



Australian forest profiles

Rainforest

Australia's rainforests comprise only about 2% of the country's total forest area but make a disproportionately large contribution to its biodiversity.

'Rainforest' is a general term for a range of broad-leaved forest communities with closed canopies. Rainforest canopy species are shade-tolerant trees that are able to establish in the understorey and take advantage of canopy gaps that might open up as a result of tree falls, lightning strikes or other disturbances. Unlike many Australian forest species, rainforest canopy trees do not depend on fire for their regeneration.

Part of the appeal of rainforests is their strong contrast with the arid and semi-arid communities that dominate most of the Australian continent. Conservation campaigns and tourism advertising have contributed to their popularity by promoting lush, iconic images of them. The high biological diversity, structural complexity and aesthetic appeal of tropical rainforests in particular, together with the presence of unique animals such as the cassowary (*Casuarius casuarius*), have also contributed to the high level of interest in rainforests and the priority given to their conservation.

There are many types of rainforest in Australia, varying mainly with rainfall and latitude. Tropical and subtropical rainforests occur in northern and eastern Australia in wet coastal areas as far south as New South Wales. Dry rainforests are a variation of tropical and subtropical rainforests; they occur in pockets protected from frequent fire in sub-coastal and inland areas across northern and eastern Australia. Monsoon rainforests occur in northern Australia in the seasonally dry coastal and sub-coastal regions. Some of the tree species in these rainforests are semi-deciduous, often losing their leaves at the end of the dry season.

Temperate rainforests occur in eastern and southeastern Australia. Warm temperate rainforests grow in New South Wales and Victoria and cool temperate rainforests in Victoria and Tasmania, with a few outliers at high altitude in New South Wales and Queensland.

Rainforests are remnants of some of the oldest types of vegetation in Australia. Many existing plant species have ancestors that date back more than 65 million years. For this reason, rainforests have major historical and scientific significance. Australian tropical rainforests contain eight of the 14 primitive flowering plant families, while the cool temperate rainforests of Tasmania contain several primitive flowering plants



Subtropical rainforest canopy, Queensland.

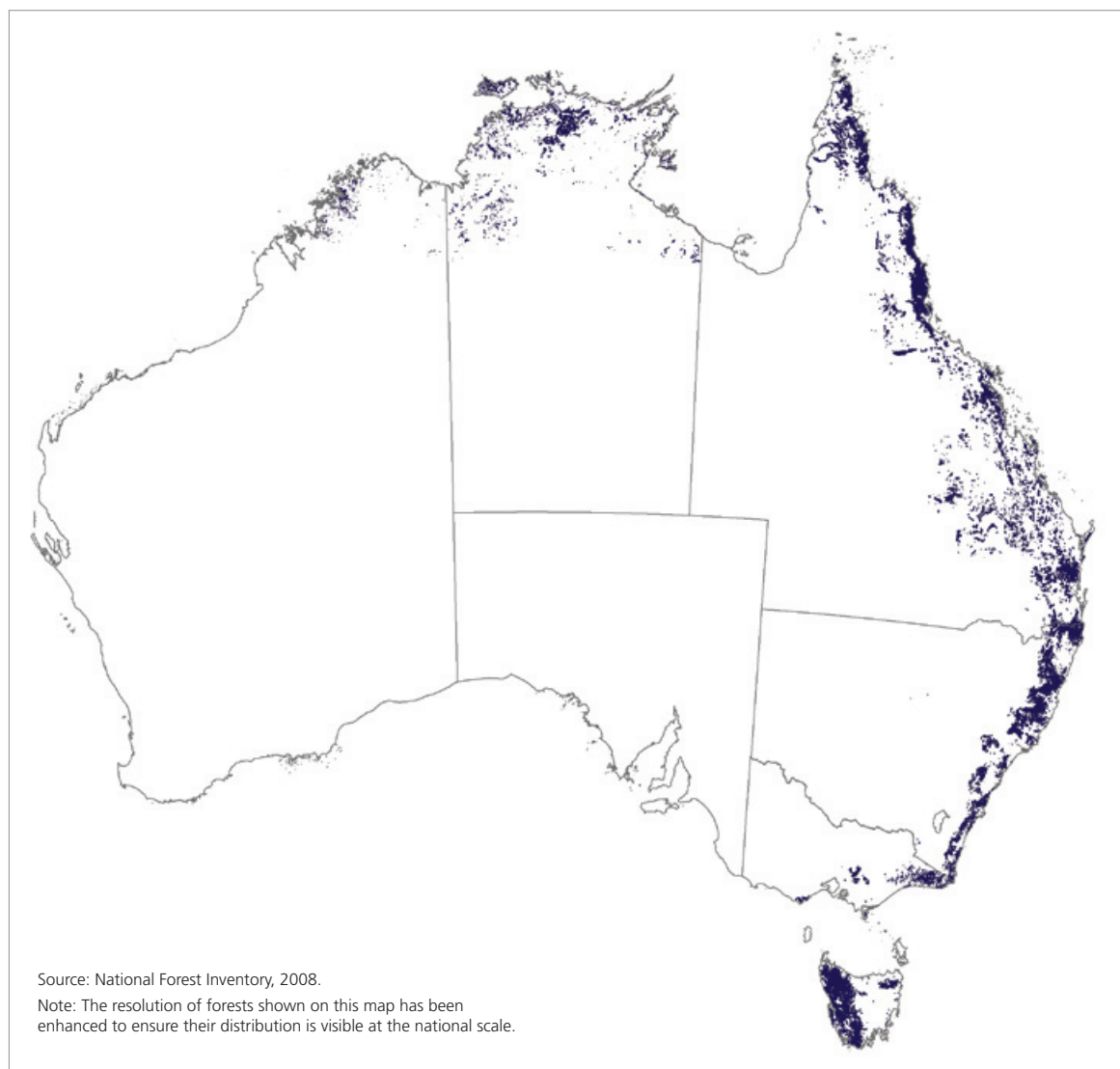
and conifers, such as Huon pine (*Lagarostrobos franklinii*) and celery top pine (*Phyllocladus asplenifolius*).

