

Lineage on the development of the *Tenure of Australia's forests (2018)* dataset for publication in the *Australia's State of the Forests Report 2018*.

Tenure of Australia's forests (2018) is a continental spatial dataset of national land tenure types, assembled for [Australia's State of the Forests Report 2018](#). It was developed from land tenure information from multiple sources, including Australian, state and territory government agencies and external sources. The land tenure dataset is then combined with forest cover information sourced from the [Forests of Australia \(2018\)](#) dataset.

Following identification of small areas of incorrect tenure information in the *Tenure of Australia's forests (2013)* dataset multiple national, and state and territory land tenure and estate spatial datasets were obtained for the development of the *Tenure of Australia's forests (2018)* dataset. National datasets included:

- PSMA Australia CadLite and Land Tenure datasets (May 2016 release)
- Australian Government Department of Defence estate (as at June 2016)
- NFI *Tenure of Australia's forests (2013)* v2.0

The PSMA CadLite and Land Tenure datasets provided near-complete coverage of land tenure data for all states and territories. The Department of Defence dataset covered the Defence estate only. Further information on the NFI's *Tenure of Australia's forests (2013)* v2.0 can be found at: http://www.agriculture.gov.au/abares/forestsaustralia/publications/display?url=http://143.188.17.20/anrdl/DAFFService/display.php?fid=pb_fta13g9abfs20160525_11a.xml

State and territory land tenure spatial datasets were supplied for SOFR 2018 by the Australian Capital Territory, New South Wales, the Northern Territory, Queensland, Tasmania and Victoria, specifically:

- ACT Land tenure dataset prepared for SOFR 2018
- NSW Digital Cadastre Database (DCDB) dataset
- NT Digital Cadastre dataset
- Qld Digital Cadastre Database (DCDB) dataset
- Tas. Copy of land tenure dataset prepared for *State of the Forests Tasmania 2017*
- Vic. Copy of land tenure dataset prepared for *Victoria's State of the Forests Report 2013*

Land tenure spatial data supplied by Western Australia provided partial coverage of WA, with the PSMA Land Tenure dataset used to fill the remaining area to provide complete coverage of that state. Land tenure information for South Australia was primarily derived from the PSMA Land Tenure dataset with an area of insufficient data covered by a supplementary SA state dataset of conservation reserves under government control.

All input datasets were converted to 100 metre cell size rasters in Esri grid format, aligning with relevant standard NFI state or territory masks (also known as NFI snap grids), in Albers projection. Where the input dataset was in polygon format, the **Polygon to Raster** tool was used to convert the polygon dataset to raster format, using the **Maximum Combined Area** option.

Each data source was evaluated and assessed against measures of accuracy and fitness for purpose for reporting tenure of forest land. The specific tenure classification schemas for each data source were translated into the six national forest tenure classes used to categorise land in the NFI:

- **Leasehold forest:** Crown land held under leasehold title and generally privately managed.

- **Multiple-use public forest:** publicly-owned state forest, timber reserves and other land managed for forest values such as wood harvesting, recreation and environmental protection.
- **Nature conservation reserve:** publicly owned land formally reserved for environmental protection, conservation and recreation. Includes national parks, nature reserves and conservation areas.
- **Other Crown land:** Crown land reserves for a variety of purposes including water supply, scientific research, mining, and use by the defence forces.
- **Private forest:** land held under freehold title and private ownership, and generally privately managed. This class also includes land with special conditions attached for designated Indigenous communities.
- **Unresolved tenure:** land where data are insufficient to determine tenure/ownership status.

For jurisdictional tenure data sources, translations to forest tenure classes were endorsed by the NFI steering committee representatives.

Appendix 1 details translation of each data source's tenure classification schema to the NFI forest tenure classes.

The land tenure dataset prepared and supplied by the ACT included translations to the NFI national forest tenure classes.

For each jurisdiction the input datasets were layered (ordered) based on the overall evaluation of accuracy/fitness for reporting tenure of forest land. Where data coverage was incomplete in all three sourced datasets gaps were filled using land tenure data from the *Tenure of Australia's forests (2013) v2.0* dataset. The dataset layering priority, from highest to lowest:

1. Department of Defence estate data
2. State and territory land tenure data
3. PSMA Land Tenure data
4. NFI *Tenure of Australia's forests (2013) v2.0*

Any remaining area with no data was allocated as 'Unresolved tenure'.

