Land Use in Australia – At a Glance

Land uses have a major effect on Australia's natural resources through their impacts on water, soil, nutrients, plants and animals. There is also a strong link between changing patterns of land use and economic and social conditions, particularly in regional Australia.

This pamphlet gives a brief outline of how land use is mapped in Australia and provides statistics showing the breakdown of land uses in Australia. For more detailed information on land use and access to land use data visit www.abares.gov.au/landuse.

What is land use?

Land use information shows how our land resources are used. This includes the production of goods (such as crops, timber and manufactures) and services (such as defence, recreation, biodiversity and natural resources protection).

Plantation forestry (ALUM class 3.2.0)

Cereals (ALUM class 3.3.1)

Glasshouses (hydroponic) (ALUM class 5.1.4)

There is often confusion between the terms 'land use' and 'land cover' because of the common use of remotely sensed data (either satellite or airborne) for mapping. The distinction between land use and land management practice is also poorly understood.

Land cover

Land cover refers to the physical surface of the earth, including various combinations of vegetation types, soils, exposed rocks and water bodies as well as anthropogenic elements, such as agriculture and built environments. Land cover classes can usually be discriminated by characteristic patterns using remote sensing.

Land use

Land use means the purpose to which the land cover is committed. Some land uses, such as agriculture, have a characteristic land cover pattern. These usually appear in land cover classifications. Other land uses, such as nature conservation, are not readily discriminated by a characteristic land cover pattern. For example, where the land cover is woodland, land use may be timber production or nature conservation.

Land management practice

Land management practice means the approach taken to achieve a land use outcome — the 'how' of land use (eg cultivation practices, such as minimum tillage and direct drilling). Some land management practices, such as stubble disposal practices and tillage rotation systems, may be discriminated by characteristic land cover patterns and linked to particular issues.

How land use is mapped

Land use mapping in Australia is conducted broadly at two scales: national scale and catchment scale (see Figure 1). Both land use mapping methods use the Australian Land Use and Management (ALUM) Classification system, which provides a nationally consistent method to collect and present land use information for a wide range of users across Australia. The Australian Collaborative Land Use Mapping and Management (ACLUMP) coordinates land use mapping in Australia to ensure consistent coverage at both 'national' and 'catchment' scale.

