Concept Plan SP 2016-030

Dirk Hartog Island National Park Ecological Restoration Project – fauna reconstruction

Animal Science

Project Core Team

Supervising Scientist	Saul Cowen
Data Custodian	Saul Cowen
Site Custodian	

Project status as of July 5, 2021, 12:13 p.m.

Update requested

Document endorsements and approvals as of July 5, 2021, 12:13 p.m.

Project Team	granted
Program Leader	granted
Directorate	granted

Dirk Hartog Island National Park Ecological Restoration Project – fauna reconstruction

Biodiversity and Conservation Science Program

Animal Science

Departmental Service

Service 7: Research and Conservation Partnerships

Aims

Dirk Hartog Island (DHI) is Western Australia's largest island (62,000 ha) and is located in the Shark Bay World Heritage Area. Historically the island is significant as the site of the first European landing on Australia's west coast. Between 1869 and 2009, DHI was a pastoral lease running up to 20,000 sheep at a time; during this time cats were introduced and became feral. Goats were introduced during the construction of the light house in 1908 and readily established on the island. In 2009 most of DHI became a national park managed by the Department of Parks and Wildlife (some freehold was retained by the former pastoral lessee). Because of its former diverse mammal fauna, the island has long been considered a suitable site for an ecological restoration project, and funding provided by the Net Conservation Benefits associated with the Gorgon Gas Project on Barrow Island allowed this to proceed. In 2011 a program to eradicate or remove all the sheep, feral goats and feral cats was commenced. This has progressed well and is anticipated to be completed in 2017/18.

A major component of the ecological restoration project is the reconstruction of the vertebrate fauna that once occurred on DHI. Historically, 13 native terrestrial mammal species occurred on the island, however all but three species have become locally extinct. This 12 year project proposes to reintroduce ten species of mammal: the boodie (*Bettongia lesueur*), western barred bandicoot (*Perameles bougainville*), woylie (*Bettongia penicillata*), mulgara (*Dasycercus blythi*), dibbler (*Parantechinus apicalis*), Shark Bay mouse (*Pseudomys fieldi*), greater stick-nest rat (*Leporillus conditor*), desert mouse (*Pseudomys desertor*), heath mouse (*Pseudomys shortridgei*) and chuditch (*Dasyurus geoffroii*). In addition the threatened rufous hare-wallaby (*Lagorchestes hirsutus*) and banded hare-wallaby (*Lagostrophus fasciatus*) will be introduced to DHI to help improve their conservation status. The water rat (*Hydromys chrysogaster*) and the thick-billed grass-wren may also be reintroduced.

Aims:

- To assess and monitor source populations, both genetically and quantitatively, of the species proposed for translocation, and determine optimum founder source and number than can be removed without adversely impacting source populations.
- To undertake translocations of the selected species and monitor their success.
- To reconstruct the terrestrial mammal fauna, restore ecological function to DHI, and improve the conservation status of the translocated threatened species.

Expected outcome

To re-establish the terrestrial mammal fauna assemblage of Dirk Hartog Island to pre-European discovery at 1616, and to restore the ecological processes of the island. In doing so, conserve and increase the conservation status of several threatened and priority native mammal species and enhance the intrinsic value of Dirk Hartog Island.

Strategic context

This project delivers on Science and Conservation Division's strategic priorities by conserving and managing the State's native animals through recovery of key animal species. It also directly contributes to the management of the Department's lands, plants and animals for tourism.

Expected collaborations

Murdoch University: Dr Peter Spencer
Dirk Hartog Island resort
NESP Threatened Species Recovery Hub

Proposed period of the project

July 1, 2016 – June 30, 2030

Staff time allocation

Role	2016/17	2017/18	2018/19
Scientist	1.60	1.60	1.60
Technical	1.50	1.50	1.50
Volunteer	1.00	1.00	1.00
Collaborator	0.20	0.20	0.20

Indicative operating budget

Source	2017/18	2018/19	2019/20
Consolidated Funds (DPaW)	205,000	212,000	216,000
External Funding	411,500	365,100	950,200