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Australia

FAO, at the request of its member countries, regularly monitors the world's forests and their management and uses through the Global Forest Resources Assessment (FRA). This country report is prepared as a contribution to the FAO publication, the Global Forest Resources Assessment 2015 (FRA 2015).

The content and the structure are in accordance with the recommendations and guidelines given by FAO in the document Guide for country reporting for FRA 2015 (<http://www.fao.org/3/a-au190e.pdf>). These reports were submitted to FAO as official government documents.

The content and the views expressed in this report are the responsibility of the entity submitting the report to FAO. FAO may not be held responsible for the use which may be made of the information contained in this report.

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Introductory Text

Place an introductory text on the content of this report

- This document is Australia’s Country Report to the UN FAO Collaborative Forest Resource Questionnaire 2015 (CFRQ 2015) and Global Forest Resource Assessment (FRA 2015), referred to collectively as FRA 2015 in Australia’s Country Report.
- Australia’s forests are recognised and valued for their diverse ecosystems and unique biodiversity, for their cultural heritage, and for their provision of goods and services such as wood, carbon sequestration, soil and water protection, and aesthetic and recreational values. They are subject to a range of pressures including invasive weeds, pests and diseases, drought, changing fire regimes and climate, urban development and mining, agricultural management practices such as grazing, and the legacy of previous land management practices.
- A well-established policy framework, guided by Australia’s National Forest Policy Statement (1992), supports the conservation and sustainable management of Australia’s forests, both nationally and at state and territory levels. Through this statement and other regulatory mechanisms, Australia’s national, state and territory governments are committed to the sustainable management of all Australia’s forests. The policy also mandates the preparation of a report on the status of Australia’s forests, agreed to by state and territory governments with the Australian Government, as “to produce and publish a ‘state of the forests’ review every five years”.
- Data for Australia’s forest estate is assembled in the National Forest Inventory (NFI). The NFI is a partnership between the Australian and State and Territory governments "to be the authoritative source of information for national and regional monitoring and reporting to support decision making on all of Australia's forests". The NFI is guided by the NFI Steering Committee (NFISC) which consists of representative from each state and territory plus a representative from the Commonwealth Department of Agriculture. Both the NFI and NFISC are specified in Australia’s National Forest Policy Statement. The NFISC was a co-author with the Australian Government of the recently released five-yearly national flagship report ‘Australia’s State of the Forests Report 2013’ which meets Australia’s national and international reporting requirements.
- Australia’s Country Report to the FRA 2015 presents information for 2000, 2005, 2010 and 2015 using information published in Australia’s five- yearly State of the Forests Reports (the SOFR series). Together with their citations, the SOFR series are SOFR 1998 (National Forest Inventory Steering Committee (NFISC) 1998), SOFR 2003 (NFISC 2003), SOFR 2008 (Montreal Process Implementation Group for Australia (MIG) 2008), and SOFR 2013 (MIG & NFISC 2013). Data for 1990 have been obtained from various sources as that year pre-dates the SOFR series. Additional information is sourced from other published documents.
- Australia has 125 million hectares of forest, equivalent to 16% of Australia’s land area, as determined at 2011. Australia has about 3% of the world’s forest area, and globally is the country with the seventh largest forest area.
- Australia’s forest area as reported in FRA 2015 is 125 million hectares. The area of forest reported by Australia in FRA2010 was 149 million hectares. The main reason for reporting a different forest area in FRA 2015 is improved resolution of forest mapping,

resulting from the use of finer-scale vegetation data often complemented by interpreted satellite imagery incorporated through a Multiple Lines of Evidence (MLE) process.

- Most of this improvement in resolution of forest mapping has occurred in Australia’s woodland forests (the drier inland forests with crown canopy cover ranging from 20% up to and including 50%), and has resulted from more careful delineation of the boundary between woodland forest with a crown cover of 20% or more and other woody vegetation with a crown cover of less than 20%: much of the area reported as woodland forest in FRA 2010 has been reclassified in FRA 2015 as other woody non-forest vegetation (Other wooded land). Most (83%) of the reduction in reported forest area between that reported in FRA 2010 and that reported in FRA 2015 is in the woodland forests of south-central and north-central Australia, in forests generally managed under leasehold tenure.
- The improved mapping resolution and more accurate measure of Australia’s forest area has derived from the new MLE methodology developed and implemented by Australia’s National Forest Inventory team in 2013. The MLE approach integrates forest cover data provided by state and territory land management agencies, with data sourced from a variety of remote-sensing methods. This approach gives a higher level of certainty for areas of forest and non-forest. The resultant National Forest Inventory forest cover dataset derives from an updated and more rigorous and robust understanding of Australia’s total forest area, and of the geographic distribution of national forest types and land tenure. Further information is available from SOFR 2013 and Mutendeuzi M, Read S, Howell C, Davey S & Clancy T (2013).
- The definition of Australia’s forest used in this report is the same as that used by Australia’s National Forest Inventory and reported in the SOFR series. It includes areas (irrespective of land use) dominated by trees having usually a single stem and a mature or potentially mature height higher than 2 metres and with existing or potential crown cover equal to or greater than 20%. This definition differs from that used by the FAO in the minimum thresholds for both height and canopy cover, and in the treatment of land use.
- Australia, through the Australian Government Department of the Environment (formerly the Australian Government Department of Climate Change and Energy Efficiency), has assembled consistent land cover change data from 1972-2011 for the purpose of reporting greenhouse gas emissions. Published forest cover change figures from this dataset and covering the period 1990-2011 are provided in Australia’s National Greenhouse Accounts National Inventory Report 2011 Volume 2, released in April 2013 (Australian Government Department of Climate Change and Energy Efficiency, 2013); in Australia’s Country Report to the FRA 2015 this report is referred to as Australia’s National Greenhouse Gas Inventory 2011, or NGGI 2011.
- To address the mapping inconsistencies between figures published in SOFR1998, SOFR 2003, SOFR 2008 and SOFR2013, a set of derived forest extent figures have been calculated and reported for the purposes of the FRA 2015 for 1990,2000, 2005, and 2010, as follows:

Parameter	Time stamp of data	Australian publication	FRA publication
Australia’s FRA 2015 derived forest area 1990	1990	Not published in Australia	FRA 2015
Australia’s FRA 2015 derived forest area 2000	1997		FRA 2015
Australia’s FRA 2015 derived forest area 2005	2002		FRA 2015
Australia’s FRA 2015 derived forest area 2010	2007		FRA 2015
Australia’s FRA 2015 reported forest area 2015	2011	SOFR 2013	FRA 2015

- The SOFR 2013 total forest area of 124,751,000 hectares provides the baseline, or reference value, from which the area figures for earlier years are derived by application of the NGGI 2011 forest cover change figures. The derived forest area figures provided here for 1990-2010 are referred to as *Australia’s FRA 2015 derived forest area* .

- The plantation extent for each of the reporting years are the absolute areas of Industrial Plantations taken from Australia’s National Plantation Inventory for the respective years. No adjustments have been made.
- The tenure, forest type and structure area data for 2000, 2005 and 2010 are calculated using the *Australia’s FRA 2015 derived forest area* for these years, and the area proportions of the various tenure, forest type and structure categories published in SOFR 1998, SOFR 2003, and SOFR 2008 respectively.
- For both the total forest area data and its proportional breakdown by tenure, type and structure for both the baseline and each of the historic reporting years, this approach is the same as the approach implemented for FRA 2010.
- *Australia’s FRA 2015 derived forest area* figures have been calculated only to meet the requirements of FAO’s Global Forest Resource Assessment 2015, and are not used for country-level reporting.
- References:
- Montreal Process Implementation Group for Australia & National Forest Inventory Steering Committee (2013). *Australia’s State of the Forests Report 2013*, ABARES, Canberra, December. CC BY 3.0. (referred to as SOFR 2013, and cited as MIG & NFISC 2013)
- Montreal Process Implementation Group (2008). *Australia’s State of the Forests Report 2008*. Bureau of Rural Sciences, Canberra. (referred to as SOFR 2008, and cited as MIG 2008)
- Mutendeudzi M, Read S, Howell C, Davey S & Clancy T (2013). *Improving Australia’s forest area estimate using a ‘Multiple Lines of Evidence’ approach*. Australian Bureau of Agricultural and Resource Economics and Sciences, Canberra.
- Australian Government Department of Climate Change and Energy Efficiency (2013). *Australian National Greenhouse Accounts - National Inventory Report 2011 Volume 2*, DCCEE, Canberra. (referred to as National Greenhouse Gas Inventory 2011 or NGGI 2011)

Desk Study?

Check "yes" if this survey is a Desk Study, "no" otherwise	
Desk Study?	no

1. What is the area of forest and other wooded land and how has it changed over time?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

1.1 Categories and definitions

Category	Definition
Forest	Land spanning more than 0.5 hectares with trees higher than 5 meters and a canopy cover of more than 10 percent or trees able to reach these thresholds in situ. It does not include land that is predominantly under agricultural or urban land use.
Other wooded land	Land not classified as "Forest" spanning more than 0.5 hectares with trees higher than 5 meters and a canopy cover of 5-10 percent or trees able to reach these thresholds ; or with a combined cover of shrubs bushes and trees above 10 percent. It does not include land that is predominantly under agricultural or urban land use.
Other land	All land that is not classified as "Forest" or "Other wooded land".
...of which with tree cover (<i>sub-category</i>)	Land considered as "Other land", that is predominantly agricultural or urban lands use and has patches of tree cover that span more than 0.5 hectares with a canopy cover of more than 10 percent of trees able to reach a height of 5 meters at maturity. It includes bothe forest and non-forest tree species.
Inland water bodies	Inland water bodies generally include major rivers, lakes and water reservoirs.
Forest expansion	Expansion of forest on land that, until then, was not defined as forest.
...of which afforestation (<i>sub-category</i>)	Establishment of forest through planting and/or deliberate seeding on land that, until then, was not defined as forest.
...of which natural expansion of forest (<i>sub-category</i>)	Expansion of forests through natural succession on land that, until then, was under another land use (e.g. forest succession on land previously used for agriculture).
Deforestation	The conversion of forest to other land use or the longterm reduction of the tree canopy cover below the minimum 10 percent threshold.
...of which human induced (<i>sub-category</i>)	Human induced conversion of forest to other land use or the permanent reduction of the tree canopy cover below the minimum 10 percent threshold.
Reforestation	Natural regeneration or re-establishment of forest through planting and/or deliberate seeding on land already in forest land use.
...of which artificial reforestation (<i>sub-category</i>)	Re-establishment of forest through planting and/or deliberate seeding on land already in forest land use.

1.2 National data

1.2.1 Data sources

References to sources of information	Variables	Years	Additional comments
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1	<p>Montreal Process Implementation Group for Australia and National Forest Inventory Steering Committee (2013). Australia's State of the Forests Report 2013, ABARES, Canberra, December. CC BY 3.0. (referred to as SOFR 2013, and cited as MIG & NFISC 2013)</p>	Forest area	2006 to 2011	<p>This report is the most comprehensive report and national assessment of Australia's forests. SOFR 2013 was compiled from numerous spatial and non-spatial datasets captured predominantly between 2006 and 2011, and draws on data collated since 1991. Spatial data vary from very detailed 1:25,000 scale to broader 1:250,000 scale. Remote sensing and ground based data were used to determine forest cover, as detailed in Indicator 1.1a.</p>
2	<p>Montreal Process Implementation Group for Australia (2008). Australia's State of the Forests Report 2008. Bureau of Rural Sciences, Canberra. (referred to as SOFR 2008, and cited as MIG 2008)</p>	Forest area	2001 to 2006	<p>This report was the most comprehensive report and national assessment of Australia's forests at the time and was the principal source of information provided for FRA 2010. SOFR 2008 was compiled from numerous spatial and non-spatial datasets captured predominantly between 2001 and 2006, and draws on data collated since 1991. Spatial data vary from very detailed 1:25,000 scale to broader 1:250,000 scale.</p>

3	Department of Climate Change (2013) Australian National Greenhouse Accounts National Inventory Report 2011 – Volume 2. The Australian Government Submission to the UN Framework Convention on Climate Change. April 2013 (referred to in this report as Australia’s National Greenhouse Gas Inventory 2011, or NGGI 2011)	Derived forest area pre-2011, forest expansion, afforestation (total)	1990, 2000, 2005, 2010	The Australian Government Department of Environment’s Australian National Greenhouse Accounts (referred to as Australia’s National Greenhouse Gas Inventory 2011, or NGGI) provides a picture of land cover change for the purposes of greenhouse gas accounting using a nationally applied remote sensing approach over Australia based on a consistent time series of woody vegetation extent integrated with biomass modelling. The system is used to report land use change, and maps woody vegetation extent as part of this. This mapping has been completed for 21 time epochs from 1972 to 2012 using methods that ensure time series consistency. The mapping of woody vegetation extent is part of the ongoing National Greenhouse Gas Inventory program and will be updated annually.
4	National Forest Inventory (2003). Australia’s State of the Forests Report 2003. Bureau of Rural Sciences, Canberra. (referred to as SOFR 2003, and cited as NFI 2003)	Forest area	1996 to 2001	This report was the most comprehensive report and national assessment of Australia’s forests at the time and was the principal source of information provided for FRA 2005. SOFR 2003 was compiled from numerous spatial and non-spatial datasets captured predominantly between 1996 and 2001, and draws on data collated since 1991. Spatial data vary from very detailed 1:25,000 scale to broader 1:250,000 scale.
5	Hnatiuk, R. P. Tickle, M.S. Wood and C. Howell. 2003. Defining Australian forests. Australian Forestry 66:176-186.	Forest area	2003	Paper that provides discussion of issues relating to the definition of Australia’s forests.

6	National Forest Inventory (1998). Australia's State of the Forests Report 1998. Bureau of Rural Sciences, Canberra. (referred to in this submission as SOFR 1998)	Forest area	1991 to 1996	This report was the first comprehensive report and national assessment of Australia's forests and was the principal source of information provided for FRA 2000. SOFR 1998 was compiled from numerous spatial and non-spatial datasets captured predominantly between 1991 and 1996. Spatial data vary from very detailed 1:25,000 scale to broader 1:250,000 scale.
7	Mutendeudzi M, Read S, Howell C, Davey S and Clancy T (2013a). Improving Australia's forest area estimate using a 'Multiple Lines of Evidence' approach. Australian Bureau of Agricultural and Resource Economics and Sciences, Canberra.	Forest area	2013	This report provides the technical description of the newly developed methodology implemented by Australia's National Forest Inventory to more accurately identify Australia's forest cover and type, as reported in SOFR 2013.
8	Mutendeudzi M, Read S, Howell C, Davey S and Clancy T (2013b). A 'Multiple Lines of Evidence' approach to Australia's forest cover estimate. In: Managing our Forests into the 21st Century, Proceedings of the Institute of Foresters of Australia Conference, Canberra, 7–11 April 2013, Institute of Foresters of Australia, Canberra.	Forest area	2013	This conference paper provides an overview of the Multiple Lines of Evidence approach to develop a more accurate estimate of Australia's forest cover and type. This paper was derived from the aforementioned report, 2013a, at source #7.
9	Gavran M (2012). Australian Plantation Statistics 2012 Update, ABARES technical report, Australian Bureau of Agricultural and Resource Economics and Sciences, Canberra.	Forest area, afforestation, afforestation of introduced species	2011	This report provides an annual update on Australia's plantation estate based on information provided by growers and regional representatives in tabular form for year ending 2011 (i.e. numbers but no maps or spatial data).
10	Gavran, M & Parsons, M (2011), Australian plantation statistics 2011, Australian Bureau of Agricultural and Resource Economics and Sciences, Canberra.	Forest area, afforestation, afforestation of introduced species	2010	This report provides a spatial update on Australia's plantation estate based on information provided by growers and regional representatives for year ending 2010

11	Gavran & Parsons (2010) National Plantation Inventory Update, Bureau of Rural Sciences, Canberra	Forest area, afforestation, afforestation of introduced species	2009	National Plantation Inventory annual update for year ending 2009
12	National Plantation Inventory 2009 Update	Forest area, afforestation, afforestation of introduced species	2008	National Plantation Inventory annual update for year ending 2008
13	National Plantation Inventory 2008 Update	Forest area, afforestation, afforestation of introduced species	2007	National Plantation Inventory annual update for year ending 2007
14	National Plantation Inventory 2007 Update	Forest area, afforestation, afforestation of introduced species	2006	National Plantation Inventory annual update for year ending 2006
15	National Plantation Inventory 2006 Update	Forest area, afforestation, afforestation of introduced species	2005	National Plantation Inventory spatial update for year ending 2005
16	National Plantation Inventory 2005 Update	Forest area, afforestation, afforestation of introduced species	2004	National Plantation Inventory annual update for year ending 2004
17	National Plantation Inventory 2004 Update	Forest area, afforestation, afforestation of introduced species	2003	National Plantation Inventory annual update for year ending 2003
18	National Plantation Inventory 2003 Update	Forest area, afforestation, afforestation of introduced species	2002	National Plantation Inventory annual update for year ending 2002
19	National Plantation Inventory 2002 Update	Forest area, afforestation, afforestation of introduced species	2001	National Plantation Inventory annual update for year ending 2001
20	Wood, Allison, Stephens, Howell (2001) National Plantation Inventory 2001	Forest area, afforestation, afforestation of introduced species	2000	National Plantation Inventory spatial update for year ending 2000
21	National Plantation Inventory tabular report 2000	Forest area, afforestation, afforestation of introduced species	1998 and 1999	National Plantation Inventory update for year ending 1999
22	National Plantation Inventory 1997, Bureau of Rural Sciences, Canberra	Forest area, afforestation, afforestation of introduced species	1997	National Plantation Inventory spatial update for the year ending 1997
23	National Plantation Inventory 1997, Bureau of Rural Sciences, Canberra	Forest area, afforestation, afforestation of introduced species	1996	National Plantation Inventory spatial update for the year ending 1996
24	National Plantation Inventory 1997, Bureau of Rural Sciences, Canberra	Forest area	1995	National Plantation Inventory spatial update for the year ending 1995
25	Australian Bureau of Agriculture and Resource Economics 'Australian Forest Resources 1990 and 1991'	Forest area	1990 and 1991	Tabular data only for plantation area and type (native & exotic species)

26	Department of the Environment and Water Resources (2007), Australia's Native Vegetation: A summary of Australia's Major Vegetation Groups, 2007(including CD). Australian Government, Canberra, ACT	Other Wooded Lands	2007	This booklet has been produced for natural resource managers, researchers and educators. The information presented here is drawn from the National Vegetation Information System (NVIS), which is an information partnership between Australian governments. A CD inside the back cover provides detailed information for researchers and users of Geographic Information Systems (GIS).
27	Commonwealth of Australia 2013. Australian National Greenhouse Accounts – Quarterly Update of Australia's National Greenhouse Gas Inventory, December Quarter 2012	Deforestation	N/A	Definition of deforestation.

1.2.2 Classification and definitions

National class	Definition
Forest	An area, incorporating all living and non-living components, that is dominated by trees having usually a single stem and a mature or potentially mature stand height exceeding two metres and with existing or potential crown cover of overstorey strata about equal to or greater than 20%. This definition includes Australia's diverse native forests and plantations, regardless of age. It is also sufficiently broad to encompass areas of trees that are sometimes described as woodlands. [Note that "forest" as defined here includes the sub-categories of woodland forest, open forest and closed forest defined below. Also note that the definition of forest applies independently to the management objective or primary use of the land upon which the forest occurs.]
Woodland forest	A crown canopy category of forest, in which the tree crown cover ranges from 20% up to and including 50% of the land area when viewed from above.
Open forest	A crown canopy category of forest, in which the tree crown cover ranges from more than 50% up to and including 80% of the land area when viewed from above.
Closed forest	A crown canopy category of forest, in which the tree crown cover is more than 80% of the land area when viewed from above.
Other Land	Land not classified as forest or other wooded land. Includes agricultural land, meadows and pastures, built-on areas, barren land, etc.
Inland Water	Area occupied by major rivers, lakes and reservoirs.

Industrial Plantation	Hardwood or softwood plantation supplying log resources to the wood-processing industries as reported through the National Plantation Inventory. Plantation is defined as: intensively managed stands of trees of either native or exotic species created by the regular placement of seedlings or seeds.
Other Forest	Non-industrial plantations and planted forests of various types including sandalwood species, farm forestry, environmental plantings, and plantations on land that has subsequently transferred to within a reserve system.
Land use change	Land use change is where land that meets the definition of forest is converted to a non-forested condition by direct human action. Commercial forestry activity is excluded, unless post harvest activity involves a change in land use, e.g. to pasture or cropping. Plantations are not included in the land use change accounting framework unless there is interceding change in land use between the original forest condition and planting of the plantation.
Afforestation	Establishment of forest on land not previously forested. For FRA 2015, data provided are solely for commercial timber plantation development on previously cleared land.
Reforestation	Establishment of forest on land that historically contained forest but was converted to some other use, such as agriculture. Reforestation in Australia includes forest naturally regenerated and plantations that were deliberately seeded or planted following harvest activities. Data on reforestation are not collected nationally.
Other Wooded Land	Australia does not have a formal definition of Other Wooded Land, but for the purposes of FRA 2015 it is: land not defined as forest; with trees higher than 2 metres and a canopy cover of 10 - 20%, or trees able to reach these thresholds; or with a combined cover of shrubs, bushes and trees above 20%. It does not include land that is predominantly urban or horticultural land use.
Deforestation	Deforestation is the direct, human-induced removal of forest cover and replacement with pasture, crops or other non-forest uses. Commercial forestry activity is excluded, unless post harvest activity involves a change in land use, e.g. to pasture or cropping. Under the Kyoto Protocol, deforestation is defined as the direct, human-induced removal of forest cover on land that was forest on 1 January 1990.

