**Concept Plan SP 2003-004**

# 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

**Ecosystem Science**

## Project Core Team

| | |
|---|---|
| **Supervising Scientist** | Neil Burrows |
| **Data Custodian** | |
| **Site Custodian** | |

## Project status as of Sept. 27, 2017, 9:21 a.m.

Approved and active

## Document endorsements and approvals as of Sept. 27, 2017, 9:21 a.m.

| | |
|---|---|
| **Project Team** | granted |
| **Program Leader** | granted |
| **Directorate** | granted |

# 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

## Science and Conservation Division Program

Ecosystem Science

## Parks and Wildlife Service

Service 2: Conserving Habitats, Species and Ecological Communities

## Aims

It is hypothesized that mammals, as well as being important in their own right, are also 'ecosystem engineers', aiding dispersal of plant propagules, nutrient cycling and increasing water permeability through digging and feeding activity. We have recently installed quadrats to measure any benefits to vegetation cover and plant species richness generally accruing from the presence of mammals that were extinct from these ecosystems for many decades.

Murphy *et al.*(2005) have reported the benefits to sandalwood recruitment and regeneration in the presence of woylies (*Bettongia penicullata*), which dispersed and cached sandalwood seed at Dryandra woodland and Karakamia Sanctuary. Brand (1999) has also demonstrated the importance of grazing by introduced herbivores (domestic stock) on decimating sandalwood recruitment and degrading the condition of host plants in the WA rangelands. In addition to monitoring the general condition of the vegetation, I am proposing to specifically monitor a) the role of small–medium size marsupials (including Boodie - *Bettongia lesueur* and b) the effects of excluding grazing by introduced and native herbivores in the recruitment and regeneration of WA sandalwood *Santalum spicatum*.

Rather than create a new SPP for this work, I would prefer to include it as an addendum to SPP 93/004 and an extension of the monitoring protocol outlined in the SPP and the Rangelands Restoration Adaptive Management Plan.

## Expected outcome

## Strategic context

## Expected collaborations

## Proposed period of the project

None – None

## Staff time allocation

| Role | Year 1 | Year 2 | Year 3 |
|---|---|---|---|
| Scientist<br>Technical<br>Volunteer<br>Collaborator | | | |

## Indicative operating budget

| Source | Year 1 | Year 2 | Year 3 |
|---|---|---|---|
| Consolidated Funds (DPaW) | | | |

| Source | Year 1 | Year 2 | Year 3 |
|---|---|---|---|
| External Funding | | | |