

**PROCEEDINGS OF THE AUSTRALIAN RANGELAND SOCIETY
BIENNIAL CONFERENCE**

Official publication of The Australian Rangeland Society

Copyright and Photocopying

© The Australian Rangeland Society 2012. All rights reserved.

For non-personal use, no part of this item may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without prior permission of the Australian Rangeland Society and of the author (or the organisation they work or have worked for). Permission of the Australian Rangeland Society for photocopying of articles for non-personal use may be obtained from the Secretary who can be contacted at the email address, rangelands.exec@gmail.com

For personal use, temporary copies necessary to browse this site on screen may be made and a single copy of an article may be downloaded or printed for research or personal use, but no changes are to be made to any of the material. This copyright notice is not to be removed from the front of the article.

All efforts have been made by the Australian Rangeland Society to contact the authors. If you believe your copyright has been breached please notify us immediately and we will remove the offending material from our website.

Form of Reference

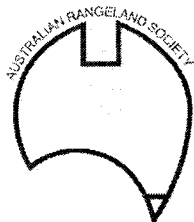
The reference for this article should be in this general form;
Author family name, initials (year). Title. *In*: Proceedings of the nth Australian Rangeland Society Biennial Conference. Pages. (Australian Rangeland Society: Australia).

For example:

Anderson, L., van Klinken, R. D., and Shepherd, D. (2008). Aerially surveying Mesquite (*Prosopis* spp.) in the Pilbara. *In*: 'A Climate of Change in the Rangelands. Proceedings of the 15th Australian Rangeland Society Biennial Conference'. (Ed. D. Orr) 4 pages. (Australian Rangeland Society: Australia).

Disclaimer

The Australian Rangeland Society and Editors cannot be held responsible for errors or any consequences arising from the use of information obtained in this article or in the Proceedings of the Australian Rangeland Society Biennial Conferences. The views and opinions expressed do not necessarily reflect those of the Australian Rangeland Society and Editors, neither does the publication of advertisements constitute any endorsement by the Australian Rangeland Society and Editors of the products advertised.



The Australian Rangeland Society

ACHIEVING A BETTER BALANCE : INCREASING THE RESERVE SYSTEM IN THE WESTERN AUSTRALIAN RANGELANDS

A. Brandis, F. Batini

Department of Conservation and Land Management, Locked Bag 104 Bentley, WA 6983

ABSTRACT

The rangelands of Western Australia cover about 85% of the state and include the sub-tropical savanna of the Kimberley, the semi arid and arid spinifex, the southern mulga shrublands and the extensive chenopod plains of the Nullarbor. About 40% of the rangelands are managed for the production of meat and wool under a pastoral lease system. Many important ecosystems occur within these pastoral leases, where after 150 years of settlement, many changes to plant and animal populations have occurred. Biological diversity in the rangelands is declining most noticeably with the extinction, or reduction in the distribution and abundance, of many medium sized mammal species. The recognition of the need to conserve the full array of indigenous ecosystems and species has occurred at all community and political levels in various international, national, state and territory and local settings. The key to conservation of the State's biodiversity is the establishment of a comprehensive, adequate and representative reserve system. There is also recognition of the need for cooperative management of off-reserve land lands having high conservation values. The Western Australian government is committed to the conservation of flora and fauna through the establishment of an expanded system of terrestrial reserves and the setting of environmental objectives for other land uses. A pastoral land acquisition program is now well under way with the cooperation of key interest groups and to date over two million hectares of land has been purchased for eventual addition to the reserve system. Off reserve management agreements have also been developed with pastoral lessees.

INTRODUCTION

The department of Conservation and Land Management (CALM) is the lead agency with responsibility for the conservation of biodiversity in Western Australia. CALM manages over 20 million hectares of public land on behalf of the community of Western Australia for the long term conservation of flora and fauna. CALM also has responsibility for the management of wildlife (flora and fauna) under the Wildlife Conservation Act on all other land tenures. Management for the conservation of biodiversity is largely based both on the protection of habitats, ecosystems and ecological processes within the reserve system and through encouraging ecologically sustainable practices on adjacent lands. About 14 million hectares of conservation reserves occur in the rangelands.

The rangelands cover 85% of Western Australia. They are mostly the arid and semi arid regions but also include the tropical savanna woodlands in the north of the State and the chenopod plains of the Nullarbor. The rainfall over much of the semi arid and arid zones is characteristically low and variable, although the tropical areas to the north receive seasonally high rainfall. The main ecosystems are native grasslands, shrublands, woodlands and tropical savanna woodlands.