1.2.3 Original data

Forest area									
Original data for Table 1.2.3 – GFRA 2015									
	YEAR	1989	1990	1991	1992	1993	1994	1995	1996

	NGGI area (2011) ('000ha)	111,870	111,990	112,100	112,390	112,400	112,420	112,430	112,360
	Annual Gain/Loss ('000 ha)	n.a.	120	110	290	10	20	10	-70
	Australia's FRA2015 Derived Native forest & Other forest (1990-2010)		127,518						
	Industrial Plantation (NPI)		1,023						
1.1	Derived FRA 2015 Total Forest (1990-2010)		<u>128,541</u>						
1.2	Other Wooded Land		n.a.						
1.3	Other Land		n.a.						
1.3.1	...of which with tree cover		n.a.						
1.4	Inland water bodies		5,892						

	AUSTRALIA LAND AREA		774,122						
		1989	1990	1991	1992	1993	1994	1995	1996
	Grass to Forest - Forest expansion (NGGI 2011)		690	550	670	430	380	320	270
1.6	Forest expansion (NGGI 2011)		544						
1.6.1	...of which afforestation (from NPI)		n.a.						
1.6.1i	...of which of introduced spp (Softwood spp from NPI)		n.a.						
1.6.2of which natural expansion		n.a.						
	New Industrial Plantations								
	Hardwood (from NPI)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	19	35

	Softwood (from NPI)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	11	14
	Total (from NPI)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	30	49
	Figures from NGGI 2011	1989	1990	1991	1992	1993	1994	1995	1996
	Forest loss to Grassland		460	340	310	340	290	250	270
	Forest loss to Crop		120	90	70	70	80	60	70
	Deforestation		580	430	380	410	370	310	340
1.7	Rate of Deforestation		434						
	Net change (NGGI 2011)		110	120	290	20	10	10	-70
	Rate change		110						
	Industrial Plantations (NPI)	1989	1990	1991	1992	1993	1994	1995	1996
	Softwood		926					895	909
	Hardwood		96					178	212
	Unknown								
2.3	Total Plantation		1,023				1,043	1,073	1,122
	YEAR	1997	1998	1999	2000	2001	2002	2003	2004

	NGGI 2011 (‘000ha)	112,290	112,210	112,360	112,510	111,800	111,090	110,210	109,330
	Annual Gain/ Loss (‘000 ha)	-70	-80	150	150	-710	-710	-880	-880
	Australia's FRA2015 Derived Native forest & Other forest (1990-2010)	127,665					126,013		
	Industrial Plantation (NPI)	1,176		1,337		1569	1,628	1,666	1,716
1.1	Derived Total Forest (1990-2010)	<u>128,841</u>		n.a.		n.a.	<u>127,641</u>	n.a.	n.a.
1.2	Other Wooded Land	n.a.					n.a.		
1.3	Other Land	n.a.					n.a.		
1.3.1	...of which with tree cover	n.a.					n.a.		
1.4	Inland water bodies	5,892					5,892		
	AUSTRALIA LAND AREA	774,122					774,122		
		1997	1998	1999	2000	2001	2002	2003	2004

	Grass to Forest - Forest expansion (NGGI 2011)	240	260	490	510	80	70	80	80
1.6	Forest expansion (NGGI 2011)	<u>316</u>					<u>164</u>		
1.6.1	...of which afforestation (from NPI)	<u>59</u>					<u>74</u>		
1.6.1i	...of which of introduced spp (Softwood spp from NPI)	<u>12</u>					<u>9</u>		
1.6.2of which natural expansion	<u>257</u>					<u>90</u>		
	New Industrial Plantations	1997	1998	1999	2000	2001	2002	2003	2004
	Hardwood (from NPI)	40	54	85	126	74	49	31	46
	Softwood (from NPI)	15	12	10	11	10	5	11	7
	Total (from NPI)	54	66	95	137	84	54	42	54

	Figures from NGGI 2011	1997	1998	1999	2000	2001	2002	2003	2004
	Forest loss to Grassland	250	270	280	300	730	720	900	890
	Forest loss to Crop	60	60	60	60	60	60	60	70
	Deforestation	310	330	340	360	790	780	960	960
1.7	Rate of Deforestation	<u>326</u>					<u>770</u>		
	Net change (NGGI 2011)	-70	-70	150	150	-710	-710	-880	-880
	Rate change	-10					-606		
	Industrial Plantations (NPI)	1997	1998	1999	2000	2001	2002	2003	2004
	Softwood	924	936	948	972	980	988	992	1,005
	Hardwood	252	305	389	503	588	638	676	716
	Unknown								
2.3	Total Plantation	1,176	1,241	1,337	1,485	1,569	1,628	1,668	1,720
	YEAR	2005	2006	2007	2008	2009	2010	2011	
	NGGI 2001 area ('000ha)	108,110	107,330	106,660	106,610	107,310	108,040	108,200	
	Annual Gain/ Loss ('000 ha)	-1,220	-780	-670	-50	700	730	160	

	Australia's FRA2015 Derived Native forest & Other forest (1990-2010) and Published Native forest & Other forest for 2011			121,308				122,734	
	Industrial Plantation (NPI)		1,818	1,903	1,973	2,020		2,017	
1.1	Derived Total Forest (1990-2010); Published Total Forest (2011)		n.a.	<u>123,211</u>	n.a.	n.a.		<u>124,751</u>	
1.2	Other Wooded Land			n.a.				<u>250,961</u>	
1.3	Other Land							<u>392,518</u>	
1.3.1	...of which with tree cover							n.a.	
1.4	Inland water bodies			5,892				5,892	

	AUSTRALIA LAND AREA			774,122				774,122	
		2005	2006	2007	2008	2009	2010	2011	
	Grass to Forest - Forest expansion (NIR 2011)	60	50	60	190	920	900	280	
1.6	Forest expansion (NIR 2011)			<u>256</u>				590	
1.6.1	...of which afforestation (from NPI)			<u>72</u>				17	
1.6.1i	...of which of introduced spp (Softwood spp from NPI)			<u>8</u>				2	
1.6.2of which natural expansion			<u>184</u>				573	
	New Industrial Plantations	2005	2006	2007	2008	2009	2010	2011	
	Hardwood (from NPI)	66	67	76	66	43	21	8	
	Softwood (from NPI)	6	11	11	6	6	3	2	

	Total (from NPI)	72	78	87	72	50	24	10	
	Figures from NGGI 2011	2005	2006	2007	2008	2009	2010	2011	
	Forest loss to Grassland	1200	750	670	180	160	120	90	
	Forest loss to Crop	80	80	70	60	60	50	30	
	Deforestation	1,280	830	740	240	220	170	120	
1.7	Rate of Deforestation			662				145	
	Net change (NGGI 2011)	-1,220	-780	-680	-50	700	730	160	
	Rate change			-406				145	
	Industrial Plantations (NPI)	2005	2006	2007	2008	2009	2010	2011	
	Softwood	990	1,001	1,010	1,014	1,020	1,024	1,025	
	Hardwood	740	807	883	950	991	973	980	
	Unknown							12	
2.3	Total Plantation	1,739	1,818	1,903	1,973	2,020	2,009	2,017	

Notes to Table 1.2.3:

1. All area figures reported in Table 1.2.3 are in thousands of hectares.
2. NGGI Forest area (NGGI 2011): Department of Climate Change (2013) Australian National Greenhouse Accounts National Inventory Report 2011 – Volume 2. The Australian Government Submission to the UN Framework Convention on Climate Change. April 2013.
3. Q1.1 –

Australia's forest area as reported in FRA 2015 is 125 million hectares. The area of forest reported by Australia in FRA 2010 was 149 million hectares. The main reason for reporting a smaller forest area in FRA 2015 is

improved resolution of forest mapping, resulting from the use of finer-scale vegetation data often complemented by interpreted satellite imagery incorporated through the MLE process. Most of this improvement in resolution of forest mapping has occurred in Australia's woodland forests (the drier inland forests with crown canopy cover ranging from 20% up to and including 50%), and has resulted from more careful delineation of the boundary between woodland forest with a crown cover of 20% or more and other woody vegetation with a crown cover of less than 20%. Most (83%) of the reduction in reported forest area between that reported in FRA 2010 and that reported in FRA 2015 is in south-central and north-central Australia, in forests generally managed under leasehold tenure.

1. Q1.1 – Australia's National Forest Inventory forest extent for 2011 (as reported in SOFR 2013). For all other years, derived total forest (referred to as *Australia's FRA 2015 derived forest area*) as calculated using the annual forest change figures from the NGGI 2011 applied to the National Forest Inventory forest extent for 2011.
2. Q1.2 – Other Wooded Land 2011 determined as an additional outcome of the MLE process to identify Australia's forest extent (SOFR 2013). Other Wooded Land for 2010, as reported for FRA 2010, has not been reported in FRA 2015 due to methodological inconsistency between the recent, more accurate figure and the figure reported in FRA 2010.
3. A figure for 1990 native forest has not been provided.
4. Annual Gain/Loss ('000 ha): Gain (positive) represents annual gain of forest land, as calculated from the annual change in NGGI 2011 annual forest land figures. Loss (negative) represents annual loss of forest land, as calculated from the annual change in NGGI 2011 annual forest land figures.
5. Q1.6 – 'Rates of forest expansion': The source of the 'expansion' figures is the NGGI 2011 (Grass to Forest value), averaged over 5 year periods as follows: for 1990, the average of the 1990, 1991, 1992, 1993 and 1994 figures; for 2000, the average of the 1995, 1996, 1997, 1998 and 1999 figures; for 2005, the average of the 2000, 2001, 2002, 2003 and 2004 figures; and for 2010, the average of the 2005, 2006, 2007, 2008 and 2009 figures.
6. Q1.6.1 – '...of which afforestation' and 'of which introduced species': the source data is the National Plantation Inventory annual areas of new plantations, using the same years for calculating 5-year averages as for Q1.6: Rates of forest expansion.
7. Q1.6.2 – '...of which natural expansion' – the figures are the difference between 1.6-'Forest expansion' and 1.6.1-'...of which afforestation'.
8. Q1.7 – 'Rate of deforestation': The source of the deforestation figures is the NGGI 2011 (Forest loss to grassland and forest loss to crop), averaged over the same 5-year periods as Q1.6: 'Rates of forest expansion'.
9. See reference list in 1.2.1 for data sources.
10. There are considerable differences in the area of forest in each of the four reports in the five-yearly series of *Australia's State of the Forest Report*. These progressive changes are primarily due to changes in mapping in many regions within Australia. Remotely sensed data from various sources was also incorporated in 2013 through a new 'MLE' approach. The changes are thus methodological, and do not reflect significant changes in the on-ground area of forests.
11. The total extent of forest reported here for the purposes of FRA 2015 differs from the woody vegetation extent derived by Australia's National Greenhouse Gas Inventory for carbon accounting purposes. Refer to p.45 of SOFR 2013.

1.3 Analysis and processing of national data

1.3.1 Adjustment

Forest area

Source	Land Area (1,000 Hectares)	Area of Inland water (1,000 Hectares)	Total Area of Australia (1,000 Hectares)
FAOSTAT	768,230	5,892	774,122

FAOSTAT data differ to the land areas officially reported within Australia under other national reporting requirements, including the National Greenhouse Gas Inventory. [Geoscience Australia](#), which provides the formal figure for Australia’s land area, identifies a total land area of 769,202,400 hectares, of which 765,986,100 hectares is the mainland and 3,216,300 hectares are comprised of islands.

For the purposes of FRA, Australia’s national figures provided in this report have not been calibrated. Reconciliation of FAOSTAT land and water areas is a matter to be followed up with FAO outside the FRA process.

1.3.2 Estimation and forecasting

Forest area

Australia’s domestic forest reporting timetable is not aligned with that of the five-yearly FRA reporting. To meet the reporting years required for FRA 2015, for most FRA 2015 tables Australia uses forest data reported in Australia’s State of the Forests Report 1998 (SOFR 1998) for the 2000 data; forest data reported in SOFR 2003 for the 2005 data; forest data reported in SOFR 2008 for the 2010 data; and forest data reported in SOFR 2013 for the 2015 data.

Forest-related data prior to 1990 are largely unavailable in Australia, or are inconsistent with data reported after 1990 except for forest area.

As described in the Introductory text to this report, questions involving current forest area statements (notably Questions 1, 2, 4, 5, 6, 12, 14 and 18 of FRA 2015) are based on the 2011 forest area figure (124.8 million hectares) published in SOFR 2013 and used in this report as Australia’s FRA 2015 reported forest area for 2015. Figures for Australia’s historic forest areas were calculated by applying the historical forest area change data from Australia’s National Greenhouse Gas Inventory 2011 (published in Australia’s National Greenhouse Accounts National Inventory Review, April 2013) to the 2011 forest area figure published in SOFR 2013 (Australia’s FRA 2015 reported forest area), and thus are called *Australia’s FRA 2015 derived forest areas*. This was done as the different forest area figures reported in Australia’s SOFR 1998, SOFR 2003, SOFR 2008 and SOFR 2013 (156.4 million hectares, 164.4 million hectares, 149.2 million hectares and 124.8 million hectares respectively) differ due largely to improvements in the resolution of vegetation mapping, particularly the use of fine-scale imagery, undertaken by agencies in the Australian, state and territory governments, rather than actual on-ground forest cover change. The 2011 area total figure reported in SOFR 2013 (124.8 million hectares) is thus used as the reference point for all FRA 2015 reporting.

The most accurate plantation data in Australia are data on Industrial plantations collected through the National Plantation Inventory (NPI). Absolute annual figures reported through annual NPI updates are therefore reported for FRA 2015. The NPI figures for plantation area for each year are subtracted from the value of Australia’s FRA 2015 derived forest area, to calculate the non-plantation component for each of the reporting years (comprising native forest, and a small area of ‘other forests’ that include non-industrial plantations).

The proportions by area of forests of different tenure, type and structure are the proportions reported in SOFR 1998, SOFR 2003 and SOFR 2008, with these proportions here applied to the relevant *Australia’s derived FRA 2015 forest area* figures.

Australia's derived FRA 2015 forest area figures have been calculated to meet the requirements of FAO's Global Forest Resource Assessment 2015 for the purposes of providing regional and global forest trend information, and are not used for country-level reporting.

The NGGI 2011 forest area change figures (see Table 1.2.3) show a net loss of forest from 1990 to 2011. The net loss is comprised of both gains from native forest regrowth and plantation expansion, and losses from deforestation as well as the more temporary impacts of drought and fire. Within this period, there is a small increase in forest area over the period 1990 to 2000, followed by a decline to 2008, followed again by an increase in forest area. The most likely reason for the decline in forest area in the middle of this period is the extended drought across much of Australia between 2000 and 2010, combined with land use change. This drought was characterised not only by low rainfall but also by higher than average temperatures, which together had a dual effect on Australia's forests: a decline in the area of native forest regrowth, along with a decline in canopy cover detected by satellites and interpreted by the remote-sensing algorithms as a loss of forest extent. It is unclear at this stage whether any of the climatic-induced reduction is a permanent loss of forest. Since 2000, there have also been a number of high-intensity bushfires (see Table 3.6, p. 196, SOFR 2013 for more information on mega-fires), especially in Australia's open forests. The long-term effect of these fires on Australia's forest area is also, as yet, unclear. The recent increase in forest area between 2008 and 2011 is due to the commencement of native forest regrowth from drought and fire, as well as a reduced rate of deforestation from land use change.

Australia's extent figures for 'Other Wooded Land' are based on a combination of publicly available information from Australia's National Vegetation Information System (NVIS) together with results from the MLE analysis undertaken to determine Australia's forest cover (SOFR 2013). They are not published separately.

1.3.3 Reclassification

Forest area

The definition of forest used in Australia differs from the FRA 2015 definition in both height and crown cover density thresholds. Australia's forest is defined by trees with an actual or potential minimum height of 2 metres and minimum crown cover of 20%.

Height classifications for Australia's forests are: from 2 metres up to and including 10 metres (low); greater than 10 metres and up to and including 30 metres (medium); and greater than 30 metres (tall). The 2 metre threshold allows inclusion of mallee forest (12.1 million hectares of forest). The mallee group of predominantly *Eucalyptus* species has a single-stemmed or multi-stemmed form and generally range between 2 and 10 metres in height, depending on site conditions. They occur in relatively remote areas and are mapped using remote sensing. While most other forest trees in Australia form forests greater than 5 metres tall, it is not possible to subdivide Australia's low forests into areas of forest with heights greater than and less than 5 metres, and therefore not possible to reclassify Australia's forests to accord with FAO's forest height threshold of 5 metres.

Similarly, much of Australia's forest area is in the lower crown cover density class of woodland forest (defined as forest in which the tree crown cover, viewed from above, ranges from 20% up to and including 50% of the land area), occurring predominantly in remote areas and mapped using remote sensing. It is not generally possible with this methodology to distinguish crown cover classes above and below a 10% threshold, and therefore not possible to reclassify Australia's forests to accord with FAO's forest canopy cover threshold of 10%.

Figures submitted by Australia in this report for FAO's Other Wooded Land (OWL) category are calculated solely for FRA 2015 reporting purposes.

1.4 Data

Table 1a

Categories		Area (000 hectares)				
		1990	2000	2005	2010	2015
	Forest	128541	128841	127641	123211	124751
	Other wooded land	N/A	N/A	N/A	N/A	250961
	Other land	N/A	N/A	N/A	N/A	392518
	... of which with tree cover	N/A	N/A	N/A	N/A	N/A
	Inland water bodies	5892	5892	5892	5892	5892
	TOTAL	134433.00	134733.00	133533.00	129103.00	774122.00

Table 1b

Categories		Annual forest establishment / loss (000 hectares per year)				...of which of introduced species (000 hectares per year)			
		1990	2000	2005	2010	1990	2000	2005	2010
	Forest expansion	544	316	164	256	N/A	N/A	N/A	N/A
	... of which afforestation	N/A	59	74	72	N/A	12	9	8
	... of which natural expansion of forest	N/A	257	90	184	N/A	N/A	N/A	N/A
	Deforestation	434	326	770	662	N/A	N/A	N/A	N/A
	... of which human induced	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Reforestation	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	... of which artificial	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Tiers

Category	Tier for status	Tier for reported trend
Forest	Tier 2	Tier 2
Other wooded land	Tier 2	Tier 1
Forest expansion	Tier 2	Tier 2

Deforestation	Tier 2	Tier 2
Reforestation	Tier 1	Tier 1

Tier criteria

Category	Tier for status	Tier for reported trend
<ul style="list-style-type: none"> • Forest • Other wooded land • Afforestation • Reforestation • Natural expansion of forest • Deforestation 	<p>Tier 3 : Data sources: Either recent (less than 10 years ago) National Forest Inventory or remote sensing, with ground truthing, or programme for repeated compatible NFIs</p> <p>Tier 2 : Data sources: Full cover mapping / remote sensing or old NFI (more than 10 years ago)</p> <p>Tier 1 : Other</p>	<p>Tier 3 : Estimate based on repeated compatible tiers 3 (tier for status)</p> <p>Tier 2 : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status)</p> <p>Tier 1 : Other</p>

1.5 Comments

Category	Comments related to data definitions etc	Comments on the reported trends

Forest	<p>A land area, incorporating all living and non-living components, dominated by trees usually having a single stem and a mature or potentially mature stand height exceeding 2 metres, and with existing or potential crown cover of overstorey strata about equal to or greater than 20%. This definition includes native forests and plantations and areas of trees that are sometimes described as woodlands. It also applies irrespective of the management objective or primary use of the land upon which the forest occurs.</p>	<p>Australia's FAO forest area 1990–2010 figures were derived by applying the Australian National Greenhouse Gas Inventory (2011) forest cover change figures to a 2011 National Forest Inventory forest area base (SOFR 2013). To provide the five-year time period required by FAO, Australia's derived FRA 2015 forest area figure for 1997 is reported for 2000; Australia's derived FRA 2015 forest area figure for 2002 is reported for 2005; and Australia's derived FRA 2015 forest area figure for 2007 is reported for 2010. Data prior to 1990 were unavailable: as such 1990 data have been reported for this time period. The trends in the forest areas used to derive the above figures are from Australia's National Greenhouse Gas Inventory (2011), published in April 2013. Australia's FRA 2015 reported forest area (2011 National Forest Inventory forest area base, published in SOFR 2013) was derived using a new Multiple Lines of Evidence (MLE) approach which has improved the resolution of mapping and given a more accurate measure of Australia's forest area of 125 million hectares. The MLE approach integrates forest cover data provided by state and territory land management agencies, with data sourced from a variety of remote-sensing methods. This approach gives a higher level of certainty for areas of forest and non-forest. The resultant National Forest Inventory forest cover dataset contains an updated and more rigorous and robust understanding of Australia's total forest area, of the geographic distribution of national forest types, and of the geographic distribution of forests of different tenure.</p>
Other wooded land	<p>Australia does not have a formal definition of Other Wooded Land, but for the purposes of FRA 2015 it is: land not defined as forest; with trees higher than 2 metres and a canopy cover of 10 - 20%, or trees able to reach these thresholds; or with a combined cover of shrubs, bushes and trees above 20%. It does not include land that is predominantly urban or horticultural land use.</p>	<p>Figures submitted by Australia for FAO's Other Wooded Land (OWL) category in 2010 were based on published information and calculated solely for FRA reporting purposes. The analysis used the best spatial information available at the time of writing (2009) but the resulting area was an overestimate of the extent of OWL. OWL figures reported for FRA 2015 are based on a different dataset and methodology, and it is not possible to draw comparisons. As such, the 2010 figure has been removed and has not been reported in FRA 2015.</p>
Other land	N/A	N/A

Other land with tree cover	Information for this land cover is nationally incomplete.	N/A
Inland water bodies	Figures reported are those supplied by FAO.	N/A
Forest expansion	<p>Forest expansion is determined from the NCCI 2011 figures for conversion of grassland to forest. 'Rates of forest expansion': The source of the expansion figures is the NCCI 2011 (Grass to Forest) figures, averaged over 5 year periods for 1990 (1990, 1991, 1992, 1993, 1994); 2000 (1995, 1996, 1997, 1998, 1999), 2005 (2000, 2001, 2002, 2003, 2004) and 2010 (2005, 2006, 2007, 2008, 2009). ***Forest expansion comprises 'natural expansion' plus 'afforestation'. 'Afforestation' includes only areas of new Industrial plantations. Data provided for afforestation are for commercial timber plantation development on previously cleared land only. The afforestation figures reported are based on the area of plantations established on non-forest land. Some commercial timber plantation species are Australian native species, sometimes (but not necessarily) endemic to the planting site. Afforestation is only reported for new industrial plantation establishment on land that, until then, was not classified as forest. ...' of which afforestation' and 'of which introduced species': the source data is the National Plantation Inventory annual areas of new plantations, using the same years for 5-year average as those for Q1.6: Rates of forest expansion. The softwood species component of new plantations is used as a surrogate for 'of which introduced species', noting that approximately 5% of the softwood species component are native softwood species. '....of which natural expansion' – the figures are the difference between 1.6-'Forest expansion' and 1.6.1-'...of which afforestation'.</p>	Forest cover change figures, including expansion, are nationally and temporally consistent through the reporting period 1990-2012.
Deforestation	'Rate of deforestation': The source of the deforestation figures is the NCCI2011 (Forest loss to grassland and forest loss to crop), averaged over the same 5 year periods as Q1.6: 'Rates of forest expansion'.	N/A
Reforestation	Not available	N/A

Other general comments to the table

• NOTES TO TABLE 1a: Figures may not tally exactly due to rounding. Australia's derived FRA 2015 forest extent figures have been calculated to meet the requirements of FAO's Global Forest Resource Assessment 2015 for the purposes of providing regional and global forest trend information, and are not used for country-level reporting. In response to a request by FAO in August 2009 for FRA 2010, and to address the mapping inconsistencies between 1998, 2003 and 2008, a set of derived forest extent figures were reported for 1990, 2000 and 2005. Referred to as Australia's FRA 2010 derived forest extent, the figures were calculated using the 2006 National Forest Inventory forest area base, published in SOFR 2008, as the baseline forest extent, with forest cover change data from the former Australian Government Department of Climate Change's Australia's National Greenhouse Accounts National Inventory Report developed for carbon accounting purposes and derived from the National Greenhouse Gas Inventory (NGGI) remote sensing program. The same approach has been used for FRA 2015, with the 2011 National Forest Inventory forest area base, published in SOFR 2013, used as the baseline forest extent for calculation of Australia's FRA 2015 derived forest extent. • The forest area statements for 1990, 2000, 2005, 2010 are referred as follows: Australia's FRA 2015 derived forest extent 1990; Australia's FRA 2015 derived forest extent 2000; Australia's FRA 2015 derived forest extent 2005; Australia's FRA 2015 derived forest extent 2010. • Australia's FRA 2015 reported forest area in 2015: Australia's National Forest Inventory forest extent SOFR 2013 reported for 2015 (Montreal Process Implementation Group of Australia & National Forest Inventory Steering Committee (2013). Australia's State of the Forests Report 2013. Australian Bureau of Agricultural Resource Economics and Sciences, Canberra. Table 1 – Australia's forest area by jurisdiction.) • The Other Wooded Land figure provided for 2015 in this report is drawn from National Vegetation Information System (NVIS) data together with results from the MLE analysis undertaken for the forest extent reported in SOFR 2013. These issues are discussed in SOFR 2013, Indicator 1.1a. • OTHER GENERAL COMMENTS: - Forest area change - The Australian Government Department of the Environment's Australian National Greenhouse Gas Inventory (NGGI), published in Australia's National Greenhouse Accounts National Inventory Review, April 2013, provides a picture of land cover change for the purposes of greenhouse gas accounting using a nationally applied remote sensing approach over Australia, based on a consistent time series of woody vegetation extent integrated with biomass modelling. The NGGI is used to report land use change, and maps woody vegetation extent to do this. This mapping has been completed for 21 time periods from 1972 to 2011 using methods that ensure time-series consistency. These methodologies used to determine forest area change are significantly different from those used for the National Forest Inventory for determining (by type, tenure and structure). Australia's total forest area has been derived from various State & Territory forest and vegetation mapping activities and a wide range of other sources including aerial photography, and assembled using the MLE approach described in SOFR 2013 and Mutendeudzi et al (2013a,b). However, the NGGI figures are considered the best available estimates of forest cover change over time, and have been combined with the NFI native and plantation forest area figures for 2011 to present the best estimate of forest extent at time points between 1990 and 2011. National Plantation Inventory figures have been used to report on plantation forest extent. - Forest expansion, reforestation - • For the purposes of the FRA 2015 report, 'Afforestation' is taken to refer to commercial plantation establishment on land that, until then, was not classified as forest. The annual National Plantation Inventory has data back to 1990 for new plantations and these were mostly established on land that, until then, was not classified as forest.

