



Australia's Rangelands

Analysing natural resources, patterns of use and community assets

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Alternative land management options for the rangelands have important implications for Australia's natural resources – and the communities and industries that depend on their use. The Bureau of Rural Sciences is working to improve our understanding of natural resource use in the rangelands, in particular to:

- identify and locate key natural resource, pastoral and agricultural production assets
- explore tensions between alternative claims on the natural resource base, and
- consider how trade-offs in the use of these assets may be investigated



RANGELAND ASSETS

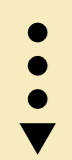
Profiles of rangeland assets describe the natural resource base (physical, environmental and biological), industry and threatening processes

INDICATORS

NATURAL RESOURCE BASE

Biophysical assets (actual and potential) supplied by nature enabling production of goods and services – including conservation

- Annual Rainfall
- Carbon: Biomass
- Net Primary Productivity
- Vertebrate Species Richness
- Vascular Plant Species Richness
- Mineral Deposits



PRODUCTION BASE

The management of resources to produce goods and services

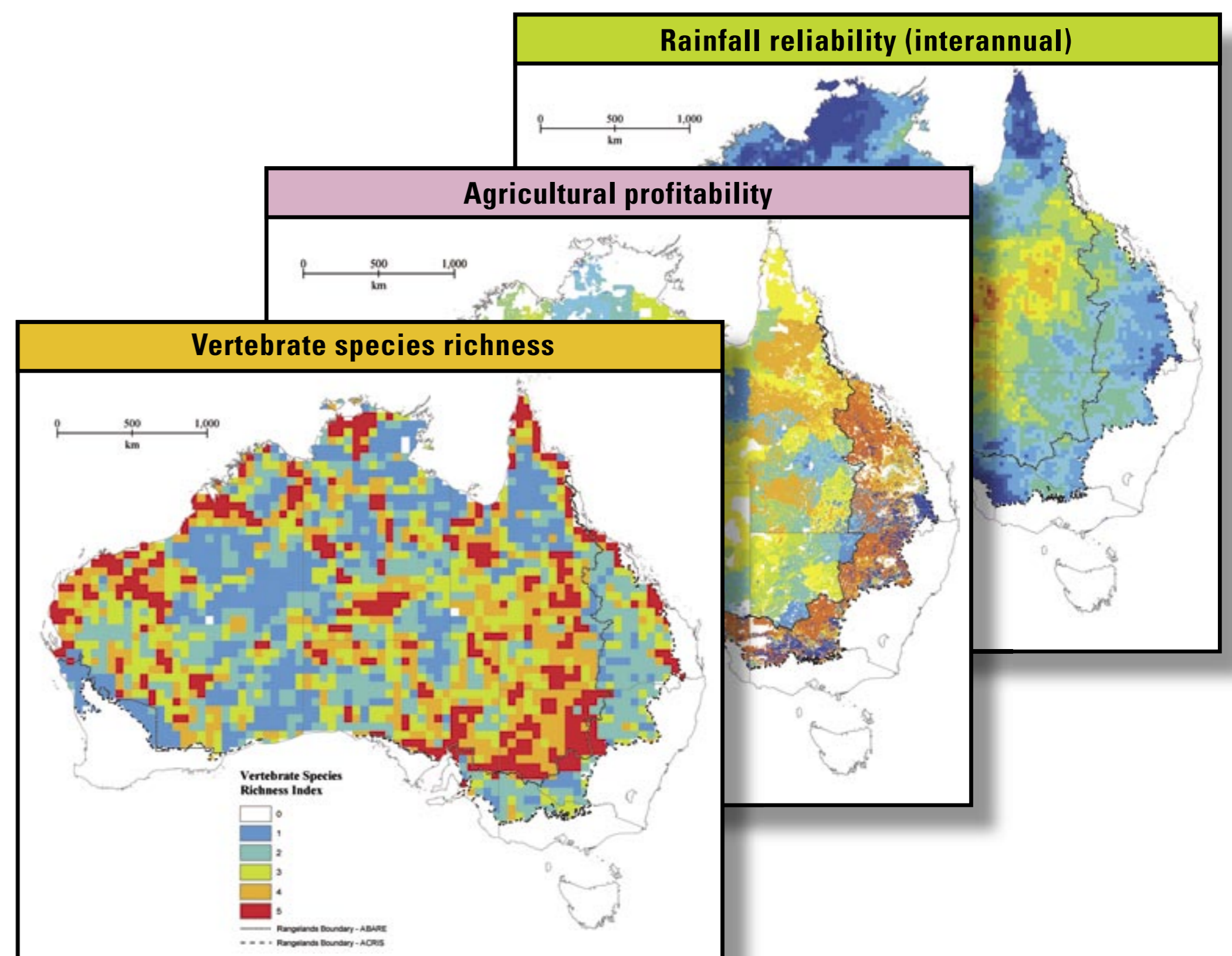
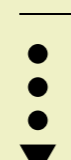
- Agricultural Profitability
- Stocking Density
- Production Costs
- Land Available for Primary Production
- Vegetation Grazeability
- Mine Occurrence