Because of the small amount of light that filters through their dense tree canopies, many rainforests have only sparse vegetation at ground level, but mosses, vines and other aerial plants are common on tree trunks. Some rainforests, particularly those in the wet tropics of northern Queensland, grow vines in abundance and form the continent's most diverse vegetation communities. Temperate rainforests and high-altitude tropical rainforests often feature ferns and mosses.



Tropical rainforest, Nightcap National Park, northeastern New South Wales.

Figure 1: Rainforest distribution



Where are Australia's rainforests?

Rainforests account for most (77%) of Australia's closed crown cover forest. They extend across the top of northern Australia from the Kimberley to Cape York and down the east coast to the cool temperate zone in Tasmania (Figure 1). Rainforests occur in all states and territories except South Australia and the Australian Capital Territory (Table 1). Queensland has the largest area (57% of all rainforests), followed by Tasmania (18%), New South Wales (15%) and the Northern Territory (9%).



Rainforest in a sheltered, moist gully, where it receives protection from frequent fire.

In all but the areas of highest rainfall, rainforest occurs in discontinuous patches in locally sheltered, moist areas that are protected from frequent fire. It occurs in relatively large tracts in Queensland's wet tropics, where average annual rainfall is above 3 600 millimetres, and in western Tasmania, where average annual rainfall is higher than 3 500 millimetres. Rainforest generally does not develop where average annual rainfall is less than 1 000 millimetres.

Since European settlement, large areas of Australia's rainforest have been cleared for agriculture. In parts of Queensland and northern New South Wales, rainforest has displaced tall, open eucalypt forests, probably because of a reduction in fire frequency.

A forest assessment in 2008¹ revised the area of rainforest in Queensland downwards from 2.9 million hectares (reported in 2003) to 1.9 million hectares, and the area in the Northern Territory upwards from 224 000 hectares to 302 000 hectares. This is largely explained by an improvement in forest measurement technology, particularly the increasing availability of high-resolution remotely sensed data, and improvements in forest typing methods. Estimates of the rainforest area in other jurisdictions were unchanged between 2003 and 2008.

1 MIG (2008).

Table 1: Tenure of rainforest, by state and territory, 2008 ('000 hectares)

Tenure	NSW	NT	Qld	Tas.	Vic.	WA	Australia
Leasehold land	8	28	281	0	0	0	318
Multiple-use forests	82	0	184	171	9	0	446
Nature conservation reserves	309	0	881	387	9	2	1 588
Other crown land	5	6	115	13	0	3	143
Private land	88	264	383	22	0	0	757
Unresolved tenure	1	4	24	0	0	0	29
Total	495	302	1 867	593	18	5	3 280

Note: Totals may not tally due to rounding. The six forest tenure categories above are defined in MIG (2008, pp xvii–xviii).
Source: MIG (2008).

Ownership and management

About 48% of Australia's rainforests are in formally gazetted nature conservation reserves, an increase from 44% in 2003; 23% are on private land, and 14% are in multiple-use public forests and on other Crown land.

Values and uses

Wood

Rainforest timbers are prized for their fine aesthetic qualities. Although large areas of rainforest are now protected, small-scale, selective harvesting still occurs on private land in some states. In Tasmania, some rainforests provide a small ongoing supply of timber for high-value uses such as joinery and woodcraft.

Environmental

Australian rainforests cover a relatively small area of the continent (about 0.4%) but are disproportionately important for the conservation of biodiversity. They contain 60% of the country's unique plant families and about 17% of all Australian bird species. Far north Queensland's wet tropical rainforests contain about 30% of Australia's marsupial and frog species and 62% of its butterfly species. Five of the 13 'hotspots' of plant diversity identified in Australia are dominated by rainforest and a further three have rainforest components.

About 1.04 million hectares of rainforest (32%) is in Australia's World Heritage conservation areas; 654 000 hectares (63%) of this is in Queensland, and there are also significant areas in the Tasmanian Wilderness World Heritage Area.



Green tree frog (*Litoria caerulea*).



Tropical rainforest, World Heritage Area, far north Queensland.

Indigenous uses

Rainforests have a high density of tree-dwelling fauna, such as possums and birds, and have traditionally been used as hunting grounds. Freshwater creeks in tropical rainforests are home to many traditional food sources, including yabbies, fish and turtles.



Interpretation board describing Aboriginal use of Australia's tropical rainforests.

Other uses

Tourism is now the main economic use of rainforests, particularly in far north Queensland and Tasmania. Bioprospecting surveys continue to seek species useful for medical and dietary purposes. The production of honey from the Tasmanian rainforest species leatherwood (*Eucryphia lucida*) is another important use.



Myrtle beech (*Nothofagus cunninghamii*) cool temperate rainforest, Otways, Victoria.



Skyrail Rainforest Cableway, near Cairns, is a world first in environmental tourism, carrying passengers 7.5 kilometres over Australia's World Heritage-listed Tropical Rainforest canopy and deep into the forest.

References and further reading

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Websites

www.jcu.edu.au/rainforest/

www.daff.gov.au/forestsaustralia

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