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Geoscience Australia

Australian Land Tenure 1993

Product User Guide

**National Mapping Division,
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About this product user guide

This product user guide sets out the fundamental concepts and characteristics of *Australian Land Tenure 1993*. The guide begins with general information and provides more details in later sections. The overview of data content and structure will allow you to make immediate use of the data.

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1 User information

1.1 User support/contact information

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1.2 Geoscience Australia - National Mapping Division

Geoscience Australia is the national agency for geoscience research and spatial information. It serves government and supports the community through its output areas of geoscience for urban centres, oceans and coasts, and regional and rural areas.

The National Mapping Division within Geoscience Australia undertakes national mapping, remote sensing maritime boundary and land information coordination activities in support of Australia's economic and social development.

2 About Australian Land Tenure 1993

2.1 Australian Land Tenure 1993 components

Your *Australian Land Tenure 1993* data package has two components which combine to give you a complete data product. The components are:

- **Product user guide**
This guide describes the structure and content of *Australian Land Tenure 1993*.
- **Data files**
The number of files will vary with the application format of the data.

2.2 The Australian Land Tenure 1993 product

Australian Land Tenure 1993 has been derived from Geoscience Australia's *National Public and Aboriginal Lands* data and supplemented with additional information. It identifies all public and private land tenure, including Aboriginal and Torres Strait Islander lands vested in communities or equivalent bodies. Data are sourced from government gazette notices, cadastral maps and plans.

Note: *the use of gazetted descriptions and cadastral plans does not imply that the data are suitable for any legal interpretation.*

Australian Land Tenure 1993 provides a fundamental base layer of geographic information on which you can build a wide range of applications. This data is particularly suited to State-wide and national applications, and can be combined with resource and environmental datasets, satellite imagery and demographic data.

This data has undergone several changes during its development, including changes to its name and to the land categories below. Its original intention for use was to provide a digital coverage of land tenure information to serve the needs of the Commonwealth authorities.

The data covers the whole of Australia and is classified according to selected land tenure categories. These categories fall into three major groups:

- **Public lands** (State Crown lands and Commonwealth-owned lands), broadly classified by primary reservation purpose;
- **Aboriginal lands** comprising private leasehold, freehold and reserves held by or on behalf of Aboriginal communities; and
- **Private lands**, being the balance of freehold and Crown leasehold land.

Public, private and Aboriginal lands in Australia fall within six broad classes. They are:

1. Forestry;
2. Environmental protection;
3. Institutional;
4. Mining;
5. Other; and
6. Private

Crown land in classes 1 to 5 are unalienated to the ownership by freehold or leasehold of any individual or incorporated group. Such land may, however, be subject to temporary grazing leases, occupation licences etc. In certain circumstances, two of these principal classes may apply to a single land parcel (eg. Aboriginal freehold land leased to a conservation authority as national park).

Differentiation of specific reserve types for nature conservation and forestry reserve types is not available in this product.

2.3 Coordinate system

Australian Land Tenure 1993 data is only available in geographical coordinates (latitude and longitude) in decimal degrees using the Australian Geodetic Datum 1966 (AGD66).

3 Data loading

3.1 Application formats

The *Australian Land Tenure 1993* data is supplied in four application formats:

- ArcInfo Export;
- ArcView Shapefile;
- MapInfo mid/mif; and
- AS2482.

3.2 Description of files

The downloaded *Australian Land Tenure 1993* package contains the following files.

Table 1: *Australian Land Tenure 1993* files

Documentation files				
File name	File content			
42340_user_guide.pdf	This user guide			
Data files				
File name	ArcInfo Export (*e00)	ArcView Shapefile (*dbf, *.shp, *.shx)	MapInfo mid/mif (*mid, *.mif)	AS2482
	File size (KB)	File size (KB)	File size (KB)	File size (KB)
ltpointd	195	(+_point) 99		
ltpolyd	(*e00 - *.e02) 5418	(+_chain) 2 074 (+_point) 366 (+_polygon) 3 139		
lt_chain			2263	
lt_point			310	
lt_polygon			4065	
lanten.as2				1 486
lanten.fc				1
lanten.lis				4
Total	5 613 KB/ 5.5 MB	5 678 KB 5.5 MB	6 638 KB/ 6.5 MB	1 491 KB/ 1.5 MB

4 Data characteristics and concepts

4.1 Data characteristics

Resolution of coordinates

The horizontal coordinates of the data are given to a resolution of 0.00001 degrees in geographical coordinates (approximately 1 metre on the ground).

Area of coverage

The area of coverage is for the whole of Australia, both onshore and offshore, and is between the latitude limits 5°S to 47°S and longitude limits 105°E to 165°E.

Topological integrity

Australian Land Tenure 1993 data were tested to ensure that they comply with the rules for topological integrity set out below. Generally the compliance ranges between 99.5% or 95%. This means that the data have passed the test even if they contain a limited number of errors.

- The data have a node/chain structure. Within a linear network layer or a polygon layer, all linear features are broken by a node at intersections or at the point where an attribute of the feature changes. This is demonstrated in the following diagram.

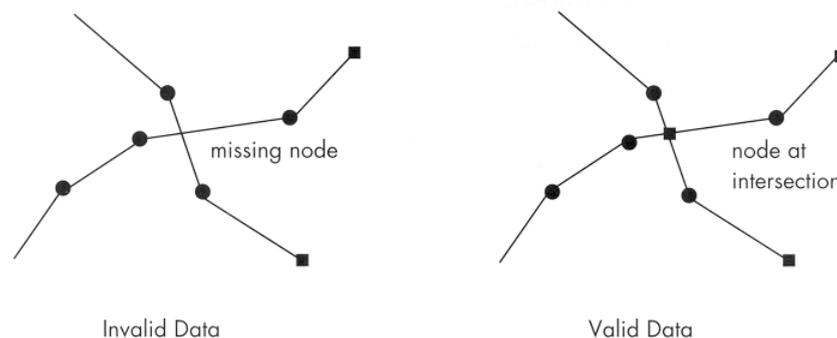


Figure 1: Linear intersections

- Every linear feature instance has a node at each end.
- All polygons are completely closed.
- Every polygon feature contains a polygon label point.
- Polygons in the same layer cannot overlap.
- Within a layer there are no coincident features.
- When two features in separate layers share the same physical position on the source material, they have exactly coincident spatial objects. The same feature instance may occur twice in the data supplied to you. When this occurs the repeated feature instance has exactly the same coordinates.
- There are no undershoots. This possible error is illustrated below.

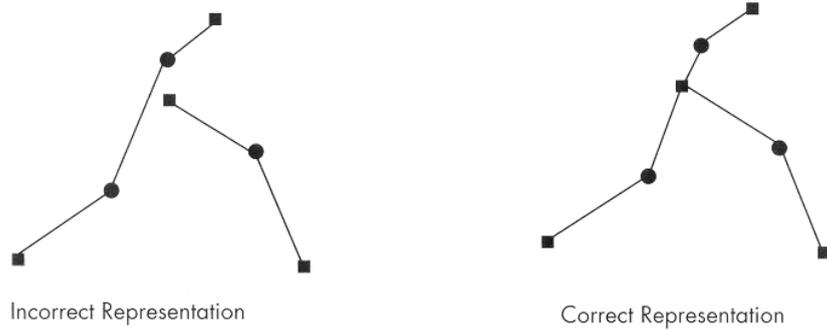


Figure 2: Undershoots

- The spatial data have no overshoots, broken lines or other artefacts of the data capture process. These possible errors in the data are illustrated below.

