

Landscape ecology - function and management. Principles from Australia's rangelands.

Editors J. Ludwig, D. Tongway, D. Freudenberger, J. Noble, K. Hodgkinson.

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This reasonably slim volume attempts to provide a framework for understanding the ecological processes occurring in semi-arid woodlands (rangelands) and to provide a basis for gauging the sustainability of various land management practices.

The book is really a summary of some decades' work by CSIRO and in several parts of these rangelands, with emphasis on the results of research at 'Lake Mere' near Louth, in the mulga woodlands of western New South Wales. 'The authors propose a Trigger-Transfer-Reserve-Pulse model to explain landscape (and vegetation) dynamics, and describe the various phases and the linkages and interdependence between them.

In developing this model and describing it in this book, I think they have brought together in a logical way what they and other rangelands workers and managers have known for many years in a disjointed way: that rangelands depend on rainfall events to produce pulses of vegetation growth, that rain water and plant nutrients need to be concentrated into 'patches' to generate optimum production, and that consumption of the production (by grazing or fire) needs to allow for feedback or maintenance of the patches if production is to be sustained.

These principles should be able to be related to all uses of rangelands as well as grazing, and not only in the Australian context.

There are suggestions for simple monitoring of patch condition, techniques for re-establishing patches in degraded systems, and emphasis on the consequences of over-consumption by grazing animals.

The logic of the model is supported by well chosen examples from research results, though a much broader range of results is also available from work outside CSIRO but rarely acknowledged. I can relate the logic to many field applications, and it elucidates some rangelands phenomena not always obvious. It indicates that more attention to landscape variability (or patchiness) at a small scale is necessary for appropriate management. Issues to consider might include concentration on the condition of patches rather than all of the land in a paddock; the choice of where to lop or push mulga to protect or to create patches; and the places to concentrate woody shrub control (in patches).

In some other landscape types the patches may not be so obvious to detect, particularly where degradation has blurred boundaries. However, I am inspired to look for them in future.

I found the book easy to read, enlightening, and posing challenges in putting into practice (in terms of land administration and land management) the principles espoused. The chapters are short (about 10 pages each), have recaps of previous chapters, and summaries at the ends. This can be a little repetitious and probably reflects in part the different authorships. However, not many people will read the book in one sitting, and the reminders help to implant the ideas and recall the story so far.

I think it is an excellent book for government advisory officers and private consultants. Many graziers would benefit from the perspectives provided, but even this size of book (130 odd pages of text) would dissuade those who are not particularly interested.

I feel the book would form a good basis for a series of discussions with land managers to help them 'read the land', understand the consequences of various management sections, and advise them how to restore patchiness.

I noted a couple of typographic errors, an incorrect location for 'Trafalgar' Station, and reference to three non-existent colour plates. Otherwise I found the language, format and style most acceptable.

The book inevitably arrives at the conclusion that many areas of rangelands are overstocked at times (by various classes of animals), due to a variable pasture production regime attempting to support reasonably constant stock numbers.

The scientists have done their bit to explain how the ecological system upon which pastoral production and biodiversity depend operates. This illustrates the value of long term research, the team approach, and the time to think things through: CSIRO seems to be one of the few organisations left where this can still happen.

The real challenge for land managers and administrators is how to reconcile the often over-consumption of vegetation production (and the ultimate decay of landscape functioning) with financial imperatives, social structure and political influence, and derive sensible land tenures and rules that protect all interests.

Peter Walker

Department of Land and Water Conservation, New South Wales