Project Plan SP 2011-021

Western Australian terrestrial fauna surveys

Ecosystem Science

Project Core Team

Supervising Scientist	Lesley Gibson
Data Custodian	Lesley Gibson
Site Custodian	Lesley Gibson

Project status as of Oct. 10, 2018, 2:03 p.m.

Update requested

Document endorsements and approvals as of Oct. 10, 2018, 2:03 p.m.

Project Team	granted
Program Leader	granted
Directorate	granted
Biometrician	required
Herbarium Curator	not required
Animal Ethics Committee	not required

Western Australian terrestrial fauna surveys

Biodiversity and Conservation Science Program

Ecosystem Science

Departmental Service

Service 6: Conserving Habitats, Species and Communities

Project Staff

Role	Person	Time allocation (FTE)
Supervising Scientist	Mark Cowan	0.8
Supervising Scientist	Lesley Gibson	0.4
Research Scientist	Allan Burbidge	0.1

Related Science Projects

This SPP is designed to include localised terrestrial fauna surveys and monitoring, and complements the Western Australian Wetland Fauna Survey project (new SPP). Larger survey projects with similar methods and objectives are the biological surveys of the Carnarvon Basin, Wheatbelt (SPP1998-020), Pilbara (SPP2004-002 and 2004-004) and Kimberley islands (2007-001).

Proposed period of the project

July 25, 2013 – None

Relevance and Outcomes

Background

The Department of Environment and Conservation (with the assistance of the WA Museum) has a long-standing commitment to undertaking regional biogeographic surveys of the State. Since the 1970s, there have been major regional surveys of the Eastern Goldfields, Nullarbor, Kimberley rainforests, southern Carnarvon Basin, the Wheatbelt and the Pilbara (e.g. McKenzie et al. 1991; Burbidge et al. 2000; Keighery et al. 2004, George et al. 2011). Other major surveys cover parts of the Kimberley islands, Great Sandy Desert, Gibson Desert, Little Sandy Desert, Dampier Peninsula, Murchison, Gascoyne, southern forests and numerous existing and proposed conservation reserves (e.g. Miles and Burbidge 1975; Burbidge and McKenzie 1983; Gibson and McKenzie 2012, Keighery et al. 2007). These surveys have underpinned the selection of areas for the conservation reserve system, provided information to determine conservation status of species and filled significant gaps in biodiversity knowledge. While these large scale surveys provide analyses of biodiversity patterning for regional-scale conservation planning, sites are usually too sparse and often lack detail at finer scales. The more localised surveys undertaken will fill spatial and/or habitat gaps in the larger surveys, extend geographic coverage, assist in resolving taxonomic issues, increase ecological understanding, provide information on fine-scale biodiversity patterns and in many cases complement regional surveys.

Aims

The aims of the surveys covered by this SPP are:

- To provide understanding of landscape scale terrestrial fauna biodiversity and concomitant patterning to inform local conservation planning and as baselines for future monitoring.
- To provide better data on the distribution, ecological tolerances and conservation status of terrestrial species and communities.

Expected outcome

The immediate aims of the individual projects vary depending on the needs of the funding source, but usually contribute to improved species distributional and ecological understanding, prioritizing conservation actions by local managers and/or assessing potential environmental impacts of land use proposals.

Individual survey projects: Ability of regional conservation managers to understand local biodiversity patterning and its underlying drivers and use it to a) assess environmental impacts, b) prioritise conservation actions, c) set biodiversity targets d) establish baselines for monitoring and e) monitor change.

Projects in combination: Improved understanding of species distributions and habitat requirements at a State level. This will contribute to bioregionalisation analyses, analysis of species' conservation status and analyses of the relationships between species and broad scale gradients and threats such as climate change.

Knowledge transfer

Primary users of the knowledge coming out of these projects are Commonwealth government agencies and/or facilitated projects (e.g. ABRS, ANHAT, TERN, ACRIS), DEC conservation managers, including those in regional offices, Species and Communities Branch, Natural Resources Management Branch and Environmental Management Branch and WA Museum. This knowledge is primarily transferred to the above users via reports (e.g. Cowan 2011, Cowan and Parkin 2012), physical data and oral presentations tailored to the needs of particular users (usually those that provided the funding).