The output nation-wide land tenure dataset was then combined (intersected) with the forest cover information identified by the Multiple Lines of Evidence (MLE) approach used to develop the *Forests of Australia (2018)* dataset. This enabled the forest cover status of tenure areas to be identified.

Appendix 1 Translation of source tenure data to NFI forest tenure classes lookup tables

National-scale tenure data sources

Table 1: Translation of PSMA-supplied tenure information to NFI forest tenure classes

PSMA hierarchical land tenure levels				NFI forest tenure class	
Level 1	Level 2	Level 3	Level 4		
100 Freehold	200 Freehold	300 Freehold	400 Freehold	Private forest	
101 Non-freehold	201 Leasehold	301 Term Lease	401 Pastoral Term Lease	Leasehold forest	
			402 Special Purpose Term Lease	Leasehold forest	
			403 ACT Term Lease	Leasehold forest	
			404 Other Term Lease	Leasehold forest	
		302 Perpetual Lease	405 Pastoral Perpetual Lease	Leasehold forest	
			406 Special Purpose Perpetual Lease	Leasehold forest	
			407 Other Perpetual Lease	Leasehold forest	
		303 Other Lease	408 Other Lease	Leasehold forest	
		202 Reserve	304 Conservation Reserve	409 Marine Reserve	Nature conservation reserve
				410 National Park	Nature conservation reserve
	411 Other Conservation Reserve			Nature conservation reserve	
	412 Water Reserve			Other Crown land	
	305 Mining Reserve		413 Mining Reserve	Other Crown land	
	306 Forestry Reserve		414 Multiple Use Forest	Multiple-use public forest	
			415 State Forest	Multiple-use public forest	
			416 Timber Reserve	Multiple-use public forest	
			417 Other Forestry Reserve	Multiple-use public forest	
	307 Transportation or Infrastructure Reserve		418 Stock Route	Other Crown land	
		419 Transportation Reserve	Other Crown land		
		420 Other Infrastructure Reserve	Other Crown land		
308 Other Reserve	421 Other Reserve	Other Crown land			
203 Vacant, Unallocated or Other Crown Land	309 Vacant, Unallocated or Other Crown Land	422 Vacant, Unallocated or Other Crown Land	Other Crown land		
102 No Data	102 No Data	102 No Data	102 No Data	Unresolved tenure	

The supplied Department of Defence estate dataset was translated to the NFI forest tenure class of 'Other Crown land' in its entirety.

Jurisdictional tenure data sources

The land tenure dataset prepared and supplied by the ACT included translations to NFI forest tenure classes.

Table 2: Translation of NSW DCDB tenure information to NFI forest tenure classes

Feature dataset/feature class value	NFI forest tenure class	Layering order
<i>LandBase/NPWSReserve</i>	Nature conservation reserve	1
<i>LandBase/StateForest</i>	Multiple-use public forest	2
<i>CrownLandPolygon</i> with attributes joined from <i>CrownAccount</i> where field 'crownaccounttype' = 'Leased Crown Land'	Leasehold forest	3
<i>LandBase/Lot</i> where field <i>controllingauthorityid</i> =		
1 – Unknown	Unresolved tenure	4
2 – Freehold	Private forest	4
3 – Crown	Other Crown land	4
4 – Local Government Authority	Private forest	4
7 – Shared Crown/Council	Other Crown land	4
12 – NSW Government	Other Crown land	4
13 – Australian Government	Other Crown land	4

Table 3: Translation of NT Digital Cadastre tenure information to NFI forest tenure classes

Field: 'Tenure description'	NFI forest tenure class
Freehold	Private
Vacant Crown Land	Other Crown land
Crown Lease Term	Leasehold forest
Government	Other Crown land
Crown Lease Perpetual	Leasehold forest
Special Purposes Lease	Leasehold forest
Perpetual Pastoral Lease	Leasehold forest
Unregistered Crown Land	Other Crown land
Reserve	Nature conservation reserve
Occupation Licence	Other Crown land
Right to a Freehold Title	Private forest
Pastoral Lease	Leasehold forest
Building Lease	Leasehold forest
Registered Mining Lease	Leasehold forest
Grazing Licence	Other Crown land
Miscellaneous Lease	Leasehold forest

