

Research Briefing Note

Implementing satellite-based grazing gradient methods for rangeland assessment in South Australia

Bastin, G.N., Tynan, R.W. & Chewings, V.H. (1998) *The Rangeland Journal* 20: 61-76

BACKGROUND

Assessing the impact of sheep and cattle grazing on the rangelands is now an integral part of pastoral lease administration in Australia. Traditional ground-based methods were used in northern South Australia but were unable to reliably separate grazing effects on the vegetation from that caused by variability in rainfall and landscapes.

Northern South Australia has many similarities with central Australia where a range of techniques had been developed for rangeland assessment based on satellite data. These techniques, known as the grazing gradient method, use systematic change in cover with increasing distance from stock water to quantify grazing impact. The Pastoral Management Program of the SA Department of Environment, Heritage & Aboriginal Affairs tested these techniques to assess the condition of their northern grazed rangelands.

AIM

Through cooperation between CSIRO and the Pastoral Management Program to (1) adapt the grazing gradient method to the requirements of the client, (2) provide suitable training and documentation, and (3) test the method's ability to assess grazing impact in a trial area of northern South Australia.

RESULTS

- A procedure was developed which allowed the grazing gradient method to be used in northern South Australia. This required rapid mapping of the different landscapes present (by classifying satellite data), adapting the procedure for determining vegetation cover from satellite data and extensively modifying existing software.
- Suitable training and documentation was provided allowing the Pastoral Management Program to implement the methodology within their own organisation.
- Early results show that the grazing gradient method can measure grazing impact in northern South Australia, with the method being supported by pastoralists and the Pastoral Board.

IMPLICATIONS

Satellite data provide a reliable means for measuring grazing impact using the grazing gradient method. This research method has been made operational within a State agency with responsibility for land management and administration.

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