Tasks and Milestones

There are no set timelines for this SPP as it covers one or more surveys at a time, each with their own milestones and timelines. Some years there may be no surveys run under this SPP.

References

Burbidge, A.A. and McKenzie, N.L. (eds) (1983). Wildlife of the Great Sandy Desert. Western Australian Wildlife Research. Bulletin No. 12: 1-127. Department of Fisheries and Wildlife, Perth.

Burbidge, A.H., Harvey, M.S. and McKenzie, N.L. (eds) (2000). Biodiversity of the southern Carnarvon Basin, Western Australia. Records of the Western Australian Museum Supplement No. 61: 1-595.

Cowan, M.A. (2011). Vertebrate Survey in Cane River Conservation Park with a focus on the Nanutarra Block. Report to Commonwealth Department of Sustainability, Environment, Water, Population and Communities.

Cowan, M.A and Parkin, T. (2012). Vertebrate Survey of Credo Station. Report to Commonwealth Department of Sustainability, Environment, Water, Population and Communities.

George, A.S., McKenzie, N.L. and Doughty, P. (eds) (2011). A Biodiversity Survey of the Pilbara Region of Western Australia. Records of the Western Australian Museum, Supplement No. 78, Part 1: 1-311.

Gibson, L.A. and McKenzie, N.L. (2012). Identification of biodiversity assets of selected Kimberley islands: background and implementation. Records of the Western Australian Museum, Supplement No. 81: 1–14.

Keighery, G.J., Halse, S.A., Harvey, M.S. and McKenzie, N.L. (2004). A biodiversity survey of the Western Australian agricultural zone. Records of the Western Australian Museum Supplement No. 67: 1-384.

Keighery, G.J., Gibson, N., van Leeuwen, S., Lyons, M.N. and Patrick, S. (2007). Biological survey and setting priorities for flora conservation in Western Australia. Australian Journal of Botany 55: 308-315.

McKenzie, N.L., Johnston, R.B. and Kendrick, P.G. (eds) (1991). Kimberley Rainforests of Australia. Surrey Beatty & Sons: New South Wales.

Miles, J.M. and Burbidge, A.A. (eds) (1975). A Biological Survey of the Prince Regent River Reserve, North-west Kimberley, Western Australia. Western Australian Wildlife Research. Bulletin No. 3: 1-116. Department of Fisheries and Wildlife, Perth.

Study design

Methodology

Site selection. This is dependent on the objectives of each survey, but usually involves selecting a suite of survey sites that best represent the diversity of geological/habitat types present.

Survey techniques. Standard survey methods used in other recent biological surveys (e.g. Pilbara survey, the Kimberley island survey) will be employed. This includes any combination of pitfall, cage, Elliott, funnel and camera traps, foraging, spotlighting and opportunistic sightings.

Physical/chemical habitat descriptions. Site descriptors (e.g. Landsystem, vegetation, landform setting and substrate attributes) will be recorded for each survey site. Additionally, soil samples may be collected and analysed for their chemical properties (budget and specific project dependent).

Identifications. Identifications will be to the lowest taxonomic resolution possible. External taxonomic assistance will be sought where needed.

Data analysis. Dependant on aim of specific project and may range from basic inventory to a combination of multivariate analyses including modelling and ordination/classification methods.

Biometrician's Endorsement

required

Data management

No. specimens

This is likely to vary widely depending on the focus of the individual project and taxa.

Herbarium Curator's Endorsement

not required

Animal Ethics Committee's Endorsement

not required

Data management

Data will be managed by the relevant Project Leader within the Biogeography Program at the Woodvale Wildlife Research Centre. Depending on the nature of the project, datasets will be made available within reports and provided to public databases such as NatureMap. Specimens will be lodged at the Western Australian Museum.

Budget

Consolidated Funds

Source	Year 1	Year 2	Year 3
FTE Scientist			
FTE Technical			
Equipment			
Vehicle			
Travel			
Other			
Total			

External Funds

Source	Year 1	Year 2	Year 3
Salaries, Wages, OVertime			
Overheads			
Equipment			
Vehicle			
Travel			
Other			
Total			