Table 4: Translation of Queensland DCDB tenure information to NFI forest tenure classes

Field: 'Tenure' ¹ (where 'Cover type' = 'base')	NFI forest tenure class
Boat Harbours	Other Crown land
Commonwealth Acquisition	Other Crown land
Forest Reserve ²	Multiple-use public forest
Freehold	Private forest
Housing Land	Other Crown land
Industrial Estates	Other Crown land
Lands Lease	Leasehold forest
Mines Tenure	Leasehold forest
National Park	Nature conservation reserve
Port and Harbours Boards	Other Crown land
Railway	Other Crown land
Reserve	Other Crown land
State Forest	Multiple-use public forest
State Land	Other Crown land
Timber Reserve	Multiple-use public forest
Water Resource	Other Crown land
¹ This only includes unique values for the 'Tenure' field that were retained when converted to 100 by 100 metre cell size raster data. Some unique values that describe land parcels smaller than one hectare are eliminated and not included. ² Interim tenure for a maximum of five years. Managed by Department of National Parks, Recreation, Sport and Racing with associated conditions. This tenure allows public access and multiple uses such as grazing, apiary sites and commercial activity, but excludes timber harvesting. Any use must be ecologically sustainable and protect biodiversity in accordance with the Nature Conservation Act 1992. The most appropriate allocation for SOFR 2018 is 'Multiple-use public forest'.	

Table 5: Translation of Tasmanian-supplied tenure information to NFI forest tenure classes

Field: 'Tenure'	NFI forest tenure class
Conservation & Public Reserves	Nature conservation reserve
Private Freehold Land	Private forest
Other Publicly Managed Land	Other Crown land
Permanent Timber Production Zone (PTPZ) land	Multiple-use public forest

Table 6: Translation of Victorian-supplied tenure information to NFI forest tenure classes

Field: 'Tenure description'	NFI forest tenure class
Commonwealth Land	Other Crown land
Marine	Nature conservation reserve
Non-crown land	Private forest
Other Crown land	Other Crown land
Parks and Conservation reserves	Nature conservation reserve
Plantation	Multiple-use public forest
State forest	Multiple-use public forest

Table 7: Translation of WA-supplied tenure information to NFI forest tenure classes

Fields: 'Tenure' and 'Category' ¹ (inset)	NFI forest tenure class
Crown Land 5(1)(g) Reserve 5(1)(h) Reserve Conservation Park Marine Management Area Marine Nature Reserve Marine Park Miscellaneous Reserve National Park Nature Reserve SRT ² – River Reserve State Forest Timber Reserve	Nature conservation reserve Nature conservation reserve Nature conservation reserve Nature conservation reserve Nature conservation reserve Nature conservation reserve Nature conservation reserve Nature conservation reserve Nature conservation reserve Nature conservation reserve Nature conservation reserve Multiple-use public forest Multiple-use public forest
Freehold CALM ³ Exec Body Freehold Crown Freehold – Dept. Interest National Park ⁴ SRT ² – River Reserve	Private forest Private forest Private forest Private forest
Leasehold Section 16A agreement	Leasehold forest
Unallocated Crown Land Section 33(2) Unallocated Crown Land – Dept. Interest ⁵	Other Crown land Other Crown land
<p>¹ This only includes unique values for the 'Tenure' and 'Category' fields that were retained when converted to 100 by 100 metre cell size raster data. Some unique values that describe land parcels smaller than one hectare are eliminated and not included.</p> <p>² Swan River Trust.</p> <p>³ Conservation and Land Management.</p> <p>⁴ These records relate to the Murujuga National Park that is freehold tenure (Indigenous-owned), leased back to the government and jointly managed as a national park.</p> <p>⁵ Former pastoral leasehold land that expired on 01 July 2015 and now proposed for conservation. 'Other Crown land' remains for appropriate tenure class for SOFR 2018.</p>	