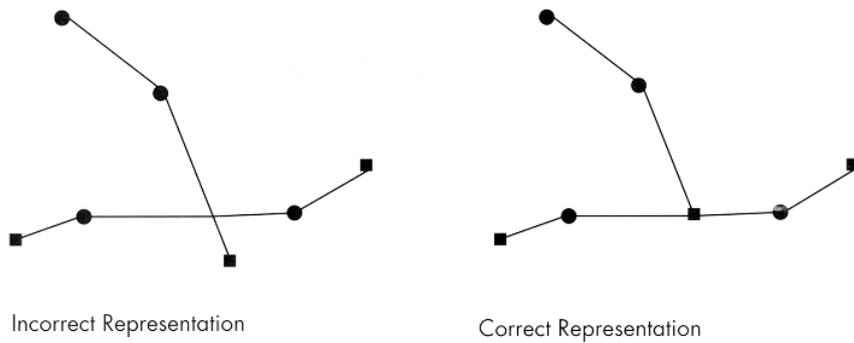


Figure 3: Overshoot



Figure 4: Broken lines



Figure 5: Data spikes

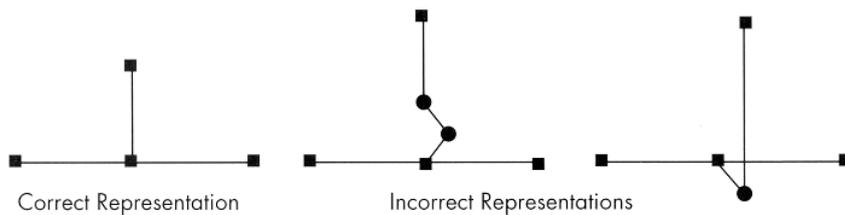


Figure 6: Artefacts in data

Point density reduction

Line features were filtered using a factor of 0.1 of map scale, reducing point density to 500 metres. No line smoothing procedures were used for this database other than filtering of the lines.

Edge-matching

Edge-matching is the process used for digitally aligning contiguous linear features which cross adjacent maps and tiles. It ensures that the coordinates of a feature's intersection with the map edge are coincident in the digital data for adjacent maps. This means that there are no discontinuities where a feature crosses the boundary between adjacent source maps. Edge-matching of spatial data therefore creates a 'seamless' database, allowing the application of network analyses such as area calculations.

Several hundred maps at 1:250 000 scale were used as the source material for the digital representation of the Australian coastline. As these maps were produced over a long period and to different specifications, there were occasional difficulties in matching some of the map and tile edges in the digital data. Features which, in reality, are contiguous may not join on adjacent maps. For example, a reserve boundary following a natural feature such as a stream which runs to the edge of the map may not match an adjacent older map because the course of the stream on the map has been redefined.

Source map edge-matching

The edges of every source map were checked with the edges of adjacent maps for positional and attribute matching. If a feature at the map edge was displaced less than 50 metres, the feature on the most reliable map sheet remained fixed and the feature on the least reliable map sheet was positionally adjusted to achieve a smooth join. If the displacement was greater than 50 metres, additional source material was accessed and, if necessary, the feature revised. Data quality information on the revised feature indicates any revision.

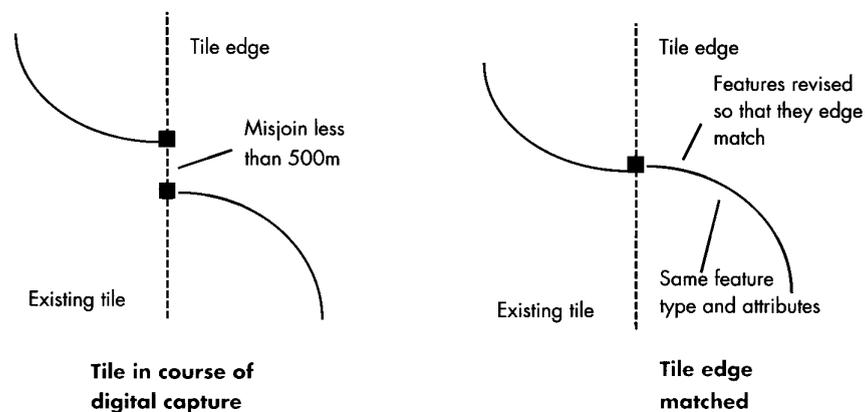


Figure 7: Edge-matching of source maps

Edge-matching polygon features

There are some additional considerations that apply for edge matching polygons. Because of the position of the tile edge, an entity may be represented by separate polygon feature instances in adjacent tiles. Unless the attribute values of the label point of each of these separated polygons are identical, it is not easy to dissolve the line between the two polygons to create a single feature.

Except for the unique feature identifier and data quality pointer attributes, the edge-matching process ensures identical attribute values for polygon features that have been split by the tile edge.

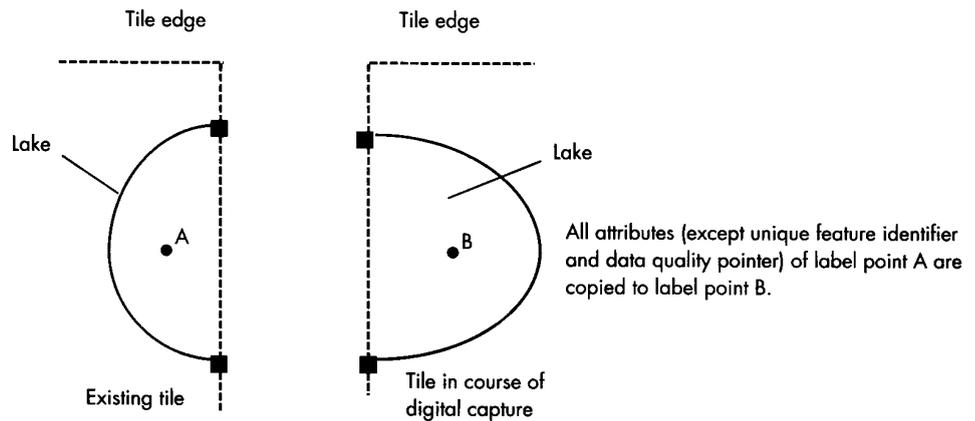


Figure 8: Edge-matching of polygons

Depiction of the land tenure environment

The following diagram illustrates the relationships of a selection of feature types occurring in *Australian Land Tenure 1993*.

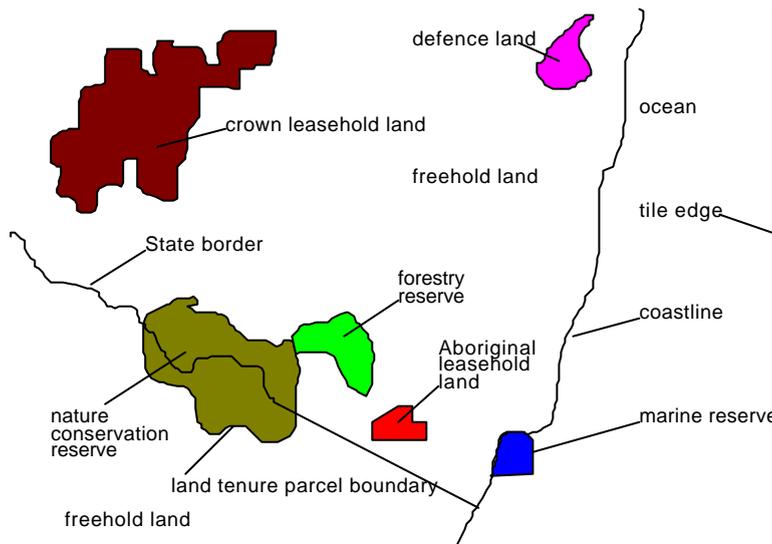


Figure 9: The land tenure environment

Classification criteria

A broadly based, nationally consistent master classification of land tenure has been used which incorporates land tenure types currently in use by the relevant State and Commonwealth land administration agencies. This classification was originally developed to define data at a capture scale of 1:250 000. A nominal scale of 1:4.7 million and a minimum 50km² threshold limit for land parcels was specified for this product. The master classification provided detail well beyond that required and consequently, some categories for this product are aggregations of the original classification.

