

**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](mailto: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 15<sup>th</sup> 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*

**BRIGALOW OUTLIER:**  
**A resource inventory of the Brigalow vegetation communities  
west of the Culgoa River**

*Therese Wade*

Dept of Conservation and Land Management, NSW

**INTRODUCTION**

Brigalow (*Acacia harpophylla*) communities once covered six million hectares in Queensland and northern New South Wales. Brigalow vegetation occurs west of the Culgoa river in New South Wales and this is the only large area of this vegetation remaining in this State. In recent years a conflict has developed between the management of this resource for grazing and the protection of its conservation value. A resource inventory was needed to guide government policy on clearing of this vegetation.

The objectives of the Brigalow Resource Survey were:

To determine the extent, variety and level of modification of the brigalow vegetation communities

To identify the flora and fauna species of these communities

To clarify the impact of modification for grazing on the natural communities

**BACKGROUND**

The significant conservation value of the brigalow communities in this area is well established by the literature (e.g. MDBMC, 1987). The grazing value of the natural communities, however, is low and leaseholders have sought permission to clear or thin the tree layer. This requires approval from the Western Lands Commissioner (Western Lands Act 1901 (NSW)). Permission cannot be given without full consideration of the impact on the natural environment (Environmental Planning and Assessment Act 1987 (NSW)). This impact could not be assessed without information on the extent and composition of these communities.

**METHOD**

The vegetation of the area was mapped from aerial photographs. Vegetation was classified into "types" based on the dominant species of the tallest layer. The brigalow communities were further classified according to the level of modification of the tree layer.

A flora and a fauna survey were conducted concurrently over a two week period in October 1991. Climatic conditions over the 18 months preceding the survey were extremely dry.

The fauna survey was carried out by the Royal Zoological Society of New South Wales (Ellis and Wilson, unpubl.). Further information was provided by H. Parnaby of the Australian Museum who conducted an independent survey during November.

The flora survey sampled 55 sites across the range of brigalow vegetation types and modification classes. This survey was carried out with assistance from the New South Wales National Parks and Wildlife Service.

**RESULTS**

The brigalow vegetation communities occur on level plains between the floodplains associated with the Culgoa or Warrego rivers and a slightly elevated band of ridges, sandhills and sandplain.

Four "types" of brigalow vegetation were identified. Brigalow is a dominant element of vegetation covering 146,000 hectares. Seventy nine percent of this area has been modified. Half of the modified area has had a major change in community structure. This includes nearly all the woodlands on clay soils. The remaining area of unmodified brigalow woodland is 12,000 hectares and unmodified brigalow-gidgee woodland covers 18,000 hectares.

The flora survey identified 110 plant species in the brigalow vegetation areas sampled. The erratic occurrence and low abundance of many species limits the comparisons that can be made between vegetation types and classes. However the species complement was compared to a species list of brigalow communities in South Central Queensland (Neldner 1984). The majority of the species recorded in this survey were not recorded in the Queensland communities.

The Royal Zoological Society's survey has shown that the area is particularly diverse in reptile species and insectivorous bats. Two of the bats recorded in this survey and one recorded by the Australian Museum are listed as threatened in Schedule Twelve of the National Parks and Wildlife Act (1974). Two of the bird species recorded are also on this list.

#### CONCLUSIONS

Most of the brigalow vegetation in this area has been modified. The level of modification is high in half the area affected and low to moderate elsewhere.

No clear distinctions could be made between the floral composition of different vegetation types and classes. More extensive sampling would be needed to determine the impact of modification on brigalow communities.

The species and soil types occurring in communities in this area suggest that they are distinct from brigalow communities found in Queensland.

The fauna identified in two limited surveys include species with significant conservation value.

This project was sponsored by National Estate Grants Program

#### REFERENCES

- Ellis, M. and Wilson, P. (unpubl). An overview of the vertebrate fauna of the brigalow belt north east of Bourke NSW.
- MDBMC (1987) Murray Darling Basin Environmental Resources Study. A report prepared for the Murray Darling Basin Ministerial Council. State Pollution Control Commission, Sydney.
- Neldner, V.J. (1984) Vegetation survey of Queensland. South central Queensland. QLD. Botany. Bull. No. 3 QLD DPI.