

The Australian Land Use and Management (ALUM) Classification Version 7, May 2010

Class 1 Conservation and natural environments

This class includes land that has a relatively low level of human intervention. The land may be formally reserved by government for conservation purposes, or conserved through other legal or administrative arrangements. Areas may have multiple uses, but nature conservation is the prime use. Some land may be unused as a result of a deliberate decision of the government or landowner, or due to circumstance.

1.1 Nature conservation

Tertiary classes 1.1.1–1.1.6 are based on the Collaborative Australian Protected Areas Database (CAPAD) classification (Cresswell & Thomas 1997).

1.1.1 *Strict nature reserve*—protected area managed mainly for science. An area of land possessing outstanding or representative ecosystems, geological or physiological features or species, which is available primarily for scientific research or environmental monitoring.

1.1.2 *Wilderness area*—protected area managed mainly for wilderness protection. A large area of unmodified or slightly modified land retaining its natural character and influence, without permanent or significant habitation, which is protected and managed so as to preserve its natural condition.

1.1.3 *National park*—protected area managed mainly for ecosystem conservation and recreation. A natural area of land, designated to: a) protect the ecological integrity of one or more ecosystems for the current and future generations; b) exclude exploitation or occupation detrimental to the purposes of designation of the area; and c) provide a foundation for spiritual, scientific, educational, recreational and visitor opportunities, all of which must be environmentally and culturally compatible.

1.1.4 *Natural feature protection*—protected area managed for conservation of specific natural features. An area containing one or more specific natural or cultural features that are of outstanding value because of their inherent rarity, representative or aesthetic qualities, or cultural significance.

1.1.5 *Habitat/species management area*—protected area managed mainly for conservation through management intervention. An area of land or sea subject to active intervention for management purposes to ensure the maintenance of habitats or to meet the requirements of specific species. This may include areas on private land.

1.1.6 Protected landscape—protected area managed mainly for landscape conservation and recreation. An area of land where the interaction of people and nature over time has produced a distinct character with significant aesthetic, cultural or ecological value, and often with high biological diversity.

1.1.7 Other conserved area—land under forms of nature conservation protection that fall outside the scope of the CAPAD classification. This includes heritage agreements, voluntary conservation arrangements and registered property agreements.

1.2 Managed resource protection

Tertiary classes 1.2.1–1.2.4 are based on the CAPAD classification. These areas are managed primarily for the sustainable use of natural resources. This includes areas with largely unmodified natural systems that are managed primarily to ensure the long-term protection and maintenance of biological diversity, water supply, aquifer or landscape, while providing a sustainable flow of natural products and services.

1.2.1 Biodiversity—area managed for biodiversity.

1.2.2 Surface water supply—area managed as a catchment for water supply.

1.2.3 Groundwater—area managed for groundwater.

1.2.4 Landscape—area managed for landscape integrity.

1.2.5 Traditional Indigenous uses—area managed primarily for traditional Indigenous use.

1.3 Other minimal use

Areas of land that are largely unused (in the context of the prime use) but may have ancillary uses. This may be a deliberate decision by the land manager or the result of other circumstances. The land may be available for use but remain ‘unused’ for various reasons.

1.3.1 Defence land—natural areas—natural areas allocated to field training, weapons testing and other field defence uses, predominantly in rural areas.

1.3.2 Stock route—stock reserves under intermittent use or unused.

1.3.3 Residual native cover—land under native cover, mainly unused (no prime use) or used for non-production or environmental purposes (e.g. to conserve native vegetation and wildlife, or for natural resources protection).

1.3.4 Rehabilitation—land under rehabilitation that has been restored to a near natural state. Land that is degraded or undergoing rehabilitation but still substantially modified should be mapped under classes 3.6.2, 3.6.3, 4.6.2, 4.6.3 or 5.8.4.

Class 2 Production from relatively natural environments

This class includes land that is subject to relatively low levels of intervention. The land may not be used more intensively because of its limited capability. The structure of the native vegetation generally remains intact despite deliberate use, although the floristics of the vegetation may have changed markedly. Where the native vegetation structure is, for example, open woodland or grassland, the land may be grazed.

Where native grasses have been deliberately and extensively replaced with improved species, the use should be treated under class 3, 'Production from dryland agriculture and plantations'.

