Concept Plan SP 2017-055

Rangeland restoration at Matuwa Kurrara Kurrara: the next phase

Animal Science

Project Core Team

Supervising Scientist	Cheryl Lohr
Data Custodian	Cheryl Lohr
Site Custodian	

Project status as of April 16, 2019, 7:25 a.m.

New project, pending concept plan approval

Document endorsements and approvals as of April 16, 2019, 7:25 a.m.

Project Team	granted
Program Leader	granted
Directorate	required

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Biodiversity and Conservation Science Program

Animal Science

Departmental Service

Service 6: Conserving Habitats, Species and Communities

Aims

- **Research on arid rangeland fauna reconstruction**
  - Review methods for estimating animal abundance inside predator-free compound at Matuwa.
  - Monitor the health and reproductive status of populations of fauna inside the Matuwa predator-free compound.
  - Collect genetic samples from animals inside the compound for assessment of the genetic health of translocated populations.
  - Develop and implement a standardised fauna monitoring program across Matuwa landscape.
  - Continue to reintroduce populations of native fauna to MKK.
- **Adaptive management in collaboration with the Martu people**
  - Collaborate with Wiluna Community School to use fauna data as potential educational tool.
  - Estimate the efficacy of cat and dog control for restoring populations of native fauna on the broader MKK landscape by combining datasets collected by Martu Rangers and DBCA.
  - Monitor feral herbivore presence and initiate further control if necessary.
  - Investigate opportunities for the DBCA training courses to be hosted at MKK or in the Goldfields to facilitate training of Martu Rangers.
- **Publish previous research completed at Matuwa in collaboration with previous researchers.**
- **Create an arid rangeland field research centre through collaboration with other research institutions**
  - Pair grazing and control plots to measure vegetation density and quality over time.
  - Assess change in the vegetation on the broader MKK landscape following the reduction in introduced herbivores using remote sensing in 2020.
  - Assess species diet and competition among species inside the predator-free copound.
  - Assess the small vertebrate species assemblage inside and outside the predator-free compound.
  - Assess the effect of patch-burn strategies on the diversity of vegetation and avian species.

Expected outcome

By 2023 we expect to:

1) Reintroduce at least 3 additional species to the predator-free compound.

2) Reintroduce at least 3 additional species to the open MKK landscape, 2 through passive leaching.

3) Suppress feral predator and feral herbivore populations throughout the duration of the project and train MKK rangers in feral predator and herbivore control.

4) Collaborate and engage with the traditional owners of MKK, the Martu, and build their capacity to manage and conserve the native biodiversity of MKK in the future by providing formal training and experience in scientific research and adaptive management.

5) Connect and coordinate research projects from multiple research institutions to create an opportunity for MKK to become an arid rangeland field research centre that may benefit Western Australia's biodiversity, MKK, and the Martu beyond 2023.

Strategic context

Matuwa Kurrara Kurrara (MKK), is located 1100km north-east of Perth, in the rangelands of Western Australia. It crosses the boundary of the Gascoyne and Murchison IBRA regions and is a geologically and biologically diverse landscape. Potentially MKK could support one of the most diverse mammal assemblages in arid Australia, and contribute significantly to the long-term conservation of several threatened species. Restoring the biodiversity of MKK will provide many engagement and training opportunities for DBCA and the traditional owners of MKK, the Martu people. Ultimately, MKK could become a centre for arid zone research with considerable benefit to Western Australia's biodiveristy, MKK, and the Martu people.

The State Government purchased the pastoral leases Lorna Glen and Earaheedy in 2000. The Lorna Glen area (244,000ha) has been actively managed by DBCA and its predecessors in partnership with the Martu people since the purchase. Since 2000, two DBCA Science and Conservation Projects have focussed on restoring the natural ecosystem at MKK. In 2003, *Project Rangelands Restoration: developing sustainable management systems for the conservation of biodiversity at the landscape scale in rangelands of the Murchison and Gascoyne bioregions–managing fire and introduced predators* (SPP 2003-004) was initiated. This project was a revision of RPP 60/90 (Project Desert Dreaming) and superceded 60/90 (SCP 2002/06). This project focused on restoring patch-burn dynamics, and reducing the abundance of feral herbivores to restore the native vegetation on MKK. In 2012, the project *Rangelands restoration: reintroduction of native mammals to Lorna Glen (Matuwa)* (SPP 2012-024) was funded by the DBCA Science and Conservation Division, Goldfields Region and the Chevron Gorgon Gas Project – fauna translocation offset fund. This project focussed on reintroducing native fauna species to the open MKK landscape, and for species particularly vulnerable to predation, translocated species into a predator-free compound on Matuwa. Exclusive Native Title was awarded over both pastoral leases in 2014 and they now form the Matuwa Kurrara Kurrara Indigenous Protected Area (MKK IPA) that has a formal indigenous management group (Tarlka Matuwa Piarku Aboriginal Corporation, TMPAC) who approve all activities. Due to the creation of the MKK IPA and several staffing changes we are proposing a new science and conservation project that will combine the aims and activities of the two previous projects (SPP 2003-004 and SPP 2012-024) to create a new project with a greater focus on working with the traditional owners to further the restoration of MKK. This project is also funded by the Chevron Gorgon Gas Project – fauna translocation offset fund.

Our proposed project meets most of DBCA's guiding principles for conservation including: 1) establish, augment and maintain populations in the wild; 2) manage threats; 3) test the efficiency and effectiveness of management techniques at a landscape scale; 4) prioritise conservation by the conservation and iconic status of species, contribution to ecosystem function, likelihood of success, stakeholder interest and community values; 5) use scientific evidence, innovation and an adaptive management context to manage an ecosystem and respond to changing circumstances; and 6) work in partnership with other conservation organisations, researchers, and local communities.

Expected collaborations

We expect to develop collaborations with many other research and training institutions, non-profit conservation organisations and the local community, including:

DBCA Goldfields Region
MKK ranger program
Wiluna school and Tafe
Western Australia's Universities
BirdLife Australia
Bush Heritage
The Australian Wildlife Conservancy.

Proposed period of the project

Oct. 11, 2017 – June 30, 2023

Staff time allocation

Role	Year 1	Year 2	Year 3

Role	Year 1	Year 2	Year 3
Scientist	1.0	1.0	1.0
Technical	1.0	1.0	1.0
Volunteer	0.5	0.5	0.5
Collaborator	1.0	1.0	1.0

Indicative operating budget

Source	Year 1	Year 2	Year 3
Consolidated Funds (DPaW)			
External Funding	450,000	450,000	