The following table shows the lineage of the this *Australian Land Tenure 1993* product categories

Table 2: *Australian Land Tenure 1993* classification categories

Master classification of land tenure		Land tenure categories
CLASS 1 Forestry reserve	1a State forest equivalent 1b Timber reserve	Forestry reserve

Master classification of land tenure		Land tenure categories
CLASS 2 Environmental protection reserve	2a National Park	Nature conservation reserve (includes national parks)
	2b Other nature conservation reserve	Marine reserve
	2c Water supply reserve	Aboriginal freehold- national park Water reserve
CLASS 3 Institutional land	3a Defence reserve	Defence land
	3b Aboriginal reserve	Aboriginal reserve
	3c Other institutional land	Other crown land
CLASS 4 Mining reserve		Mining reserve
CLASS 5 Vacant crown land		Vacant crown land
CLASS 6 Freehold and crown leasehold land	6a1 Freehold Aboriginal	Aboriginal freehold land
	6a2 Leasehold Aboriginal	Aboriginal leasehold land
	6b1 Freehold other	Mainly freehold land
	6b2 Leasehold other	Crown leasehold land (mainly pastoral)
		Mixed lands

Class 1 - Forestry reserve

Public lands managed and controlled by State forestry services in accordance with Forestry Acts and regulations (p.325 1986 Australian Yearbook).

1a - State forest or equivalent

Permanent forestry reserves. Primary purpose - timber production and harvesting. These are usually known as State Forests, but include reserved forests (Victoria), and Forest Reserves (South Australia). Note that the term 'State forest' as used in Victoria includes protected forests, (Vic. Forestry Act 3.1), Crown lands administered by the Lands Department and not regarded here as permanent forestry reserves. Permanent forestry reserves can be revoked only with the concurrence of Parliament. This can be by Act or Resolution (various Forestry Acts: Slinn) or, in the case of forest reserves in SA, by tabling the reasons for revocation in Parliament. (Slinn).

This class contains:

- State forests (NSW, QLD, TAS, WA);
- Reserved forests (Vic);
- Forest reserves (SA,WA); and
- Forestry reserves (ACT).

1b - Timber reserve

Temporary forestry reserves. These are areas of Crown land that have been given temporary reserve status to protect existing timber resources, or to be maintained for the provision of timber supply (e.g. NSW Act, reg. 5). Timber reserves no longer exist in Victoria, having been converted to reserved forests (permanent forestry reserves) (Vic. forestry Act, 42.1). Temporary forestry reserves can be reserved or revoked without reference to Parliament, by gazettal, proclamation etc. (Slinn; various Acts).

This class contains:

- Timber reserves (NSW, QLD, TAS, WA lands and forestry Acts); and
- local government forestry reserves (SA forestry Act).

Class 2 - Environmental protection reserve

Usually administered by State or federal national parks and wildlife services or water supply authorities but includes others such as flora reserves (NSW: Forestry Commission) and Scientific Areas (QLD) and some national parks and nature reserves administered by other authorities, such as the Lands Department in WA,

or some local government authorities. Provisions for reserving or revoking national parks and other nature conservation reserves vary from State to State and may be by Act or Resolution of Parliament, proclamation etc.

Water supply reserves are given a separate category within this group because although they share the major characteristic of protecting the natural environment from physical alteration, their purpose is different.

2a - National Park

National Parks are generally large areas, of scenic or other natural significance to the general public. They are permanently reserved as national parks, and public use is encouraged. This class includes National Parks in all States.

2b - Other nature conservation reserve

Includes nature reserves, state recreation areas, conservation parks, environmental parks etc. These are crown lands reserved for more specific environmental conservation purposes such as protection of wildlife, protection of a type of habitat, or preservation of an area with natural features of scientific or recreational value.

2c - Water supply reserve

Crown lands reserved to protect a water supply catchment or accommodate works associated with water supplies. Includes controlled catchments where privately or publicly owned land is used primarily for other purposes but is subject to landuse or access restrictions. Can include areas reserved primarily for water catchment protection, but where secondary interests might be represented.

This includes:

- Catchment areas reserved specifically for domestic water quality protection where access may be restricted (all States);
- Crown land reserved in irrigation supply catchments for erosion/siltation control.; and
- Various Crown reserves vested in water supply authorities, or designated for water supply purposes (e.g. PWP, Water) reserved land associated with government bores etc.- probably all States).

Class 3 - Institutional land

An institute, or institution can be broadly defined as an organization set up to promote or implement some educational, scientific or other activity in the public interest. (Concise Oxford Dictionary; Longman Dictionary of Geography). These organisations often hold large areas of public land to accommodate their activities, which results in a class of reserved public land, vested in a special-purpose organisation, where the focus of interest is on the human activities carried out there, and which need have little or no relationship to the natural features of the land itself. This contrasts with classes 1 and 2 above which, although falling within this general definition, are special cases where the reservation and classification of the land depend entirely upon the nature of the land and its natural resources.

3a - Defence reserve

All land reserved for use by the armed forces for training, research, and military installations. Crown lands designated defence or training areas; military firing ranges; land vested in defence departments; reserved land obviously associated with defence installations e.g. dockyards, barracks etc. (all States).

3b - Aboriginal reserve

These are distinguished from class 6a (land held by Aboriginal communities) by being Crown lands, reserved for Aborigines, but under the control of State Government Aboriginal affairs authorities. (QLD, WA,).

3c - Other institutional land

Other institutional lands reserved for purposes other than those in the other classifications, or being held in reserve pending dedication for some specific purpose.

There are three sub-classes as follows:

- *3c1 - Transport communications and electricity services*; aerodromes, railway yards and shipping terminals, if big enough; power generation sites etc.
- *3c2 - Scientific/research/ educational*; state agricultural colleges/research farms, CSIRO research areas etc.
- *3c3 - Other*; miscellaneous areas that cannot be classified but are still crown lands including reserved crown land. Crown lands reserved for purposes other than those in other classes. Contains many different categories of land varying from state to state, but include the following: travelling stock routes; police paddocks; camel paddocks; and road reserves, reserves from sale, reserves for public purposes.

Class 4 - Mining reserve

Crown lands held in reserves for mining. Note that mining on privately held land is not included.

Class 5 - Vacant crown land

Crown land that is not reserved for any purpose.

Class 6 - Freehold and crown leasehold land

Class 6 represents all privately owned land, differentiated by tenure (freehold or leasehold). This includes as a special class, land owned by Aboriginal communities, but not by individual Aboriginal landowners. This class (6a) is further subdivided according to whether the group ownership is by freehold or leasehold title. All other freehold and leasehold land is covered by class 6b. In certain circumstances, freehold title can be held by a Government body, such as a State forestry commission when land is purchased to establish forestry plantations.

6a - Land held by Aboriginal communities

Aboriginal freehold and leasehold land is land held by designated Aboriginal communities, with special conditions attached to the titles. Does not include land held privately by individual Aboriginal landowners.

- *6a1 - Freehold Aboriginal title*
- *6a2 - Leasehold Aboriginal title*

6b. Other freehold and leasehold land

- *6b1 - Freehold other*
- *6b2 - Leasehold other*

4.2 Australian Land Tenure 1993 data concepts

Each feature in *Australian Land Tenure 1993* is defined by a spatial object and an attribute object. These features fit into the hierarchy of theme and layer. At the highest level, associated features are grouped into themes. Themes are subdivided into layers according to the spatial objects used to represent the features.

Vector data

Vector data describes spatial data in which the location of a real world phenomenon is defined by points and straight lines (vectors) between these points. The vector data model used for *Australia Land Tenure 1993* also includes polygons - areas bounded by straight lines.

Feature-based data

The feature-based data model can be described by the following definitions which are used to represent phenomena in the real world:

- **Entity:** A real world phenomenon which cannot be divided into phenomena of the same type.
- **Feature instance:** A single occurrence of a feature which has a unique set of spatial and attribute object values.

- **Attribute:** A descriptive characteristic of a feature. Attributes can be spatial (or locational) and aspatial (or non-locational).
- **Attribute value:** A value assigned to an attribute, either for a feature instance or its attributes.
- **Feature class:** A group of feature instances defined by a set of rules and having common attributes and relationships that are the properties of the corresponding real world phenomena.
- **Entity class:** A group of entities of the same kind, matching the members of a feature class.

The structure of a feature instance in the feature based data model can be summarised as:

$$\text{feature instance} = [\text{spatial object} + \text{attribute object}]$$

Spatial object

Spatial objects are the locational attributes of the feature. In this product, they comprise the special cases of points, chains and polygons. Spatial objects have a spatial address which consists of one or more couplets (x, y) or triplets (x, y, z).