2.1 Grazing native vegetation

Land uses based on grazing by domestic stock on native vegetation where there has been limited or no deliberate attempt at pasture modification. Some change in species composition may have occurred. For ALUM purposes, this class is used when there is greater than 50 per cent dominant native species. Refer to 'Decision rules' in Part 2 for guidance.

Australian Collaborative Land Use and Management Program (ACLUMP) partners have agreed to this definition, but note that most jurisdictions have datasets specifically designed to distinguish native from non-native vegetation. These datasets should be used to report on native versus non-native vegetation, as the land use classification maps the actual land use as a priority over land cover. If the type of livestock is known, record this in the Australian Bureau of Statistics (ABS) commodities field (refer to Part 3, 'Catchment scale mapping' for mapping specifications and Appendix 4 for ABS commodities codes).

2.2 Production forestry

Commercial production from native forests and related activities on public and private land. Environmental and indirect production uses associated with retained native forest (e.g. prevention of land degradation, windbreaks, shade and shelter) are included in class 1, 'Conservation and natural environments'.

2.2.1 Wood production—area managed for sawlogs and pulpwood.

2.2.2 Other forest production—area managed for non-sawlog or non-pulpwood production, including oil, wildflowers, firewood and fence posts.

Class 3 Production from dryland agriculture and plantations

This class includes land that is used principally for primary production, based on dryland farming systems. Native vegetation has largely been replaced by introduced species through clearing, the sowing of new species, the application of fertilisers or the dominance of volunteer species. The range of activities in this category includes plantation forestry, pasture production for stock, cropping and fodder production, and a wide range of horticultural production.

3.1 Plantation forestry

Land on which plantations of trees or shrubs (native or exotic species) have been established for production, or environmental and resource protection

purposes. This includes farm forestry. Where planted trees are grown in conjunction with pasture, fodder or crop production, class allocation should be made on the basis of prime use.

3.1.1 *Hardwood plantation*—area managed for hardwood sawlogs or pulpwood.

3.1.2 *Softwood plantation*—area managed for softwood sawlogs or pulpwood.

3.1.3 *Other forest plantation*—area managed for non-sawlog or non-pulpwood production, including oil, wildflowers, firewood and fence posts.

3.1.4 *Environmental forest plantation*—area managed for environmental and indirect production uses (e.g. prevention of land degradation, windbreaks, shade and shelter). This can also include trees planted for carbon credits.

3.2 Grazing modified pastures

Pasture and forage production, both annual and perennial, based on significant active modification or replacement of the initial vegetation. For ALUM purposes, this class is used when there is greater than 50 per cent dominant exotic species. Refer to ‘Decision rules’ in Part 2 for guidance.

ACLUMP partners have agreed to this definition, but note that most jurisdictions have datasets specifically designed to distinguish native from non-native vegetation. These datasets should be used to report on native versus non-native vegetation, as the land use classification maps the actual land use as a priority over land cover.

Land under pasture at the time of mapping may be in a rotation system, so that at another time the same area may be, for example, under cropping. Land in a rotation system should be classified according to the land use at the time of mapping. Suggested tertiary classes for legume and grass pasture types can be fitted to the pasture attributes collected through the ABS Agricultural Commodity Census. If livestock or pasture type is known, record this in the ABS commodities field (refer to Part 3, ‘Catchment scale mapping’ for mapping specifications and Appendix 4 for ABS commodities codes).

3.2.1 *Native/exotic pasture mosaic*—pastures in which there is a substantial native species component, despite extensive active modification or replacement of native vegetation.

This class may apply where native and exotic pasture is patterned at a relatively fine spatial scale. If there is greater than 50 per cent native pastures then the area should be coded to class 2.1, ‘Grazing native vegetation’. Refer to ‘Decision rules’ in Part 2 for guidance.

3.2.2 *Woody fodder plants*—woody plants used primarily for the purpose of providing forage for livestock grazing. Examples include tagasaste, leucaena and saltbush.

3.2.3 *Pasture legumes*

3.2.4 Pasture legume/grass mixtures

3.2.5 Sown grasses—this includes saline pastures.

3.3 Cropping

Land that is under cropping. Land under cropping at the time of mapping may be in a rotation system, so that at another time the same area may be, for example, under pasture. Land in a rotation system should be classified according to the land use at the time of mapping. Cropping can vary markedly over relatively short distances in response to changes in the nature of the land and the preferences of the land manager. It may also change over time in response to market conditions. Production of fodder, such as lucerne hay, is considered cropping as there is no harvesting by stock.