The rangelands are comprised of a diverse array of landscapes reflecting various climatic, geological, ecological and land use processes. They support a range of economic, social and cultural activities including mining, conservation, pastoral, horticultural, irrigated agriculture, tourism and recreation, and traditional Aboriginal activities. Approximately 40% of the rangelands is managed for meat and wool production under the pastoral lease system. The remainder of the rangelands are made up of vacant crown land, Aboriginal land, and conservation reserves (5%). Pastoral activities are the most extensive land use in the rangelands which have resulted in widespread environmental degradation including loss of species.

Much of the rangelands have been altered over a relatively short period of time. Today, about 20%, or 19 million hectares of the pastoral zone (Dept. Agriculture, WA, 1988) are judged to be in poor condition (loss of palatable perennial plant species; reduction of foliar coverage; increases in populations of unpalatable species, accelerated soil erosion).

CONSERVING BIODIVERSITY

The recognition of the need to conserve the full array of indigenous ecosystems and species has occurred at all community and political levels in various international, national, state and Territory and local settings. For example, the World Convention on Biological Diversity, dealt at a global level with issues such as the conservation of biodiversity and the sustainable use of natural resources. The development of the National Strategy for the Conservation of Biodiversity as a means of providing guidance for the conservation and sustainable management of Australia's biodiversity resulted from the ratification of this Convention.

At a global level, biological diversity is declining due to population and development pressures. In the rangelands of Western Australia, loss of biological diversity is occurring due to the modification, and sometimes destruction, of habitats caused by the impacts of grazing, soil erosion, and the introduction of exotic plants and animals which compete with and displace native species.

Biodiversity in the rangelands is declining most noticeably with the extinction, or reduction in the distribution and abundance, of many medium sized mammal species (Burbidge and McKenzie, 1989). Conservation of biodiversity is essential for the maintenance of ecological processes, including life support systems such as clean air and water, and in maintaining options for future use.

The challenge is to integrate conservation, preventative and remedial actions and ongoing management of the rangelands to protect biological diversity and maintain the ecological processes which provide the productive capacity of its natural resources. This challenge is made more difficult by the fragile nature of many rangeland ecosystems, the unpredictable nature of rainfall and a harsh economic environment.

In 1992 the Prime Minister's Statement on the Environment addressed the Commonwealth's commitment to the co-operative development of a national reserve system. As a result, the National Reserves System Co-operative Program (NRSCP) was established. The NRSCP aims to facilitate the development of a Comprehensive, Adequate and Representative (CAR) reserve system to be progressively established by the year 2000.

In 1993 the Commonwealth Government acknowledged that Australia's rangelands, though a valuable asset, were facing continued degradation from a range of threatening processes including overgrazing, fire, and introduced animals and plants. The recently released National Principles and Guidelines for Rangeland Management, 1999, clearly recognises the importance of the rangelands unique ecosystems and habitats for rare, threatened and endangered species. There is also the recognition that past management practices (and perhaps some of the current activities) have resulted in accelerated land degradation including vegetation decline, erosion and a decline in biodiversity calling into question the sustainability of the industry in the long term.

At the State level the WA Government has recently released a rangeland management policy, *Managing the Rangelands*, which makes a clear commitment to conserving native flora and fauna through the establishment and management of a CAR reserve system and the development of environmental objectives for other land uses. The election commitments contained in the WA Coalition Government's *Policies Leading into the 21st Century* are quite specific in relation to conservation. The Government has directed CALM to, *inter alia*, establish the framework of a CAR reserve system, through land acquisition in the pastoral zone, and the co-operative management of off reserve lands by agreement with lessees. CALM is to seek Commonwealth Government funding for

land acquisition and agreement with pastoral lessees for a co-operative approach to land management which is sympathetic to conservation objectives.

The recognition of the need for the conservation of biodiversity is also identified in the Gascoyne - Murchison Rangeland Strategy (GMS) which recommends *inter alia*, the establishment and management of a CAR Reserve System for that region. This Strategy also recognises the need for off-reserve conservation management measures.

EXISTING RESERVE SYSTEM

Most of the conservation reserves in WA are remote, rocky or waterless areas which are unsuitable for pastoral use and fall well short of being a CAR system representing the full array of land surfaces and biological communities.

The Interim Biogeographic Regionalisation of Australia (IBRA,1995) process resulted in the identification of 23 bioregions within the rangelands of WA; these provide the framework for planning the development of the National Reserve System and for identifying gaps in the existing reserve system. Seven of the bioregions occurring across the rangelands of WA are identified as high priority for increasing the reserve system due to the high degree of bias and the small area of land within the reserve system. A further five rangeland bioregions are considered as medium priority for conservation reserve establishment.