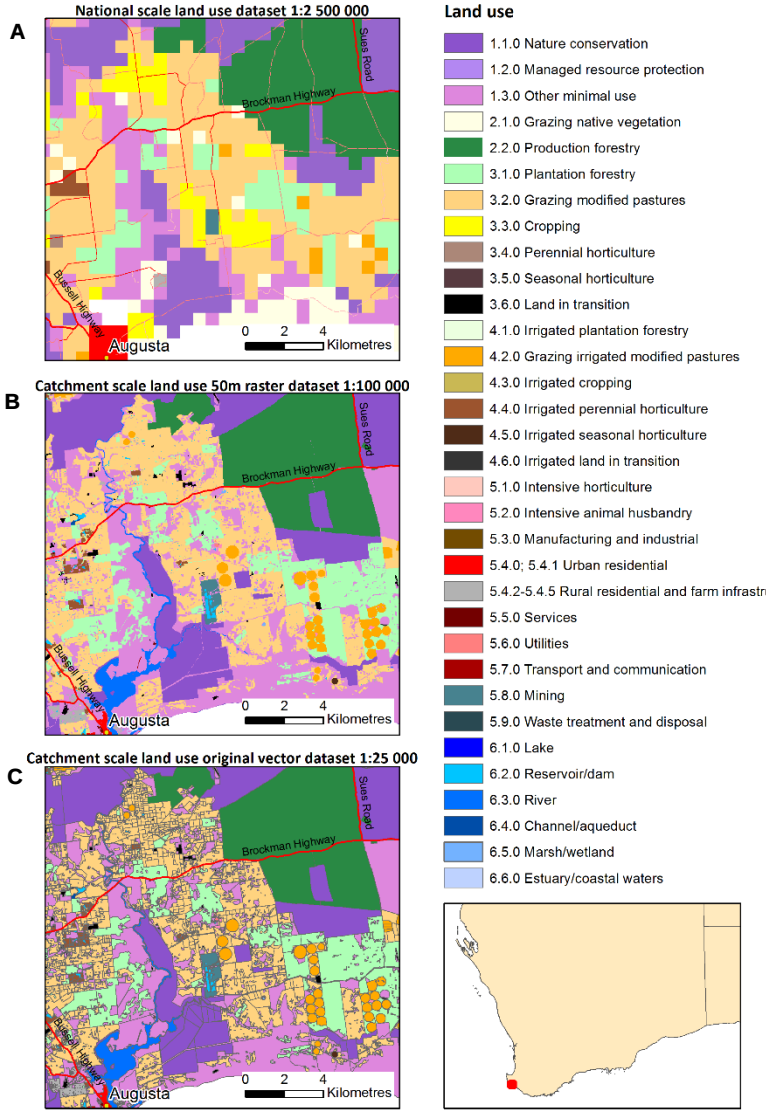

Figure 1 - Difference in scale and information contained in national (continental) scale and catchment scale land use maps in an area around Augusta in southwest Western Australia.

A. A sample of national scale mapping near Augusta based on data captured at approximately 1:2,500,000 scale provides insufficient detail for use in catchment scale applications.

B. A sample of the national 50m raster catchment scale mapping dataset of the same sample area provides greater detail at the 1:100,000 scale.

C. Original vector based catchment scale mapping captured at 1:25,000 scale of the same sample area near Augusta shows the boundaries and detail provided by this finer scale mapping.

Sources:
A. Land Use of Australia 2010-11, Version 5, ABARES 2016
B. Catchment Scale Land Use of Australia – Update May 2016, ABARES 2016
C. Cape to Cape Land Use 2014, Department of Agriculture and Food, Western Australia, 2015

National scale (1:2,500,000) land use mapping gives an overview of land use mapping across the continent. National scale mapping uses a modelling approach to integrate Australian Bureau of Statistics agricultural commodity data, satellite imagery and other land use information.

Catchment scale land use mapping is more detailed than national scale mapping and is produced by combining state cadastre, public land databases, fine-scale satellite data, other land cover and use data, and information collected in the field. Catchment scale mapping can vary from 1:25,000 (where 1cm on the map = 250m on the ground) for irrigated and peri-urban areas, to 1:100,000 scale (1cm = 1km) for broadacre cropping regions, and 1:250,000 (1cm = 2.5km) for the semi-arid and arid pastoral zone.

Australia's land uses

The national land use picture for Australia described here is drawn from national scale mapping completed for 2010-11 (1:2,500,000). Due to the broad scale of this dataset, actual land areas should be used as a guide. For more accurate land use information at the local and regional level, catchment scale land use data can be used.

Figure 2 shows the land use in Australia for the 2010-11 year using a modelling approach based on agricultural statistics, satellite imagery and other land use information. Table 1 and Figure 3 show the breakdown of land uses by square kilometres and percentage area.

