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The Australian Rangeland Society

LANDSCAPE ECOLOGY STUFFS UP MANAGEMENT AND POLICY: WHAT CAN WE DO ABOUT IT?

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We wanted to subtitle the newspaper heading above with “*Sicut serpentes, sicut columbes*: challenge without insult”, but apart from being a bit obscure it was also too long. The Latin is an old school motto, meaning to be as wise as serpents but as gentle as doves. We want here to make a sympathetic challenge to some of our past failings, which arise from the biophysical properties of our rangelands landscapes but flow through to social, political, and ultimately economic and environmental problems on a grand scale.

The first issue is our failure to synthesise our results well across the rangelands, and thereby reconcile some of the conflicting myths and mental models that bedevil rangeland policy and management. We will illustrate this with the topic of ‘overgrazing’. Almost all grazing trials result suggest that higher stocking rates are better for production, yet their proponents almost invariably recommend lower stocking rates, usually for good reason. Whether land degradation ‘really’ happens is not a black or white issue, depending on the interaction between our landscape ecology and the land use goals, making simplistic management and policy prescriptions useless.

The second issue is how well we match the scales of our policy or management institutions with our landscape processes, when we are seeking to create resilient systems. For example, we can improve the production resilience of rangelands by evening up grazing use at the paddock scale – an admirable land conservation goal – but in some regions this is likely to have a serious impact on our regional biodiversity. Water quality at a catchment scale is driven by redistribution processes at the 100m scale, themselves altered by grazing management at the paddock scale. Carbon storage at the national scale is affected by vegetation change managed at the landscape scale. Not only do we need to synthesise across types of systems, but also across scales of systems and the key processes operating at different scales.

These two issues combine for our third, most problematic concern. Where does grazing have a future in the rangelands, and what sort of future is it in different regions? We argue that, to be able to move towards answering this essential question, we need to synthesise our understanding of how landscapes function with a realistic understanding of management objectives and the appropriate scales of economic, social and political institutions. The input from landscape ecology will only be part of the solution, but it could be contributing much more effectively to the debate about other constraints than it has in the past.

These issues are not all unique to rangelands, but there are reasons why they are particularly acute here. I shall try to suggest how the different players – policy people, managers, agencies, funding bodies and researchers - might address some of these. The motto at the start matters because we should not challenge what has gone before in order to denigrate our forebears, but rather to learn wisely and sympathetically from their errors. We can only hope that those who follow us will regard us as kindly.