Point

A *point* is a geometric representation defined by a single (x, y) coordinate couplet or a (x, y, z) triplet. Three special points are used.

- **Entity point**
An *entity point* is used to locate point entities, or area entities represented by a point because of the scale of the source material and/or scale of the final product.
- **Polygon label point**
A *polygon label point*, contained within every polygon feature instance, locates information about that polygon. It is linked to the bounding chains of the polygon. In proprietary GIS software packages, this point type is sometimes known as a centroid.
- **Node**
A *node* is a junction of two or more feature instances or an end point of a feature instance. Nodes may carry attribute information.



Chain

A *chain* is a spatial object composed of a sequence of non-intersecting line segments which is bounded by nodes at each end. Chains may carry topological information such as a reference to the polygons to the left and right (with respect to the direction of digitising) and reference the start and end nodes.

A line segment is a straight line between two consecutive vertices in a chain. Each vertex is defined by a single (x, y) coordinate couplet.



Figure 10: Chain spatial object

Polygon

A *polygon* is a bounded, continuous region consisting of an interior area, and an outer boundary defined by a set of chains. A polygon may also contain one or more non-nested inner boundaries also defined by sets of chains.

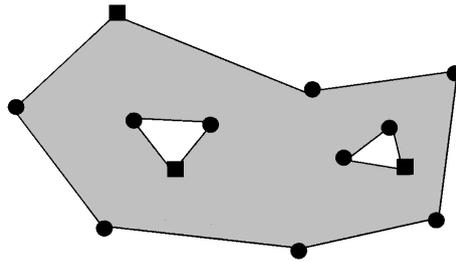


Figure 11: Polygon spatial object

The entity and its spatial object

The spatial object used to depict a feature depends on the size of the entity with respect to the scale of the source material. A very small Aboriginal reserve could be represented as an entity point whereas a large reserve could be represented by a polygon. For this reason, a class of feature may be depicted by more than one type of spatial object.

Attribute object

An *attribute object* identifies the class of feature and the non-locational properties of the feature. The following example illustrates the possible content of the attribute object for a parcel of Aboriginal freehold land in Queensland. Note that area is expressed in hectares and the date is read as month/day/year.

Table 3: Example of an attribute object and its values

Attribute	Attribute value
feature	Abor_free (Aboriginal freehold over 100km ²)
name	Mapoon
res_type	ADGT (Aboriginal Deed of Grant in Trust)
res_area	26300
state	B (Queensland)
authority	AC (Aboriginal Community Council/Association)
reserve number	38
proclaimed	10/26/86
latest_gaz	10/26/86
revised	07/08/93

5 Data structure and content

5.1 Data structure

Australia Land Tenure 1993 uses a feature based topological data model which consists of points, chains and polygons. Specific land parcels within the land tenure classification are represented by entity points, and by line segments connecting at nodes to form the boundaries of polygons.

Additional information about the land parcels is contained in an attribute table. Polygon label points within polygons of land link each polygon and its boundary segments to the information relating to that land parcel in a record and field attribute table. Likewise, entity points are also linked to another attribute table. When combined, these objects define a feature instance. Features are grouped to form a hierarchy which is used for the capture and transfer of the data.

A total of 16 polygon feature types have been generated from the *Australia Land Tenure 1993* master classification to create a meaningful set of basic feature types for this product. The area of the sea is covered as a separate feature type. There are four classifications of chains which form the boundaries for the polygon label point features. The Aboriginal land classifications (apart from the single Aboriginal freehold/National Park category) are represented by six entity point feature types. The following table describes the feature types:

Table 4: *Australia Land Tenure 1993* feature types

Feature type	Feature	Feature description
Polygon	abor_cent	Aboriginal reserve over 100km ²
	abor_free	Aboriginal freehold over 100km ²
	abor_lease	Aboriginal leasehold over 100km ²
	def_cent	Defence land
	for_cent	Forest reserve
	free_cent	Freehold land other than Aboriginal land
	lease-cent	Leasehold land other than Aboriginal land
	marine_cent	Marine reserve
	mine_cent	Mining reserve
	mixed	Multiple public land parcels
	multi_cent	Aboriginal freehold-national park
	ncr_cent	Nature conservation reserve
	other_cent	Other Crown land
	ocean	Unallocated area of ocean
vcl_cent	Vacant crown land	
water_cent	Water supply reserve	
Point	abor_cent1	Aboriginal reserve 0.1 to 10km ²
	abor_cent2	Aboriginal reserve 10 to 100km ²
	abor_free1	Aboriginal freehold 0.1 to 10km ²
	abor_free2	Aboriginal freehold 10 to 100km ²
	abor_lease1	Aboriginal leasehold 0.1 to 10km ²
	abor-lease2	Aboriginal leasehold 10 to 100km ²
Chain	coastline	Coastline of Australia
	public_boun	Reserve boundary
	state_border	State borders
	tile_edge	Tile edge

Aboriginal freehold and Aboriginal leasehold feature types can carry a full set of attribute responses. Due to the concatenation of most sub-classes of the remaining category types as shown in Table 2, the corresponding feature types cannot carry a full set of attribute responses. This is also the case whenever adjoining areas of the same feature types but with different reserve types have been amalgamated. Consequently responses to the attributes 'res_type', 'res_area', 'authority', 'res_number', 'proclaimed', and 'latest_gaz' have not been entered. Likewise, mixed lands features which by definition comprise small public land parcels of different classifications, are also unable to carry a full set of attribute responses.

Theme

The digital spatial data contained in data are primarily derived from existing map production material. The data on the source material are captured as features and these features may be grouped into *themes*, each containing logically related geographic information. The theme is the highest level of data grouping in the vector data structure. *Australia Land Tenure 1993* is composed of only a single theme.

Layer

Each theme may consist of one or more layers. A layer is a grouping of features which have compatible spatial objects. Vector data may contain four types of layers:

- **Linear network layer**
Linear layers contain linear features such as watercourses. These layers are composed of nodes and chains.
- **Polygon layer**
Polygon layers contain area features represented by polygons, such as lakes and reefs.
- **Point layer**
Point layers contain features that are represented by entity points, such as buildings or aircraft facilities.
- **Point/linear layer**
Point/linear layers contain a combination of entity point and chain features such as road networks with bridges and river networks with waterfalls and locks.

Australia Land Tenure 1993 has only one layer, land tenure.

5.2 Data dictionary

Characteristics which are common to all features:

- **Feature code**
Every *Australia Land Tenure 1993* feature instance is identified by a code which groups those features that have common characteristics and relationships corresponding to properties of real world phenomena. This attribute is shown under the heading '*Feature Code*' for each feature definition in this data dictionary.
- **State**
The State or Territory the parcel is located in.
- **Revised**
Date of the latest data amendment.

Attribute table

Table 5: Attribute table of *Australia Land Tenure 1993*

Feature	Description	Object	Attribute	Attribute values
ABORIGINAL FREEHOLD LAND (abor_free1 - Aboriginal freehold 0.1km ² to 10km ² ; abor_free2 - Aboriginal freehold 10km ² to 100km ² ; abor_free - Aboriginal freehold over 100km ²)	Aboriginal freehold lands held by designated Aboriginal communities with special conditions attached to the titles.	Polygon/Entity point	NAME (name)	Name of the land parcel
			RESERVE TYPE (res_type)	Land type
			RESERVE AREA (res_area)	Area of parcel
			CONTROLLING AUTHORITY (authority)	Controlling organisation Valid combinations of authority to reserve types (res_type) include: Res_type Authority ADGT AC AFI LC, AL AFL AC, LC, AL, IA, AA, AD, AB
			RESERVE NUMBER (res_number)	Identification number of parcel
			DATE OF	Date parcel proclaimed in gazette