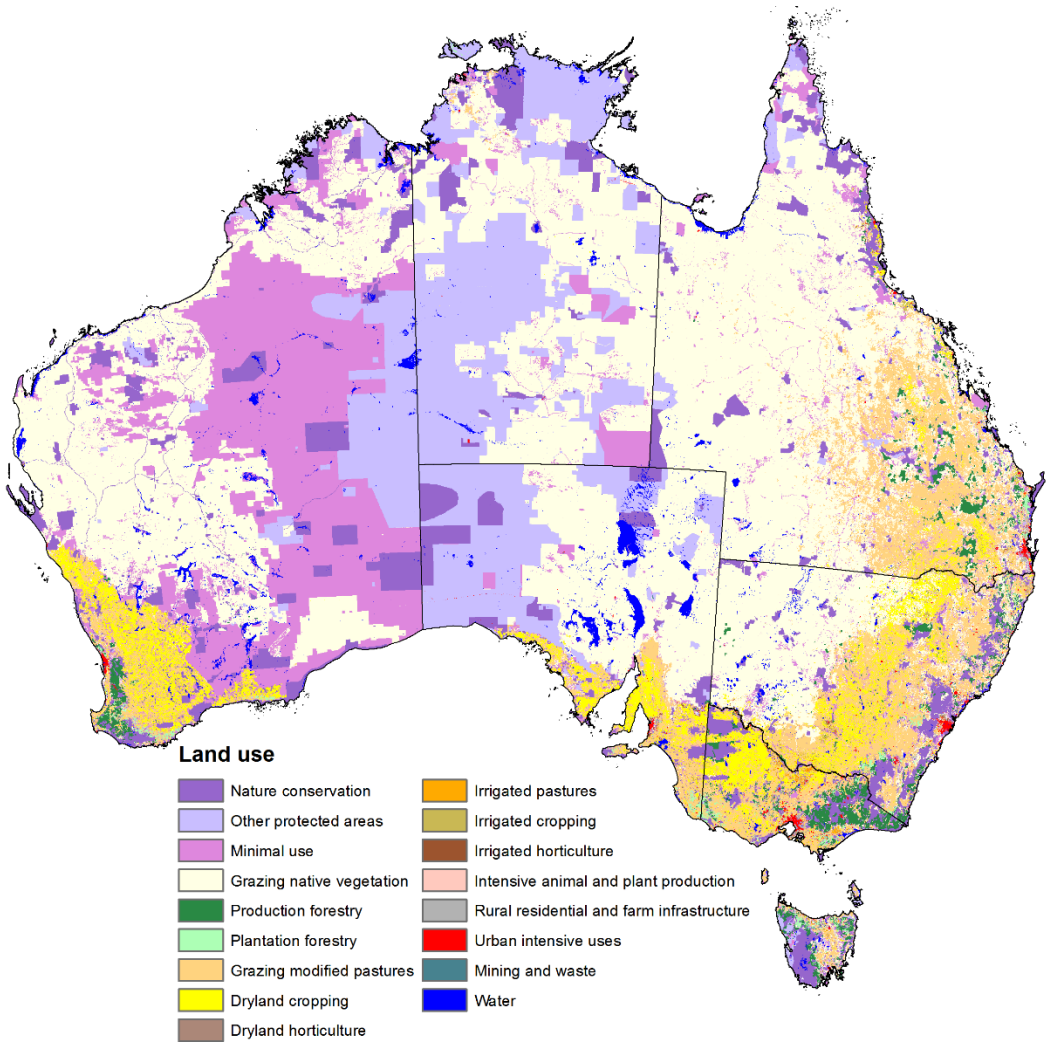

Figure 2. Land Use of Australia 2010-11, Version 5 (ABARES 2016)

According to this dataset, in 2010-11 the total area of land under primary production (livestock grazing, dryland and irrigated agriculture, and intensive agriculture) was nearly 4.5 million square kilometres or 58% of the continent. The dominant land use is livestock grazing which makes up 54% (or 4.2 million square kilometres) of land uses.

Approximately 605,000 square kilometres or almost 8% of Australia is set aside to nature conservation. Other protected areas, including Indigenous uses, cover over 1.1 million square kilometres (or 15%) of Australia.

