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Melaleuca forests

Melaleuca is a genus of trees and shrubs, some of which are commonly known as ‘paperbarks’ because of their distinctive light, flaky bark (which consists of thin layers of cork). They occur predominantly in Australia, but also in India, Indonesia, Malaysia, New Caledonia, New Guinea and the Pacific Islands. There are about 143 species, and 140 of these are native to Australia. However, this profile only refers to forests of tree-forming melaleucas, which are forests where melaleuca species taller than two metres at maturity and with a crown cover of more than 20% are dominant.

Although melaleuca forest only makes up 4% of Australia’s forest area, it is the third most extensive forest type, after eucalypts and acacias. More than seven million hectares of melaleuca forests have been identified in Australia, the majority being woodland and open forests.

Melaleuca forests mainly grow in northern Australia in damp or wet habitats that dry out seasonally. They occur as large tracts of low woodland forest across estuarine plains and seasonal swamps, in the coastal and near-coastal areas of monsoonal northern Australia. They also occur as narrow strips of dense, pure stands, beside streams and in and around swamps. These ecologically important forests are often too small to be mapped and displayed at a national level.

Many melaleuca wetlands have been altered. Drainage and flood mitigation, especially during the 1970s and 1980s, and increased waterlogging and salinity, particularly in areas of irrigation, have affected melaleuca forests along creek lines and watercourses in agricultural areas. Peat and other materials have been extracted from swamp areas for use in horticulture. Areas have been cleared for grazing and cropping, for example, for sugarcane on the Herbert River floodplain in northern Queensland.

The name ‘melaleuca’ comes from the Greek *melas* (meaning black) and *leucon* (meaning white). This referred to the first named tree, which had white papery bark over an inner layer of black bark, or to a tree with white bark that was burnt around the base of the trunk. Another commonly used name for melaleuca is ‘tea-tree’, although this term applies more often to *Leptospermum* species.



Weeping paperbark (*Melaleuca leucadendra*) Pilbara, Western Australia



The light, flaky bark of the melaleuca

Australian forest profile

Where are Australia's melaleuca forests?

About 75% of Australia's melaleuca forests occur in Queensland, concentrated in the far north region adjacent to the Gulf of Carpentaria and on Cape York Peninsula (Table 1 and Figure 1). A further 23% is found in the Northern Territory. Small pockets occur along the subtropical and temperate coasts of Queensland, New South Wales and Victoria, and on the fringes of rivers and coastal wetlands, including brackish and saline areas. Extensive stands of swamp dominated by melaleucas, blackwood (*Acacia melanoxylon*) and *Leptospermum* species occur on poorly drained sites in northwestern Tasmania.

Melaleuca forests occur on a wide range of sites throughout nonarid Australia, and display marked variability in the dominant species. Northern Australian melaleuca forests are dominated by broad-leaved paperbark (*Melaleuca viridiflora*), weeping paperbark or long-leaved paperbark (*M. leucadendra*), silver paperbark (*M. argentea*), blue paperbark (*M. dealbata*) and yellow-barked paperbark (*M. nervosa*).

In southern and eastern Australia, melaleuca forests are confined to more permanently wet watercourses and swamps. The most common coastal species is paperbarked tea-tree (*M. quinquenervia*). In Western Australia, melaleuca forests are restricted to small pockets in specific sites, such as Preiss's paperbark (*M. preissiana*) in near-coastal swampy areas, and freshwater or swamp paperbark (*M. raphiophylla*) on creek lines and watercourses.



Coastal tea-tree (*Leptospermum laevigatum*) and eucalypt forest

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

	Woodland	Open	Closed	Unknown crown cover	Total
Melaleuca	1 056 000	763 000	15 000	5 222 000	7 056 000
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: Melaleuca forest distribution



Source: National Forest Inventory (2003)

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

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

Tenure	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	Australia
Leasehold land	0	1 000	736 000	4 447 000	0	0	0	0	5 184 000
Multiple-use forests	0	2 000	0	23 000	0	4 000	18 000	0	46 000
Nature conservation reserves	0	16 000	1 000	443 000	0	10 000	66 000	0	537 000
Other crown land	0	1 000	33 000	42 000	0	0	6 000	0	83 000
Private land	0	25 000	821 000	322 000	1 000	5 000	6 000	0	1 180 000
Unresolved tenure	0	0	2 000	25 000	0	0	1 000	0	28 000
Total melaleuca forest	0	44 000	1 593 000	5 301 000	1 000	19 000	96 000	0	7 056 000

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

Ownership and management

Nationally, 74% of melaleuca forests occur on leasehold land and an additional 17% on private land. In both cases, the main land use is grazing for cattle production. Only 7.5% of melaleuca forests occur in nature conservation reserves. Less than 2% are located in multiple-use forests or other crown land.

Values and uses

Wood

Melaleuca wood contains a high proportion of silica, which makes it durable in water and underground, and highly resistant to termites. However, this also makes it difficult to saw or plane, and season. To this end, it is not used for wide-scale commercial purposes. Logs of straighter trees are sometimes used locally for marine piling and in boat building.

Environmental

Melaleuca forests often have special habitat conditions and even remnant melaleuca forests can provide significant habitat for a wide range of species. For example, the swamp paperbark (*Melaleuca ericifolia*) riparian swamp in the Damper Creek Reserve in Monash, Victoria, contains a diversity of habitats, and is considered to be a site of regional zoological significance. Melaleuca forests provide habitat for the nationally significant southern bell frog (*Litoria raniformis*), and an assortment of State and regionally significant fauna.

Indigenous uses

Indigenous Australians living traditionally in parts of the Northern Territory use the bark of long-leaved paperbark for making sheaths for stone knives and spearheads, as tinder for starting fires, a cover for baking food, a component of fish traps, and a material for making blankets or capes. As the only large diameter trees in the north, melaleuca trees can also be used to make canoes. The flowers can be sucked for nectar, or soaked in water to make a sweet drink.



Seasonally waterlogged stand of *Melaleuca leucadendra* near Lockhart River, Cape York.



Other uses

The leaves of some melaleucas, particularly tea-tree (*Melaleuca alternifolia*), supply the raw material for the tea-tree oil industry. The oil is an effective antiseptic, and is used in creams for cuts and abrasions, shampoos, soaps, mouthwashes and toothpastes. Trees were harvested from natural forests until plantation development in the 1980s. Paperbark is also used in the horticultural industry as a lining for hanging baskets. Melaleuca flowers are important for apiarists as a source of honey, and are sometimes known as 'honey myrtles' for this reason.

Weeping paperbark forest (*Melaleuca leucadendra*) Pilbara, Western Australia



Grant Wardell-Johnson



Melaleuca

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