

# Research Briefing Note

Assessing rangeland condition and trend.

**Friedel, M.H., Laycock W.A. & Bastin G.N.** (2000) Chapter 10. *In: Field and laboratory methods for grassland and animal production research* (eds L. 't Mannetje & R.M. Jones) pp. 227-262. CAB International, Wallingford, UK. 447 pp.

## **BACKGROUND**

To manage rangelands well, we need to understand what causes rangelands to change and what the impacts of different uses are. That means the effect of management has to be separated from the effect of environmental variability in these complex environments. The current status of land is often called range condition, while the direction of change is called range trend.

## **APPROACH**

This book chapter is a review. We begin by explaining the ways in which change in rangelands can be conceptualised. How range condition and trend are assessed depends on what underlying model of change fits the circumstances. Most models are limited in their ability to deal with a diversity of spatial and temporal scales. The values implicit in range condition, health and trend, and links to scale, are explained. We outline strategies for assessment, starting with inventory, setting objectives, devising a sampling strategy, and ending with how outcomes are used. Methods of range monitoring are described in detail. Many ground-based methods are available to monitor composition and structure of vegetation as well as soil attributes, for indicating rangeland function. Remotely-sensed methods can be applied over very large areas, to assess vegetation cover or phenology. We discuss when and where to use different techniques and how to analyse the data.

## **CONCLUSIONS**

We conclude that there is no single model or method that fits all situations. The emphasis should be on detecting change, rather than condition at a point in time. Methods should be tailored to fit not only particular environmental characteristics, but also management objectives and the customers for the information. In order to be effective, monitoring should be part of a larger plan of management and implementation, embedded in a cultural, economic and political context.

**Further Information:** Margaret Friedel or Gary Bastin  
CSIRO Sustainable Ecosystems  
PO Box 2111, Alice Springs, NT 0871  
Ph: (08) 89 507100 Fax (08) 89 507187  
E-mail: [margaret.friedel@csiro.au](mailto:margaret.friedel@csiro.au), [gary.bastin@csiro.au](mailto:gary.bastin@csiro.au)

December 2000