Feature	Description	Object	Attribute	Attribute values
			PROCLAMATION (proclaimed)	
ABORIGINAL FREEHOLD - NATIONAL PARK (multi_cent)	Aboriginal freehold lands leased back to conservation authorities as national park. Such lands are jointly controlled.	Polygon	NAME (name)	Name of land parcel
			RESERVE TYPE (res_type)	Land type
			RESERVE AREA (res_area)	Area of parcel
			CONTROLLING AUTHORITY (authority)	Controlling organisation Valid combinations of authority to reserve types (res_type) include: Res_type Authority FINP J
			RESERVE NUMBER (res_number)	Identification number of parcel
			DATE OF PROCLAMATION (proclaimed)	Date parcel proclaimed in gazette
			DATE OF LATEST GAZETTAL (latest_gaz)	Date of latest gazette amendment
ABORIGINAL LEASEHOLD LAND (abor_lease1 - Aboriginal freehold 0.1km ² to 10km ² ; abor_lease2 - Aboriginal freehold 10km ² to 100km ² ; abor_lease - Aboriginal freehold over 100km ²)	Aboriginal leasehold lands occupied by designated Aboriginal communities with special conditions attached to the titles.	Polygon/Entity point	NAME (name)	Name of land parcel
			RESERVE TYPE (res_type)	Land type
			RESERVE AREA (res_area)	Area of parcel
			CONTROLLING AUTHORITY (authority)	Controlling organisation Valid combinations of authority to reserve types (res_type) include: Res_type Authority ALG AL ALL AL, L, NR, AA APL AL, AA, L, PI
			RESERVE NUMBER (res_number)	Identification number of parcel
			DATE OF PROCLAMATION (proclaimed)	Date parcel proclaimed in gazette

Feature	Description	Object	Attribute	Attribute values
			DATE OF LATEST GAZETTAL (lates t_gaz)	Date of latest gazette amendment
ABORIGINAL RESERVE (abor_cent1 - Aboriginal freehold 0.1km ² to 10km ² ; abor_cent2 - Aboriginal freehold 10km ² to 100km ² ; abor_cent - Aboriginal freehold over 100km ²)	Aboriginal crown reserve land reserved for Aboriginal people, under the control of State Government Aboriginal affairs authorities.	Polygon/Entity point.	NAME (name)	Name of land parcel
			RESERVE TYPE (res_type)	Land type
			RESERVE AREA (res_area)	Area of parcel
			CONTROLLING AUTHORITY (authority)	Controlling organisation Valid combinations of authority to reserve types (res_type) include: Res_type Authority ABOR QD, AL
			RESERVE NUMBER (res_number)	Identification number of parcel
			DATE OF PROCLAMATION (proclaimed)	Date parcel proclaimed in gazette
			DATE OF LATEST GAZETTAL (latest_gaz)	Date of latest gazette amendment
COASTLINE (coastline)	A line depicting the boundary between land and sea.	Chain		
CROWN LEASEHOLD LAND (lease_cent)	Crown leasehold land (mainly pastoral), privately occupied by other than Aboriginal communities.	Polygon		
DEFENCE LAND (def_cent)	Land reserved for the use of the armed forces.	Polygon		
FORESTRY RESERVE (for_cent)	Crown land managed and controlled by State forestry services.	Polygon		
FREEHOLD LAND (free_cent)	Mainly freehold land, privately occupied by other than Aboriginal communities.	Polygon		
LAND TENURE PARCEL BOUNDARY (public_bound)	The boundary line forming the edge of the land tenure polygons.	Chain		
MARINE RESERVE (marine_cent)	Area reserved by an Act or Resolution of Parliament for the purposes of protecting the	Polygon		

Feature	Description	Object	Attribute	Attribute values
	natural environment that covers marine and estuarine areas.			
MINING RESERVE (mine_cent)	Crown lands held in reserve for mining. Does not include mining on privately held land.	Polygon		
MIXED LANDS (mixed)	Adjoining small public land parcels of different categories individually less than 50km ² , none which are greater than sixty percent of the combined area.	Polygon		
NATURE CONSERVATION RESERVE (ncr_cent)	Areas that are reserved by an Act or Resolution of Parliament for the purposes of protecting the natural environment. Includes class National Park.	Polygon		
OCEAN (ocean)	The area that is enclosed between the coastline, the seaward edge of declared marine features and the tile edge.	Polygon		
OTHER CROWN LAND (other_cent)	Reserved areas of educational, scientific and other public institutional land, or crown land being held in reserve pending dedication.	Polygon		
STATE BORDER (state_border)	Boundary defining the division of the Commonwealth of Australia into State and Territory administrations.	Chain		
TILE EDGE (tile_edge)	The line defining the limits of the data in the data transfer.	Chain		
VACANT CROWN LAND (vct_cent)	Areas of crown land that are not reserved for any purpose.	Polygon		
WATER RESERVE (water_cent)	Areas of crown land that are reserved to protect water supplies.	Polygon		

Attribute values

Type of reserve

The table below shows all the valid values for the type of reserve (inc. tenure) attribute. Unless otherwise indicated by details enclosed by (), a reserve type may occur in all States and Territories of Australia. The Acts, as amended, under which of these reserves are administered are listed as a source to precise definitions.

Table 6: Type of reserve attribute values

Value	Reserve description
AA	Aboriginal Area (NSW National Parks and Wildlife Act 1974)
ABOR	Aboriginal Reserve (NSW Crown Lands Consolidation Act 1913) (QLD) WA Land Act 1933)
ADGT	Aboriginal Deed of Grant in Trust (QLD The Land Act 1962-1988)
AFI	Aboriginal Freehold Land (inalienable): land held by incorporated Aboriginal groups (SA Pitjantjatjara Land Rights Act 1981, Aboriginal Lands Trust Act 1966-75) (NT Aboriginal Land Rights Act 1976) (NSW Aboriginal Land Rights Act 1984)
AFL	Aboriginal Freehold Land (alienable): land held on behalf of incorporated Aboriginal groups (all States)
ALL	Aboriginal held lease other than pastoral (QLD;NSW;SA;WA;NT)
ALG	Aboriginal Local Government Area Lease (QLD)
AP	Aboriginal Place (NSW National Parks and Wildlife Act 1974)
APL	Aboriginal held pastoral lease (QLD;WA;NT;NSW;SA)
AS	Aboriginal Site (TAS National Parks and Wildlife Act 1970)
FINP	[multi feature] Aboriginal freehold-National Park (NT)

Controlling authority

The table below shows all the valid attributes for the controlling authority attribute.

Table 7: Controlling authority attribute values.

Value	Authority description
A	State/Territory National Parks Service or equivalent
AA	Aboriginal and Torres Strait Islander Commission
AB	Aboriginal Corporation (NT)
AC	Aboriginal Community Council/Association
AL	Aboriginal Lands Trust

Value	Authority description
AP	Aboriginal Affairs Planning Authority (WA)
B	State Wildlife authority
C	Local Government authority
D	Australian Nature Conservation Agency (Commonwealth)
DD	Department of Defence (Commonwealth)
E	State Education Department
F	State Forestry Commission
IA	Incorporated Aboriginal organisation (Vic)
J	Aboriginal Land Council and State/Territory/Commonwealth National Parks & Wildlife Service or equivalent
L	State Lands Department
LC	Aboriginal Land Council
N	ACT Parks and Conservation Service
NR	State Department of Conservation and Natural Resources (Vic)
O	Other State or Federal Govt. Organisations
P	Great Barrier Reef Marine Park Authority
PI	State Department of Primary Industry
PW	State Department of Water Resources/Public Works
QD	Queensland Department of Family Services and Aboriginal and Islander Affairs

State

The table below shows all the valid attributes for the State attribute.

Table 8: State attribute values.

Value	State description
B	Queensland

C	New South Wales
D	Victoria
E	South Australia
F	Western Australia
G	Northern Territory
H	Tasmania
I	ACT/Jervis Bay
OS	outside of States

6 Data quality information

Lineage

Lineage contains a description of the source material, the methods used to derive and capture the data, line filtering, and line smoothing procedures.

Source of the data

Source information for key land tenure classes (including forestry, nature conservation and Aboriginal lands) have been extracted from State and Commonwealth Government gazettes. Declared areas and boundary changes are recorded from gazettes and data holdings are periodically verified by comparison with information obtained from relevant State authorities.

The Commonwealth Aboriginal and Torres Strait Islander Commission and State government departments have provided information on Aboriginal-held lands which are not gazetted.

