



Acacia forests

The genus *Acacia* contains more than 1500 species. It occurs naturally on all continents except Europe and Antarctica. Australia has 955 species, making acacia the largest genus of flowering plants (excluding liverworts and fungi) in the country.

Many acacias produce spectacular golden flowers and are conspicuous in the landscape. An acacia was one of the first Australian plants collected by Europeans, and golden wattle (*Acacia pycnantha*) is Australia's national floral emblem.

Acacias became known as 'wattles', because their branches were used to build huts, using what the early British settlers called the 'wattle and daub' method. This involved weaving sticks and branches among stakes to create a frame that could be plastered with mud.

Acacias display an amazing variation in appearance, leaf type, habitat and genetic diversity, from small creeping forms to trees up to 30 metres tall. However, this profile refers only to forests of tree-forming acacias, which are taller than two metres at maturity, with a crown cover of more than 20%, and are dominant in a community. There are 54 species of forest-forming acacias.

Acacia forests are the second most extensive forest type in Australia, with 16 million hectares of forest or 10% of the total native forest area.

Forests dominated by acacia are mostly open or woodland forest communities. These forests are generally found where rainfall averages less than 750 millimetres per year. In areas with lower rainfall and poorer soil, the canopies of acacia forests are more open and the trees decrease in height.

In wetter locations, acacia can form open forests that are usually dominated by a single species. For example, blackwood (*Acacia melanoxylon*) dominates extensive stands of swamp forest on poorly drained sites in Tasmania.



Gidgee (*Acacia cambagei*) woodland, Central Queensland

E.L. Thompson, Old Environment Protection Agency

Trees without leaves

Acacia species produce leaves of great variety; however, often these are not really leaves at all, but phyllodes – flattened leaf stalks – that have adapted to appear and function as leaves. Some phyllodes are large – up to 30 centimetres long; others are so small they are hard to see. Some stems have distinctive wide wings with tiny phyllodes present, as in *Acacia glaucoptera*. Several acacias have bipinnate (fern-like) leaves, made up of a large number of small leaflets (pinnules) along a central stalk.



Michael F. Ryan

Where are Australia's acacia forests?

Acacias dominate vast areas of Australia and are found in all habitats. They are especially common and conspicuous in arid, semiarid and dry subtropical areas. Acacia forests occur in all Australian states and the Northern Territory (Table 1 and Figure 1), with the largest areas in Queensland and Western Australia.

Low acacia woodland forests grow in Australia's arid zone, where the average annual rainfall is as low as 250 millimetres. Some species also extend into higher rainfall regions, including closed forests or rainforests.

Mulga (*Acacia aneura*) is the dominant species over vast areas in the arid and semiarid zone, and also occurs as an understorey species in some eucalypt forests in the east. Brigalow (*A. harpophylla*) is widespread in Queensland, sometimes forming dense forests. It grows as outlying forests in New South Wales on clay soils of flat or undulating country. Patches of lancewood (*A. shirleyi*) grow as forest on rocky outcrops and steep slopes in the tropics and subtropics, whereas myall (*A. pendula*) dominates forests adjacent to streams or saltbush shrublands. Gidgee (*A. cambagei*) is widespread in areas where average rainfall is less than 500 millimetres per year, and is even found along drainage lines in the Simpson Desert in central Australia.

Ownership and management

Less than 4% of acacia forests are in nature conservation reserves. Most occur on leasehold or private land (Table 2).



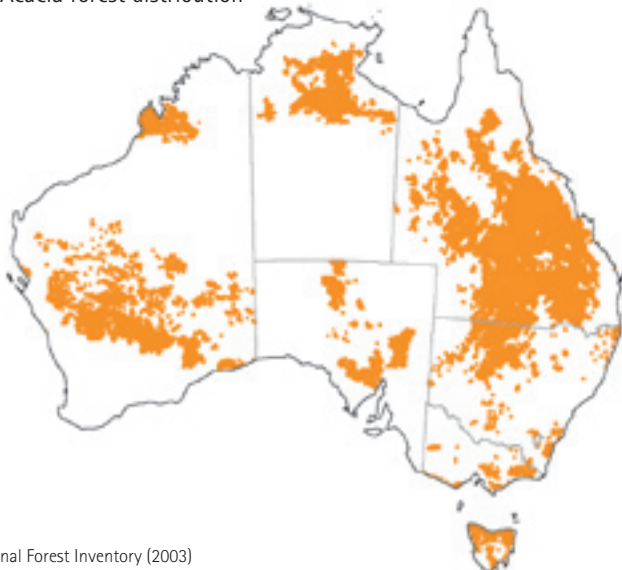
Acacia pendula

Table 1: Area of acacia forest by crown cover compared with total native forest (hectares)