At the tertiary level, classes should be based on commodities or commodity groups that relate to ABS Level 2 agricultural commodity categories (see Appendix 4 for ABS agricultural commodity levels). If the crop type is known, record this in the ABS commodities field (refer to Part 3, ‘Catchment scale mapping’ for mapping specifications and Appendix 4 for ABS commodities codes).

3.3.1 Cereals

3.3.2 Beverage and spice crops

3.3.3 Hay and silage

3.3.4 Oil seeds

3.3.5 Sugar

3.3.6 Cotton

3.3.7 Alkaloid poppies—where it is known that poppies are grown for alkaloid purposes, map under this class rather than class 3.3.4, ‘Oil seeds’.

3.3.8 Pulses

3.4 Perennial horticulture

Crop plants living for more than two years that are intensively cultivated, usually involving a relatively high degree of nutrient, weed and moisture control. Suggested tertiary classes are based on the ABS Level 2 commodity categories that relate to horticulture (see Appendix 4). If the crop type is known, record this in the ABS commodities field (refer to Part 3, ‘Catchment scale mapping’ for mapping specifications and Appendix 4 for ABS commodities codes).

3.4.1 Tree fruits

3.4.2 Oleaginous fruits

3.4.3 Tree nuts

3.4.4 Vine fruits

3.4.5 Shrub nuts, fruits and berries

3.4.6 Perennial flowers and bulbs

3.4.7 Perennial vegetables and herbs

3.4.8 *Citrus*—where citrus can be detected, map under this class rather than class 3.4.1, ‘Tree fruits’.

3.4.9 *Grapes*—where grapes can be detected, map under this class rather than class 3.4.4, ‘Vine fruits’.

3.5 Seasonal horticulture

Crop plants living for less than two years that are intensively cultivated, usually involving a relatively high degree of nutrient, weed and moisture control. Suggested tertiary classes are based on the ABS Level 2 agricultural commodity categories that relate to horticulture (see Appendix 4). If the crop type is known, record this in the ABS commodities field (refer to Part 3, ‘Catchment scale mapping’ for mapping specifications and Appendix 4 for ABS commodities codes).

3.5.1 Seasonal fruits

3.5.2 Seasonal nuts

3.5.3 Seasonal flowers and bulbs

3.5.4 Seasonal vegetables and herbs

3.6 Land in transition

Areas where the land use is unknown and cannot reasonably be inferred from the surrounding land use. This class should be used sparingly. Land must have been previously used for agriculture or plantations.

3.6.1 *Degraded land*—land that is severely degraded (e.g. from soil erosion, salinity, or weed or shrub invasion) and is not under active rehabilitation.

3.6.2 *Abandoned land*—land where a previous pattern of agriculture may be observed, but is not currently under production.

3.6.3 *Land under rehabilitation*—land in the process of rehabilitation for agricultural production (i.e. not for purposes under class 1, ‘Conservation and natural environments’ or class 5, ‘Intensive uses’).

3.6.4 *No defined use*—land cleared of intact native vegetation where the proposed land use is not known.

3.6.5 Abandoned perennial horticulture—land previously used for perennial horticulture that has not been cleared (e.g. an orchard where trees remain but the site has been invaded by woody shrubs, with trees unpruned or dying).

Class 4 Production from irrigated agriculture and plantations

This class includes agricultural land uses where water is applied to promote additional growth over normally dry periods, depending on the season, water availability and commodity prices.

This includes land uses that receive only one or two irrigations per year, through to those uses that rely on irrigation for much of the growing season. Baxter and Russell (1994) created this primary class because of the degree of intervention involved in irrigation, and its potential impacts on hydrology and geohydrology.

Irrigation in Australia is in a state of flux and there is a need to rely more heavily on ancillary data than in the past. Land should be mapped according to its use at the time of mapping. If there is no evidence of irrigation (e.g. infrastructure or active irrigation), the area should be mapped to the appropriate dryland class.

4.1 Irrigated plantation forestry

Land on which irrigated plantations of trees or shrubs have been established for production, or environmental and resource protection purposes. This includes farm forestry.

4.1.1 Irrigated hardwood plantation—area managed for hardwood sawlogs or pulpwood.

4.1.2 Irrigated softwood plantation—area managed for softwood sawlogs or pulpwood.

4.1.3 Irrigated other forest plantation—area managed for non-sawlog or non-pulpwood production, including oil, wildflowers, firewood and fence posts.

