



# Research Briefing Note

## **Spatial factors in the distribution of cattle in rangelands as detected in patterns of change in vegetation cover.**

**Pickup, G. & Bastin, G.N.** (1997) *Journal of Applied Ecology* 34: 657-667

### **BACKGROUND**

Grazing pressure in Australia's rangelands is centered around watering points. Poorly placed watering points can result in overgrazing of some areas and under grazing of others. Uneven grazing distribution can be reduced by changing paddock shape through fence line relocation, paddock subdivision or by addition, relocation or closure of waterpoints. Models of animal distributions can help these decisions once they are validated for the environment in which they are applied.

### **AIM**

1. To develop models of cattle grazing distribution from satellite data for various landscapes in central Australia.
2. To determine if distance from water and preference for particular types of forage are sufficient to predict animal distributions.

### **RESULTS**

- Patterns of change in vegetation cover, as measured by satellite data, can be used to model grazing animal distributions in central Australia on the basis of distance from water and the grazing preference for individual landscape types.
- Model assumptions about paddock shapes, waterpoint layouts and mixtures of landscape types all appear justified.
- Land degradation has much less effect on the distribution of grazing animals than differences in grazing preference for individual landscape types and stocking rates.

### **IMPLICATIONS**

General animal distribution models, derived from satellite data for broad landscape types, can be based on distance from water and grazing preference. The models are potentially useful for inclusion in decision support software such as RANGEPACK Paddock which are directed at redesigning paddock layout and grazing use. Such changes would usually be achieved by relocating

waterpoints and fencelines to change the distribution and intensity of grazing pressure.

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