	Woodland	Open	Closed	Unknown crown cover	Total
Acacia	11 364 000	2 998 000		2 126 000	16 488 000
Total native forest	102 526 000	45 603 000	4 644 000	9 907 000	162 680 000

Source: National Forest Inventory (2003) *Australia's State of the Forests Report*

Figure 1: Acacia forest distribution



Source: National Forest Inventory (2003)

Note: The distribution represented on this map has been enhanced for clarity

Table 2: Tenure of acacia forest, by State and Territory (hectares)

Tenure	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	Australia
Leasehold land	0	833 000	1 274 000	4 867 000	1 709 000	0	3 000	3 403 000	12 090 000
Multiple-use forests	0	8 000	0	134 000	0	37 000	15 000	12 000	206 000
Nature conservation reserves	0	40 000	1 000	302 000	49 000	13 000	35 000	148 000	588 000
Other crown land	0	30 000	9 000	17 000	90 000	1 000	1 000	714 000	864 000
Private land	0	43 000	326 000	1 541 000	6 000	22 000	9 000	283 000	2 230 000
Unresolved tenure	0	296 000	3 000	122 000	84 000	0	0	2 000	508 000
Total acacia forest	0	1 251 000	1 613 000	6 984 000	1 939 000	74 000	63 000	4 563 000	16 488 000

Source: National Forest Inventory (2003) *Australia's State of the Forests Report*

Values and uses

Wood

A substantial industry has been built on the attractive timbers of some *Acacia* species, particularly blackwood. Black wattle (*Acacia mearnsii*), silver wattle (*A. dealbata*) and brown salwood (*A. celsa*) have been harvested for timber or paper pulp.

There are barriers to harvesting other species of acacia. The vast majority is widely dispersed and not economical for large-scale processing, due to small stem size, low timber yield and distance to processing facilities; however, acacias of lower economic value have been harvested and used on site for poles, posts and rails and small-scale wood turning. The wood from some acacias, such as lancewood, is valued as firewood, because it burns slowly and evenly.

Australian acacias, including mangium or hickory (*A. mangium*), are planted in more than 70 countries and cover about 2 million hectares. Mangium occurs naturally in Queensland and Papua New Guinea and is a major timber plantation

species in tropical countries as well as the Northern Territory. The Queensland natural populations are valuable sources of genetic material for breeding better forms of this species.



Brigalow (*Acacia harpophylla*) woodland near Cecil Plains, southeast Queensland



Crimson Rosella (*Platycercus elegans*)

Environmental

Due to their wide distribution, acacia forests are important for maintaining ecosystem processes and landscape integrity. The brigalow belt, for example, stretches from the New South Wales–Queensland border in the south, to Townsville in the north. The brigalow region supports 148 species of reptiles, 13 of which are rare or endangered, and 328 species of birds, 24 of which are threatened. Mature brigalow provides the sole food source of the northern imperial hairstreak butterfly (*Jalmenus evagoras*), which only occurs in about 30 locations from northern New South Wales to north Queensland.

Indigenous uses

Indigenous people have long used acacias for fuel, medicine, musical instruments (such as clap-sticks), tools and weapons (notably boomerangs and spearheads), and in ritual practices. Traditionally, acacia seeds were ground into flour to make cakes. Witchetty grubs, an important source of food for Indigenous people, can be found under the bark and in the roots of some acacias. Traditional Indigenous knowledge of acacia species has been an invaluable guide to potential wider use.



Acacia

Other uses

Acacia forests are used for cut flowers, oils, wood products (including sawlogs, fence posts, fuel wood and pulp for paper manufacture), fodder and land rehabilitation. Mulga is an important fodder tree, sustaining stock across semiarid northern Australia through times of drought. In the past, species such as black wattle (*Acacia mearnsii*) were used as sources of tannin for treating leather in Australia and are still being used for this purpose overseas. Acacia seeds have been developed as a bush food and are used to flavour cakes, biscuits and ice-cream.

However, relatively few of the 955 Australian acacia species are cultivated here, suggesting that the potential of many species remains unexplored.

Gidgee (*Acacia cambagei*) woodland, Central Queensland



E.J. Thompson, Old Environment Protection Agency



Acknowledgements

Australia's forest types profiles have been compiled by the National Forest Inventory, a cooperative project between the Australian Government and State and Territory governments, and managed by the Bureau of Rural Sciences. Information in this profile is taken from *Australia's State of the Forests Report 2003*, available by calling 1800 020 157 or online from <http://www.brs.gov.au/stateoftheforests>.

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