4.1.4 Irrigated environmental forest plantation—area managed for environmental and indirect production uses (e.g. preventing land degradation, windbreaks, shade and shelter). This can also include trees planted for carbon credits.

4.2 Grazing irrigated modified pastures

Irrigated pasture production, both annual and perennial, based on a significant degree of modification or replacement of the native vegetation. Refer to ‘Decision rules’ in Part 2 for guidance.

This class may include land in a rotation system that may be under cropping at other times. Land in a rotation system should be classified according to the land use at the time of mapping. Cropping or pasture rotation regimes are treated as land management practices. If the livestock or pasture type is known, record this in the ABS commodities field (refer to Part 3, ‘Catchment scale mapping’ for mapping specifications and Appendix 4 for ABS commodities codes).

4.2.1 Irrigated woody fodder plants—irrigated woody plants used primarily to provide forage for livestock grazing.

4.2.2 Irrigated pasture legumes

4.2.3 Irrigated legume/grass mixtures

4.2.4 Irrigated sown grasses

4.3 Irrigated cropping

Land that is under irrigated cropping. This class may include land in a rotation system that at other times may be under pasture. Land in a rotation system should be classified according to the land use at the time of mapping. Cropping or pasture rotation regimes are treated as land management practices. If the crop type is known, record this in the ABS commodities field (refer to Part 3, 'Catchment scale mapping' for mapping specifications and Appendix 4 for ABS commodities codes).

4.3.1 Irrigated cereals

4.3.2 Irrigated beverage and spice crops

4.3.3 Irrigated hay and silage

4.3.4 Irrigated oil seeds

4.3.5 Irrigated sugar

4.3.6 Irrigated cotton

4.3.7 Irrigated alkaloid poppies—where it is known that poppies are grown for alkaloid purposes, map under this class rather than class 4.3.4, 'Irrigated oil seeds'.

4.3.8 Irrigated pulses

4.3.9 Irrigated rice—where rice can be detected, map under this class rather than class 4.3.1, 'Irrigated cereals'.

4.4 Irrigated perennial horticulture

Irrigated crop plants living for more than two years that are intensively cultivated, usually involving a relatively high degree of nutrient, weed and moisture control. If the crop type is known, record this in the ABS commodities field (refer to Part 3, 'Catchment scale mapping' for mapping specifications and Appendix 4 for ABS commodities codes).

4.4.1 Irrigated tree fruits

4.4.2 Irrigated oleaginous fruits

4.4.3 Irrigated tree nuts

4.4.4 Irrigated vine fruits

4.4.5 Irrigated shrub nuts, fruits and berries

4.4.6 Irrigated perennial flowers and bulbs

4.4.7 Irrigated perennial vegetables and herbs

4.4.8 Irrigated citrus—where citrus can be detected, map under this class rather than class 4.4.1, ‘Irrigated tree fruits’.

4.4.9 Irrigated grapes—where grapes can be detected, map under this class rather than class 4.4.4, ‘Irrigated vine fruits’.

4.5 Irrigated seasonal horticulture

Irrigated crop plants living for less than two years that are intensively cultivated, usually involving a relatively high degree of nutrient, weed and moisture control. If the crop type is known, record this in the ABS commodities field (refer to Part 3, ‘Catchment scale mapping’ for mapping specifications and Appendix 4 for ABS commodities codes).

4.5.1 Irrigated seasonal fruits

4.5.2 Irrigated seasonal nuts

4.5.3 Irrigated seasonal flowers and bulbs

4.5.4 Irrigated seasonal vegetables and herbs

4.5.5 Irrigated turf farming

4.6 Irrigated land in transition

Areas where irrigated production may occur, but land use is unknown and cannot be reasonably inferred from the surrounding land use. Evidence or knowledge of irrigated use or of existing irrigation infrastructure should be present. This class should be used sparingly. Land must have been previously used for agriculture or plantations as it falls under class 4.

4.6.1 Degraded irrigated land—land is severely degraded (e.g. from soil erosion, salinity, or weed or shrub invasion), with evidence of irrigation or irrigation infrastructure. Not under active rehabilitation.

4.6.2 Abandoned irrigated land—land where a previous pattern of irrigated agriculture may be observed, but which is not currently under production. There is evidence of irrigation or irrigation infrastructure.

4.6.3 Irrigated land under rehabilitation—land in the process of rehabilitation for irrigated agriculture (i.e. not for purposes under class 1, ‘Conservation and natural environments’ or class 5, ‘Intensive uses’). There is evidence of irrigation or irrigation infrastructure.