THREATENING PROCESSES

Processes that threaten sustainability of natural resources and production

- Grazing Density
- Erosion Potential
- Vegetation Sensitivity
- Groundwater Sustainability
- Rainfall Reliability (interannual)
- Feral Animal Density
- Fire Frequency



EXPLORING TENSIONS

Tensions between different uses are explored using multi-criteria decision analysis (MCDA) and profiles of rangeland assets

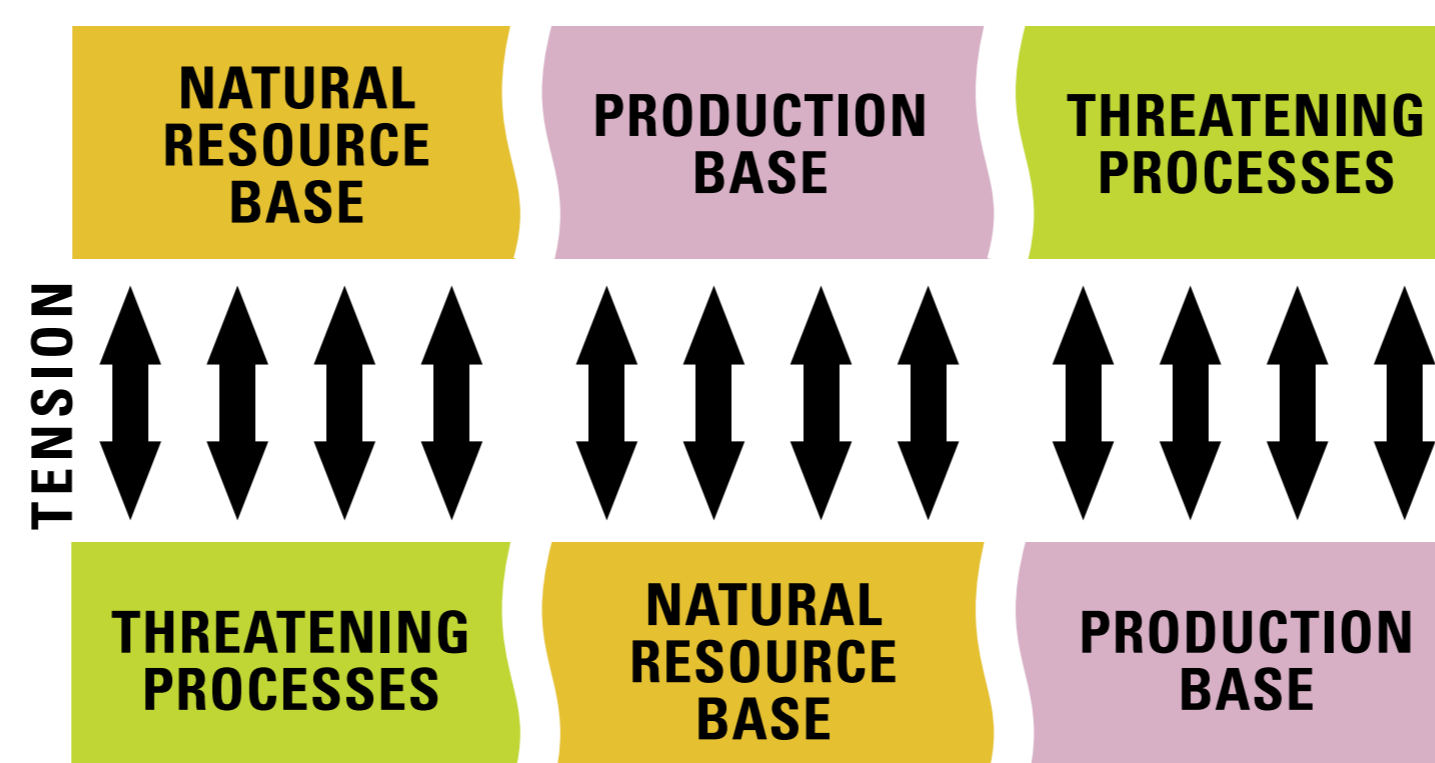
An MCDA approach provides for:

- simple linear addition and combination of data layers
- a balance between evidence-based science and soft systems approaches to decision-making
- flexible exploration of relationships