2. What is the area of natural and planted forest and how has it changed over time?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

2.1 Categories and definitions

Term	Definition
Naturally regenerated forest	Forest predominantly composed of trees established through natural regeneration.
Naturalized introduced species	Other naturally regenerated forest where the tree species are predominantly non-native and do not need human help to reproduce/maintain populations over time.
Introduced species	A species, subspecies or lower taxon occurring <i>outside</i> its natural range (past or present) and dispersal potential (i.e. outside the range it occupies naturally or could occupy without direct or indirect introduction or care by humans).
Category	Definition
Primary forest	Naturally regenerated forest of native species where there are no clearly visible indications of human activities and the ecological processes are not significantly disturbed.
Other naturally regenerated forest	Naturally regenerated forest where there are clearly visible indications of human activities.
...of which of introduced species (<i>sub-category</i>)	Other naturally regenerated forest where the trees are predominantly of introduced species.
...of which naturalized (<i>sub-sub category</i>)	Other naturally regenerated forest where the trees are predominantly of naturalized introduced species.
Planted forest	Forest predominantly composed of trees established through planting and/or deliberate seeding.
...of which of introduced species (<i>sub-category</i>)	Planted forest where the planted/seeded trees are predominantly of introduced species.
Mangroves	Area of forest and other wooded land with mangrove vegetation.
...of which planted (<i>sub-category</i>)	Mangroves predominantly composed of trees established through planting.

2.2 National data

2.2.1 Data sources

References to sources of information	Variables	Years	Additional comments
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1	Montreal Process Implementation Group & National Forest Inventory Steering Committee (2013). Australia's State of the Forests Report 2013. Australian Bureau of Agricultural Resource Economics and Sciences, Canberra.	Primary forest, mangroves (forest and OWL)	2006 to 2011	This report is the most comprehensive report and national assessment of Australia's forests. SOFR 2013 was compiled from numerous spatial and non-spatial datasets captured predominantly between 2006 and 2011, and draws on data collated since 1991. Spatial data vary from very detailed 1:25,000 scale to broader 1:250,000 scale.
2	Montreal Process Implementation Group (2008). Australia's State of the Forests Report 2008. Bureau of Rural Sciences, Canberra.	Primary forest; mangroves (forest and OWL)	2001 to 2006	This report was the most comprehensive report and national assessment of Australia's forests at the time and was the principal source of information provided for FRA 2010. SOFR 2008 was compiled from numerous spatial and non-spatial datasets captured predominantly between 2001 and 2006, and draws on data collated since 1991. Spatial data vary from very detailed 1:25,000 scale to broader 1:250,000 scale.
3	National Forest Inventory (2003). Australia's State of the Forests Report 2003. Bureau of Rural Sciences, Canberra.	Primary forest	1996 to 2001	This report was the most comprehensive report and national assessment of Australia's forests at the time and was the principal source of information provided for FRA 2005. SOFR 2003 was compiled from numerous spatial and non-spatial datasets captured predominantly between 1996 and 2001, and draws on data collated since 1991. Spatial data vary from very detailed 1:25,000 scale to broader 1:250,000 scale.
4	Gavran M (2012). Australian Plantation Statistics 2012 Update, ABARES technical report, Australian Bureau of Agricultural and Resource Economics and Sciences, Canberra.	Forest area, afforestation, afforestation of introduced species	2011	This report provides an annual update on Australia's plantation estate based on information provided by growers and regional representatives in tabular form for year ending 2011 (i.e. numbers but no maps or spatial data).

5	Gavran, M & Parsons, M (2011), Australian plantation statistics 2011, Australian Bureau of Agricultural and Resource Economics and Sciences, Canberra.	Forest area, afforestation, afforestation of introduced species	2010	This report provides a spatial update on Australia's plantation estate based on information provided by growers and regional representatives for year ending 2010
6	Gavran & Parsons (2010) National Plantation Inventory, Bureau of Rural Sciences, Canberra	Forest area, afforestation, afforestation of introduced species	2009	National Plantation Inventory annual update for year ending 2009
7	National Plantation Inventory 2009 Update	Forest area, afforestation, afforestation of introduced species	2008	National Plantation Inventory annual update for year ending 2008
8	National Plantation Inventory 2008 Update	Forest area, afforestation, afforestation of introduced species	2007	National Plantation Inventory annual update for year ending 2007
9	National Plantation Inventory 2007 Update	Forest area, afforestation, afforestation of introduced species	2006	National Plantation Inventory annual update for year ending 2006
10	National Plantation Inventory 2006 Update	Forest area, afforestation, afforestation of introduced species	2005	National Plantation Inventory spatial update for year ending 2005
11	National Plantation Inventory Australia 2005 Update	Forest area, afforestation, afforestation of introduced species	2004	National Plantation Inventory annual update for year ending 2004
12	National Plantation Inventory Australia 2004 Update	Forest area, afforestation, afforestation of introduced species	2003	National Plantation Inventory annual update for year ending 2003
13	National Plantation Inventory 2003 Update	Forest area, afforestation, afforestation of introduced species	2002	National Plantation Inventory annual update for year ending 2002
14	National Plantation Inventory of Australia Tabular Report 2002	Forest area, afforestation, afforestation of introduced species	2001	National Plantation Inventory annual update for year ending 2001
15	Wood, Allison, Stephens, Howell (2001) National Plantation Inventory 2001	Forest area, afforestation, afforestation of introduced species	2000	National Plantation Inventory spatial update for year ending 2000
16	National Plantation Inventory tabular report 2000	Forest area, afforestation, afforestation of introduced species	1998 & 1999	National Plantation Inventory update for year ending 1999
17	National Plantation Inventory 1997, Bureau of Rural Sciences, Canberra	Forest area, afforestation, afforestation of introduced species	1997	National Plantation Inventory spatial update for year ending 1997
18	National Plantation Inventory 1997, Bureau of Rural Sciences, Canberra	Forest area, afforestation, afforestation of introduced species	1996	National Plantation Inventory spatial update for year ending 1996
19	National Plantation Inventory 1997, Bureau of Rural Sciences, Canberra	Forest area, afforestation, afforestation of introduced species	1995	National Plantation Inventory spatial update for year ending 1995

20	Australian Bureau of Agriculture and Resource Economics 'Australian Forest Resources 1990 and 1991'	Forest area	1990 & 1991	Tabular data only for plantation area and type (native & exotic species)
21	Keenan, R.J. and Ryan, M. (2004; Revised 2006) Old growth forests. Science for Decision makers, Bureau of Rural Sciences, Canberra 8pp.	Old growth forest area	Up to 2002	Used data from the Comprehensive Regional Assessment (CRA) process which informed Regional Forest Agreements (RFAs). The RFAs were negotiated as an outcome of the 1992 National Forest Policy.

2.2.2 Classification and definitions

National class	Definition
Old growth forest	Ecologically mature forest in which the effects of disturbances are now negligible.
N/A	N/A
N/A	N/A
N/A	N/A

2.2.3 Original data

Old growth forest:					
	1990	1998	2003	2008	2013
Old growth forest ('000 ha)	n.a.	n.a.	5,233	5,039	5,039

Source:

1990 figures: Not available

1998 figures: Not available

2003 figures: SOFR 2003 – Table 39, page 86. Not nationally complete. Data only for ten regions where Comprehensive Regional Assessments were undertaken for Regional Forest Agreements

2008 figures: SOFR 2008 – Table 9, page 18. Not nationally complete. Data only for ten regions where Comprehensive Regional Assessments were undertaken for Regional Forest Agreements

2013 figures: SOFR 2013 – Indicator 1.1b. Not nationally complete. Data only for ten regions where Comprehensive Regional Assessments were undertaken for Regional Forest Agreements, and not updated since SOFR 2008.

Old growth forests in Australia are defined as ‘*Ecologically mature forest where the effects of disturbances are now negligible*’. This broadly corresponds to the definition of Primary Forest used in FRA 2015.

Plantation figures (hectares):

Plantation	1990	1997	2002	2007	2011
Softwood	926,406	924,056	987,864	1,010,155	1,025,000
Introduced species	879,521	n.a.	n.a.	n.a.	980,000
<i>Pinus</i>					
Native species	46,885	n.a.	n.a.	n.a.	45,000
<i>Araucaria</i>					
Hardwood	96,469	252,001	638,337	883,494	980,000
Other/ unknown	0	0	1,626	9,254	12,000
TOTAL Plantation	1,022,875	1,176,057	1,627,827	1,902,903	2,017,000
Total FRA2015 forest	128,541,000	128,841,000	127,641,000	123,211,000	124,751,000

Source:

1990 figures: Australian Forest Resources 1990 and 1991

1997 figures: National Plantation Inventory – 2000 Update and National Plantation Inventory – 1998 Update

2002 figures: National Plantation Inventory – 2003 Update

2007 figures: National Plantation Inventory – 2008 Update

2011 figures: National Plantation Inventory – 2012 Update

Mangroves:

	1990	1998	2003	2008	2013
Mangroves (‘000 ha)	n.a.	1,045	749	980	913

Source:

1998: SOFR 1998 – Table 1, page 31

2003: SOFR 2003 – Table 3, page 30

2008: SOFR 2008 – Table 2, page 7

2013: SOFR 2013 – Table 1.2, page 37

2.3 Analysis and processing of national data

2.3.1 Adjustment

No calibration is undertaken.

2.3.2 Estimation and forecasting

nil

2.3.3 Reclassification

FRA Class	National Reporting Class
Primary	Old growth forests 100% - of known area
Other naturally regenerated forest	Other native forest 100%
Planted forest	Plantation 100%

2.4 Data

Table 2a

Categories		Forest area (000 hectares)				
		1990	2000	2005	2010	2015
	Primary forest	N/A	N/A	5233	5039	5039
	Other naturally regenerated forest	N/A	N/A	120780	116269	117695
	... of which of introduced species	0	0	0	0	0
	... of which naturalized	N/A	N/A	N/A	N/A	N/A
	Planted forest	1023	1176	1628	1903	2017
	... of which of introduced species	926	924	988	1010	1025
TOTAL		1023.00	1176.00	127641.00	123211.00	124751.00

Table 2b

Primary forest converted to (000 ha)								
1990-2000			2000-2010			2010-2015		
Other natural regeneration	Planted	Other land	Other natural regeneration	Planted	Other land	Other natural regeneration	Planted	Other land
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Table 2c

Categories	Area (000 hectares)				
	1990	2000	2005	2010	2015
Mangroves (forest and OWL)	N/A	1045	749	980	913
... of which planted	0	0	0	0	0

Tiers

Category	Tier for status	Tier for reported trend
Primary forest	Tier 2	Tier 2
Other naturally regenerated forest	Tier 2	Tier 2
Planted forest	Tier 3	Tier 3
Mangroves	Tier 2	Tier 2

Tier Criteria

Category	Tier for status	Tier for reported trend
Primary forest/Other naturally regenerated forest/Planted forest	<p>Tier 3 : Data sources: Recent (less than 10 years) National Forest Inventory or remote sensing with ground truthing or data provided by official agencies or programme for repeated compatible NFIs</p> <p>Tier 2 : Data sources: Full cover mapping/ remote sensing or old NFI (more than 10 years) Tier 1 : Other</p>	<p>Tier 3 : Estimate based on repeated compatible tiers 3 (tier for status) Tier 2 : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) Tier 1 : Other</p>

2.5 Comments

Category	Comments related to data definitions etc	Comments on reported trend
Primary forest	Primary category comprises that classified as 'old growth forest' and assessed in areas where Comprehensive Regional Assessments were undertaken for ten Regional Forest Agreements.	Trend information on Primary Forests (old growth forest) is limited. Old-growth forests identified during the original comprehensive regional assessment surveys in the 1990s for the Regional Forest Agreement (and Comprehensive Regional Assessment) regions were discussed in SOFR 2008. The area of old-growth forest in Australia reported at that time was 5.0 million hectares, and has not been updated.
Other naturally regenerating forest	All other native forest (includes an unknown but very small proportion of environmental plantings and other planted forest).	Reported changes from 2000 to 2015 are primarily due to improvements in availability of high-resolution remotely sensed data and improved forest mapping techniques.
Planted forest	Introduced species figure uses the total 'Softwood' areas from 1998, 2003, 2008 and 2013 NPI reports. Approximately 5% of the total softwood plantation area is of native softwood species (e.g. <i>Araucaria cunninghamii</i>).	N/A
Mangroves	Mangrove area figures are taken directly from the 1998, 2003, 2008 and 2013 State of the Forests Reports. The 2005 extent is understood to be an underestimate due to mapping methodologies. Data for 1990 were unavailable.	Reported changes from 2000 - 2010 are primarily due to improvements in availability of high-resolution remotely sensed data and forest mapping techniques.

Other general comments to the table

• NOTES TO TABLE 2a: • Australia's FRA 2015 derived forest area figures have been calculated to meet the requirements of FAO's Global Forest Resource Assessment 2015 for the purposes of providing regional and global forest trend information, and are not used for country-level reporting. • Figures may not tally exactly due to rounding. 1. Australia's forest area as reported in FRA 2015 is 125 million hectares, while Australia's forest area was reported in FRA 2010 as 149 million hectares. The main reason for reporting a reduced forest area in CFRQ 2015/FRA 2015 is an improved resolution of forest mapping, resulting from the use of finer-scale vegetation data often complemented by interpreted satellite imagery. 2. In response to a request by FAO in August 2009 for FRA 2010, and to address the mapping inconsistencies between 1998, 2003 and 2008, a set of derived forest area figures were reported for 1990, 2000 and 2005 in FRA 2010. Referred to as Australia's FRA 2010 derived forest area, the figures were calculated using the SOFR 2008 forest area as the baseline forest area, with forest cover change data from the former Australian Government Department of Climate Change's Australia's National Greenhouse Accounts National Inventory Report developed for carbon accounting purposes and derived from the National Carbon Accounting System (now National Greenhouse Gas Inventory) remote sensing program. The same approach has been used for FRA 2015, with Australia's 2011 forest area reported in SOFR 2013 used as the baseline forest area (refer to Introduction and Table 1 for further discussion). 3. Old growth forest figures published in Australia's State of the Forests Reports (SOFR) 2003, 2008 and 2013 have not been recalculated due to uncertainty in how or whether Australian National Greenhouse Accounts' forest cover change figures apply to old growth forests. The areas provided reflect fine scale mapping of old growth forests but are nationally incomplete. Furthermore, old growth forest mapping has not been updated since that reported in SOFR 2008. 4. See comments to Q1 for 2015 baseline forest (SOFR 2013: Indicator 1.1a Table 1.1, p33. Native forest total) and derived total forest areas for 1990, 2000, 2005 and 2010. • OTHER GENERAL COMMENTS: • Mapping old-growth forests requires knowledge of the growth stage, growth trajectory and disturbance history of the forest. Disturbance history is often not well known and has to be interpreted from other information, such as forest structure or direct evidence such as tracks, stumps and fire scars. Some of this information can be identified using aerial photographs, but in many cases expensive and labour-intensive field validation is required. Therefore, only a relatively small area of Australia's forests (mostly tall, wet forest) has been assessed for its old-growth status or, more generally, its old-growth values. Old-growth forests are usually identified in patches larger than 2–3 hectares. • The area of old growth forests in regions outside those for which data is presented is likely to be small. Most forests outside the ten regions where Comprehensive Regional Assessments were undertaken for Regional Forest • Agreements are open and woodland forests that have been subject to past human-induced fires, other disturbances such as grazing or sporadic wood harvesting, or are forest regrowth (natural expansion of forest) on land that was historically cleared of native forest for agriculture. Thus, the area of primary forest reported is an underestimate, but is likely to be only a small underestimate. • There have been considerable tree planting efforts in the last 20 years under a range of government programs for aesthetics, nature conservation, soil protection, or maintenance of water quality. In addition, many private landholders have been undertaking some tree planting primarily for protective purposes, but these areas are not known. There are no comprehensive statistics for these types of forest.

3. What are the stocks and growth rates of the forests and how have they changed?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

3.1 Categories and definitions

Category	Definition
Growing stock	Volume over bark of all living trees with a minimum diameter of 10 cm at breast height (or above buttress if these are higher). Includes the stem from ground level up to a top diameter of 0 cm, excluding branches.
Net Annual Increment (NAI)	Average annual volume of gross increment over the given reference period less that of natural losses on all trees, measured to minimum diameters as defined for "Growing stock".
Above-ground biomass	All living biomass above the soil including stem stump branches bark seeds and foliage.
Below-ground biomass	All biomass of live roots. Fine roots of less than 2 mm diameter are excluded because these often cannot be distinguished empirically from soil organic matter or litter.
Dead wood	All non-living woody biomass not contained in the litter either standing lying on the ground or in the soil. Dead wood includes wood lying on the surface dead roots and stumps larger than or equal to 10 cm in diameter or any other diameter used by the country.
Carbon in above-ground biomass	Carbon in all living biomass above the soil including stem stump branches bark seeds and foliage.
Carbon in below-ground biomass	Carbon in all biomass of live roots. Fine roots of less than 2 mm diameter are excluded because these often cannot be distinguished empirically from soil organic matter or litter.
Carbon in dead wood	Carbon in all non-living woody biomass not contained in the litter, either standing, lying on the ground, or in the soil. Dead wood includes wood lying on the surface, dead roots and stumps larger than or equal to 10 cm in diameter or any other diameter used by the country.
Carbon in litter	Carbon in all non-living biomass with a diameter less than the minimum diameter for dead wood (e.g. 10 cm) lying dead in various states of decomposition above the mineral or organic soil.
Soil carbon	Organic carbon in mineral and organic soils (including peat) to a soil depth of 30 cm.

3.2 National data

3.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments

1	Department of Industry, Innovation, Climate Change, Science, Research Tertiary Education (2013), Australian National Greenhouse Accounts: National Inventory Report 2011 – Volume 2. The Australian Government Submission to the UN Framework Convention on Climate Change. April 2013	Carbon	1990 to 2011	Australia's National Greenhouse Gas Inventory (formerly the National Carbon Accounting System (NCAS)) provides a picture of land cover change for the purposes of greenhouse gas accounting using a nationally applied remote sensing approach over Australia based on LANDSAT satellite imagery to map woody vegetation extent at 25m resolution over 20 time periods from 1972 to (most recently) 2011, including annually from 2004. See comments for Table 1 under section 1.6.
2	Montreal Process Implementation Group & National Forest Inventory Steering Committee (2013), Australia's State of the Forests Report 2013. Australian Bureau of Agricultural and Resource Economics and Sciences, Canberra.	Carbon	2006 to 2011	This report is the most comprehensive report and national assessment of Australia's forests. SOFR 2013 was compiled from numerous spatial and non-spatial datasets captured predominantly between 2006 and 2011, and draws on data collated since 1991. Spatial data vary from very detailed 1:25,000 scale to broader 1:250,000 scale.
3	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A

3.2.2 Classification and definitions

National class	Definition
N/A	N/A

3.2.3 Original data

Input data for Biomass and Carbon supplied by Australian Government Department of the Environment.
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3.3 Analysis and processing of national data

3.3.1 Adjustment

Nil

3.3.2 Estimation and forecasting

Nil

3.3.3 Reclassification

Nil

3.4 Data

Table 3a

Category		Growing stock volume (million m ³ over bark)										
		Forest					Other wooded land					
		1990	2000	2005	2010	2015	1990	2000	2005	2010	2015	
	Total growing stock	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	... of which coniferous	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	... of which broadleaved	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Table 3b

Category/Species name			Growing stock in forest (million cubic meters)			
Rank	Scientific name	Common name	1990	2000	2005	2010
1 st	n/a	N/A	N/A	N/A	N/A	N/A
2 nd	n/a	N/A	N/A	N/A	N/A	N/A
3 rd	n/a	N/A	N/A	N/A	N/A	N/A
4 th	n/a	N/A	N/A	N/A	N/A	N/A

5 th	n/a	N/A	N/A	N/A	N/A	N/A
6 th	n/a	N/A	N/A	N/A	N/A	N/A
7 th	n/a	N/A	N/A	N/A	N/A	N/A
8 th	n/a	N/A	N/A	N/A	N/A	N/A
9 th	n/a	N/A	N/A	N/A	N/A	N/A
10 th	n/a	N/A	N/A	N/A	N/A	N/A
Remaining			N/A	N/A	N/A	N/A
TOTAL			.00	.00	.00	.00

THE PRE-FILLED VALUES FOR GROWING STOCK REFER TO THE FOLLOWING THRESHOLD VALUES (SEE TABLE BELOW)

Item	Value	Complementary information
Minimum diameter (cm) at breast height of trees included in growing stock (X)	n/a	n/a
Minimum diameter (cm) at the top end of stem for calculation of growing stock (Y)	n/a	n/a
Minimum diameter (cm) of branches included in growing stock (W)	n/a	n/a
Volume refers to above ground (AG) or above stump (AS)	n/a	n/a

PLEASE NOTE THAT THE DEFINITION OF GROWING STOCK HAS CHANGED AND SHOULD BE REPORTED AS GROWING STOCK DBH 10 CM INCLUDING THE STEM FROM GROUND LEVEL UP TO A DIAMETER OF 0 CM, EXCLUDING BRANCHES.

