



LUMIS – the Land Use and Management Information System

Land management practices information is assembled by government agencies, research institutions, community groups and industry. Until now there has been no agreed way to organise and share this information. This has made it difficult to efficiently compile the land management practices information necessary to understand and improve our management of Australia's natural resources.

The Australian Collaborative Land Use Mapping Programme (ACLUMP) is developing LUMIS to collate information on land management practices. This will show how the landscape is being managed including where and when changes are being made.

Mapping land management practices

Land management practice is the approach taken to achieve a land use outcome – the 'how' of land use. In agriculture, the term refers to broad activities such as crop, pasture or pest management and to more specific actions such as soil amendment, a tillage practice or an irrigation method.

LUMIS is structured as a hierarchical categorisation system that identifies the object of management at Level 1 and specific actions at Level 5 (Figure 1). Management practices may be spatially attributed to a point, polygon or management unit (i.e. paddock / farm). This enables management practices to be spatially linked with land use and other mapped information. Details on a specific action can also be recorded such as its frequency or the amount of inputs used or outputs produced.

Initially the categorisation focuses on agricultural practices, but it is structured to enable inclusion of practices associated with other land uses such as forestry, conservation and mining.

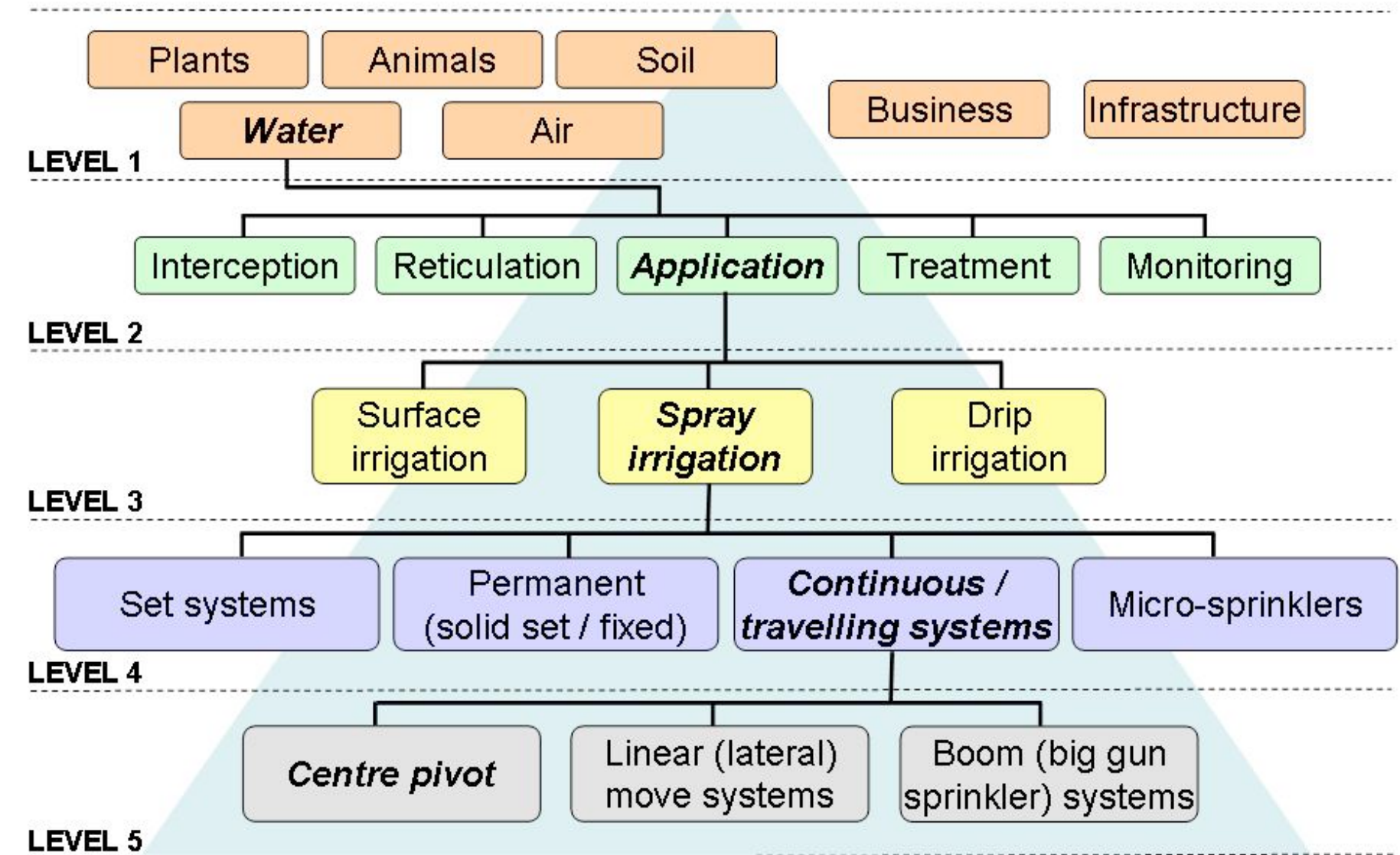


Figure 1. The primary components of the landscape (plants, animals, soil, water and air) and the managerial components (business and infrastructure) form Level 1 in the LUMIS categorisation. Management practices are then grouped according to where they occur in the management cycle (i.e. planning, establishment, growth, maintenance, product removal, protection and monitoring). Figure 1 shows how LUMIS categorises the application of spray irrigation using a centre pivot.

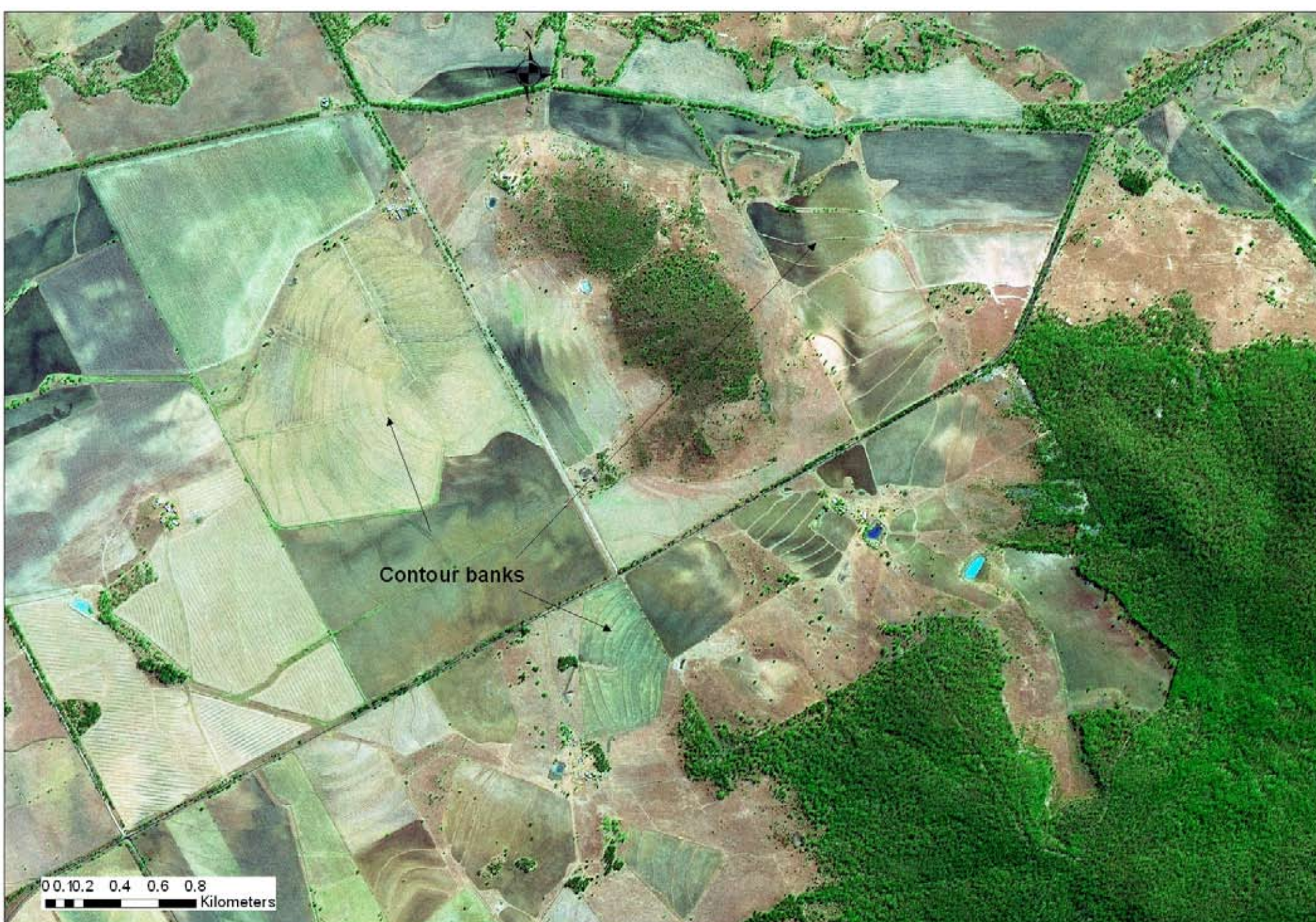


Figure 2. Spot 5 imagery in the Condamine catchment showing location of contour banks (QLD Department of Natural Resources and Water).