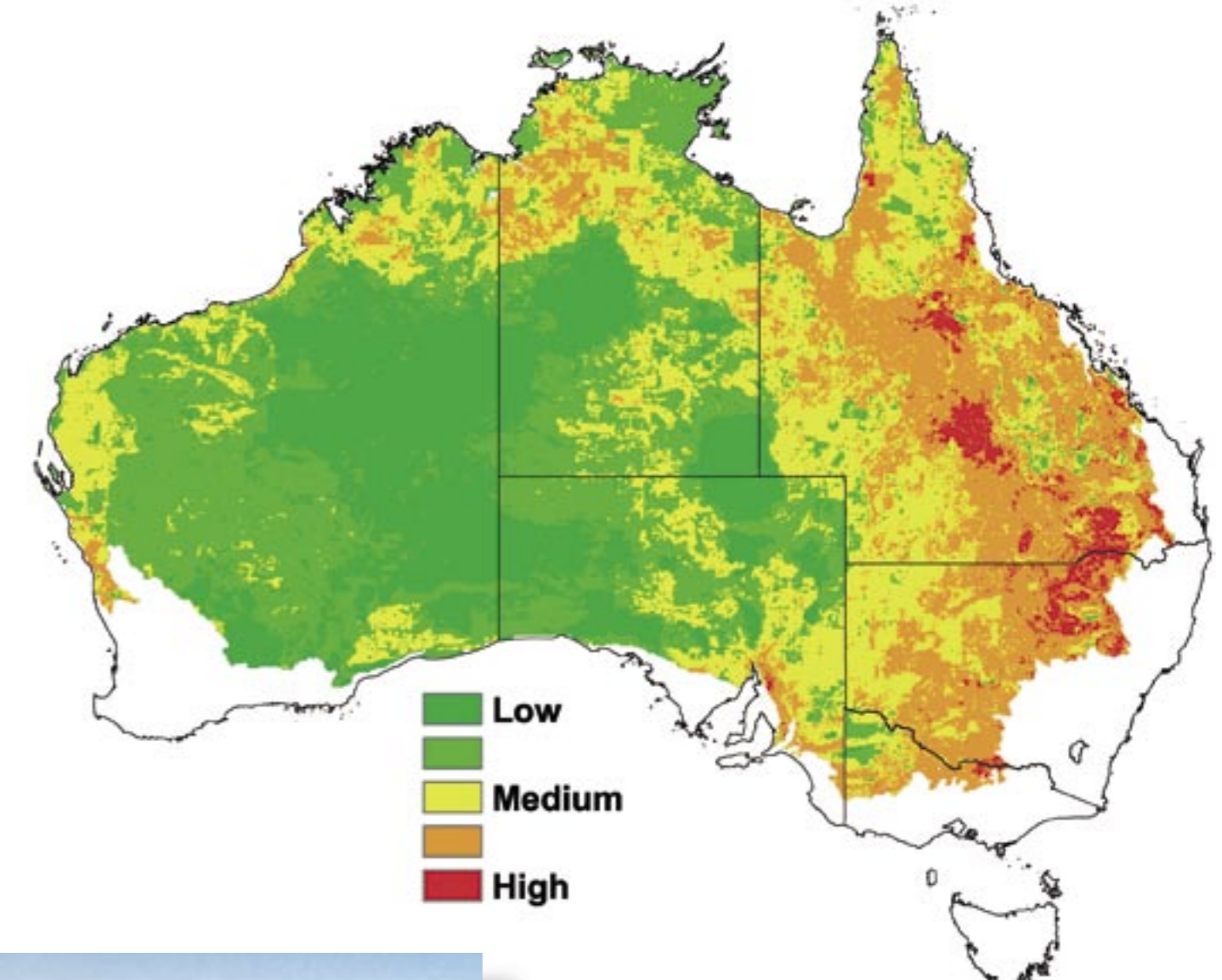
Analysis in 6 steps: an iterative process

- 1 Define problem and decision criteria
- 2 Identify variables that influence decision criteria
- 3 Assemble data inputs and establish relative rating
- 4 Design operations and functions for synthesis
- 5 Develop viewpoint profiles with clients
- 6 Workshop results, develop consensus view / redefine problem

Framework for analysing different claims on the natural resource base



An illustrative index of the potential for tension between different claims on natural resources in the rangelands



OUTCOMES

It is anticipated that this analysis will help:

- Identify key issues and information gaps
- Guide the development of more detailed investigations
- Inform policy development for the rangelands
- Scope alternative landscape futures

FURTHER INFORMATION

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Natural Heritage Trust
Helping Communities
Helping Australia
An Australian Government Initiative

References

National Land and Water Resources Audit (2001). Rangelands – Tracking Changes; Australian Collaborative Rangeland Information System. National Land and Water Resources, Canberra.

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