Table 3c

Category		Net annual increment (m ³ per hectare and year)				
		Forest				
		1990	2000	2005	2010	2015
	Net annual increment	N/A	N/A	N/A	N/A	N/A
	... of which coniferous	N/A	N/A	N/A	N/A	N/A
	... of which broadleaved	N/A	N/A	N/A	N/A	N/A

Table 3d

Category	Biomass (million metric tonnes oven-dry weight)
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		Forest					Other wooded land				
		1990	2000	2005	2010	2015	1990	2000	2005	2010	2015
	Above ground biomass	N/A	11216	11137	11146	N/A	N/A	N/A	N/A	N/A	N/A
	Below ground biomass	N/A	4807	4773	4777	N/A	N/A	N/A	N/A	N/A	N/A
	Dead wood	N/A	1861	1848	1849	N/A	N/A	N/A	N/A	N/A	N/A
TOTAL		.00	17884.00	17758.00	17772.00	.00	.00	.00	.00	.00	.00

Table 3e

Category		Carbon (Million metric tonnes)									
		Forest					Other wooded land				
		1990	2000	2005	2010	2015	1990	2000	2005	2010	2015
	Carbon in above ground biomass	N/A	5608	5569	5573	N/A	N/A	N/A	N/A	N/A	N/A
	Carbon in below ground biomass	N/A	2403	2387	2388	N/A	N/A	N/A	N/A	N/A	N/A
	<i>Subtotal Living biomass</i>	N/A	8012	7955	7961	N/A	N/A	N/A	N/A	N/A	N/A
	Carbon in dead wood	N/A	930	924	925	N/A	N/A	N/A	N/A	N/A	N/A
	Carbon in litter	N/A	103	103	103	N/A	N/A	N/A	N/A	N/A	N/A
	<i>Subtotal Dead wood and litter</i>	N/A	1034	1026	1027	N/A	N/A	N/A	N/A	N/A	N/A
	Soil carbon	N/A	3877	3849	3852	N/A	N/A	N/A	N/A	N/A	N/A
TOTAL		.00	12921.00	12832.00	12841.00	.00	.00	.00	.00	.00	.00

Tiers

Variable/category	Tier for status	Tier for trend
Total growing stock	N/A	N/A

Net annual increment	N/A	N/A
Above ground biomass	Tier 2	Tier 2
Below ground biomass	Tier 2	Tier 2
Dead wood	Tier 2	Tier 2
Carbon in above-ground biomass	Tier 1	Tier 1
Carbon in below ground biomass	Tier 1	Tier 1
Carbon in dead wood and litter	Tier 1	Tier 1
Soil carbon	Tier 1	N/A

Tier criteria

Category	Tier for status	Tier for reported trend
Total growing stock	Tier 3: Data sources Recent 10 years National Forest Inventory or remote sensing with ground truthing or programme for repeated compatible NFI 10 years Domestic volume functions Tier 2: Data sources/registers and statistics modelling or old NFI 10 years or partial field inventory Tier 1: Other data sources	Tier 3: Estimate based on repeated compatible tiers 3 (tier for status) Domestic growth functions Tier 2: Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 tier for status Tier 1: Other
Net annual increment	Tier 3: Scientifically tested national volume and growth functions Tier 2: Selection of volume and growth functions as relevant as possible Tier 1: Other	Tier 3: Confirmation/adjustment of functions used through scientific work Tier 2: Review work done to seek alternative functions Tier: 1 Other
Biomass	Tier 3: Country-specific national or sub-national biomass conversion expansion factors applied or other domestic or otherwise nationally relevant biomass studies Tier 2: Application of country specific national or sub-national biomass conversion factors from other country with similar climatic conditions and forest types Tier 1: International/regional default biomass expansion factors applied	Tier 3 : Estimate based on repeated compatible tiers 3 (tier for status) Tier 2 : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) Tier 1 : Other
<ul style="list-style-type: none"> • Carbon in above ground biomass • Carbon in below ground biomass • Carbon in dead wood and litter • Soil carbon 	Tier 3: Country-specific national or sub-national biomass conversion expansion factors applied Tier 2: Application of country specific national or sub-national biomass conversion factors form from other country with similar climatic conditions and forest types Tier 1: International/regional default biomass expansion factors applied	Tier 3 : Estimate based on repeated compatible tiers 3 (tier for status) Tier 2 : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) Tier 1 : Other

3.5 Comments on growing stock biomass and carbon

Category	Comments related to data definitions etc	Comments on the reported trend
Total growing stock	Not nationally classified or reported. (See 'other general comments' below)	nil
Growing stock of broadleaved coniferous	Not nationally classified or reported. (See 'other general comments' below)	nil
Growing stock composition	Not nationally classified or reported. (See 'other general comments' below)	nil
Net annual increment	Not nationally classified or reported. (See 'other general comments' below)	nil
Above-ground biomass	Reported by the Australian Government Full Carbon Accounting Model (FullCAM) which is an ecosystem model that uses a mass-balance approach to carbon cycling for each of the following 3 carbon pools: biomass (above and below ground); dead organic matter (dead wood and litter); and soil organic matter.	nil
Below-ground biomass	See comments above to 'Above-ground biomass'	nil
Dead wood	See comments above to 'Above-ground biomass'	nil
Carbon in above-ground biomass	Australia's State of the Forests Report (SOFR) 2013 reports that, at the end of 2010, Australia's forests stored a total of 12,841 Mt C. This carbon was stored in living biomass (above ground and below ground), debris and soil. The majority of the carbon in forests (10,613 Mt C, 83%) was held in the category 'Non-production native forests', which includes all protected forest areas plus areas of extensive inland woodland forests. The remaining carbon was held in production native forests (16%) and plantations (1.3%). SOFR 2013 also reports total carbon stored in forests at the end of 2000 as 12,922 Mt C and at the end of 2005 as 12,831 Mt C.	Carbon stocks in Australia's forests declined by approximately 91 Mt C in the period 2001–05. The NGGI notes that the change was driven by natural disturbances such as wildfire (especially in 2003), and conversion of forest land to other land uses, mainly agriculture. Over the period 2006–10, forest carbon stocks recovered by 10 Mt C, mainly due to native forest regrowth following wildfires, and less forest being affected by clearing and wildfire. Between 2001 and 2010, therefore, the stock of carbon in Australia's forests decreased by an estimated 81 Mt C (0.6%). Note: these figures are indicative and timeframes longer than one decade are needed to properly assess trends in carbon stocks in Australia's forests.
Carbon in below-ground biomass	See comments for 'Carbon in above-ground biomass' above, and in 'General Comments to the Table' below	N/A
Carbon in dead wood	See comments for 'Carbon in above-ground biomass' above, and in 'General Comments to the Table' below.	N/A
Carbon in litter	See 'General Comments to the Table' below	N/A

Soil carbon	Australia's State of the Forests Report 2013 reports that based on estimates derived from Australia's National Greenhouse Gas Inventory (2012), approximately 3,600 Mt C was stored in the soils of Australia's forests in 2010. This value is likely to be an underestimate because soil carbon data are currently unavailable for large areas of forest land, and because measurements and calculations are only made to 0.3 metres in depth. The soil carbon estimate is calculated using a single forest extent from NCAS overlaid on an initial soil carbon map. Many changes in Australia forest cover through time, in particular in response to drought, may affect forest extent but have less effect on total soil carbon.	N/A
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Other general comments to the table

• NOTES TO TABLE 3d: Forest biomass data for 1990 are not available. Forecasts for 2015 are not available. • NOTES TO TABLE 3e: 1. Data are for all woody vegetation (native and plantations) as reported in SOFR 2013 and derived from Australia's National Greenhouse Gas Inventory, Australian Government Department of the Environment. 2. Carbon figures, which have been calculated using Australia's National Carbon Accounting System (NCAS), are based on a consistent time-series of woody vegetation extent integrated with biomass modelling, and are Australia's formal carbon figures. However, they apply to the Department of the Environment's woody vegetation extent, and not Australia's forest extent as reported here or in SOFR 2013. 3. Includes plantations. 4. Forecasts for 2015 are not available. 5. The soil carbon estimate is calculated using a single forest extent from NCAS overlaid on an initial soil carbon map. Many changes in Australia forest cover through time, in particular in response to drought, may affect forest extent but have less effect on total soil carbon. Data for 1990 are not available. Forecasts for 2015 are not available. • OTHER GENERAL COMMENTS: While growing stock has been assessed on some parts of the forest estate that are used or planned for wood production in Australia, this assessment has not been carried out across all Australia's forest extent and moreover assessment methods and merchantability standards vary between state and region. There are therefore insufficient data to compile a meaningful estimate at the national level. Changes in the carbon stock in Australia's forests are estimated using modelling methodologies consistent with IPCC guidelines.

4. What is the status of forest production and how has it changed over time?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

4.1 Categories and definitions

Term	Definition
Primary designated function	The primary function or management objective assigned to a management unit either by legal prescription documented decision of the landowner/manager or evidence provided by documented studies of forest management practices and customary use.
Non wood forest product (NWFP)	Goods derived from forests that are tangible and physical objects of biological origin other than wood.
Commercial value of NWFP	For the purpose of this table, value is defined as the commercial market value at the forest gate.
Category	Definition
Production forest	Forest area designated primarily for production of wood, fibre, bio-energy and/or non-wood forest products.
Multiple use forest	Forest area designated for more than one purpose and where none of these alone is considered as the predominant designated function.
Total wood removals	The total of industrial round wood removals and woodfuel removals.
...of which woodfuel	The wood removed for energy production purposes, regardless whether for industrial, commercial or domestic use.

4.2 National data

4.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	Montreal Process Implementation Group for Australia & National Forest Inventory Steering Committee (2013). Australia's State of the Forests Report 2013. Australian Bureau of Agricultural and Resource Economics and Sciences, Canberra.	Production forest; Multiple-use forest	2006 to 2011	This report is the most comprehensive report and national assessment of Australia's forests at the time and is the principal source of information provided for FRA 2015. SOFR 2013 is compiled from numerous spatial datasets captured predominantly between 2006 and 2011 and varying from very detailed 1:25,000 scale to broader 1:250,000 scale, and draws on data collated since 1991.

2	Gavran, M 2012, Australian plantation statistics 2012 update, ABARES technical report, Canberra, June.	Production forest	2011	The 2012 edition of Australian plantation statistics update is used here for consistency as these plantation areas are used in Australia's State of the Forests Report 2013.
3	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A

4.2.2 Classification and definitions

National class	Definition
Multiple-use public forest	Publicly owned state forest, timber reserves and other forest areas on which a range of forest values, including provision of wood for harvest, water supply, conservation of biodiversity, recreation and environmental protection, are managed by state and territory agencies in accordance with relevant Acts and regulations.
Private forest	Land held under freehold title and under private ownership. It includes land held under freehold title with special conditions attached for designated Indigenous communities.
Other crown land	Crown land reserved for a variety of purposes, including utilities, scientific research, education, stock routes, mining, use by the defence forces, and use by Indigenous communities. Excludes Leasehold Forest, Nature Conservation Reserve, and Multiple-Use Forest.
Leasehold forest	Crown land held under leasehold title for a specific term and purpose and generally regarded as privately managed, including land held under leasehold title with special conditions attached for designated Indigenous communities.

4.2.3 Original data

Area of forest								
YEAR	'90	1998		2003		2008		2013
	'000 hectares	'000 hectares	%	'000 hectares	%	'000 hectares	%	'000 hectares
Leasehold forest	n.a.	54,154	42	58,557	46	53,603	44	48533

Multiple-use public forest *	n.a.	10,938	9	8,827	7	7,744	6	10159
Nature conservation reserve	n.a.	14,402	11	16,647	13	18,411	15	21478
Other Crown land *	n.a.	12,778	10	10,181	8	8,939	7	8146
Private land - including Indigenous *	n.a.	34,422	27	30,154	24	31,355	26	33394
Unresolved tenure	n.a.	972	1	1,648	1	1,254	1	1024
FRA 2015 Native forest	127,518	127,665		126,013		121,308		122,734
Industrial Plantations (NPI)	1,023	1,176		1,628		1,903		2,017

Notes:

* Land tenures considered as candidate tenures for FRA ‘Multiple Use/Purpose forest’.

Australia’s FRA 2015 derived forest areas for 1990, 2000, 2005 and 2010, with the proportions by area of tenure classes from SOFR 1998, SOFR 2003, and SOFR 2008 used to calculate areas by tenure class in each of the years 1990, 2000, 2005 and 2010. *Australia’s FRA 2015 reported forest area 2015*, with the areas of tenure classes from SOFR 2013, are reported for 2015.

Plantation figures are absolute figures from the relevant NPI publications for each year.

As throughout Australia’s submission, Australia’s 1990 figures are for the year 1990; Australia’s 2000 figures are from the year 1997 (SOFR 1998); Australia’s 2005 figures are from the year 2002 (SOFR 2003); Australia’s 2010 figures are from the year 2007 (SOFR 2008); and Australia’s 2015 figures are from the year 2011 (SOFR 2013).

4.3 Analysis and processing of national data

4.3.1 Adjustment

No calibration is undertaken.

4.3.2 Estimation and forecasting

nil

4.3.3 Reclassification

nil

4.4 Data

Table 4a

Categories		Forest area (000 hectares)				
		1990	2000	2005	2010	2015
	Production forest	1023	1176	1628	1903	2017
	Multiple use forest	N/A	58138	49162	48038	50029

Table 4b

Rank	Name of product	Key species	Commercial value of NWFP removals 2010 (value 1000 local currency)	NWFP category
1 st	Honey and beeswax	<i>Apis mellifera</i>	85000	11
2 nd	Native bush foods	<i>Backhousia citriodora</i> , <i>Solanum centrale</i> , <i>Tasmania lanceolata</i> , <i>Citrus australasica</i> , <i>Syzygium luehmanni</i> , <i>Terminalia ferdinandiana</i> , <i>Citrus glauca</i> , <i>Santalum acuminatum</i> , <i>Kunzea pomifera</i> , <i>Acacia</i> spp., <i>Syzygium anisatum</i> , <i>Davidsonia jerseyana</i> , <i>Acronychia acidula</i> , <i>Citrus australis</i>	16635	1
3 rd	Crocodiles	<i>Crocodylus porosus</i> , <i>Crocodylus johnstoni</i>	14744	10

4 th	Sandalwood	Santalum spicatum, Santalum lanceolatum, Santalum album	14740	3
5 th	Tea tree oil	Melaleuca alternifolia	12132	3
6 th	Game pigs	Sus scrofa	6694	12
7 th	Truffles	Tuber melanosporum, Tuber aestivum	5152	1
8 th	Deer	Dama dama, Cervus elaphus, Cervus timorensis, Cervus canadensis	1659	12
9 th	Eucalyptus oil	Eucalyptus polybractea, Eucalyptus radiata, Eucalyptus globulus	1260	3
10 th	Kangaroo and wallaby	Macropus robustus, Macropus giganteus, Macropus rufus, Macropus fuliginosus, Macropus rufogriseus, Thylogale billardierii	N/A	12
TOTAL			158016.00	

2010	
Name of local currency	Australian dollar (AUD)

Category
Plant products / raw material
1 Food
2 Fodder
3 Raw material for medicine and aromatic products
4 Raw material for colorants and dyes
5 Raw material for utensils handicrafts construction
6 Ornamental plants
7 Exudates
8 Other plant products
Animal products / raw material

9 Living animals
10 Hides skins and trophies
11 Wild honey and beeswax
12 Wild meat
13 Raw material for medicine
14 Raw material for colorants
15 Other edible animal products
16 Other non-edible animal products

Table 4c Pre-filled data from FAOSTAT

Year	FRA 2015 category (1000 m ³ u.b.)	
	Total wood removals	...of which woodfuel
1990	20758.3	3545.3
1991	20390.5	3786.5
1992	20674.4	4020.4
1993	21910.4	4251.4
1994	23252.5	4490.5
1995	24302.5	4742.5
1996	24357.9	5017.9
1997	27034	6957
1998	28050	6892
1999	27667	6829
2000	31181	6774
2001	31087	6695
2002	29712	5520
2003	31604	5890
2004	31933	5601
2005	31933	5601

2006	31777	5042
2007	32264	5181
2008	33269	5059
2009	30316	4828
2010	30431	4854
2011	31291	4724

Tiers

Category	Tier for status	Tier for reported trend
Production forest	Tier 3	Tier 3
Multiple use forest	Tier 3	Tier 3

Tier Criteria

Category	Tier for status	Tier for reported trend
Production forest Multiple use forest	Tier 3: Updated including field verifications national forest maps including functions Tier 2: Forest maps older than 6 years including forest functions Tier 1: Other	Tier 3 : Estimate based on repeated compatible tiers 3 (tier for status) Tier 2 : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) Tier 1 : Other

4.5 Comments

Category	Comments related to data definitions etc	Comments on the reported trend
Production forest	Plantation data only	The trend reflects the increase in Australia's plantation extent.

Multiple use forest	<p>The FAO term Multiple Use/Purpose applies to the primary designated function of the forest, and should not be confused with Australia’s national forest tenure category ‘Multiple-use public forest’. For FRA reporting purposes, Multiple Use Forest = Multiple Use Public Forest (100%), plus Other Crown Land (100%), plus Private forest (95% for 2011 area (SOFR2013)). The 2015 figure provided is calculated in this way from SOFR 2013, Indicator 1.1.a, Table 6 – Area of native forest, by tenure and jurisdiction. The 95% multiplier for private forest for 2011 has been calculated due to Australia now being able to report on the area of covenanted land; approximately 5% of private land is now classified in conservation of biodiversity. Figures for 1990, 2000 (SOFR 1998), 2005 (SOFR 2003) and 2010 (SOFR 2008) include 100% of private land. The figures reported here has been provided solely for FRA reporting purposes and differs from the SOFR 2013 figure.</p>	<p>The trend reflects a number of processes including the negotiation of Regional Forest Agreements in the late 1990s and early 2000s, which led to an increase in the area of Nature Conservation Reserves (Conservation of biodiversity category) and a decrease in the area of Australia’s Multiple-use public forests, and continued to be reflected in the figures reported in 2010 and 2015. For private forests the decline is largely attributable to improved and finer-scale mapping of forest area.</p>
Total wood removals	<p>Data supplied here are as supplied by ABARES to the annual FAO forest sector questionnaires. Note: new data were not supplied for 2005, 2004 data were used.</p>	N/A
Commercial value of NWFP	<ul style="list-style-type: none"> • Source: SOFR 2013, Indicator 6.1b, Table 1. • Commercial value of NWFP removals in 2010 (value 1000 local currency) figures are for the Australian financial year 2011-12 (1 July 2011 to 30 June 2012). • Key species for native bush foods determined from Foster, M. (2014) (in press) Emerging Industries: Their Value to Australia, Rural Industries Research and Development Corporation, Canberra, and ABARES (2013) Agricultural Commodities: March Quarter 2013, ABARES, Canberra. • The gross value from the total commercial harvest of kangaroo in 2011–12 was AUD\$28.6 million. The value of exports of kangaroo products (meat and skins) was AUD\$47 million in 2011-12. The proportion of production and value from kangaroos derived from forests (animals living or sheltering in forests) is unknown. Production of wallaby meat in Tasmania was estimated to be around 29 tonnes in 2011–12, with a gross value for wallaby production of AUD\$250,000. 	N/A

Other general comments to the table

• NOTES TO TABLE 4a: 1. Regarding 1990: Plantation data only (Forestry and Timber Bureau & Australian Bureau of Agricultural and Resource Economics, Forestry Branch 1991). The definition of native forest in 1990 applied only to commercially productive forests and therefore published figures are inconsistent with the National Forest Inventory forest definition and extent of native forest used in subsequent years, so are not provided here. 2. Regarding 2000: Proportions from SOFR 1998 (native forest) applied to Australia's FRA 2015 derived forest extent 2000. 3. Regarding 2005: Proportions from SOFR 2003 (native forest) applied to Australia's FRA 2015 derived extent 2005. 4. Regarding 2010: Proportions from SOFR 2008 (native forest) applied to Australia's FRA 2015 derived extent 2010. 5. Regarding 2015: Native Forest: SOFR 2013; Plantation: NPI 2012. 6. Source for 2015 Production (plantation) figure: Gavran, M (2012), Australian plantation statistics 2012 update, ABARES technical report, Canberra, June. Table 1 – Overview of Australia's plantation estate. 7. Regarding 2015 Multiple use forest figure: The FAO term Multiple Use/Purpose applies to the primary designated function of the forest, and should not be confused with Australia's national forest tenure category 'Multiple-use public forest'. For FRA reporting purposes, Multiple Use /Purpose Forest is 100% of Multiple Use Public Forest plus 100% of Other Crown Land plus 95% of Private (see 4.3.3). The figure provided is calculated from SOFR 2013, Indication 1.1.a, Table 6 – Area of native forest, by tenure and jurisdiction, and is the sum of Multiple Use Public Forest, Other Crown Land and 95% of Private area. The value 95% derives from Australia now being able to report on the area of private covenanted land, with approximately 5% of private land now coventanted and classified as managed for conservation of biodiversity (see 4.3.3.). This figure is provided solely for FRA reporting purposes and differs from that reported in SOFR 2013.

• NOTES TO TABLE 4b: • Source: SOFR 2013, Indicator 6.1b, Table 1. • Commercial value of NWFP removals in 2010 (value 1000 local currency) figures are for the Australian financial year 2011-12 (1 July 2011 to 30 June 2012). • Key species for native bush foods determined from Foster, M. (2014) (in press) Emerging Industries: Their Value to Australia, Rural Industries Research and Development Corporation, Canberra, and ABARES (2013) Agricultural Commodities: March Quarter 2013, ABARES, Canberra.