4.6.4 No defined use (irrigation)—land cleared of intact native vegetation where the proposed land use is not known. There is evidence of irrigation or irrigation infrastructure.

4.6.5 Abandoned irrigated perennial horticulture—land previously used for irrigated perennial horticulture that has not been cleared (e.g. an orchard where trees remain but the site has been invaded by woody shrubs, with trees unpruned or dying). There is evidence of irrigation or irrigation infrastructure.

Class 5 Intensive uses

This class includes land uses that involve high levels of interference with natural processes, generally in association with closer settlement.

The level of intervention may be high enough to completely remodel the natural landscape—the vegetation, surface-water and groundwater systems, and the land surface. If the crop type is known, record this in the ABS commodities field (refer to Part 3, ‘Catchment scale mapping’ for mapping specifications and Appendix 4 for ABS commodities codes).

5.1 Intensive horticulture

Intensive forms of plant production, often with special-purpose improvements used for horticultural production. If the crop type is known, record this in the ABS commodities field (refer to Part 3, ‘Catchment scale mapping’ for mapping specifications and Appendix 4 for ABS commodities codes).

5.1.1 Shadehouses—land where special-purpose shade structures have been built for intensive plant production (including mushrooms).

5.1.2 Glasshouses—land where special-purpose structures have been built for indoor propagation and growing of plants and plant crops.

5.1.3 Glasshouses (hydroponic)—land where special-purpose hydroponic structures have been built for indoor propagation and growing of plants and plant crops.

5.1.4 Abandoned intensive horticulture—land previously used for intensive horticulture that has not been converted to another land use. Intensive horticulture infrastructure is still in place (e.g. abandoned glasshouses).

5.2 Intensive animal husbandry

Intensive forms of animal production (excludes associated grazing or pasture) or animal-holding yards. Agricultural production facilities (feedlots, piggeries, etc.) where the livestock type is known may be included as tertiary classes. If the livestock type is known, record this in the ABS commodities field (refer to Part 3, ‘Catchment scale mapping’ for mapping specifications and Appendix 4 for ABS commodities codes). This secondary class includes emus, alpacas, deer and beekeeping.

5.2.1 Dairy sheds and yards—land including the milking shed, holding yards and so on of a dairy operation. Dairy pastures should not be mapped under this

class, but should be mapped under class 3.2, 'Grazing modified pastures', class 4.2, 'Grazing irrigated modified pastures' or their relevant tertiary classes.

5.2.2 Cattle feedlots—land with specialist infrastructure used for intensive feeding of cattle.

5.2.3 Sheep feedlots—land with specialist infrastructure used for intensive feeding of sheep.

5.2.4 Poultry sheds and yards—land with specialist infrastructure used for egg or broiler production, or where poultry run as free range with special-purpose fencing in place. This includes chickens, ducks, ostriches and so on.

5.2.5 Piggeries—land with specialist infrastructure for use as a piggery.

5.2.6 Aquaculture—land used for cultivating fish and crustaceans (lobsters, yabbies, etc.) or molluscs (oysters, mussels). This also includes crocodiles.

5.2.7 Horse studs—land with special-purpose buildings and fencing associated with a well-developed horse stud farm or horse training facility. This class should be for intensive horse farming. Agistments should be classed under the relevant grazing class, and pony clubs should be mapped under class 5.5.3, 'Recreation and culture'.

5.2.8 Stockyards/saleyards—land designed for yarding and selling stock. This class should be used for holding yards that are not part of the farm enterprise.

5.6.9 Abandoned intensive animal husbandry—land with dairy sheds, feedlots, poultry sheds, piggeries and so on that have been abandoned and not replaced with another land use.

5.3 Manufacturing and industrial

Factories, workshops, foundries, construction sites and so on. In the urban setting, manufacturing and industrial areas should be mapped to this secondary code. In the rural or agricultural setting, the following tertiary classes may be used, if desired.

5.3.1 General purpose factory—area used for manufacturing, assembly or repairs. Includes some specialised or purpose-built improvements.

5.3.2 Food processing factory—area where the principle use is food processing. The building is most likely to be purpose built and may have extensive plant and equipment included (e.g. cannery, milk production plant).

