

**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

TESTING SUSTAINABLE GRAZING STRATEGIES FOR THE SEASONABLY VARIABLE TROPICAL SAVANNAS

Peter O'Reagain & John Bushell

Department of Primary Industries, QLD Beef Industry Institute, PO Box 976, Charters Towers 4820.

The inability of current management practices to cope with inter-annual rainfall variability is a major threat to the sustainability of grazing enterprises in northern Australia. Recommended grazing strategies like variable stocking are untested and are not widely applied due to the perception that ecological sustainability and profitability are incompatible.

To address this issue a replicated grazing trial was established in 1997 on Wambiana station near Charters Towers (mean annual rainfall 650 mm; C.V. = 38%). Strategies being tested are (i) conservative stocking (8ha/LSU), (ii) heavy stocking (4 ha/LSU), (iii) variable stocking - stock numbers adjusted annually according to available herbage (3-10 ha/LSU), (iv) a variable-SOI (Southern Oscillation Index) strategy - stock numbers adjusted annually according to available herbage and SOI- based rainfall predictions (3-10ha/LSU) and (v) rotational spelling (6 ha/LSU) - one third of the pasture spelled annually as a feed reserve. (LSU = 400 kg steer).

Since the start of the trial rainfall has been exceptional and above average in all seasons. Individual animal production was markedly higher (30-50 kg/beast/annum) under light than under the heavier stocked regimes due to the consistently higher diet quality selected under the former strategies. Conversely, total animal production per hectare (kg/ha) was significantly higher under the heavier stocked regimes, although some animals had to be supplemented in the 2001 dry season to prevent mortality in these treatments. Pasture condition stayed constant or improved in all treatments, due to a combination of burning and above average rainfall.

These results should be regarded as preliminary due to their short-term nature and the exceptionally good seasons experienced since the trial's inception. It is important that the project be continued in the long term in order to quantify the precise trade-off between sustainability and profitability for different grazing strategies.