• The gross value from the total commercial harvest of kangaroo in 2011–12 was AUD\$28.6 million. The value of exports of kangaroo products (meat and skins) was AUD\$47 million in 2011-12. The proportion of production and value from kangaroos derived from forests (animals living or sheltering in forests) is unknown. Production of wallaby meat in Tasmania was estimated to be around 29 tonnes in 2011–12, with a gross value for wallaby production of AUD\$250,000. • OTHER GENERAL COMMENTS: 1. Australia's FRA 2015 derived forest area figures have been calculated to meet the requirements of FAO's Global Forest Resource Assessment 2015 for the purposes of providing regional and global forest trend information, and are not used for country-level reporting. 2. For previous FRAs, Australia included figures for Multiple–use public forest in the 'Production' category, but in recognition of their management for multiple values these areas are now included in FAO's 'Multiple use/purpose' category. 3. Industrial plantation forests are now the sole class of Australian forest in the 'Production' category. 4. To provide the five-year time period required by FAO, Australia's FRA 2015 derived forest area 2000 is data for 1997 (SOFR 1998); Australia's FRA 2015 derived forest area 2005 is data for 2002 (SOFR 2003); Australia's FRA 2015 derived forest area 2010 is data for 2007 (SOFR 2008); and Australia's FRA 2015 report forest area 2015 is data from 2011 (SOFR 2013). 5. In all forests 'designated' for wood production, harvesting is restricted from sensitive areas including streamside reserves, steep slopes, sensitive soils and rare plant or animal habitats, through the implementation of comprehensive codes of forest practice. However, these restricted areas are not generally mapped or geographically designated in tenure databases or in strategic management plans, but are only mapped when detailed assessments to develop operational plans are undertaken. 6. The primary functions for many public native forests in Australia are to protect soil, water and biodiversity, including those forests used for wood production (Multiple-use forest). Harvesting can only occur if these values (and others such as visual amenity and recreation values) are considered within the operational planning process. Codes of practice and other state regulations provide similar limitations during harvest management planning for plantations and private native forests.

5. How much forest area is managed for protection of soil and water and ecosystem services?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

5.1 Categories and definitions

Category	Definition
Protection of soil and water	Forest area designated or managed for protection of soil and water
...of which production of clean water (<i>sub-category</i>)	Forest area primarily designated or managed for water production, where most human uses are excluded or heavily modified to protect water quality.
...of which coastal stabilization (<i>sub-category</i>)	Forest area primarily designated or managed for coastal stabilization.
...of which desertification control (<i>sub-category</i>)	Forest area primarily designated or managed for desertification control.
...of which avalanche control (<i>sub-category</i>)	Forest area primarily designated or managed to prevent the development or impact of avalanches on human life assets or infrastructure.
...of which erosion, flood protection or reducing flood risk (<i>sub-category</i>)	Forest area primarily designated or managed for protecting communities or assets from the impacts of erosion riparian floods and landslides or for providing flood plain services.
...of which other (<i>sub-category</i>)	Forest area primarily designated or managed for other protective functions.
Ecosystem services, cultural or spiritual values	Forest area primarily designated or managed for selected ecosystem services or cultural or spiritual values.
...of which public recreation (<i>sub-category</i>)	Forest area designated or managed for public recreation.
...of which carbon storage or sequestration (<i>sub-category</i>)	Forest area designated or managed for carbon storage or sequestration.
...of which spiritual or cultural services (<i>sub-category</i>)	Forest area designated or managed for spiritual or cultural services.
...of which other (<i>sub-category</i>)	Forest area designated or managed for other ecosystem services.

5.2 National data

5.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments

1	Montreal Process Implementation Group for Australia and the National Forest Inventory Steering Committed (2013). Australia's State of the Forests Report 2013. Australian Bureau of Agricultural Resource Economics and Sciences, Canberra.	Protection of soil and water ...of which production of clean water; Ecosystem services, cultural or spiritual values ... of which public recreation ... of which carbon storage or sequestration ... of which spiritual or cultural services	2006 to 2011	This report is the most comprehensive report and national assessment of Australia's forests. SOFR 2013 was compiled from numerous spatial and non-spatial datasets captured predominantly between 2006 and 2011, and draws on data collated since 1991. Spatial data vary from very detailed 1:25,000 scale to broader 1:250,000 scale
2	Montreal Process Implementation Group (2008). Australia's State of the Forests Report 2008. Bureau of Rural Sciences, Canberra.	Protection of soil and water ...of which production of clean water; Ecosystem services, cultural or spiritual values ... of which public recreation ... of which carbon storage or sequestration ... of which spiritual or cultural services	2001 to 2006	This report was the most comprehensive report and national assessment of Australia's forests at the time and was the principal source of information provided for FRA 2010. SOFR 2008 was compiled from numerous spatial and non-spatial datasets captured predominantly between 2001 and 2006, and draws on data collated since 1991. Spatial data vary from very detailed 1:25,000 scale to broader 1:250,000 scale.
3	National Forest Inventory (2003). Australia's State of the Forests Report 2003. Bureau of Rural Sciences, Canberra.	Ecosystem services, cultural or spiritual values ... of which carbon storage or sequestration	1996 to 2001	This report was the most comprehensive report and national assessment of Australia's forests at the time and was the principal source of information provided for FRA 2005. SOFR 2003 was compiled from numerous spatial and non-spatial datasets captured predominantly between 1996 and 2001, and draws on data collated since 1991. Spatial data vary from very detailed 1:25,000 scale to broader 1:250,000 scale.
4	National Forest Inventory (1998). Australia's State of the Forests Report 1998. Bureau of Rural Sciences, Canberra.	Ecosystem services, cultural or spiritual values ... of which carbon storage or sequestration	1991 to 1996	Compiled from numerous spatial and non-spatial datasets captured predominantly between 1991 and 1996. Spatial data vary from very detailed 1:25,000 scale to broader 1:250,000 scale.

5.2.2 Classification and definitions

National class	Definition
N/A	N/A

5.2.3 Original data

Protection of soil and water:

Area of public forest from which wood harvesting was excluded

For year 2015

From: *Australia's State of the Forests Report 2013* – Indicator 4.1.a – Table 4.1, p.205. Area of public forest from which wood harvesting was excluded, 2011.

Australia Total: 29,808 hectares

For year 2010

SOFR 2008 – Table 47, p.89.

Area ('000 hectares)	30,453
Proportion of SOFR 2008 Native Forest (%)	21
Australia's FRA 2015 derived forest area 2010 ('000 hectares)	25,063

... of which production of clean water

Area of forest in catchments managed specifically to supply water for human or industrial use

For year 2015

From: *Australia's State of the Forests Report 2013* – Indicator 4.1.a – Table 4.2, p206. Area of forest in catchments managed specifically to supply water for human or industrial use, 2011, plus additional 77,000 ha as per footnote for NSW below.

Jurisdiction	ACT	NSW	NT	SA	Tas.	Vic.	WA	Total
Area ('000 ha)	48	255	29	1	5	157	948	1443

Notes:

SA: Area of multiple-use public forest managed by ForestrySA (pine forests on SA Water land); does not include native vegetation and grassland areas in reservoir protection areas.

NSW: Area of closed catchments on multiple-use public forest of 178,000 hectares plus an additional 77,000 hectares of forest in closed water catchments which are available for wood harvesting, subject to scientifically based mitigation measures to protect soil and water values – see text on p.206 of SOFR 2013.

WA: Includes only the public drinking water source areas on multiple-use public forest and conservation reserves in south-west of Western Australia.

Note: Only ACT, NSW, NT, Vic. and WA provided new data for 2011. Data for SA and Tas. are from SOFR 2008. Data were not available for Qld.

For year 2010

SOFR 2008 – Table 48, p.89.

Jurisdiction	ACT	NSW	NT	SA	Tas.	Vic.a	WA	Total
Area ('000 hectares)	112	250	29	1	5	77	949	1,423
Proportion of SOFR 2008 Native Forest (%)								1
Australia's FRA 2015 derived forest area 2010 ('000 hectares)								1171

a The area statement for Victoria differs from that published in Table 48 of SOFR 2008 as the figure published was an overestimate. The figure included in this table for Victoria is drawn from the text accompanying the table in SOFR 2008 which identifies 77,150 hectares as locked for the supply of domestic water.

Ecosystem services, cultural or spiritual values

Ecosystem services, cultural or spiritual values	<p>All forest, excluding industrial plantations reported through the National Plantation Inventory.</p> <p>2010, 2005 and 2000: Australia's <i>FRA 2015 derived forest area figures</i> for native forests</p>
... of which public recreation	<p>2015: Table 6.36, p.296 of SOFR 2013 (99% of multiple-use public forests, and 94% of nature conservation reserves)</p> <p>2010, 2005 and 2000: sum of multiple-use public forests (100%) and nature conservation reserves (100%) using Australia's <i>FRA 2015 derived forest area figures</i></p>
... of which carbon storage or sequestration	
... of which spiritual or cultural services	<p>2015: Intersection of Indigenous and non-indigenous heritage datasets, using SOFR 2013 data .</p> <p>2010: The area statement for 2010 is the absolute area statement, rather than <i>Australia's FRA 2015 derived forest area figure for 2010</i> because the 2010 area statement applies to both forest and non-forest land and cannot be disentangled, thereby preventing the use of the derived forest area approach.</p>

For 2015 Spiritual and cultural figure (43,723 thousand hectares):

Category	Hectares ('000)
Indigenous owned/managed only	36,437
Heritage listed only	2,665
Both Indigenous and Heritage listed	4,620
Total Forest managed for spiritual and cultural values	43,723

From SOFR 2008 - For 2010 Spiritual and cultural figure (22,928,000 hectares):

	Subtotal native forest ('000 hectares)	Plantation hardwood ('000 hectares)	Plantation softwood ('000 hectares)	Total ('000 hectares)
Table 96: Area of forest and non- forest land under Indigenous ownership	20,848	17	2	20,867
Table 97: Area of land and forest on the Register of the National Estate of Indigenous values	1574	0	0	1,574
Table 99: Register of National Estate non-Indigenous places in forests	485	1	1	487
SOFR 2008 Total – Spiritual and cultural				22,928

Note:

The area statement for 2010 is the absolute area statement, rather than *Australia's FRA 2015 derived forest area figure for 2010* because the area statement applies to both forest and non-forest land and cannot be disentangled, thereby preventing the use of the derived forest area approach.

5.3 Analysis and processing of national data

5.3.1 Adjustment

nil

5.3.2 Estimation and forecasting

nil

5.3.3 Reclassification

nil

5.4 Data

Table 5a

Categories		Forest area (1000 hectares)				
		1990	2000	2005	2010	2015
	Protection of soil and water	N/A	N/A	N/A	30453	29808
	... of which production of clean water	N/A	N/A	N/A	1423	1443
	... of which coastal stabilization	N/A	N/A	N/A	N/A	N/A
	... of which desertification control	N/A	N/A	N/A	N/A	N/A
	... of which avalanche control	N/A	N/A	N/A	N/A	N/A
	... of which erosion, flood protection or reducing flood risk	N/A	N/A	N/A	N/A	N/A

	... of which other (please specify in comments below the table)	N/A	N/A	N/A	29030	28365
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Other

The 'of which other' category = 'Protection of soil and water' minus 'of which production of clean water'

Table 5b

Categories	Forest area (1000 hectares)				
	1990	2000	2005	2010	2015
Ecosystem services, cultural or spiritual values	127518	127665	126013	121308	122734
...of which public recreation	N/A	25340	25474	26155	30789
...of which carbon storage or sequestration	N/A	N/A	N/A	N/A	N/A
...of which spiritual or cultural services	N/A	N/A	N/A	22928	43723
...of which other (please specify in comments below the table)	N/A	N/A	N/A	72225	48222

Tiers

Category	Tier for reported trend	Tier for status
Protection of soil and water	Tier 3	Tier 3
Ecosystem services, cultural or spiritual values	Tier 2	Tier 1

Tier criteria

Category	Tier for status	Tier for reported trend
Protection of soil and water	Tier 3: High reliability data derived either from high intensity sample survey or data obtained from national or state agencies responsible for regulations or legislation relating to soil and water protection. Tier 2: Approaches based on low intensity or incomplete sample-based surveys or studies that provide data for specific areas that is extrapolated through statistical analysis to national level estimates. Tier 1: Other	Tier 3 : Estimate based on repeated compatible tiers 3 (tier for status) Tier 2 : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) Tier 1 : Other

<ul style="list-style-type: none"> • Cultural or spiritual values • Public recreation • Spiritual or cultural services • Other 	<p>Tier 3: High reliability data derived either from high intensity sample survey or data obtained from national or state agencies responsible for regulations. Tier 2: Approaches based on low intensity or incomplete sample-based surveys or studies that provide data for specific areas that is extrapolated through statistical analysis to national level estimates. Tier 1: Other</p>	<p>Tier 3 : Estimate based on repeated compatible tiers 3 (tier for status) Tier 2 : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) Tier 1 : Other</p>
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5.5 Comments

Category	Comments related to data definitions etc	Comments on the reported trend
Protection of soil and water	<p>FRA 2015 data are for the area of public forest from which wood harvesting was excluded as at 2011 ('000 hectares), reported in SOFR 2013. The FRA 2010 data are calculated using the Australian's FRA 2015 derived forest area for 2010 and the area proportion of public forest from which wood harvesting was excluded reported in SOFR 2008.</p>	N/A
Production of clean water	<p>Data are for the area of forest in closed catchments managed specifically to supply water for human or industrial use reported in SOFR 2013. The FRA 2010 data are calculated using the Australian's FRA 2015 derived forest area for 2010 and the area proportion of forest in catchments managed specifically to supply water for human or industrial use, reported in SOFR 2008.</p>	N/A
Coastal stabilization	<p>Australia is unable to provide nationally consistent information to address this question. Nonetheless, Australia operates a range of dune protection programs of activities contributing to coastal environments. The programs provide opportunities for governments, community, business and interest groups to become actively involved in on-ground works to protect and manage Australia's coastal environments.</p>	N/A

Desertification control	<p>Australia is unable to provide nationally consistent information to address this question. In Australia, desertification tends to be associated with land degradation and is viewed as a natural resource management issue rather than a forest issue. Causes of land degradation include over-grazing by introduced and native herbivores (total grazing pressure), mechanical removal of vegetation cover, woody weed invasion, and land management without regard to climate. There are no singular solutions for addressing land degradation in Australia: the problems are numerous, varied and often site-specific and interrelated. Hence, Australia's response has been to develop an integrated package of mutually reinforcing measures that recognise this complexity. This package incorporates: comprehensive and integrated regulatory frameworks; processes to manage the use of surface and ground-waters, including specific allocation for the environment; measures to improve water quality; a range of incentives for improved vegetation management, retention and protection; diversifying the commercial use of agricultural land; measures to encourage conservation and remediation; reform and strengthening institutional delivery; programs to build decision making capacity at all levels through improved access to information; and a range of community based, voluntary programs targeted at reducing land degradation.</p>	N/A
Avalanche control	<p>Australia is unable to provide nationally consistent information to address this question. Avalanches occur very occasionally in the highest areas of the mountains in the states of New South Wales, Victoria and Tasmania, but are considered a natural process and rarely impact on human life, assets, or infrastructure.</p>	N/A
Erosion, flood protection or reducing flood risk	<p>Australia is unable to provide nationally consistent information to address this question. All public forests managed for wood production are subject to codes of practice designed, among other purposes, to reduce soil erosion, minimise damage to soil physical properties and to maintain water quantity and quality.</p>	N/A
Other protective functions	<p>The 'of which other' sub-category = 'Protection of soil and water' minus 'of which production of clean water', as advised by the GFRA.</p>	N/A

Ecosystem services, cultural or spiritual values	The category 'Ecosystem services, cultural or spiritual values' includes all forest except Industrial Plantations. The figure supplied for 2015 is Australia's total forest area, reported in SOFR 2013. While the area of Industrial Plantation is not included, it is recognised that a proportion of these forests provide some ecosystem services. Australia's FRA 2015 derived forest area figures for native forest are presented for 1990, 2000, 2005 and 2010.	N/A
Public recreation	The data are the forest area available for recreation and tourism on public land except 'Other Crown Land'. They do not include the forest area available for recreation and tourism on private and leasehold land. Public access for recreation and tourism to forests on private land is generally limited, although few data are available on this; the same applies for forests on leasehold land, which is mostly privately managed under long-term pastoral leases that grant the lessee rights of custodianship of the land. Of the nearly 82 million hectares of forest on private and leasehold land, around 6 million hectares (7%) is in the National Reserve System. The Northern Territory contains more than 3.5 million hectares of reserved private or leasehold land, including reserved Indigenous land: much of this land is available for recreation and tourism, including Kakadu National Park, which is private land tenure and contains close to 900,000 hectares of forest. Because these data are unavailable for previous years, for consistency they have not been included in the 2015 area figure.	N/A
Carbon storage or sequestration	n/a	n/a
Spiritual or cultural services	2015 figures: Area of forest land under Indigenous ownership and management, Indigenous management, Indigenous co-management and Other special rights, plus the area of forest on non- Indigenous heritage sites. 2010 figures: The absolute area statement reported in SOFR 2008 are reported, rather than Australia's FRA 2015 derived forest area figure for 2010. This is because the area statement from SOFR 2008 applies to both forest and non-forest land and cannot be disentangled, thereby preventing the use of the derived forest area approach.	The 43,723,000 hectares reported here for FRA 2015 is calculated from data reported in SOFR 2013. It cannot be compared to the figure supplied for FRA 2010, because the 3 datasets used to calculate the FRA 2015 figure (Indigenous sites, heritage sites and forest extent) have been compiled significantly differently to their compilation for SOFR 2008. Furthermore, the FRA 2015 data include areas of forest managed but not necessarily owned by Indigenous peoples. The 2010 figure is inconsistent with the 2015 figure as it does not include forests under Indigenous management.

Other ecosystem services	The 'of which other' sub-category = 'Ecosystem services, cultural or spiritual values' minus 'of which public recreation' minus 'of which spiritual or cultural services', as advised by the GFRA.	N/A
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Other general comments to the table

n/a

6. How much forest area is protected and designated for the conservation of biodiversity and how has it changed over time?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

6.1 Categories and definitions

Category	Definition
Conservation of biodiversity	Forest area designated primarily for conservation of biological diversity. Includes but is not limited to areas designated for biodiversity conservation within the protected areas.
Forest area within protected areas	Forest area within formally established protected areas independently of the purpose for which the protected areas were established.

6.2 National data

6.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	Montreal Process Implementation Group & National Forest Inventory Steering Committee (2013). Australia's State of the Forests Report 2013. Australian Bureau of Agricultural Resource Economics and Sciences, Canberra.	Conservation of biodiversity Forest area within protected areas	2006 to 2011	This report is the most comprehensive report and national assessment of Australia's forests. SOFR 2013 was compiled from numerous spatial and non-spatial datasets captured predominantly between 2006 and 2011, and draws on data collated since 1991. Spatial data vary from very detailed 1:25,000 scale to broader 1:250,000 scale.
2	Montreal Process Implementation Group (2008). Australia's State of the Forests Report 2008. Bureau of Rural Sciences, Canberra.	Conservation of biodiversity Forest area within protected areas	2001 to 2006	This report was the most comprehensive report and national assessment of Australia's forests at the time and was the principal source of information provided for FRA 2010. SOFR 2008 was compiled from numerous spatial and non-spatial datasets captured predominantly between 2001 and 2006, and draws on data collated since 1991. Spatial data vary from very detailed 1:25,000 scale to broader 1:250,000 scale.

3	National Forest Inventory (2003). Australia's State of the Forests Report 2003. Bureau of Rural Sciences, Canberra.	Conservation of biodiversity Forest area within protected areas	1996 to 2001	This report was the most comprehensive report and national assessment of Australia's forests at the time and was the principal source of information provided for FRA 2005. SOFR 2003 was compiled from numerous spatial and non-spatial datasets captured predominantly between 1996 and 2001, and draws on data collated since 1991. Spatial data vary from very detailed 1:25,000 scale to broader 1:250,000 scale.
4	National Forest Inventory (1998). Australia's State of the Forests Report 1998. Bureau of Rural Sciences, Canberra.	Conservation of biodiversity, Forest area within protected areas	1991 to 1996	Compiled from numerous spatial and non-spatial datasets between 1991 and 1996. Spatial data vary from very detailed 1:25,000 scale to broader 1:250,000 scale.

6.2.2 Classification and definitions

National class	Definition
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Nature conservation reserve	Lands managed by state and territory government agencies that are formally reserved for environmental, conservation and recreational purposes, including national parks, nature reserves, state and territory recreation and conservation areas. This class does not include informal reserves (areas protected by administrative instruments), areas protected by management prescription, or forest areas pending gazettal to this tenure. The harvesting of wood and non-wood forest products generally is not permitted in nature conservation reserves. The Collaborative Australian Protected Areas Database (CAPAD) is a spatial representation of Australia's National Reserve System. SOFR 2013 reports 26.4 million hectares of forest (21% of Australia's forest) in CAPAD, for which the primary management intent is nature conservation. Every two years, the Australian Government collects information on protected areas from state and territory governments and other protected area managers, in CAPAD. CAPAD is primarily concerned with the management intent of a protected area rather than its tenure. Therefore, the total area of forest in CAPAD (Tables 1.23 and 1.24) is more than the area of forest in formal 'nature conservation reserves' (as reported in SOFR 2013, Indicator 1.1a). For example, some large national parks, including Kakadu National Park in the Northern Territory, are classified as private land tenure, but are managed primarily for conservation, and are therefore included in CAPAD. CAPAD is used to provide a national perspective of the conservation of biodiversity in protected areas. It also allows Australia to regularly report on the status of protected areas to meet international obligations, such as those under the Convention on Biological Diversity. Australia's protected area information is also included in the World Database on Protected Areas.
N/A	N/A
N/A	N/A
N/A	N/A

6.2.3 Original data

IUCN Category by Year ('000 ha)								
Area in IUCN category	IUCN category						Total IUCN	Total area ('000 ha)
	1a	1b	2	3	4	5		

Published in SOFR 1998 ('000 ha)	1,169	826	11,766	171	3,054	2,634	436		
% of total forest area in SOFR 1998	0.8	0.6	7.6	0.1	2.0	1.7	0.3	12.9	
Calculated for Australia's FRA 2015 derived forest area 2000 ('000 ha)	957	677	9,639	140	2,502	2,158	357	16,430	127,665
Published in SOFR 2003 ('000 ha)	4,555	2,603	14,316	163	325	325	2,115		
% of total forest area in SOFR 2003	2.8	1.6	8.8	0.1	0.2	0.2	1.3	15.0	

Calculated for Australia's FRA 2015 derived forest area 2005 ('000 ha)	3,528	2,016	11,089	126	252	252	1,638	18,902	126,013
Published in SOFR 2008 ('000 ha)	4,179	3,451	14,875	223	372	282	3,239		
<i>% of total forest area in SOFR 2008</i>	<i>2.8</i>	<i>2.3</i>	<i>10.1</i>	<i>0.2</i>	<i>0.3</i>	<i>0.2</i>	<i>2.2</i>	<i>18.1</i>	
Calculated for Australia's FRA 2015 derived forest area 2010 ('000 ha)	3,439	2,840	12,242	184	306	232	2,666	21,909	121,308
Published in SOFR 2013 ('000 ha)	3,169	2,854	14,331	573	495	490	4,485		

% of total forest area in SOFR 2013	2.6	2.3	11.7	0.5	0.4	0.4	3.7	21.5	
Australia's FRA 2015 reported forest area 2015 ('000 ha)	3,169	2,854	14,331	573	495	490	4,485	26,397	122,734

For year 2015: the total figure of 26.397 million hectares excludes 30,000 hectares for which the IUCN category classification is unresolved. See SOFR 2013, Indicator 1.1c, Table 1.24.