5.3.3 Major industrial complex—area with large-scale industrial use (e.g. car plant, paper mill).

5.3.4 Bulk grain storage—area with silos, special-purpose grain storage sheds and so on.

5.3.5 *Abattoirs*—area with special improvements for the slaughter of stock and preparation of meat for wholesale market.

5.3.6 *Oil refinery*—land and buildings used in the refinement and storage of petroleum products.

5.3.7 *Sawmill*—area with special improvements for the milling and curing of timber.

5.3.8 *Abandoned manufacturing and industrial*—area with factories, silos, tanneries and so on that have been abandoned and not replaced with another land use.

5.4 Residential and farm infrastructure

5.4.1 *Urban residential*—land with houses, flats, hotels and so on within urban areas.

5.4.2 *Rural residential with agriculture*—rural allotments with agricultural activity at the subcommercial or hobby scale (excluding backyard or domestic garden areas and livestock as pets). Refer to ‘Decision rules’ in Part 2 for guidance.

5.4.3 *Rural residential without agriculture*—rural allotments with no agricultural activity present (may have backyard or domestic garden areas, or livestock as pets). Refer to ‘Decision rules’ in Part 2 for guidance.

5.4.4 *Remote communities*—area with a small, isolated community, generally less than 20 residences or buildings (without the facilities associated with even small towns) that lies within an area defined by the Australian Standard Geographical Classification – Remoteness Areas (ASGC-RA) system as remote or very remote¹ (ABS 2001). In the Northern Territory, these are typically (but not always) Indigenous communities or families in homeland areas. Residences may be permanent or semipermanent.

5.4.5 *Farm buildings/infrastructure*—area with houses, buildings, sheds and other infrastructure associated with farm enterprises. Actual supply channels or aqueducts should be mapped under class 6.4, ‘Channel/aqueduct’. If the building or infrastructure is smaller than the minimum mapping unit, it can be incorporated into the surrounding land use.

5.5 Services

Land allocated to providing commercial or public services, resulting in substantial interference to the natural environment. Where services are provided on land that retains natural cover, apply an appropriate classification under class 1, ‘Conservation and natural environments’ (e.g. 1.1.7, ‘Other conserved area’ or 1.3, ‘Other minimal use’).

¹ See map at

[www.abs.gov.au/websitedbs/D3110122.NSF/0/f9c96fb635cce780ca256d420005dc02/\\$FILE/appendix_A.pdf](http://www.abs.gov.au/websitedbs/D3110122.NSF/0/f9c96fb635cce780ca256d420005dc02/$FILE/appendix_A.pdf)

5.5.1 Commercial services—land with shops, markets, financial services and so on.

5.5.2 Public services—land with education services, community services and so on.

5.5.3 Recreation and culture—area with parks, sportsgrounds, camping grounds, caravan parks, swimming pools, museums, places of worship and so on.

5.5.4 Defence facilities—urban—land with Australian Government Department of Defence infrastructure, buildings, bases, research and development establishments, and so on. Only Department of Defence areas in an urban setting should be mapped to this class, unless they are solely infrastructure. Defence lands of significant area that retain natural cover should be mapped under class 1.3.1, ‘Defence land—natural areas’.

5.5.5 Research facilities—government and non-government research and development areas.

5.6 Utilities

5.6.1 Fuel-powered electricity generation—includes brown coal, black coal, oil and nuclear.

5.6.2 Hydro-electricity generation—water, wave power generation.

5.6.3 Wind farm electricity generation

5.6.4 Electricity substations and transmission—facilities associated with electricity supply.

5.6.5 Gas treatment, storage and transmission—facilities associated with gas production and supply.

5.6.6 Water extraction and transmission—extraction, purification, treatment or supply of fresh water for public, domestic and commercial use. Excludes supply for agricultural uses; this should be mapped under class 6.4, ‘Channel/aqueduct’.

5.7 Transport and communication

5.7.1 Airports/aerodromes

5.7.2 Roads

5.7.3 Railways

5.7.4 Ports and water transport

5.7.5 Navigation and communication—includes radar stations, beacons and so on.

5.8 Mining

5.8.1 Mines—land from which minerals, precious stones and coal is being extracted. Includes open-cut and deep-shaft mines.

5.8.2 Quarries—land from which stone, gravel clay, slate, sand, soil and rock is being extracted.

5.8.3 Tailings—tailings dumps and dams for storage or treatment of waste mining and quarrying output.

5.8.4 Extractive industry not in use—land formally used for extractive industry but no longer in use and no new use observed. This includes sites undergoing rehabilitation (sites that have been rehabilitated to or near their natural state should be mapped under class 1.3.4, ‘Rehabilitation’ and sites rehabilitated to a state suitable for agricultural production should be mapped under class 3.6.3, ‘Land under rehabilitation’).