Management practices identified for initial data collection include native vegetation protection measures, soil conservation methods, irrigation scheduling and application methods, weed and pest animal control methods and crop rotation systems. ACLUMP partners are currently undertaking pilot studies to develop methods for mapping these practices and trialling LUMIS. These projects will collate and map land management practices using surveys of land managers; information from local experts; existing data from agencies, industry and local groups; field mapping and interpretation of aerial photography or satellite imagery (Figure 2).

The results of these projects will contribute to refinement of the LUMIS categorisation and specifications for mapping these practices. Further work is planned to explore the appropriate scales and frequency for mapping land management practices (Figure 3).

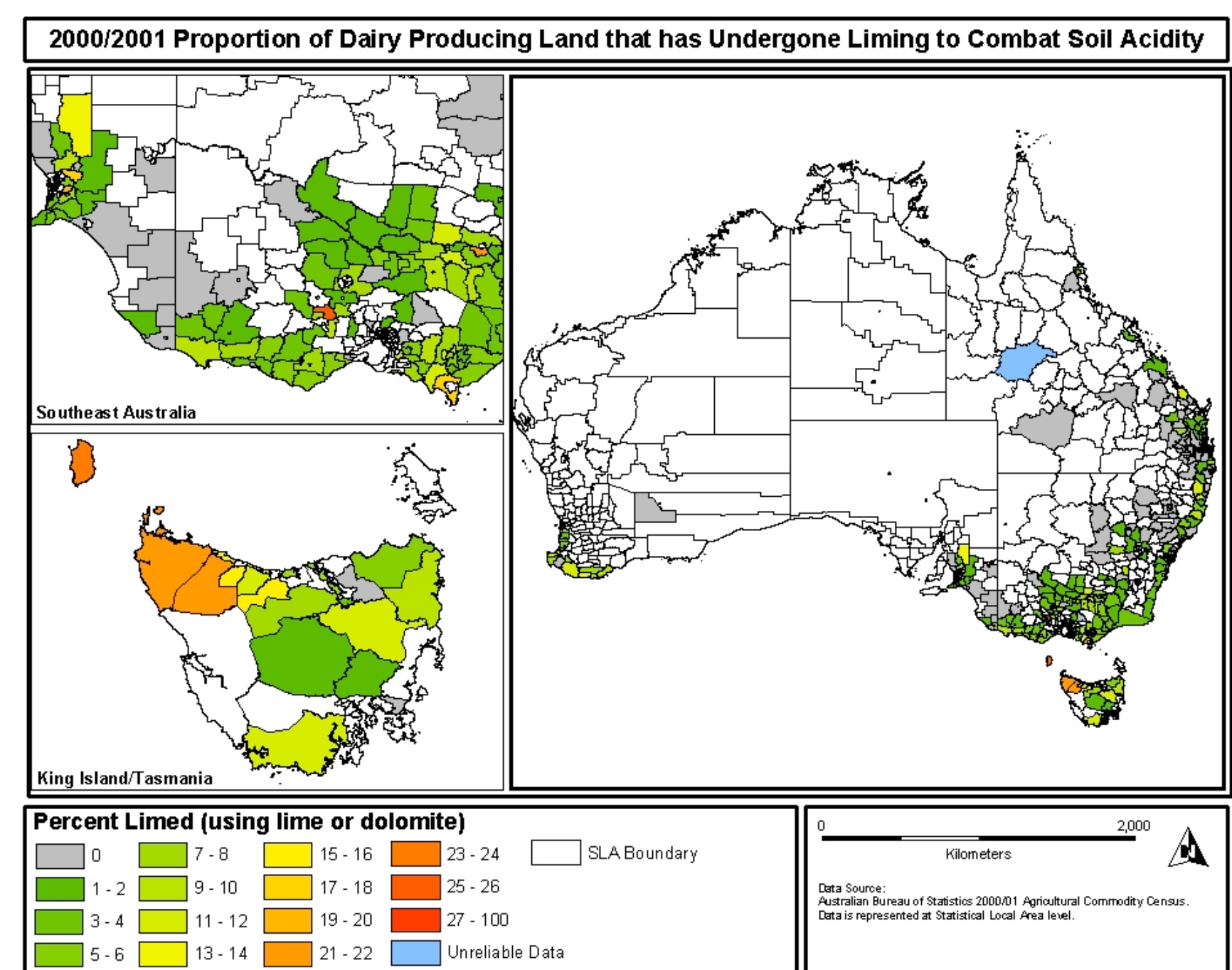


Figure 3. The Australian Bureau of Statistics collect land management practices information at the national level. This figure shows the proportion of land under dairy that was limed in 2001 by Statistical Local Areas.