6.3 Analysis and processing of national data

6.3.1 Adjustment

nil

6.3.2 Estimation and forecasting

nil

6.3.3 Reclassification

nil

6.4 Data

Table 6

Categories		Forest area (000 hectares)				
		1990	2000	2005	2010	2015
	Conservation of biodiversity	N/A	16430	18902	21909	26397

	Forest area within protected areas	N/A	13915	17012	19011	21422
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Tiers

Category	Tier for status	Tier for reported trend
Conservation of biodiversity	Tier 2	Tier 2
Forest area within protected areas	Tier 2	Tier 2

Tier criteria

Category	Tier for status	Tier for reported trend
<ul style="list-style-type: none"> Conservation of biodiversity Forests within protected areas 	Tier 3: Data obtained from national or state agencies responsible for conservation and protected area or legislation relating to area protection. Tier 2: Studies that provide data for specific areas that is extrapolated through statistical analysis to national level estimates Tier 1 Other	Tier 3 : Estimate based on repeated compatible tiers 3 (tier for status) Tier 2 : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) Tier 1 : Other

6.5 Comments

Category	Comments related to data definitions etc	Comments on the reported trend
Conservation of biodiversity	As per FAO's definition, IUCN categories I-VI are included. The FRA 2015 area is the area of forest in IUCN protected-area categories published in SOFR 2013, but excludes 30,000 hectares for which the IUCN classification is unresolved. The proportion of each IUCN category for 2000, 2005 and 2010 are based on the proportions of each of the IUCN categories published in SOFR 1998, SOFR 2003 and SOFR 2008 respectively (shown in 6.3.1- Original data), and applied to Australia's FRA 2015 derived native forest area 2000, 2005 and 2010 respectively.	Changes in the proportions of each of the IUCN categories and the total proportion, for each reporting year (see Original data table 6.2.3) are the most useful indications of trends over time.
Forest area within protected areas	As per FAO's definition, IUCN categories I-IV are included. The FRA 2015 area is forest in IUCN protected-area categories I-IV published in SOFR 2013. The proportion of each IUCN categories I-IV for 2000, 2005 and 2010 are based on the proportions of each of the IUCN categories I-IV published in SOFR 1998, SOFR 2003 and SOFR 2008 respectively (shown in 6.3.1- Original data), and applied to Australia's FRA 2015 derived native forest area 2000, 2005 and 2010 respectively.	Changes in the proportions of each of the IUCN categories and the total proportion, for each reporting year, are the most useful indications of trends over time.

Other general comments to the table

Australia's capacity to calculate the figure for 'conservation of biodiversity' has improved significantly compared to previous years because data are now also available for protected areas in nature conservation reserves not in CAPAD. These include legally covenanted forest land especially on private freehold tenure, approximately 5,000 hectares of Other forest (predominantly old hardwood plantations now reserved for biodiversity habitat), multiple-use native forests where jurisdictional legislation designates protection of the forest area and conservation of biodiversity is specified in legislation and/or regulated or managed through a management planning instrument, and defence estates on various land tenures. Of particular interest within this 39.199 million hectares is the newly assembled National Conservation Lands Database (NCLD) which presents information describing legally covenanted forest land especially on private freehold tenure, which has not been available previously. Inclusion of these areas allows a total of 39.199 million hectares of forest to be identified in SOFR 2013 (Table 1.26, p73) as being on land protected for conservation of biodiversity. None of these additional areas are reported in Section 6.4 - Data (Table 6) of this submission.

7. What is the area of forest affected by woody invasive species?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

7.1 Categories and definitions

Category	Definition
Invasive species	Species that are non-native to a particular ecosystem and whose introduction and spread cause, or are likely to cause, socio-cultural, economic or environmental harm or harm to human health.

7.2 National data

7.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	Montreal Process Implementation Group and National Forest Inventory (2013). Australia's State of the Forests Report 2013. Australian Bureau of Agricultural Resource Economics and Sciences, Canberra	Scientific name of woody invasive species	2006 to 2011	This report is the most comprehensive report and national assessment of Australia's forests. SOFR 2013 was compiled from numerous spatial and non-spatial datasets captured predominantly between 2006 and 2011, and draws on data collated since 1991. Spatial data vary from very detailed 1:25,000 scale to broader 1:250,000 scale.
2	Department of Sustainability, Environment, Water, Population and Communities (2013). Weeds of National Significance (WoNS) as at February 2013. Department of Sustainability, Environment, Water, Population and Communities, Canberra.	Scientific name of woody invasive species	1999 to 2013	Thirty two Weeds of National Significance (WoNS) have been identified by Australian governments based on their invasiveness, potential for spread and environmental, social and economic impacts. An initial list of 20 WoNS was endorsed in 1999 and a further 12 were added in 2012.
3	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A

7.2.2 Classification and definitions

National class	Definition
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Invasive species	Species that are non-native to a particular ecosystem and whose introduction and spread cause, or are likely to cause, socio-cultural, economic or environmental harm or harm to human health.
N/A	N/A
N/A	N/A
N/A	N/A

7.2.3 Original data

Source: Australian Weeds Committee (2012), Weeds of National Significance 2012. Department of Agriculture, Fisheries and Forestry, Canberra, ACT.

7.3 Analysis and processing of national data

7.3.1 Adjustment

nil

7.3.2 Estimation and forecasting

nil

7.3.3 Reclassification

nil

7.4 Data

Table 7

Scientific name of woody invasive species	Forest area affected (000 ha)	
	2005	2010
Acacia nilotica	N/A	N/A
Lantana camara	N/A	N/A
Lycium ferocissimum	N/A	N/A
Mimosa pigra	N/A	N/A

Pinus spp.	N/A	N/A
Rosa rubiginosa	N/A	N/A
Rubus fruticosus aggregate	N/A	N/A
Salix spp.	N/A	N/A
Tamarix aphylla	N/A	N/A
Ulex europaeus	N/A	N/A
Total	N/A	N/A

Tiers

Category	Tier for status	Tier for reported trend
Invasive species	Tier 1	Tier 1

Tier Criteria

Category	Tier for status	Tier for reported trend
Invasive species	Tier 3: Systematic assessment in forest inventory or other survey (e.g. by conservation department) within the last 5 years) Tier 2: Systematic assessment in forest inventory or other survey (e.g. by conservation department conducted more than 5 years ago) Tier 1: Other	Tier 3 : Estimate based on repeated compatible tiers 3 (tier for status) Tier 2 : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) Tier 1 : Other

7.5 Comments

Category	Comments related to data definitions etc	Comments on the reported trend
Invasive species	Australia does not have national data for the area of forest affected by woody invasive species. Australia has location-specific information for a number of the species provided, but the aggregate of this information is likely to be an overestimate due to spatial and temporal variability.	n/a

Other general comments to the table

n/a

8. How much forest area is damaged each year?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

8.1 Categories and definitions

Category	Definition
Number of fires	Number of fires per year
Burned area	Area burned per year
Outbreaks of insects	A detectable reduction in forest health caused by a sudden increase in numbers of harmful insects.
Outbreaks of diseases	A detectable reduction in forest health caused by a sudden increase in numbers of harmful pathogens, such as bacteria, fungi, phytoplasma or virus.
Severe weather events	Damage caused severe weather events, such as snow, storm, drought, etc.

8.2 National data

8.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	Montreal Process Implementation Group & National Forest Inventory (2013). Australia's State of the Forests Report 2013. Australian Bureau of Agricultural Resource Economics and Sciences, Canberra.	Total land area burned by fire ... of which forest area burned. Insects, diseases, severe weather events	2006 to 2011	This report is the most comprehensive report and national assessment of Australia's forests. SOFR 2013 was compiled from numerous spatial and non-spatial datasets captured predominantly between 2006 and 2011, and draws on data collated since 1991. Spatial data vary from very detailed 1:25,000 scale to broader 1:250,000 scale.
2	Montreal Process Implementation Group (2008). Australia's State of the Forests Report 2008. Bureau of Rural Sciences, Canberra.	Insects, diseases, severe weather events	2001 to 2006	This report was the most comprehensive report and national assessment of Australia's forests at the time and was the principal source of information provided for FRA 2010. SOFR 2008 was compiled from numerous spatial and non-spatial datasets captured predominantly between 2001 and 2006, and draws on data collated since 1991. Spatial data vary from very detailed 1:25,000 scale to broader 1:250,000 scale.

3	National Forest Inventory (2003). Australia's State of the Forests Report 2003. Bureau of Rural Sciences, Canberra.	Insects, diseases, severe weather events	1996 to 2001	This report was the most comprehensive report and national assessment of Australia's forests at the time and was the principal source of information provided for FRA 2005. SOFR 2003 was compiled from numerous spatial and non-spatial datasets captured predominantly between 1996 and 2001, and draws on data collated since 1991. Spatial data vary from very detailed 1:25,000 scale to broader 1:250,000 scale.
4	National Forest Inventory (1998). Australia's State of the Forests Report 1998. Bureau of Rural Sciences, Canberra.	Insects, diseases, severe weather events	1991 to 1996	This report was the most comprehensive report and national assessment of Australia's forests at the time and was the principal source of information provided for FRA 2000. SOFR 1998 was compiled from numerous spatial and non-spatial datasets captured predominantly between 1991 and 1996, and draws on data collated since 1991. Spatial data vary from very detailed 1:25,000 scale to broader 1:250,000 scale.

8.2.2 Classification and definitions

National class	Definition
N/A	N/A

8.2.3 Original data

<p>Question 8 – Table 8a:</p> <p>Area ('000 hectares) and number (#) of fires</p>

	2006		2007		2008		2009	
	Area	#	Area	#	Area	#	Area	#
Total land area burned	37,788	na	32,168	na	23,980	na	29,388	na
...of which forest area burned	8,455	na	6,655	na	5,814	na	10,230	na
	2010		2011		2012		Total	
	Area	#	Area	#	Area	#	Area	#
Total land area burned	10,341	na	57,633	na	42,834	na	na	na
...of which forest area burned	2,544	na	8,663	na	10,131	na	na	na

8.3 Analysis and processing of national data

8.3.1 Adjustment

nil

8.3.2 Estimation and forecasting

nil

8.3.3 Reclassification

nil

8.4 Data

Table 8a

Category		000 ha, number of fires									
		2003		2004		2005		2006		2007	
		000 ha	#	000 ha	#	000 ha	#	000 ha	#	000 ha	#
CFRQ	Total land area burned	N/A	N/A	N/A	N/A	N/A	N/A	37788	N/A	32168	N/A
CFRQ	... of which forest area burned	N/A	N/A	N/A	N/A	N/A	N/A	8455	N/A	6655	N/A
Category		2008		2009		2010		2011		2012	
		000 ha	#	000 ha	#	000 ha	#	000 ha	#	000 ha	#
CFRQ	Total land area burned	23980	N/A	29388	N/A	10341	N/A	56809	N/A	42834	N/A
CFRQ	... of which forest area burned	5814	N/A	10230	N/A	2544	N/A	8491	N/A	10131	N/A

Table 8b

Outbreak category	Description/name	Year(s) of latest outbreak	Area damaged (000 hectares)
1	Cardiaspina squamula	2010	N/A
1	Doratifera oxleyi	2010	N/A
1	Gonipterus scutellatus	2011	N/A
1	Ips grandicollis	2007	N/A
1	Sirex noctilio	2010	N/A
1	Uraba lugens	2011	N/A
2	Dothistroma septosporum	2010	N/A

2	Puccinia psidii sensu lato	2010	N/A
3	Cyclone Yasi	2011	N/A
3	Drought	2000-2010	N/A

Outbreak category
1 Insects
2 Diseases
3 Severe weather events

Tiers

Category	Tier for status	Tier for trend
Area affected by fire	Tier 2	Tier 2
<ul style="list-style-type: none"> • Insects • Diseases • Severe weather events 	Tier 2	Tier 1

Tier criteria

Category	Tier for status	Tier for reported trend
Burned area	Tier 3 : National fire monitoring routines Tier 2 : Remote sensing surveys Tier 1 : Other	Tier 3 : Estimate based on repeated compatible tiers 3 (tier for status) Tier 2 : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) Tier 1 : Other
<ul style="list-style-type: none"> • Insects • Diseases • Severe weather events 	Tier 3 : Systematic survey (e.g. via inventory or aerial damage assessment) Tier 2 : Management records Tier 1 : Other	Tier 3 : Estimate based on repeated compatible tiers 3 (tier for status) Tier 2 : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) Tier 1 : Other

8.5 Comments

Category	Comments related to data definitions etc	Comments on the reported trend

Burned area	<p>In the period from January 2006 to December 2011, the total area of forest burnt estimated solely from MODIS Burned Area satellite imagery was 42.4 million hectares. SOFR 2013 (pp. 191-193 and Table 3.2) provides detail on the methodology for this MODIS data, but only reports financial years (July-June) for 2006-07 to 2010-11. In the SOFR 2013 reporting period (July 2006 - June 2011) the total area of forest burnt estimated solely from MODIS Burned Area satellite imagery was 33.7 million hectares. An additional 12 months (January 2006-June 2006 and July 2011 to Dec 2011) of fire activity data are included, resulting in 42.4 million hectares of burned area estimated solely from MODIS Burned Area satellite imagery for the period January 2006 to December 2011. As described in FAO's Country Reporting Guide, the MODIS Burned Area product has limited utility in dense forest canopy as surface fires that do not affect the forest canopy may go undetected. The implication of this for reporting of burnt areas in Australia's forests is described in SOFR 2013 (see Indicator 3.1b 'Area of planned and unplanned fire'), where the total area of forest burnt is calculated from a combination of MODIS Burned Area satellite imagery and data collected by states and territories.</p>	<p>The large area of land burnt in 2011 was due to a series of preceding wet years in central Australia that led to high fuel loads in 2011.</p>
Insects	<p>Australia does not have national data for area damaged by insects. Damage to forest ecosystems from most native insect pests and pathogens over the reporting period has usually been of low severity but sometimes widespread in extent. Occasional outbreaks and epidemics have occurred, with the resultant damage adversely affecting commercial values, particularly in plantations.</p>	n/a

Diseases	<p>Australia does not have national data for area damaged by diseases. Quambalaria shoot blight caused damage in spotted gum plantations in Queensland, while fungal leaf pathogens caused occasional significant defoliation in hardwood plantations in Tasmania, Victoria, Queensland and Western Australia. Teratosphaeria (Kirramyces) leaf spot emerged as a major problem for eucalypt plantation establishment in the central coast region of Queensland. Spotted gum canker became a health issue for Corymbia species in New South Wales. Spring needle cast remained one of the major problems affecting the pine plantation estate, while Dothistroma needle blight affected pine plantations in Victoria and New South Wales.</p>	n/a
Severe weather events	<p>Australia does not have data for area damaged by severe weather events, including drought. Drought affected large areas of the south-eastern states of Australia during much of the early part of the reporting period, and large areas of Western Australia for most of the reporting period, with significant impacts on forest health. Drought also contributed to a series of intense wildfires that affected large areas of forest in south-eastern and western parts of Australia. In February 2011, tropical cyclone Yasi destroyed thousands of hectares of forest trees along the north Queensland coast near Mission Beach. The cyclone, which was the largest and most powerful on the eastern coast of Australia since 1918, produced winds exceeding 163 kilometres per hour in coastal areas between Innisfail and Ingham. The extensive cyclone damage to forest trees has led to a decline in industry confidence in future forest plantations in the region. The extent of damage varied with species, genetics, species mixtures and planting pattern, tree age, stand management and site characteristics.</p>	n/a

Other general comments to the table

N/A

9. What is the forest area with reduced canopy cover?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

Category	Definition
Reduction in canopy cover	Forest that has undergone a reduction of canopy cover of more than 20% between the years 2000 and 2010 within the forest canopy cover range of 30-80% as detected by the MODIS VCF sensor.

Table 9

Category	Area of forest with reduced canopy cover (000 ha)
Reduction in canopy cover	N/A

Tiers

Category	Tier for reported trend
Reduction in canopy cover	N/A

Tier criteria

Category	Tier for reported trend
Reduction in canopy cover	Tier 3 : Remote sensing with ground truthing and/or Landsat imagery Tier 2 : Remote sensing using Modis (using pre-filled data provided by FAO) Tier 1 : Expert opinion

Comments

Category	Comments related to data definitions etc
Reduction in canopy cover	No data reported for Australia.

Other general comments

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10. What forest policy and regulatory framework exists to support implementation of sustainable forest management SFM?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

10.1 Categories and definitions

Category	Definition
Policies supporting sustainable forest management	Policies or strategies that explicitly encourage sustainable forest management.
Legislation and regulations supporting sustainable forest management	Legislation and regulations that govern and guide sustainable forest management, operations and use.

10.2 National data

10.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	Montreal Process Implementation Group & National Forest Inventory Steering Committee (2013). Australia's State of the Forests Report 2013. Australian Bureau of Agricultural Resource Economics and Sciences, Canberra.	Policies supporting sustainable forest management ... of which, in publicly owned forests ... of which, in privately owned forests Legislation and regulations supporting sustainable forest management ... of which, in publicly owned forests ... of which, in privately owned forests	2006 to 2011	This report is the most comprehensive report and national assessment of Australia's forests. SOFR 2013 was compiled from numerous spatial and non-spatial datasets captured predominantly between 2006 and 2011, and draws on data collated since 1991. Spatial data vary from very detailed 1:25,000 scale to broader 1:250,000 scale. SOFR 2013, Indicator 7.1d 'Capacity to measure and monitor changes in the conservation and sustainable management of forests', provides further detail for this question.
2	Commonwealth of Australia (1992). National Forest Policy Statement: A New Focus for Australia's Forests, 2nd edition, Commonwealth of Australia, Canberra.	N/A	1992 - current	N/A

3	DAFF (Australian Government Department of Agriculture, Fisheries and Forestry) (2005). The National Indigenous Forestry Strategy, DAFF, Canberra. www.daff.gov.au/__data/assets/pdf_file/0006/37608/nifs_strategy.pdf	N/A	2005 - current	N/A
4	NRMMC (Natural Resource Management Ministerial Council) (2010). Australia's Biodiversity Conservation Strategy 2010–2030, Australian Government Department of Sustainability, Environment, Water, Population and Communities, Canberra.	N/A	2010-2030	N/A
5	NRMMC (2009). Australia's Strategy for the National Reserve System 2009–2030, Australian Government, Canberra	N/A	2009-2030	N/A
6	Australian Forestry Standard AS4708-2013 (2013). http://www.forestrystandard.org.au/resources/standards/AS4708-2013/AS4708-2013-Publish.pdf	N/A	2013	N/A

10.2.2 Classification and definitions

National class	Definition
n/a	N/A

10.2.3 Original data

nil

10.3 Data

Table 10

Category				
	National	Sub-national		
		Regional	Provincial/State	Local
Policies supporting sustainable forest management	yes	yes	yes	yes
... of which, in <u>publicly</u> owned forests	yes	yes	yes	yes
... of which, in <u>privately</u> owned forests	yes	yes	yes	yes
Legislation and regulations supporting sustainable forest management	yes	yes	yes	yes
... of which, in <u>publicly</u> owned forests	yes	yes	yes	yes
... of which, in <u>privately</u> owned forests	yes	yes	yes	yes

10.4 Comments

Variable / category	Comments related to data definitions etc
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Policies supporting sustainable forest management

• **NATIONAL:** A well-established policy framework, guided by Australia's National Forest Policy Statement 1992, supports the conservation and sustainable management of Australia's forests, both nationally and at state and territory levels. Through this statement and other regulatory mechanisms, Australia's national, state and territory governments are committed to the sustainable management of all Australia's forests, whether the forest is on public or private land, or within a conservation reserve or a production forest. National Forest Policy Statement 1992 – Outlines agreed objectives and policies for Australia's public and private forests, based on 11 national goals to be pursued within a regionally based planning framework that integrates environmental and commercial objectives so that provision is made for all forest values. The policy also mandates the preparation of a report on the status of Australia's forests, agreed to by state and territory governments with the Australian Government in 1992, as "to produce and publish a 'state of the forests' review every five years". As a member of the Montreal Process Working Group (MPWG) for the sustainable management of temperate and boreal forests, Australia implements the MPWG framework of criteria and indicators for national reporting through its national State of the Forests Report series to report progress towards sustainable forest management, which also serves as Australia's Country Report to the MPWG. • **National Indigenous Forestry Strategy 2005** – Encourages Indigenous participation in the forest industry and contributes to the overall sustainable development of Indigenous land and communities, addressing areas such as natural resource management, business development, cultural heritage, education, employment and training. Australia's Biodiversity Conservation Strategy 2010-2030 – Provides a guiding framework for conserving Australia's biodiversity over the coming decades for all sectors - government, business and the community. • **Australia's Strategy for the National Reserve System 2009-2030** – Provides national guidance for improved cross-jurisdictional coordination and supports collaborative action by protected area managers and key stakeholders to enhance the National Reserve System. • **The Australian Standard for Sustainable Forest Management — AS 4708-2013** – Provides a voluntary tool through which producers of forest products can demonstrate their social and environmental credentials. • **REGIONAL and PROVINCIAL (State and Territory) :** State and territory governments have responsibility for land management and develop and implement their respective policies and strategies which support sustainable forest management, and include the following: New South Wales – Forestry Corporation of NSW Forest Management Policy. Queensland – Queensland Government Department of Agriculture, Fisheries and Forestry, Forest Products unit, Forest Management Policy Statement. South Australia – Forest Industry Strategy: Vision 2050 Strategic Directions 2011-2016; Forestry SA Sustainable Forest Management Policy. Tasmania – Tasmanian Government Policy for Maintaining a Permanent Native Forest Estate; Forestry Tasmania's Sustainable Forest Management Policy and Sustainability Charter (Forest Management Plan) 2008 • **Victoria** – Victoria's Timber Industry Action Plan; Sustainability Charter for Victoria's State Forests; Victoria's Environmental Sustainability Framework. Western Australia – Forest Products Commission Forest Management Policy. • **LOCAL:** Numerous local governments throughout Australia have a role in sustainable forest management. The responsibilities of councils vary across jurisdictions, and reflect differences in state and territory legislative and regulatory frameworks. As managers of public land and as land use planners, local government is responsible for policy development and implementation of land use planning as well as regulating a wide range of activities that may impact upon sustainable forest management. Local government can also play a key role in translating the policies of Commonwealth and state/territory governments into on-ground projects.