Information relating to institutional, mining, freehold, crown leasehold and other classes was obtained from published maps but has not been systematically collected and contains little attribute information. Public roads and smaller reserves in urban areas are specifically excluded.

The coastline and State/Territory borders were captured from the 1:250 000 scale National Topographic Mapping Series (NTMS).

Data capture and verification procedures

First cover data was acquired primarily from a previous database maintained in Geoscience Australia through gazette information. Boundary information was stored on cadastral maps and individual reserve plans. Boundary information is also available from the relevant State authorities in the form of plans, diagrams, dyelines etc. The boundaries were transferred to 1:250 000 scale overlays by optical and photographic reduction. Overlays were checked against original sources prior to table or scan digitising.

Attribute information such as name, type of reserve, area, authority, reserve number, and proclamation date was entered into the attribute table. A unique identification number, source material code and the date of data entry were added to the master database.

Attribute response information for this product is reduced as a result of the amalgamation of land tenure classifications and the combining of small adjoining areas of public land. In these situations, attribute responses become invalid and thus have been deleted.

Following topological structuring and attributing of the data, it and copies of a preliminary land tenure map were provided to Commonwealth, State and Territory authorities (listed at p. 34) for checking and, where possible, any necessary amendment. It was not possible at the time for all NSW Aboriginal land tenure to be checked. Corrections were incorporated and plots of the spatial data verified by these authorities prior to the release in September 1993 of the Land Tenure Map Edition 1 (1:4.7 million scale), which was generated from this data. Since then, the data have been further revised and updated.

Positional accuracy

The positional accuracy of the data is dependent upon errors of positional accuracy of the source material and resolution tolerance variation of the digitising equipment.

Positional accuracy of the source material

The source material used to derive the land tenure boundary data complies with the following statement of positional accuracy:

Not more than 10% of well-defined points shall be in error by more than 125 metres.

To test the above statement, verification plots were produced from the data at 1:250 000 scale and overlaid to 1:250 000 NTMS map bases. Map sheets within each State were selected at random

and the position of identifiable features compared on the plot and map base. The following diagram shows the results.

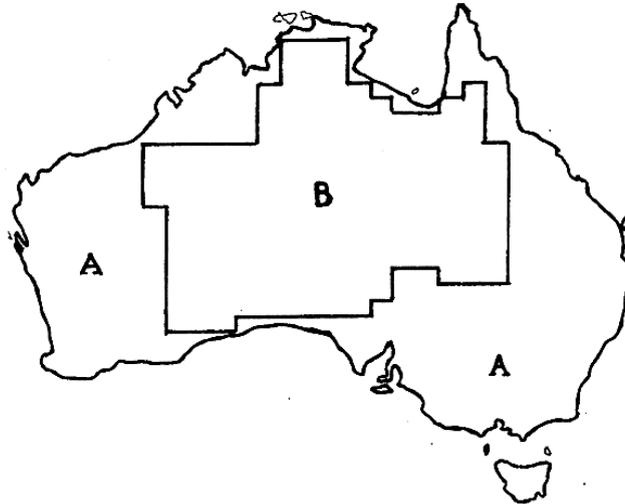


Figure 12: Positional accuracy testing

- Area A Positional accuracy was found to be within the 10% threshold due to the density of base map line features (road, railway, stream), enabling reliable positioning of land tenure boundaries.
- Area B Positional accuracy was found, on many 1:250 000 map sheets, to be above 10% due to the sparsity of base map features.

All subsequent additions and amendments have been captured at scales between 1:25 000 and 1:250 000 and land parcels within area B will be amended where necessary as suitable material becomes available.

Digitising accuracy

Scan and table digitising methods for the capture of source data were used for the acquisition of land tenure data.

Scanning.

The scanning equipment used by Geoscience Australia had a resolution of 0.05mm (SCITEX R280 system). The expectation is that the degradation caused by scanning process will be minimal and will be the result of thinning lines to a co-ordinate string. This may result in an added error of +/- 0.2mm for the thickest lines digitised. This method was used for most 1:250 000 scale map sheets area shown within Area A of the positional accuracy diagram above.

Table digitising.

Table digitising is correct to +/- 0.25mm measured on the source material. This method was true for 1:250 000 scale map sheets shown within Area B of the positional accuracy diagram. In summary, the positional accuracy of the *Australia Land Tenure 1993* is estimated, in the worse case, to be +/- 250 metres at the 1:250 000 scale of the source material.

Cartographic generalisation

Australia Land Tenure 1993 data were digitised from annotated maps and some features may be subject to cartographic generalisation. Cartographic generalisation can have a major effect on the selection and positioning of features on small scale cartographic products. It may involve the processes of selection, displacement, simplification, exaggeration or aggregation.

Selection is necessary to reduce clutter on a map. Features are selected because of their relative importance. For example, only reserves or land over a specified size are shown. Displacement is the movement of one feature with respect to another to allow them to be clearly portrayed at map scale.

Simplification involves a smoothing of the detail of a line to reduce clutter on the map and to clarify portrayal of a feature. For example, at small scale the boundary of a reserve formed in part by the course of a meandering river is simplified. Exaggeration allows small but significant features to be shown.

Aggregation allows a number of small features to be symbolised by a single feature of the same type. For example, a number of small reserves may be aggregated and portrayed as a single reserve.

Adjoining land parcels of the same category have been amalgamated to form a single polygon. Isolated land parcels less than 50km² (the minimum polygon size) have been eliminated. An exception is the smaller Aboriginal lands between 0.1 and 100km² which are represented by entity points. Public land parcels less than 50km² adjoining other public land have been amalgamated if this would result in a combined area greater than 50km². In cases where this public land comprises a combination of different tenure types, the reserve type contributing the largest area to the total determined the feature type name of the entire parcel.

Attribute accuracy

Attribute accuracy is a measure of the degree to which the feature codes and their attribute values are correct.

The data dictionary in Section 5.2 describes the features in the *Australia Land Tenure 1993* data. Each feature is defined and its feature code and attributes are given. For this product, attribute accuracy is a measure of the degree to which the attribute values of features agree with the information from the source material. The allowable error in attribute accuracy is 1%.

Description of testing procedure used.

Where 1% or less of attribute errors are permissible the entire population is tested. Where a less stringent limit is set for allowable errors, a random subset of the relevant features is generally tested. The sample size is determined from statistical tables using the known population size of the relevant feature.

The following table sets out the checks on the data and gives the test sample size and the allowable error.

Table 9: Attribute testing for *Australia Land Tenure 1993*

Attributes tested	Test sample size	Allowable error
Polygon attribute values are within the ranges as specified in the data dictionary.	full population	1%
Linework attribute values are within the ranges as specified in the data dictionary.	full population	1%
Features have the correct feature code.	full population	1%

Logical consistency

Logical consistency is a measure of the degree to which data complies with the specified capture and structuring parameters. Validating logical consistency may involve tests to check that table and file names are as set out in the Data Dictionary. Also included are graphical tests which check such things as intersections, polygon closure, minimum sizes of polygons and topological relationships. The allowable error in logical consistency ranges from 0.5% to 5%.

Description of testing procedure used

The logical consistency of the data is tested using a mixture of UNIX scripts and ArcInfo commands. This checking is independent of the GeoVision production system.

Where 1% or less of logical consistency errors are allowed the entire population is tested. Where a less stringent limit is set, a random subset of the relevant features is tested. The sample size is determined from statistical tables using the known population size of the relevant feature.

Table 10: Logical consistency checking for *Australia Land Tenure 1993*.