In 1995, Hopkins et al., conducted a comprehensive review of reserve system adequacy in WA using Beard's vegetation mapping. By intersecting the vegetation types with reserve system cadastra it is possible to quantify the number of vegetation types within the reserve system and those which are not. Using the Caracas Convention benchmark (which has no scientific basis) that there should be at least 10% of each vegetation type in reserves, it can be shown that about 90% of all vegetation types do not occur or are under-represented in the present reserve system.

INCREASING THE RESERVE SYSTEM

Determining how much land will be required for a CAR reserve system will be quite difficult. In some areas of the State's rangelands there may be little change in species composition and distribution over large tracts of land; in others, species may be confined to quite small areas. Clearly, not all habitats nor land surfaces will be included within any reserve system hence the need to manage other (non vested) land for conservation purposes in cooperation with other land managers.

The expenditure of public funds for land acquisition and ongoing management costs requires a transparent, structured approach to identifying natural ecosystems and areas of significant conservation value. Criteria for prioritising land which could be acquired for addition to the conservation estate or managed by way of voluntary agreement has been developed by CALM and include the Interim Scientific Guidelines for Establishing the National Reserve System, as well as other criteria including social, cultural, economic and planning matters. This approach to identifying areas of the state with high conservation values should ensure that a CAR reserve system is achieved.

CALM has also consulted with industry bodies including the Pastoral Lands Board, Agriculture Western Australia, Pastoralists and Graziers Association, Chamber of Minerals and Energy and the Conservation Council of Western Australia. There has been broad support for the land acquisition program.

Any land acquisition proposal will take account of mineral prospectivity, including petroleum, existing or proposed infrastructure such as transport and communications corridors, and native title implications.

CALM has been purchasing pastoral leases for inclusion in the formal reserve system for some time now. Approximately 2.5 million hectares of pastoral land has been purchased over the past two years in the GMS region increasing the CALM managed area from approximately 1 million hectares to 3.5 million hectares. Other acquisitions have occurred in other parts of the rangelands.

OFF RESERVE CONSERVATION LAND MANAGEMENT

CALM is encouraging cooperative development of conservation management on lands which are not within the reserve system. A number of mechanisms are available in legislation, but non statutory means have also been encouraged. The management goal is to conserve biological diversity within existing pastoral management by excluding (or reducing) stock from sensitive areas such as threatened habitats. The result will be a network of areas within the rangelands being managed sympathetically by existing lessees (pastoralists, aboriginal people, mining companies etc.) in accordance with ecologically sustainable development objectives. CALM has entered into a number of formal arrangements with mining companies holding five pastoral leases over the management of their leases for conservation of biodiversity. Discussions are continuing with pastoralists and aboriginal groups.

Opportunities also exist under the CALM Act Section 33(2) for CALM to manage areas of Unallocated Crown Land (UCL), with the approval of the Minister for Lands. Other UCL will be considered for reservation as investigations into conservation values continue.

ONGOING MANAGEMENT

Land acquired for the conservation reserve system requires ongoing active management which includes :

- boundary fencing;
- feral animal control including dingo control (when appropriate);
- weed control;
- water point rationalisation including decommissioning;
- track rationalisation and / or maintenance;
- fire management including fire break establishment and maintenance;
- homestead and infrastructure maintenance;
- liaison with mining companies, local government authorities;
- biological surveys;
- wildlife recovery programs;
- tourism / recreational facilities;
- research and education

Management guidelines will be prepared as an interim measure until formal management plans are developed to ensure that management issues are adequately addressed and that financial and other resources are allocated sufficient to achieve required outcomes. Management practices will conform to accepted best management practice guidelines.

CONCLUSION

CALM is progressively implementing the land acquisition program which will result in a reserve system which is based on a systematic and comprehensive selection process. In many parts of the state, there is very little land set aside for the conservation of biodiversity in a formal reserve system. The emergence of a CAR reserve system will establish a new balance in land use and lead to the establishment of a world class protected area system.

REFERENCES

Burbidge, A A, and McKenzie, NL, 1989 : Patterns in the modern decline of Western Australia's vertebrate fauna: Causes and conservation implications, *Biol. Cons.* 50, pp140 - 198.

Hopkins, A J M., Coker, J., Beeston, G R., Bowen, P., and Harver, J M., 1996. *Conservation status of vegetation types throughout Western Australia*. Australian Nature Conservation Agency, National Reserves System Co - operative Program, Project No. N703, final report

Thackway, R and Creswell, ID, 1995. An interim biogeographic regionalisation for Australia: A framework for setting priorities in the national reserves system cooperative program, Australian Nature Conservation Agency, Canberra, ACT.

Western Australian Department of Agriculture, 1988. Situation Statement : Soil and Land Conservation Programme in Western Australia, Technical Report, Division of Resource Management, WA Department of Agriculture Submission to House of Representatives Inquiry into Land Degradation