<p>Legislation and regulations supporting sustainable forest management</p>	<ul style="list-style-type: none"> • In Australia, primary constitutional responsibility for land management, including forest management, lies at the state and territory level, while the Australian Government also has certain powers and responsibilities at the national level. All states and territories have legislation, and dependent regulations, designed to ensure the conservation and sustainable management of forests on both public and private land. Some of this legislation is administered jointly by, and requires coordination between, state or territory and local governments, statutory authorities and regional management authorities. In the states and territories, comprehensive legislative provisions cover planning and review, public participation, and the regulation of forest management activities in multiple-use public forests, public nature conservation reserves and, to a lesser extent, private and leasehold forests. Major pieces of legislation relating to the conservation and sustainable management of Australia's forests include: <ul style="list-style-type: none"> • NATIONAL: Environment Protection and Biodiversity Conservation Act 1999. • REGIONAL: Regional Forest Agreements Act 2002; Water Act 2007. • STATE/ TERRITORY: <ul style="list-style-type: none"> • ACT – Nature Conservation Act 1980; Environment Protection Act 1997. • NSW – Forestry Act 2012; National Parks and Wildlife Act 1974; Forestry and National Park Estate Act 1998; Native Vegetation Act 2003. • NT – Environment Assessment Act 1994; Territory Parks and Wildlife Conservation Act 2006. • QLD – Forestry Act 1959; Nature Conservation Act 1992; Vegetation Management Act 1999. • SA – Forestry Act 1950; National Parks and Wildlife Act 1972; Native Vegetation Act 1991; Natural Resources Management Act 2004. • Tas. – Forestry Act 1920; Forest Practices Act 1985; Nature Conservation Act 2002; National Parks and Reserves Management Act 2002. • Vic. – Forests Act 1958; National Parks Act 1975; Conservation, Forests and Lands Act 1987; Sustainable Forests (Timber) Act 2004. • WA – Conservation and Land Management Act 1984; Environmental Protection Act 1986, Forest Products Act 2000, Wildlife Conservation Act 1950. • LOCAL: Numerous local governments throughout Australia have a role in sustainable forest management. The responsibilities of councils vary across jurisdictions, and reflect differences in state and territory legislative and regulatory frameworks. As managers of public land and land use planners, local government is responsible for policy development and implementation of land use planning as well as regulating a wide range of activities that may impact upon sustainable forest management. Local government can also play a key role in translating the policies of the Australian and state/territory governments into on-ground projects.
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Other general comments

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11. Is there a national platform that promotes stakeholder participation in forest policy development?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

11.1 Categories and definitions

Category	Definition
National stakeholder platform	A recognized procedure that a broad range of stakeholders can use to provide opinions, suggestions, analysis, recommendations and other input into the development of national forest policy.

11.2 National data

11.2.1 Data sources

	References to sources of information	Years	Additional comments
1	The Commonwealth of Australia and The State of Victoria. Scoping agreement for the review of progress with implementation of the Victorian Regional Forest Agreements. August 2009. Available online at: http://www.depi.vic.gov.au/forestry-and-land-use/forest-management/regional-forest-agreements	2009	As an example of the promotion of stakeholder participation, this Scoping Agreement details the process for the review of the five Victorian Regional Forest Agreements (RFAs), which includes the invitation of public comment on the performance of the Agreements. This is through the provision of a minimum 8 week period for public submissions to the draft report on progress with the implementation of the RFAs. The following webpage shows the publicly available submissions received by the Australian Government as part of the review of the five Victorian RFAs - http://www.daff.gov.au/forestry/policies/rfa/publications/responses_to_the_discussion_paper
2	A webpage highlighting the function and work of the Forest and Wood Products Council - www.daff.gov.au/forestry/industries/fwpc	2012	N/A
3	A webpage highlighting the extensive consultation undertaken in the development and implementation of the Australian Government's illegal logging policy - www.daff.gov.au/forestry/policies/illegal-logging/consultation-by-the-australian-government	2013	N/A
4	N/A	N/A	N/A

Table 11

Is there a national platform that promotes or allows for stakeholder participation in forest policy development?	yes
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11.3 Comments

Category	Comments related to data definitions etc
National stakeholder platform	<p>The Australian Government utilises a range of formal and informal consultation mechanisms in supporting the development of national forest policies. Examples of these consultation mechanisms include:</p> <ul style="list-style-type: none"> • public consultation undertaken by the Australian and state governments as part of the five-yearly reviews of Regional Forest Agreements (RFAs). RFAs are 20-year agreements with four state governments for the conservation and sustainable management of ten regions covering Australia's commercial native forests. • the Forestry and Forest Products Committee, a committee of government officials from Australian, state, territory agencies responsible for the development and implementation of forest policy. • the Forest and Wood Products Council, which is a forest industry advisory body that acts as a formal means of liaison between forest and wood products industry stakeholders and the Australian Government (the Forest and Wood Products Council is to be replaced by a Forest Industry Advisory Council). • the ongoing and inclusive stakeholder consultation that has been undertaken in developing and implementing the Australian Government's illegal logging policy.

Other general comments

n/a

12. What is the forest area intended to be in permanent forest land use and how has it changed over time?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

12.1 Categories and definitions

Category	Definition
Forest area intended to be in permanent forest land use	Forest area that is designated or expected to be retained as forest and is highly unlikely to be converted to other land use.
...of which permanent forest estate (<i>sub-category</i>)	Forest area that is designated by law or regulation to be retained as forest and may not be converted to other land use.

12.2 National data

12.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	Montreal Process Implementation Group & National Forest Inventory Steering Committee (2013). Australia's State of the Forests Report 2013. Australian Bureau of Agricultural Resource Economics and Sciences, Canberra.	Forest area intended to be in permanent forest land use (2015) ...of which permanent forest estate (2015)	2006 to 2011	This report is the most comprehensive report and national assessment of Australia's forests. SOFR 2013 was compiled from numerous spatial and non-spatial datasets captured predominantly between 2006 and 2011, and draws on data collated since 1991. Spatial data vary from very detailed 1:25,000 scale to broader 1:250,000 scale.
2	Montreal Process Implementation Group (2008). Australia's State of the Forests Report 2008. Bureau of Rural Sciences, Canberra.	Forest area intended to be in permanent forest land use (2010) ...of which permanent forest estate (2010)	2001 to 2006	This report was the most comprehensive report and national assessment of Australia's forests at the time and was the principal source of information provided for FRA 2010. SOFR 2008 was compiled from numerous spatial and non-spatial datasets captured predominantly between 2001 and 2006, and draws on data collated since 1991. Spatial data vary from very detailed 1:25,000 scale to broader 1:250,000 scale.
3	N/A	N/A	N/A	N/A

4	N/A	N/A	N/A	N/A
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12.2.2 Classification and definitions

National class	Definition
N/A	N/A

12.2.3 Original data

Forest Area 2010 : is calculated using FRA 2015 derived forest extent 2010 excluding Industrial Plantations = 121,308,000 ha

	SOFR 2008 % of total native forest	FRA 2015 derived area for 2010 ('000 hectares)
Multiple-use public native forest	6%	7,744
Nature conservation reserve	15%	18,411

The proportion of total native forest (including other forest) that is multiple-use public native forest was 6% in SOFR 2008 and 8% in SOFR 2013.

The proportion of total native forest (including other forest) that is nature conservation reserve was 15% in SOFR 2008 and 18% in SOFR 2013.

12.3 Analysis and processing of national data

12.3.1 Adjustment

See 4.2.3

12.3.2 Estimation and forecasting

See 4.2.3

12.3.3 Reclassification

nil

12.4 Data

Table 12

Categories		Forest area 2010 (000 ha)
	Forest area intended to be in permanent forest land use	26155
	... of which permanent forest estate	26155

Tiers

Category	Tier for status
Forest area intended to be in permanent forest land use	Tier 2
Permanent forest estate	Tier 2

Tier Criteria

Category	Tier for status
Forest area intended to be in permanent forest land use	Tier 3 : National or sub-national land use plans strategy documents or other reports within the past 10 years Tier 2 : National or sub-national land use plans strategy documents or other reports within the past 20 years Tier 1 : Other
Permanent forest estate	Tier 3 : National or sub-national land use plans strategy documents or other reports within the past 10 years Tier 2 : National or sub-national land use plans strategy documents or other reports within the past 20 years Tier 1 : Other

12.5 Comments

Category	Comments related to data definitions etc
Forest area intended to be in permanent forest land use	All areas protected for biodiversity conservation through legislative instruments.

Permanent forest estate	<ul style="list-style-type: none"> • Not nationally classified or reported, but for the purposes of FRA 2015 reporting the area provided is the sum of forest in Multiple-use public native forest (MUF) and Nature Conservation Reserves (NCR). • The data excludes private and leasehold forest as Australia is unable to determine the permanency of such forest. The difference in the permanent forest estate reported in FRA 2015 compared with Australia’s response to FRA 2010 is a consequence of the effect of the change in the baseline area of forest for 2008 (149 million hectares) compared with the baseline of 125 million hectares reported for 2013 (see Question 1). In this regard, the hectare area figures in Australia’s FRA 2015 response are not comparable with the hectare area figures in Australia’s FRA 2010 response, however, the proportions of MUF and NCR are comparable. The proportion of MUF and NCR was 6% and 15% in SOFR 2008, compared with 8% and 18% in SOFR 2013. • Australia’s National Forest Policy Statement 1992 has a national goal “to maintain an extensive and permanent native forest estate in Australia”, and two of the principal objectives of the Statement are “the maintenance of an extensive and permanent native forest estate in Australia and the protection of nature conservation values in forests.” In addition, for example, the Tasmania Government has a “Policy for Maintaining a Permanent Native Forest Estate”. The policy is implemented by Tasmania’s Forest Practices Authority through the Authority’s consideration of applications for approval of Forest Practices Plans under Tasmania’s Forest Practices Act 1985. The policy ensures that Tasmania maintains a permanent forest estate that comprises areas of native forest managed on a sustainable basis both within formal reserves and within multiple-use forests across public and private land.
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Other general comments

<p>The FRA 2015 seeks data only for the year 2010. To maintain reporting consistency, the same approach used for Australia's response to the FRA 2010 is applied to Australia's FRA 2015 response: namely to include in the permanent forest estate data only the areas of multiple-use public forests (MUF) and of nature conservation reserves (NCR), using <i>Australia's FRA 2015 derived forest area</i> for 2010 and the proportion of MUF and NCR reported in SOFR 2008.</p> <p>The apparent difference in the area for the year 2010 in this submission, compared to that reported in FRA 2010 for the year 2010, is due to the reduced total forest area of 125 million hectares being used as the baseline for calculation of the FRA 2015 derived forest area for the year 2010. There is no reduction in proportional area data: the proportion of MUF and NCR was 6% and 15% in SOFR 2008, and 8% and 18% in SOFR 2013.</p> <p>See SOFR 2013, Indicator 1.1c, Table 1.26: Area of forest in protected area categories, for further information. The data excludes private and leasehold forest as Australia is unable to determine the permanency of such forest. The increase in the permanent forest estate is largely a consequence of the effect of legal instruments and management plans.</p> <p>SOFR 2013 presents new datasets which more comprehensively identify areas of forest intended to be in permanent forest land use compared with previous national State of the Forests Reports (SOFR 1998, SOFR 2003, SOFR 2008). Areas of native forest protected for conservation of biodiversity, and deduced to be forest intended to be in permanent forest land use, are described in Australia’s State of the Forests Report 2013,</p>

Indicator 1.1.c. Table 10 – Area of native forest on land protected for conservation of biodiversity, by jurisdiction ('000 hectares), as presented by the data in the table below. See SOFR 2013 for a more detailed explanation. This includes forest in CAPAD (Collaborative Australian Protected Area Database), nature conservation reserves, legally covenanted lands, protected areas in multiple-use native forests, other protected areas on crown managed land and defence lands on various tenures, and private land with legal covenants.

Jurisdiction	Forest in CAPAD	Forest not in CAPAD				Total forest protected for biodiversity conservation
		Nature reserve	Legally covenanted land	Protected areas in multiple-use native forests ^a	Other protected areas on crown managed land ^b	
Area ('000 hectares)						
Total	26,427	1,801	394	9,612	965	39,199

^a Multiple-use public native forests are included where jurisdictional legislation designates protection of the forest area, and conservation of biodiversity is specified in legislation and/or regulated or managed through a management planning instrument.

^b Includes defence estates on various land tenures that have not been counted under other columns.

Source: Montreal Process Implementation Group for Australia and National Forest Inventory Steering Committee (2013). Australia's State of the Forests Report 2013, ABARES, Canberra, December. CC BY 3.0 (referred to in Australia's submission as SOFR 2013)

13. How does your country measure and report progress towards SFM at the national level?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

13.1 Categories and definitions

Category	Definition
Forest area monitored under a national forest monitoring framework	Forest area monitored by a national monitoring framework or systems that provide measurement based periodic monitoring of forest extent and quality.
Forest reporting at national scale	National reporting of forest extent and characteristics that includes some measure of progress toward sustainable forest management.

13.2 National data

13.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	Montreal Process Implementation Group & National Forest Inventory Steering Committee (2013). Australia's State of the Forests Report 2013. Australian Bureau of Agricultural Resource Economics and Sciences, Canberra.	Forest inventory Other field assessments Updates to other sources Expert estimate	2006 to 2011	This report is the most comprehensive report and national assessment of Australia's forests. SOFR 2013 was compiled from numerous spatial and non-spatial data sets captured predominantly between 2006 and 2011, and draws on data collated since 1991. Spatial data vary from very detailed 1:25,000 scale to broader 1:250,000 scale.
2	N/A	N/A	N/A	N/A
3	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A

13.2.2 Classification and definitions

National class	Definition
N/A	N/A
N/A	N/A
N/A	N/A

N/A	N/A
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13.3 Data

Table 13a

Category	% of total forest area	Most recent year	Check all boxes that apply					
			Continuous	Periodic	Permanent ground plots	Temporary ground plots	Aerial/remote sensing sample based	Aerial/remote sensing full coverage
Forest inventory	100	2011	no	no	no	no	no	yes
Other field assessments	N/A	2011	no	no	yes	yes	yes	yes
Updates to other sources	N/A	N/A	no	no	no	no	no	no
Expert estimate	N/A	2011						

Table 13b

Type of forest reporting used at national scale	Check boxes that apply
1 Criteria and Indicators reporting	yes
2 Periodic national state of the forest report	yes
3 Other (please document)	yes
4 None	no

Other type of forest reporting

• Australian National Greenhouse Accounts: Australia, through the Australian Government Department of the Environment (formerly the Australian Government Department of Climate Change and Energy Efficiency, or the Australian Government Department of Climate Change), has assembled consistent land cover change data from 1972-2011 for carbon reporting purposes. Published forest cover change figures for 1990-2011 are provided in Australia's National Greenhouse Accounts National Inventory Report 2011 Volume 2, released in April 2013, and referred to in this submission as National Greenhouse Gas Inventory (NGGI) 2011. • The Australian Government Submission to the United Nations Framework Convention on Climate Change. This report is prepared for carbon accounting purposes and is largely based on the analysis of remote sensing and ancillary data. • Some states (i.e. Victoria and Tasmania) prepare five-yearly 'State of the Forests' reports that cover all forests in that respective state. Some states prepare criteria - and indicator -based reports on public production forests (i.e. New South Wales(annually) and Western Australia (five-yearly)).

13.4 Comments

Category	Comments
see "other general comments" below...	N/A

N/A	N/A
N/A	N/A

Other general comments

13.4 *Comments*

Australia does not have a continuous or periodic national forest inventory with permanent or temporary sample plots. Australia's National Greenhouse Gas Inventory provides a full remote sensing coverage of Australia, with 2011 as the latest year of data.

Category	Comments
Forest inventory – Continuous	Examples include the Victorian Forest Monitoring Program (VFMP) and Western Australia's ForestCheck.
Forest inventory – Periodic	Examples include Multiple-use public forest in Tasmania, regeneration surveys, pre/post harvest surveys and flora and fauna surveys in all states/territories.
Forest inventory – Permanent ground plots	Examples include the Victorian Forest Monitoring Program (VFMP) and Western Australia's ForestCheck.
Forest inventory – Temporary ground plots	An example is FRAMES in New South Wales (NSW). FRAMES is a set of tools, including temporary ground plots, used to predict the strategic level harvestable volume within areas of native forest in the Forestry Corporation of NSW's North East, Central and Southern Regions.
Forest inventory – Aerial/ remote sensing sample based	An example is Forestry Tasmania's use of LiDAR to create highly detailed three-dimensional images of their forests and the terrain beneath them for inventory purposes.
Forest inventory – Aerial/ remote sensing full coverage	As an example, remote sensing is being used for large-scale reporting such as Australia's <i>State of the Forests Report 2013</i> which draws on remotely sensed data to inform the Multiple Lines of Evidence approach to determine Australia's forest area.

Other field assessments – Permanent ground plots	Examples include Terrestrial Ecosystem Research Network (TERN) AusPlots Forests; Australian National University long-term monitoring programs in south eastern Australia (e.g. Grassy Box Woodlands Stewardship, Nanangroe, Tumut, Gundagai, Jervis Bay, South West Slopes, Murray, North East Victoria and Victorian Central Highlands); the CSIRO Rainforest Permanent Plots of North Queensland; carbon flux towers (e.g. Warra LTER site, Wombat State Forest Flux Tower site, Eddy Flux Tower), and Eden Burning Study Area.
Other field assessments – Temporary ground plots	No examples
Other field assessments – Aerial/ remote sensing full coverage	Examples include the Australian National Greenhouse Accounts, and Statewide Landcover and Trees Study (SLATS) sites in Queensland and New South Wales.
Expert estimate	An example is the expert review component of the Multiple Lines of Evidence approach used to develop Australia's forest extent figure published in SOFR 2013, and the expert review component of Regional Forest Agreement (RFA) reviews in New South Wales, Victoria, Tasmania and Western Australia.
Criteria and Indicators reporting	Australia's State of the Forests Reports: criteria and indicator reporting framework based on the Montreal Process
Periodic national state of the forests reports	Australia's State of the Forests Reports: five-yearly series.

14. What is the area of forest under a forest management plan and how is this monitored?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

14.1 Categories and definitions

Category	Definition
Forest area with management plan	Forest area that has a long-term documented management plan, aiming at defined management goals which is periodically revised
...of which for production (<i>sub-category</i>)	Forest management plan mainly focused on production
...of which for conservation (<i>sub-category</i>)	Forest management plan mainly focused on conservation
Monitoring of forest management plans	Government monitoring of forest management plan implementation conducted through field visits or audits of forest management plan performance

14.2 National data

14.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	Montreal Process Implementation Group & National Forest Inventory Steering Committee (2013). Australia's State of the Forests Report 2013. Australian Bureau of Agricultural Resource Economics and Sciences, Canberra.	Forest area with management plan ... of which for production ... of which for conservation	2006 to 2011	Data taken directly from Table 7.3: 'Area of Australia's forests covered by a management plan', p .354, SOFR 2013, supplemented with an analysis of the raw data underpinning this table, to determine areas annually monitored.
2	N/A	N/A	N/A	N/A
3	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A

14.3 Data

Table 14a

Forest plan type	Forest area 2010 (000 ha)
Forest area with management plan	27758
... of which for production	7231

... of which for conservation	17249
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Table 14b

Indicate which (if any) of the following are required in forest management plans in your country	
1 Soil and water management	yes
2 High conservation value forest delineation	yes
3 Social considerations community involvement	yes

Table 14c

Percent of area under forest management plan that is monitored annually	7
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Tiers

Category	Tier for status
Forest area with management plan	Tier 2
Percent of area under forest management plan that is monitored annually	Tier 2

Tier criteria

Category	Tier for status
Forest area with management plan	Tier 3 : Reports that describe national records 5 years old or less that contain long-term forest monitoring plans Tier 2 : Industry or other records indicating the presence of a long-term forest management plan Tier 1 : Other
Percent of area under forest management plan that is monitored annually	Tier 3 : Government documentation of monitoring extent Tier 2 : Reports from forest managers or other documental sources Tier 1 : Other

14.4 Comments

Category	Comments
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Forest area with management plan	<ul style="list-style-type: none"> • Australia’s tally for the parameter ‘forest area with management plan’ includes ... of which for production (see below); plus ... of which for conservation (see below); plus a third component which are forests with management plans that are neither specifically production nor conservation. • Australia’s additional categoryof which multiple or other values (3,279,000 ha) includes forest areas covered by either a management plan or forest management certification but not allocated to either production or conservation, plus forest areas managed under a water or natural resources management plan, plus forest areas managed by the Department of Defence. • Australia’s additional category means the total in Australia’s response in this question in FAO’s database (the Forest Resources InformationManagement System (FRIMS)) does not tally. • Forest area with a management plan is an area that has a long-term documented management plan aiming at defined management goals, which is periodically reviewed. Management plans can take many forms and include examples listed in SOFR 2013 - Table 7.2 (p.352); natural resource, environment and water catchment management plans that cover and include a focus on forests; and strategic management planning systems required for forest management certification. SOFR 2013 - Table 7.3 reports the status of management plans across Australia by jurisdiction.
... of which for production	Includes net harvestable area of multiple-use public native forests covered by existing management plans or forest management certification, and areas of plantation (Industrial plantations and Other forest) that are certified.
... of which for conservation	Includes forest areas in the Collaborative Australian Protected Areas Database (CAPAD) covered by existing management plans, plus certified forests and forest areas managed by the Department of Defence zoned for biodiversity conservation.

Other general comments

14.2.3 Original data

Table 14a: Forest Plan Type

Source: SOFR2013, p.354, Table 7.3 - Area of Australia’s forests covered by a management plan.

The apparent difference in the forest area with management plan between that reported in FRA 2015 and that reported in FRA 2010 is largely a consequence of the effect of the change in the baseline area of forest for 2008 (149 million hectares) compared with the baseline of 125 million hectares reported for 2013. While Australia's reported forest extent has changed, the proportion of total native forest (including other forest) in multiple-use public native forests and in nature conservation reserves in Australia are comparable for 2008 (6% and 15%) and 2013 (8% and 18%).

Areas of forest by plan type	Australia (‘000 hectares)
Forest area with management plan	27,758

...of which primarily Conservation	17,249
... of which primarily Production	7,231
...of which primarily Multiple or other values	3,279
Forest area without management plan	96,994
Total forest (published in SOFR 2013)	124,751

Table 14c: Percent of area under forest management plan that is monitored annually

Areas of forest monitored annually according to policy or regulations.

Land ownership	ACT	NSW	NT	QLD	SA	TAS	VIC	WA	Total
	(hectares)								
Government	1,512	1,561,619	1,189,569	532,201	123,829	1,021,456	859,756	1,541,078	6,831,019
Private	-	39,056	-	676,511	131,408	375,602	443,687	227,742	1,894,005
Joint	-	-	15,124	-	-	1,144	-	2,047	18,314
Total forest monitored annually									8,743,338
Total forest									124,751,000
Proportion of forest area monitored annually (%)									7.01

NOTES TO TABLE 14c - "Percent of area under forest management plan that is monitored annually":

Areas annually monitored include native and plantation certified forest that have documentation to indicate annual monitoring, and native forests (both production and conservation) with documentation that indicates annual monitoring in accordance with policies or regulation. Both public and private forests are included in this assessment. The area includes area of government-owned forest land with annual monitoring (6,831,019 ha), area of private-owned forest land with annual monitoring (1,894,005 ha) and area of jointly owned forest land with annual monitoring (18,314 ha).

Source data: Based on an assessment of data underpinning SOFR 2013 Table 7.3 (Area of Australia's forests covered by a management plan) according to documentation of annual monitoring for native and plantation forests on public and private land managed for production and conservation purposes.