Logical consistency check	Test procedure	Test sample size	Allowable error
Names of the files are correct	on-screen, visual	full population	0.5%
Table names in the file are valid	UNIX script	full population	0.5%
Layer names and numbers in the file are valid	UNIX script	full population	0.5%
Network names and numbers in the file are valid	UNIX script	full population	0.5%
Field names in the file are correct	UNIX script	full population	0.5%
Feature codes are valid	UNIX script	full population	0.5%
Feature codes appear in only one layer and network of the file	UNIX script	full population	0.5%
Feature codes are listed in only one table of the file	UNIX script	full population	0.5%
Linear features have more than one coordinate pair	UNIX script	full population	0.5%
Label points and entity point features have only one coordinate pair	UNIX script	full population	0.5%
Planimetric coordinates given in latitude and longitude are listed to a maximum of five decimal places	UNIX script	full population	0.5%
The ArcInfo coverages can be generated, with attributes attached, and can be "built"	ArcInfo program	full population	0.5%
There are no coincident line segments in a single coverage, or intersecting arcs without a node	ArcInfo program and UNIX script	full population	0.5%
There are no label errors in polygon coverages ie. every polygon has one and only one polygon label point	ArcInfo program	full population	0.5%
There are no pseudo nodes, ie. nodes separating arcs with the same attributes	ArcInfo program	full population	2%
There are no overshoots, ie. arc overhangs at intersections	ArcInfo program	full population	1%
There are no undershoots in linear coverages ie. arcs failing to meet at intersections	ArcInfo program	full population	0.5%
There are no undershoots in polygon coverages, ie. arcs failing to meet at intersections	ArcInfo program	full population	0.5%
In polygon coverages there are no collapsed polygons or small polygons that do not exist on the map	ArcInfo program	full population	1%

Logical consistency check	Test procedure	Test sample size	Allowable error
No arcs separate polygons with identical attributes except where an arc is a state border or coastline feature ie. abutting polygons do not have the same attributes	ArcInfo program	full population	1%
All features fall fully within the tile edge	visual	full population	0.5%
At line intersections there are no artefacts such as spikes or deviations visible at 1:5 million scale	on-screen	statistical subset	5%
Features coded as tile_edge appear only on the neatline of the map	on-screen	full population	1%

Data Completeness

State, Territory and Commonwealth gazettes provide information on proclamations and additions to Crown reserves. Completeness is checked through periodic comparison against State authority estate listings for nature conservation reserves, forestry and Aboriginal reserves. Information on other Aboriginal lands is obtained through liaison with ATSIC offices and State Land Departments.

Data is collected on a State/Territory and Commonwealth basis and has been checked where possible by the following authorities between May and July 1993:

Table 11: Data completeness checking authorities

State/Territory	Authority
New South Wales	Land Information Centre, Department of Conservation and Land Management
Australian Capital Territory	Land Information Centre, Department of the Environment, Land and Planning
Victoria	Office of Geographic Data Coordination, Ministry of Finance
Tasmania	Land Information Bureau, Department of Environment and Land Management
South Australia	Resource Information Group, Department of Environment and Land Management
Western Australia	Department of Land Administration
Northern Territory:	Information Services Division, Department of Lands, Housing and Local Government
Queensland	Department of Lands
Commonwealth	Australian Nature Conservation Agency Department of Defence Great Barrier Reef Marine Park Authority

Appendix A: Metadata

Note: This dataset description is metadata (data about data) which describes the actual dataset in accordance with the ANZLIC (Australia New Zealand Land Information Council) Core Metadata [Guidelines](#) Version 2.

Dataset citation

ANZLIC unique identifier: ANZCW0703005424

Title: Australia Land Tenure 1993

Custodian

Custodian: Geoscience Australia

Jurisdiction: Australia

Description

Abstract:

Australia Land Tenure 1993 contains boundaries and attribute information on public and private land tenure, including Aboriginal and Torres Strait Islander lands vested in communities or equivalent bodies. It has been derived from Geoscience Australia's *National Public and Aboriginal Lands (NPAL)* data which has been sourced from government gazette notices, cadastral maps and plans.

It provides a fundamental base layer of geographic information on which you can build a wide range of applications. This data is particularly suited to State-wide and national applications.

ANZLIC search words:

- BOUNDARIES Mapping
- LAND Ownership Mapping
- LAND Use Mapping

Geographic extent name:

AUSTRALIA INCLUDING EXTERNAL TERRITORIES - AUSAAT - Australia - Australia

Note: The format for each Geographic extent name is: Name - Identifier - Category - Jurisdiction (as appropriate) See [GEN Register](#)

Geographic bounding box:

North bounding latitude: -9°

South bounding latitude: -90°

East bounding longitude: 168°

West bounding longitude: 145°

Data currency

Beginning date: Not Known

Ending date: 1993-06-30

Dataset status

Progress: Complete

Maintenance and update frequency: Not Known

Access

Stored data format:

Digital: ArcInfo

Non-digital: Maps

Available format type:

Digital: ArcInfo Export

Digital: ArcView Shapefile

Digital: MapInfo mid/mif

Digital: AS2482

Non-digital: Maps

Access constraints:

The data are subject to Copyright. Data files may be downloaded from Geoscience Australia's website at www.ga.gov.au/download/. A licence agreement is required.

Data quality

Lineage:

Data was primarily sourced from Geoscience Australia's *National Public and Aboriginal Lands* data which contains data from State and Commonwealth Government gazettes. The Commonwealth Aboriginal and Torres Strait Islander Commission and State Government departments provided information on Aboriginal lands not gazetted. Other information was obtained from published maps and Geoscience Australia's National Topographic Mapping Series (NTMS).

Positional accuracy:

The source material used to derive the land tenure data complies with the following statement of positional accuracy: *'Not more than 10% of well-defined points shall be in error of more than 125 metres.'*

Attribute accuracy:

For this product, attribute accuracy is a measure of the degree to which the attribute values of the features agree with information from the source material. The allowable error is 1%.

Logical Consistency:

Logical consistency checking included tests to check that table and file names were consistent with the data dictionary. Graphical tests to check intersections, polygon closure, minimum sizes of polygons and topological relationships. The allowable error of logical consistency ranges from 0.5% to 5%.

Completeness:

Data completeness has been checked through comparison against State/Territory listings for nature conservation reserves, forestry, and Aboriginal reserves.

Contact information

Contact organisation: [Geoscience Australia](http://www.ga.gov.au)

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Metadata information

Metadata date: 2003-04-02

Additional metadata

Metadata reference XHTML: <http://www.ga.gov.au/meta/ANZCW0703005424.html>

Metadata reference XML: <http://www.ga.gov.au/meta/ANZCW0703005424.xml>

Size of dataset: 5.5 - 6.5 MB depending on the format.

Resolution/scale: 1:5 million

Projection/datum: Geographical coordinates using the Australian Geodetic Datum 1966 (AGD66).

Appendix B: Feature statistics

The table below summarises the frequency of every feature code within the GeoVision *Australia Land Tenure 1993* data file.

Table 12: Feature statistics for *Australia Land Tenure 1993*.

Feature	ACT	NSW	NT	QLD	SA	TAS	VIC	WA	OS
abor_cent	-	-	-	2	-	-	-	36	-
abor_cent1	-	-	-	43	-	-	-	105	-
abor_cent2	-	-	-	3	-	-	-	32	-
abor_free	-	1	85	27	4	-	-	-	-
abor_free1	1	73	49	18	27	2	8	15	-
abor_free2	-	2	41	18	6	-	3	5	-
abor_lease	-	5	9	8	2	-	-	57	-
abor_lease1	-	3	14	-	-	-	1	6	-
abor_lease2	-	5	2	2	-	-	-	3	-
coastline	-	45	47	215	26	59	23	168	-
def_cent	-	3	2	6	2	2	1	6	-
for_cent	1	95	-	128	6	25	57	30	-
free_cent	-	13	6	65	5	13	20	14	-
lease_cent	1	1	24	56	6	-	1	75	-
marine_cent	-	1	1	21	-	-	2	7	6
mine_cent	-	-	-	7	-	-	3	1	-
mixed	2	20	-	8	-	16	11	10	-
multi_cent	-	-	4	-	-	-	-	-	-
ncr_cent	2	61	17	69	37	11	52	101	-
ocean	-	-	-	-	-	-	-	-	21
other_cent	-	41	26	47	4	6	16	73	-
public_boun	7	451	419	658	117	152	327	1138	23
state_border	-	-	-	-	-	-	-	-	183
tile_edge	-	-	-	-	-	-	-	-	1
vcl_cent	-	9	17	6	14	9	-	130	-
water_cent	-	9	-	2	1	4	10	10	-
Total	14	838	763	1409	257	299	535	2022	234

Appendix C: Areas of land tenure

The area figures in the following table have been machine calculated from the *Australia Land Tenure 1993* database in February 1994. Any variations between these figures and aggregated area statements obtained from other sources will be minor.