5.9 Waste treatment and disposal

Waste material and disposal facilities associated with industrial, urban and agricultural activities.

5.9.1 Effluent pond

5.9.2 Landfill—land used for disposal of solid inert wastes (but not including overburden).

5.9.3 Solid garbage—land used for disposal of wastes, including waste from processing plants.

5.9.4 Incinerators

5.9.5 Sewage/sewerage

Class 6 Water

Water features are regarded as essential to the ALUM Classification because of their importance for natural resources management and as points of reference in the landscape. However, the inclusion of water is complicated because it is normally classified as a land cover type. At the secondary level, the classification identifies water features, both natural and artificial. Tertiary classes relate water features to intensity of use.

Because water is a land cover rather than a land use, water classes may not be mutually exclusive with other land use classes at particular levels in the classification. Generally, water classes should take precedence so that, for example, a lake in a conservation reserve will be classed as 6.1, ‘Lake’ or 6.1.1, ‘Lake (conservation)’, rather than as 1.1, ‘Nature conservation’. Water features where a conservation tertiary class applies may be attributed using the comments field (see Part 3, ‘Catchment scale mapping’ for technical details).

6.1 Lake

A naturally occurring or human-made body of mainly static water surrounded by land (Geoscience Australia 2007).

6.1.1 Lake—conservation—water feature relates to uses included in class 1, ‘Conservation and natural environments’.

6.1.2 Lake—production—water feature relates to uses included in class 2 ‘Production from relatively natural environments’.

6.1.3 Lake—intensive use—water feature relates to uses included in class 5, ‘Intensive uses’. This includes human-made lakes created for use as residential canals.

6.1.4 Lake—saline

6.2 Reservoir or dam

A body of water collected and stored behind a constructed barrier for some specific use (Geoscience Australia 2007).

6.2.1 Reservoir—water stored for use outside a farm.

6.2.2 Water storage—intensive use/farm dams—water stored for on-site, immediate use on farm. Water feature may relate to uses included in class 5, ‘Intensive uses’. This class can also include graded scrapes and plastic sheeting.

6.2.3 Evaporation basin—basin used for evaporation of water from irrigation drainage or salt extraction.

6.3 River

A natural channel along which water may flow from time to time (Geoscience Australia 2007).

6.3.1 River—conservation—water feature relates to uses in class 1, ‘Conservation and natural environments’.

6.3.2 River—production—water feature relates to uses in class 2, ‘Production from relatively natural environments’.

6.3.3 River—intensive use—water feature relates to uses in class 5, ‘Intensive uses’. This includes human-made alterations to rivers for use as residential canals.

6.4 Channel/aqueduct

An artificial, open channel that provides the supply, distribution or removal of water for irrigation purposes, or for a significant infrastructure function (e.g. salt interception, land reclamation, or drainage between water features for environmental management purposes) (Geoscience Australia 2007).

6.4.1 Supply channel/aqueduct

6.4.2 Drainage channel/aqueduct

6.4.3 Stormwater

6.5 Marsh/wetland

Wetlands are areas of permanent, periodic or intermittent inundation, with water that is static or flowing fresh, brackish or salt, including areas of marine water, the depth of which at low tide does not exceed 6 metres (DERM 2010).

6.5.1 Marsh/wetland—conservation—water feature relates to uses in class 1, ‘Conservation and natural environments’.

6.5.2 Marsh/wetland—production—water feature relates to uses in class 2, ‘Production from relatively natural environments’.

6.5.3 Marsh/wetland—intensive use—water feature relates to uses in class 5, ‘Intensive uses’.

6.5.4 Marsh/wetland—saline

6.6 Estuary/coastal waters

That part of the seabed or estuarine areas, between mean high water and the line of lowest astronomical tide (Geoscience Australia 2007).

6.6.1 Estuary/coastal waters—conservation—water feature relates to uses in class 1, ‘Conservation and natural environments’.

6.6.2 Estuary/coastal waters—production—water feature relates to uses in class 2, ‘Production from relatively natural environments’.

6.6.3 Estuary/coastal waters—intensive use—water feature relates to uses in class 5, ‘Intensive uses’. This includes estuaries with banks altered for use as residential canals.