct.
- Brushtail possum (*Trichosurus vulpecula*) – not threatened, but locally extinct.
- Boodie (*Bettongia lesueur*) – Vulnerable; healthy island populations but extinct on the mainland (except for fenced populations on Heirisson Prong and Dryandra woodland).
- Mala (*Lagorchestes hirstus*) – Vulnerable; extinct on the mainland, three island populations.
- Golden bandicoot (*Isodon auratus*) – Vulnerable; extinct in the arid zone, healthy island populations, mainland populations persist in the Kimberley region.
- Western barred bandicoot (*Perameles bougainville*) – Endangered; extinct on the mainland (except for fenced population on Heirisson Prong), occurs on three islands.
- Numbat (*Myrmecobius fasciatus*) – Vulnerable; extinct in the arid zone, but persisting in the south-west of WA.
- Red-tailed phascogale (*Phascogale calura*) – Endangered; extinct in the arid zone, but persisting in the south-west of WA.
- Chuditch (*Dasyurus geoffroyi*) – Vulnerable; extinct in the arid zone, but persisting in the south-west of WA.
- Shark Bay mouse (*Pseudomys fieldi*) – Vulnerable; extinct in the arid zone, restricted to three islands.
- Pale field-rat (*Rattus tunneyi*) – not listed as threatened but has suffered a large range contraction and is locally extinct.

Operation Rangelands Restoration A 2020 Vision



Sydney Heads Pass, Earraheedy



Lindsay Gordon Lagoon, Lorna Glen

Where will the animals come from?

Bilbies, western barred bandicoots and mala will be sourced from DEC's captive breeding programs at the Dryandra Captive Breeding Facility and the Peron Captive Breeding Centre. Brushtail possums will be sourced from healthy extant wild populations in the Wheatbelt. Boodies, golden bandicoots and Shark Bay mice will be sourced from healthy populations on off-shore islands. Chuditch, pale field rats and red-tailed phascogales will be captive bred at Perth Zoo.



Rufous hare wallaby

How will the animals be monitored when they are released?

The released animals will be fitted with small radio transmitters and monitored continuously for at least the first three months after they are released. Radio-tracking, together with an ongoing trapping program, will provide valuable information about their survivorship, breeding, home range, dispersal, diet and habitat utilisation and population dynamics. The sandy roads and tracks in the release area will also be used to monitor animal activity.

What are the animals' chances of survival?

Research scientists are confident that with effective fox and feral cat control, and appropriate fire management, the animals have a good chance of establishing. If the animals fail to establish, scientists will obtain valuable information about why they became extinct in the first place, leading to better conservation management in the rangelands.



Tall mulla mulla



Hakea minyma



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For more information, contact DEC's Goldfields Region office on (08) 9080 5555

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