15. How are stakeholders involved in the management decision making for publicly owned forests?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

15.1 Categories and definitions

Category	Definition
Stakeholder involvement	Stakeholder involvement is defined as significant inputs into at least one aspect of forest management at the operational scale

Table 15

Please indicate the type of stakeholder involvement in forest management decision making required in your country	
1. Planning phase	yes
2. Operations phase	yes
3. Review of operations	yes

Tiers

Category	Tier for status
Type of stakeholder inputs	Tier 3

Tier criteria

Category	Tier for status
Type of stakeholder inputs	Tier 3 : Government (national or sub-national) documentation of stakeholder inputs Tier 2 : Government (national or subnational) requirement but stakeholder inputs not documented Tier 1 : Other

15.2 Comments

Category	Comments
Planning phase	Stakeholders can be involved in the management decision-making for publicly owned forests. This may include for example the engagement of stakeholders in the formulation of forest management plans.
Operations phase	Stakeholders can be involved in the management decision-making for publicly owned forests. This may include for example the involvement of stakeholders in monitoring the implementation of forest management and threatened species recovery plans.

Review of operations	Stakeholders can be involved in the management decision-making for publicly owned forests. This may include for example the involvement of stakeholders in the review of codes of practice, forest management plans, threatened species recovery plans and neighbourhood policies.
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Other general comments

n/a

16. What is the area of forest under an independently verified forest certification scheme?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

16.1 Categories and definitions

Category	Definition
FSC certification	Forest area certified under the Forest Stewardship Council certification scheme
PEFC certification	Forest area certified under the Programme for the Endorsement of Forest Certification scheme
Other international forest management certification	Forest area certified under an international forest management certification scheme with published standards and is independently verified by a third-party, excluding FSC and PEFC certification.
Certified forest area using a domestic forest management certification scheme	Area certified under a forest management certification scheme with published standards that are nationally recognized and independently verified by a thirdparty

16.2 Data

Table 16a

International forest management certification		Forest area (000 ha)						
		2000	2001	2002	2003	2004	2005	2006
	FSC	0	0	0	0	394.77	511.14	511.08
	PEFC	0	0	0	0	1093	5166	5735
	Other	0	0	0	0	0	0	0
		2007	2008	2009	2010	2011	2012	
	FSC	550.39	529.08	532.39	602.73	818.78	972.05	
	PEFC	8674	7885	7372	10147	10070	10114	
	Other	0	0	0	0	0	0	

Table 16b

Domestic forest management certification		Forest area (000 ha)						
		2000	2001	2002	2003	2004	2005	2006
	N/A	0	0	0	0	0	0	0
	N/A	0	0	0	0	0	0	0
	N/A	0	0	0	0	0	0	0

		2007	2008	2009	2010	2011	2012	
	N/A	0	0	0	0	0	0	
	N/A	0	0	0	0	0	0	
	N/A	0	0	0	0	0	0	

Tier criteria

Category	Tier for status
International forest management certification	Tier 3: International forest management scheme records maintained by the certifying organization for the reporting year Tier 2: International forest management scheme records reported by the certifying organization for a period 2 years prior to the reporting year Tier: 1 Other
Domestic forest management certification	Tier 3: National registry reports for domestic forest management certification maintained by the certifying organization for the reporting year Tier 2: Domestic forest management scheme records reported by the certifying organization for a period 2 years prior to the reporting year Tier: 1 Other

Tiers

Category	Tier for status
International forest management certification	Tier 3
Domestic forest management certification	Tier 3

16.3 Comments

Category	Comments related to data definitions etc
Certified forest area using an international forest management certification scheme	Some forest areas are certified under both FSC and PEFC certification in Australia, i.e. dual certification. The areas endorsed under PEFC in Australia are certified under the Australian Forest Certification Scheme based on the Australian Forestry Standard. The areas endorsed under FSC in Australia are certified under three interim forest management standards, regionally adapted to Australia, used by FSC accredited certification bodies. The certified forest area data above are those obtained directly from the two schemes by the FAO for FRA2015. The data obtained by the FAO are for December of each year for PEFC and July of each year for FSC.
Domestic forest management certification	n/a

Other general comments

nil

17. How much money do governments collect from and spend on forests?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

17.1 Categories and definitions

Category	Definition
Forest revenue	All government revenue collected from the domestic production and trade of forest products and services. For this purpose revenue include: <ul style="list-style-type: none"> • Goods : roundwood; sawnwood; biomass; woodbased panels; pulp and paper and non-wood forest products. • Services : including concession fees and royalties, stumpage payments, public timber sales revenue taxes and charges based on forest area or yield, taxes on domestic trade and export of forest products, special levies on forestry activities and payments into forest related funds, other miscellaneous inspection, licence and administrative fees levied by forest administrations, permit and licence fees for recreation and other forest related activities.
Public expenditure on forestry	All government expenditure on forest related activities.

17.2 National data

17.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	n/a	N/A	N/A	N/A
2	N/A	N/A	N/A	N/A
3	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A

17.3 Data

Table 17

Category	Revenues / expenditures (000 local currency)		
	2000	2005	2010
Forest revenue	N/A	N/A	N/A
Public expenditure on forestry	N/A	N/A	N/A
	2000	2005	2010
Name of Local Currency	Australian Dollar	Australian Dollar	Australian Dollar

17.4 Comments

Category	Comments related to data definitions etc
Forest revenue	Australia cannot provide nationally consistent information to complete the table in this question.
Public expenditure on forestry	Australia cannot provide nationally consistent information to complete the table in this question: see discussion in Indicator 6.2a in both SOFR 2008 and SOFR 2013.
Other general comments	Australia cannot provide nationally consistent information on "national revenue" and "public expenditure on forestry" for the foreseeable future.

Other general comments

n/a

18. Who owns and manages the forests and how has this changed?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

18.1 Categories and definitions

Category	Definition
Public ownership	Forest owned by the State or administrative units of the public administration or by institutions or corporations owned by the public administration.
...of which owned by the state at national scale (<i>sub-category</i>)	Forest owned by the State at the national scale or administrative units of the public administration or by institutions or corporations owned by the public administration.
...of which owned by the state at the sub-national government scale (<i>sub-category</i>)	Forest owned by the State at the sub-national government scale or administrative units of the public administration or by institutions or corporations owned by the public administration.
Private ownership	Forest owned by individuals, families, communities, private cooperatives corporations and other business entities, private, religious and educational institutions, pension or investment funds, NGOs, nature conservation associations and other private institutions.
...of which individuals (<i>sub-category</i>)	Forest owned by individuals and families.
...of which private business entities and institutions (<i>sub-category</i>)	Forest owned by private corporations cooperatives companies and other business entities as well as private nonprofit organizations such as NGOs nature conservation associations, and private religious and educational institutions etc.
...of which local tribal and indigenous communities (<i>sub-category</i>)	Forest owned by a group of individuals belonging to the same community residing within or in the vicinity of a forest area or forest owned by communities of indigenous or tribal people The community members are coowners that share exclusive rights and duties and benefits contribute to the community development.
Unknown ownership	Forest area where ownership is unknown includes areas where ownership is unclear or disputed.
Categories related to management rights of public forests	Definition
Public Administration	The Public Administration (or institutions or corporations owned by the Public Administration) retains management rights and responsibilities within the limits specified by the legislation.
Individuals households	Forest management rights and responsibilities are transferred from the Public Administration to individuals or households through long-term leases or management agreements.
Private companies	Forest management rights and responsibilities are transferred from the Public Administration to corporations, other business entities private cooperatives, private nonprofit institutions and associations, etc., through long-term leases or management agreements.
Communities	Forest management rights and responsibilities are transferred from the Public Administration to local communities (including indigenous and tribal communities) through long-term leases or management agreements.
Other form of management rights	Forests for which the transfer of management rights does not belong to any of the categories mentioned above.

18.2 National data

18.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	Montreal Process Implementation Group & National Forest Inventory Steering Committee (2013). Australia's State of the Forests Report 2013. Australian Bureau of Agricultural Resource Economics and Sciences, Canberra.	Public ownership ...of which owned by the state at national scale (sub-category) ...of which owned by the state at the sub-national government scale (sub-category) Private ownership ...of which individuals (sub-category) ...of which private business entities and institutions (sub-category) ...of which local, tribal and indigenous communities (sub-category) Unknown ownership Public Administration Private companies	2006 to 2011	This report is the most comprehensive report and national assessment of Australia's forests. SOFR 2013 was compiled from numerous spatial and non-spatial datasets captured predominantly between 2006 and 2011, and draws on data collated since 1991. Spatial data vary from very detailed 1:25,000 scale to broader 1:250,000 scale.
2	Montreal Process Implementation Group (2008). Australia's State of the Forests Report 2008. Bureau of Rural Sciences, Canberra	see above	2001 to 2006	This report was the most comprehensive report and national assessment of Australia's forests at the time and was the principal source of information provided for FRA 2010. SOFR 2008 was compiled from numerous spatial datasets compiled predominantly between 2001 and 2006, and draws on data collated since 1991 and varying from very detailed 1:25,000 scale to broader 1:250,000 scale.
3	National Forest Inventory (2003). Australia's State of the Forests Report 2003. Bureau of Rural Sciences, Canberra	see above	1996 to 2001	This report was the most comprehensive report and national assessment of Australia's forests at the time and was the principal source of information provided for FRA 2005. SOFR 2003 was compiled from numerous spatial datasets compiled predominantly between 1997 and 2001, and draws on data collated since 1991. Spatial data vary from very detailed 1:25,000 scale to broader 1:250,000 scale.

4	National Forest Inventory (1998). Australia's State of the Forests Report 1998. Bureau of Rural Sciences, Canberra	see above	1991 to 1996	This report was the first comprehensive report and national assessment of Australia's forests and was the principal source of information provided for FRA 2000. Compiled from numerous spatial and non-spatial datasets between 1991 and 1996. Spatial data vary from very detailed 1:25,000 scale to broader 1:250,000 scale.
5	Gavran, M (2012), Australian plantation statistics 2012 update, ABARES technical report, Australian Bureau of Agricultural and Resource Economics and Sciences, Canberra.	see above, for plantations	2011	This report provides an annual update on Australia's plantation estate based on information provided by growers and regional representatives in tabular form for year ending 2011 (i.e. numbers but no maps or spatial data).
6	National Plantation Inventory – 2008 Update. Bureau of Rural Sciences, Canberra	see above, for plantations	2007	National Plantation Inventory annual update for year ending 2007
7	National Plantation Inventory – 2003 Update. Bureau of Rural Sciences, Canberra.	see above, for plantations	2002	National Plantation Inventory annual update for year ending 2002
8	National Plantation Inventory 1998 Update. Bureau of Rural Sciences, Canberra.	see above, for plantations	1997	National Plantation Inventory spatial update for the year ending 1997
9	ABARES National Plantation Inventory database 1990 - 2012. Unpublished.	see above, for plantations	1990 to 2012	N/A

18.2.2 Classification and definitions

National class	Definition
Leasehold forest	Forest on Crown land held under leasehold title for a specific term and purpose and generally regarded as privately managed, including land held under leasehold title with special conditions attached for designated Indigenous communities.
Multiple-use public forest	Publicly owned state forest, timber reserves and other forest areas on which a range of forest values are managed, including timber harvesting, water supply, conservation of biodiversity, recreation and environmental protection. Such forests are managed by state and territory agencies in accordance with relevant Acts and regulations.

Nature conservation reserves	Publicly owned lands managed by state and territory government agencies that are formally reserved for environmental, conservation and recreational purposes including national parks, nature reserves, state and territory recreation and conservation areas, and formal reserves within state forests. This class does not include informal reserves (areas protected by administrative instruments), areas protected by management prescription, or forest areas pending gazettal to this tenure. The harvesting of wood and non-wood forest products generally is not permitted.
Other Crown land	Crown land reserved for a variety of purposes, including water supply catchments, utilities, scientific research, education, stock routes, mining, use by the defence force, and use by Indigenous communities.
Private forest	Forest on land held under freehold title and under private ownership; includes land held under freehold title with special conditions attached for designated Indigenous communities.
Unresolved tenure	Areas where tenure is unknown or for which there are no tenure data.

18.2.3 Original data

Australia's Forest Classes by Tenure	1997 area ('000 ha)	'97 (%)	2002 area ('000 ha)	'02 (%)	2007 area ('000 ha)	'07 (%)	2011 area ('000 ha)	'11 (%)
Leasehold	66,103	42	75,596	46	65,132	44	48,533	40
Multiple Use Forest	13,351	9	11,395	7	9,410	6	10,159	8
Nature Conservation Reserve	17,580	11	21,491	13	22,371	15	21,478	18
Other Crown Land	15,597	10	13,143	8	10,862	7	8,146	7
Private	42,018	27	38,928	24	38,099	26	33,394	27
Unresolved Tenure - Native forest	1,186	1	2,127	1	1,524	1	871	1

Total - Native forest 1,2,3,4	155,835	100	162,680	100	147,398	100	122,581	100
Unresolved tenure - Other forest	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	153	100
Total - Other forest	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	153	100
Public	720	61	625	38	650	34	455	23
Private	456	39	906	56	1,151	60	1485	74
Joint ownership	0	0	95	6	98	5	73	4
Unknown	0	0	2	0	4	0	0	0
Total - Industrial plantations 5,6,7,8	1,176	100	1,628	100	1,903	100	2,017	100

1. National Forest Inventory (1998). *Australia's State of the Forests Report 1998*. Bureau of Rural Sciences, Canberra.
2. National Forest Inventory (2003). *Australia's State of the Forests Report 2003*. Bureau of Rural Sciences, Canberra.
3. Montreal Process Implementation Group (2008). *Australia's State of the Forests Report 2008*. Bureau of Rural Sciences, Canberra.
4. Montreal Process Implementation Group and National Forest Inventory (2013). *Australia's State of the Forests Report 2013*. Australian Bureau of Agricultural Resource Economics and Sciences, Canberra.
5. Bureau of Rural Sciences (1998). *National Plantation Inventory 1998*. Bureau of Rural Sciences, Canberra .
6. Bureau of Rural Sciences (2003). *National Plantation Inventory – 2003 Update* . Bureau of Rural Sciences, Canberra .
7. Bureau of Rural Sciences (2008). *National Plantation Inventory – 2008 Update* . Bureau of Rural Sciences, Canberra .
8. Gavran, M (2012), *Australian plantation statistics 2012 update* , ABARES technical report, Australian Bureau of Agriculture and Resource Economics, Canberra.

Year	2000	2005	2010	2015
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Total forest area ('000 hectares) (FRA 2015 Derived areas for 2000, 2005 and 2010, and FRA 2015 baseline area for 2015)	128,841	127,641	123,211	124,751
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18.3 Analysis and processing of national data

18.3.1 Adjustment

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18.3.2 Estimation and forecasting

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18.3.3 Reclassification

	FRA Classes			
Australian National Classes	Private Ownership	Public Ownership	Other ownership	Total
Leasehold		100%		100%
Private	100%			100%
Multiple Use Public Forest		100%		100%
Nature Conservation Reserve		100%		100%
Other Crown Land		100%		100%
Unresolved Tenure			100%	100%

18.4 Data

Table 18a

Categories		Forest area (1000 hectares)			
		1990	2000	2005	2010
	Public ownership	N/A	92991	94836	89349
	... of which owned by the state at national scale	N/A	N/A	0	0
	... of which owned by the state at the sub-national government scale	N/A	92991	94836	89349
	Private ownership	N/A	34878	31060	32506
	... of which owned by individuals	N/A	N/A	N/A	N/A
	... of which owned by private business entities and institutions	N/A	N/A	N/A	N/A
	... of which owned by local, tribal and indigenous communities	N/A	N/A	N/A	17230
	Unknown ownership	N/A	972	1745	1356
TOTAL		.00	128841.00	127641.00	123211.00

Tiers

Category	Tier for status	Tier for reported trend
Public ownership	Tier 2	Tier 2
Private ownership	Tier 2	Tier 2
Unknown ownership	Tier 2	Tier 2

Tier criteria

Category	Tier for status	Tier for reported trend
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Ownership	Tier 3: National forestry statistics registers of land titles or maps on land ownership or all forest area under one ownership category that is five years old or less. Tier 2: National forestry statistics registers of land titles or maps on land ownership or questionnaires that are more than five years old. Tier 1: Other	Tier 3 : Estimate based on repeated compatible tiers 3 (tier for status) Tier 2 : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) Tier 1 : Other
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Table 18b - Holder of management rights of public forests

Categories	Forest area (000 hectares)			
	1990	2000	2005	2010
Public Administration	N/A	26060	26099	26806
Individuals	N/A	N/A	N/A	N/A
Private companies	N/A	N/A	N/A	N/A
Communities	N/A	N/A	N/A	N/A
Other	N/A	N/A	N/A	N/A
TOTAL	.00	26060.00	26099.00	26806.00

Category	Tier for reported trend	Tier for status
Public Administration	Tier 2	Tier 2
Individuals	N/A	N/A
Private companies	N/A	N/A
Communities	N/A	N/A
Other	N/A	N/A

18.5 Comments

Category	Comments related to data definitions etc	Comments on the reported trend
Public ownership	Includes native forests on Leasehold, Multiple-use public forests, Nature conservation reserves and Other crown land tenures; and Industrial plantations & Other forests on leasehold, multiple-use public forest, nature conservation reserve and other crown land tenures.	The change in area under public ownership is largely attributable to improvements in forest mapping, especially in woodland forest, between 1998, 2003, 2008 and 2013, which amend total forest area figures, rather than actual tenure changes.

Private ownership	Private freehold land, including Indigenous owned land.	The change in area under private ownership is largely attributable to changes in the actual area of the plantation estate, as well as improvements in forest mapping, especially in woodland forest, between 1998, 2003, 2008 and 2013, which amend total forest area figures.
Unknown ownership	Joint ownership: where both public and private parties have some equity in the tree crop.	N/A
Management rights	Public administration of public forests occurs on multiple-use public forest and nature conservation reserves, as well as some areas of Other Crown Land, and some areas of publicly owned Industrial Plantations. However, data are only available and reported for multiple-use public forest and nature conservation reserves, and some areas of publicly owned Industrial Plantations.	N/A

Other general comments to the table

• Public Administration includes native forest under Multiple-use public forest, Nature conservation reserve, and Other crown land tenures and those areas of Industrial plantation and Other forests on public land. • Private companies include Leasehold land only (this is public land under private leasehold arrangements). All leasehold forests have been reported in the 'Private corporations and institutions' category as Australia does not have a breakdown between this category and the 'Individuals' category. Australia is not able report "0" for 'Individuals', 'Communities' and 'Other' for 2000, 2005, 2010, because "0" suggests an actual known value. Australia is not able to report these values, so they need to be reported as 'N/A'.

19. How many people are directly employed in forestry?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

19.1 Categories and definitions

Category	Definition
Full-time equivalents (FTE)	A measurement equal to one person working full-time during a specified reference period.
Employment in forestry	Employment in activities related to production of goods derived from forests. This category corresponds to the ISIC/NACE Rev. 4 activity A02 (Forestry and logging).

19.2 National data

19.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	ABARES 2013, Australian forest and wood products statistics, September and December quarters 2012, Australian Bureau of Agricultural and Resource Economics and Sciences, Canberra.	Employment in Forestry - Forestry and Logging	2000 to 2013	Summary - Tabular data of Australian forest and wood products: September and December quarters 2012 summary statistics. These data are updated and published every 6 months.
2	N/A	N/A	N/A	N/A
3	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A

19.2.2 Classification and definitions

National class	Definition
N/A	N/A

19.2.3 Original data

The employment figures for Australia are individuals employed and not Full Time Equivalent (FTE). FTE are not available.

Employment in forestry	2000–01	2005–06	2010–11
	('000 people)		
Forestry and logging	10.0	8.39	5.54
Forestry support services	3.75	3.00	3.50
Total	13.75	11.39	9.04

Note the FAO definition is specific to 'Forestry and logging' only (see 'Categories and definitions' above), so only 'Forestry and logging' numbers reported.

19.3 Data

Table 19

Category		Employment (000 years FTE)			
		1990	2000	2005	2010
	Employment in forestry	N/A	10	8.39	5.54
	... of which female	N/A	N/A	N/A	N/A

19.4 Comments

Category	Comments related to data definitions etc	Comments on the reported trend
Employment in forestry	Note the FAO definition is specific to 'Forestry and logging' only (see 'Categories and definitions' above), so only 'Forestry and logging' numbers are reported. FTE are not available for Australia. Employed individuals are reported here.	N/A

Other general comments to the table

Further discussion is provided in SOFR 2013, Indicator 6.5a: Direct and indirect employment in the forest sector, pp.325-330. Data provided here are for the number of people employed. FTE for these categories are not available for Australia.

20. What is the contribution of forestry to Gross Domestic Product (GDP)?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

20.1 Categories and definitions

Category	Definition
Gross value added from forestry (at basic prices)	This category corresponds to the ISIC/NACE Rev. 4 activity A02 (Forestry and logging).

20.2 Data

Table 20 (Pre-filled data from UNdata/EUROSTAT)

Category	Million	Currency	Year for latest available information
Gross value added from forestry (at basic prices)	1265	Australian Dollar	2012

20.3 Comments

Category	Comments
Gross value added from forestry (at basic prices)	The industry value added (IVA) (actual) of the Australian forest product industry was \$8.3 billion in 2011 - 12, contributing 0.59 per cent of Australia's Gross Domestic Product (GDP) in that year. Source: ABARES 2013, Australian Forest and Wood Products Statistics: September and December quarters 2012, ABARES, Canberra.

Other general comments

n/a

21. What is forest area likely to be in the future

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

21.1 Categories and definitions

Category	Definition
Government target/aspiration for forest area	Government target/aspiration for forest area for a specific year.
Forests earmarked for conversion	Forest area that is allocated/classified or scheduled to be converted into non-forest uses.

21.2 National data

21.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	n/a	N/A	N/A	N/A
2	N/A	N/A	N/A	N/A
3	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A

21.3 Data

Table 21a

Category	Forest area (000 ha)	
	2020	2030
Government target/aspiration for forest area	N/A	N/A

Table 21b

Category	Forest area (000 ha)
	2013
Forests earmarked for conversion	0

21.4 Comments

Category	Comments
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Government target/aspiration for forest area	<ul style="list-style-type: none"> • Australia’s National Forest Policy Statement 1992 (NFPS) is a joint statement agreed to and signed by all states and territories and the Australian Government. The ‘vision’ of the NFPS “has a number of important characteristics” including “the area of forest is increased”. ‘National Goals’ of the NFPS include: “to expand Australia’s commercial plantations of softwoods and hardwoods so as to provide an additional, economically viable, reliable and high-quality wood resource for industry” and “to increase plantings to rehabilitate cleared agricultural land, to improve water quality, and to meet other environmental, economic or aesthetic objectives”. • Plantations for Australia: the 2020 Vision – This Australian Government initiative was established in 1997 as a 3-way partnership between government, the forest industry and private growers, to treble the area of industrial plantations from 1 million hectares in 1997, to 3 million hectares by 2020. The strategy sought to enhance regional wealth creation and international competitiveness through a sustainable increase in Australia's plantation resources. There is now a reduced expectation that the vision to reach 3 million hectares of plantation by 2020 will be achieved. The area of all categories of plantation was 2 million hectares at the time of submission of Australia’s country report, with a reduced area of recent new plantings.
Forests earmarked for conversion	None.

Other general comments

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