

GEOSCIENCE UNDERPINNING NATURAL RESOURCE MANAGEMENT DECISIONS

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Australia's future is dependent to a greater degree than that of other developed nations on the sustainable use and management of its natural assets. This requires that land use and natural resource management decisions be based on sound understanding of the systems in which these assets occur. While individual decisions are usually the responsibility of the States or local governments, the Commonwealth has an interest in outcomes and collects and manages a wealth of information that could be used to underpin such decisions.

It is an inescapable fact that there are significant gaps in our understanding of most natural systems, and the impacts of human activity on these. Decreasing these gaps in knowledge, and moving from a largely symptomatic to a more strategic approach, requires multi-disciplinary studies to enhance understanding of regions and anthropogenic impacts across a range of issues, environments and climatic regimes. In these geoscience can play an important role because:

- geology exerts major controls on many important factors including the physical and chemical features of soils, erosion, groundwater, topography, scenery, vegetation, and distribution of mineralisation; and
- geoscience approaches and technologies—most commonly applied in mineral exploration—can decrease risks in land use and natural resource management decisions by providing important insights into landscape evolution and what is happening below the top metre or so that is studied by traditional soil, water and environmental studies.

Geoscience Australia's activities in relation to land use and natural resource management are conducted mainly through the Cooperative Centre for Landscape Environments and Mineral Exploration (CRC LEME). We have committed key staff to CRC LEME, who are heavily involved in adding value to the existing framework for salinity mapping under the National Action Plan for Salinity and Water Quality (NAP), and in the development of other environmental applications of regolith geoscience.

Geoscience Australia is consulting with various groups in exploring opportunities to increase its contributions in support of an enhanced information base for decisions on natural resource management and land use. In this regard, we are exploring opportunities for contributions in the areas of information management, geophysics, geochemistry, visualisation and modelling, for two scenarios:

- Collaboration with one or more State geological surveys on projects with a land use and natural resource management focus, as an extension of the successful National Geoscience Agreement initiative; and
- Integration of wide-ranging geoscience studies with studies by land, water, environmental and other agencies into a demonstration project to show what can be achieved through a multi-disciplinary, multi-agency approach. This is a more ambitious scenario requiring a range of groups firstly to agree that a demonstration project of this nature is warranted, and secondly to commit resources to it. It should involve and draw on information and techniques coming from CRCs, other research groups and government agencies that have responsibilities for decision making.