Forestry tends to be confined to regions of Australia with higher rainfall and covers nearly 2% of the continent. The intensive land uses, a class which includes intensive plant production (e.g. glass houses and nurseries) and animal production, manufacturing, residential, services, utilities, transportation, mining and waste, occupied a relatively small proportion of the continent (35,000 square kilometres or 0.5 per cent), mainly centred around the capital cities

Table 1. Land use in Australia (based on Land Use of Australia 2010-11, Version 5, ABARES 2016)

Land use	Area(sq.km)	Percent (%)
Nature conservation	604,671	7.87%
Other protected areas including Indigenous uses	1,163,676	15.14%
Minimal use	1,172,679	15.26%
Grazing natural vegetation	3,448,896	44.87%
Production forestry	103,494	1.35%
Plantation forestry	25,752	0.34%
Grazing modified pastures	710,265	9.24%
Dryland cropping	275,928	3.59%
Dryland horticulture	743	0.01%
Irrigated pastures	6,048	0.08%
Irrigated cropping	9,765	0.13%
Irrigated horticulture	4,552	0.06%
Intensive animal and plant production	1,414	0.02%
Intensive uses (mainly urban)	13,806	0.18%
Rural residential	17,632	0.23%
Waste and mining	1,860	0.02%
Water	125,542	1.63%
No data	401	0.005%
Total	**7,687,124**	**100.00%**

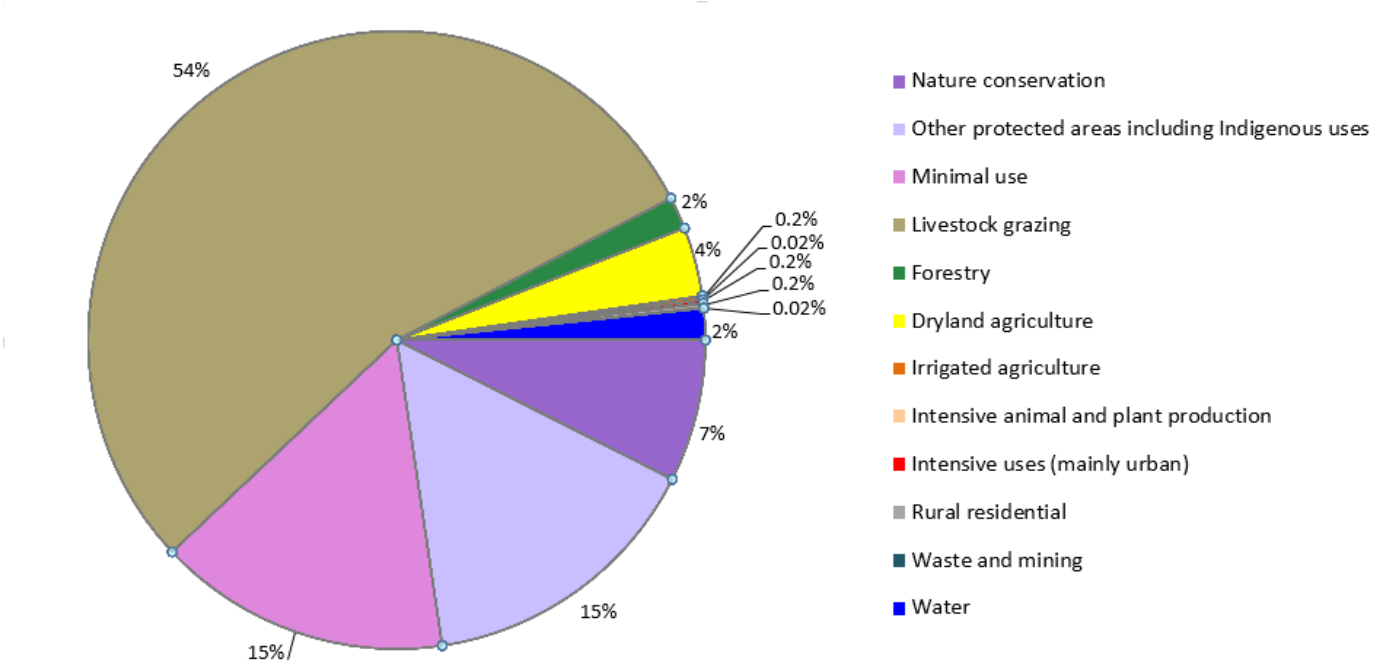

Figure 3. Land use in Australia (based on Land Use of Australia 2010-11, Version 5, ABARES 2016)