This is corroborated by the computer generated total agreeing with the officially declared areas for Australia and its States and Territories as set out in the Australian Year Book 1993.

Table 13: Areas of land tenure

Public land ('000 km²)										
Category	QLD	NSW	VIC	SA	WA	NT	TAS	ACT	Total	
Nature conservation reserve	54.2	38.1	30.6	203.7	155	27.8	13.5	1.2	524.1	
Aboriginal freehold-national park	-	-	-	-	-	10.8	-	-	10.8	
Other crown land	13.9	6.4	2.0	0.8	42.7	12.3	2.5	-	80.6	
Vacant crown land	0.6	1.4	-	8.3	863.3	82.8	4.3	-	960.7	
Forestry reserve	40.1	34.6	36.4	1.0	20.9	-	15.1	0.1	148.2	
Water reserve	0.3	2.8	1.5	0.2	5.3	-	0.9	-	11	
Defence land	3.8	0.4	0.4	3.6	6.6	3.5	0.3	-	18.6	
Mining reserve	4.3	-	0.3	-	0.4	-	-	-	5.0	
Mixed lands	0.8	2.0	1.1	-	0.8	-	4.0	0.2	8.9	
Total	118.0	85.7	72.3	217.6	1095.0	137.2	40.6	1.5	1767.9	
Private land ('000 km²)										
Category	QLD	NSW	VIC	SA	WA	NT	TAS	ACT	Total	
Freehold	627.2	405.5	155.2	158.4	205.1	6.4	27.2	-	1585	
Crown leasehold	939.8	308.9	0.1	418.4	899.9	666.6	-	0.9	3234.6	
Total	1567.0	714.4	155.3	576.8	1105.0	673.0	27.2	0.9	4819.6	
Aboriginal and Torres Strait Islander land ('000 km²)										
Category	QLD	NSW	VIC	SA	WA	NT	TAS	ACT	Total	
Freehold	20.5	0.4	-	189.0	-	516.8	-	-	726.7	
Leasehold	18.9	1.1	-	0.6	126.1	19.2	-	-	165.9	
Reserve	2.8	-	-	-	199.4	-	-	-	202.2	
Total	42.2	1.5	-	189.6	325.5	536.0	-	-	1094.8	
Total lands ('000 km²)										
Category	QLD	NSW	VIC	SA	WA	NT	TAS	ACT	Total	
Public	118.0	85.7	72.3	217.6	1095.0	137.2	40.6	1.5	1767.9	
Private	1567.0	714.4	155.3	576.8	1105.0	673.0	27.2	0.9	4819.6	
Aboriginal and Torres Strait Islander	42.2	1.5	-	189.6	325.5	536.0	-	-	1094.8	
Total	1727.2	801.6	227.6	984.0	2525.5	1346.2	67.8	2.4	7682.3	
Marine reserves ('000 km²)										
Category	QLD	NSW	VIC	SA	WA	NT	TAS	ACT	Other*	Total
Total	3.4	0.8	0.5	-	11.4	2.5	-	-	361.6	380.2

* Marine reserves in Commonwealth waters

Glossary

Attribute

A descriptive characteristic of a feature. An attribute has a defined set of attribute values.

Attribute object

The attribute object holds the non-locational or semantic information about the feature instance.

Australian Geodetic Datum 1966 (AGD66)

This datum was adopted in 1966 and is defined by the parameters of the Australian National Spheroid and the coordinates of the Johnston Geodetic Station. This datum is used for the determination of coordinates for some Geoscience Australia products. Superseded by the Geocentric Datum of Australia 1994 (GDA94).

Chain

A line composed of a sequence of non-intersecting line segments bounded by nodes. Chains reference the polygons to the left and right of the chain.

Datum

A mathematical surface from which heights or positions are referenced.

Entity

A real world phenomenon which cannot be divided into phenomena of the same type.

Entity point

An entity point is used to locate point entities represented by a point because of the scale of the source material.

Entity class

A group of entities of the same kind, matching the members of a feature class.

Feature

A feature is the cartographic or digital representation of a class of entity.

Feature class

A feature class is a group of feature instances defined by a set of rules and having common attributes and relationships that are the properties of the corresponding real world phenomena.

Feature instance

A single occurrence of a feature which has a unique set of spatial and attribute object values.

Generalisation

A process which may involve the selection, displacement, simplification, exaggeration or aggregation of features from their true position for the sake of cartographic clarity.

Generalisation

A process which may involve the selection, displacement, simplification, exaggeration or aggregation of features from their true position for the sake of cartographic clarity.

Geocentric Datum of Australia 1994 (GDA94)

The set of geographical coordinates based on the Geocentric Datum of Australia. It is compatible with Global Positioning Systems (GPS). Adopted in 1994 and implemented in the year 2000. Used in production of new editions of 1:100 000 and 1:250 000 NATMAPs.

GEODATA

Geoscience Australia's brand of high quality digital data products for use in Geographic Information Systems (GIS).

Geodetic datum

A datum defines the basis of a coordinate system. A local or regional geodetic datum is normally referred to an origin whose coordinates are defined. The datum is associated with a specific reference ellipsoid which best fits the surface (geoid) of the area of interest. A global geodetic datum is now related to the centre of the earth's mass, and its associated spheroid is a best fit to the known size and shape of the whole earth. The position of a point common to two different surveys executed on different geodetic datums will be assigned two different sets of geographical coordinates.

Geographical coordinates

A position given in spherical coordinates commonly known as latitude and longitude.

Geographic Information System (GIS)

A spatial database which is manipulated via a set of spatial operators or commands.

Latitude

The latitude of a feature is its angular distance on a Meridian, measured northwards or southwards from the terrestrial Equator.

Layer

The features in a theme are subdivided into one or more layers on the basis of the spatial objects used to represent the features. Linear networks, polygons and point features are placed in separate layers.

Linear network

A layer consisting of linear features which are connected and which form a pathway along which movement is possible.

Longitude

An angular distance measured east or west from a reference meridian (usually Greenwich) on the earth's surface.

National Topographic Map Series (NTMS)

A civilian map series comprising a set of consistent topographic maps nationwide, at scales of 1:100 000 and 1:250 000.

NATMAP

Geoscience Australia's brand for its popular topographic map range.

Node

A point that is a junction of two or more chains or which is the end point of a chain. Connectivity of chains is indicated by the sharing of nodes at their intersections.

Node/chain structure

The structuring of linear features in a layer so that they consist of chains broken by nodes at intersections or at the point where an attribute of the feature changes.

Point

A geometric representation defined by a single (x,y) coordinate pair or an (x,y,z) triplet.

Polygon

A continuous area defined by a set of bounding chains. There is only one external polygon and there may be one or more internal, non-nested inner boundaries.

Polygon label point

A point within a polygon feature instance used to locate labels or information about that polygon. This point is sometimes known as a centroid.

Positional accuracy

Statistical estimate of the degree to which planimetric coordinates and elevations of features agree with their real world values.

Projection

Any systematic way of representing the meridians and parallels of the earth upon a plane surface or map.

Segment

A direct line between a pair of points or a point and a node.

Spatial object

The spatial object holds the locational information of a feature instance. It is composed of either a point, chain or polygon.

Theme

The information contained in map production material can be divided into themes which contain logically related geographic information. Each theme is capable of being used as a dataset in its own right

Tile

The area of a spatial database included in a data transfer. The TOPO-10M product is comprised of a single tile.

Tile edge

An artificial linear feature which indicates the boundaries of the tile. The tile edge closes off polygon features which are situated in more than one tile.

Vector data

Vector data uses points and straight lines (vectors) to describe features on, or characteristics of, the earth's surface. Vector data can also include polygons, which are areas enclosed by a number of vectors. To record additional information, data attributes can be attached to individual vector features.

Vertex

The connecting point of two line segments.

References

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