



Natural Heritage Trust

Helping Communities Helping Australia

An Australian Government Initiative

Callitris forests

Callitris trees are commonly called 'cypress pines' because of their resemblance to northern hemisphere cypresses; however, they are not related and nor are they true pines.

The name 'callitris' is derived from the Greek *calli* (meaning beautiful) and *treis* (meaning three), because their scale-like leaves are in whorls of three (see image below). Like all conifers, callitris trees produce their seeds-in cones.

The *Callitris* genus now occurs only in Australia (14 species) and New Caledonia (two species). This distribution reflects the presence of callitris on the ancient supercontinent of Gondwana more than 80 million years ago, when Australia and New Caledonia were part of one landmass along with South America and Africa.

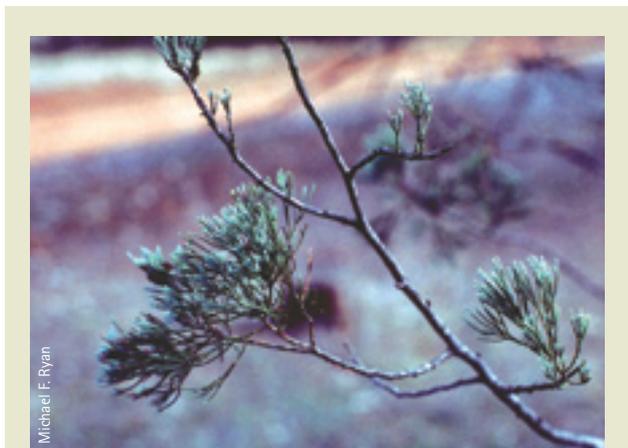
Species of callitris are tolerant of a wide variety of climates, with temperatures from below 0°C to over 40°C, and annual rainfall usually greater than 300 millimetres. Some callitris forests survive on annual rainfalls as low as 200 millimetres, including small areas in the Great Victoria Desert of Western Australia, or as high as 2000 millimetres, on Queensland's Atherton Tablelands. Most species of callitris occur in woodland and open forest types.

While callitris occurs with fire tolerant species, it does not survive intense fire. When burnt, it regenerates from seed. If fires occur too frequently or if grazing is excessive, callitris will not grow. It survives in Australia's fire-prone environment in areas protected from fire by the local topography and where the slow rate of fuel accumulation prevents frequent intense fires.

Callitris forests typically occur as small populations in drier inland regions; however, in some places they form vast tracts. Coastal cypress pine (*Callitris columellaris*) reaches the coast in northeast New South Wales. Pure stands of callitris forest are most often restricted to undulating or flat land with sandy soils, or in upland rocky areas that are protected from frequent or high intensity fires. More commonly, species of callitris codominate a forest canopy with *Eucalyptus*, *Casuarina* or *Acacia* genuses over a herbaceous, sparse, shrubby understorey.



White cypress pine (*Callitris glaucophylla*) forest, Queensland



Leaf detail

The name 'callitris' is derived from the Greek *calli* (meaning beautiful) and *treis* (meaning three), because their scale-like leaves are in whorls of three.

Australian forest profile

Where are Australia's callitris forests?

The 2.3 million hectares of callitris that grow in Australia (Table 1) are components of many Australian ecosystems, from the arid tropics to the Australian Alps (Figure 1). The most common species of callitris is white cypress pine (*Callitris glauca*).

Changes in fire frequency and land management have allowed white cypress pine forests to expand since European settlement. Woodland and open forests of white cypress pine and other callitris species grow in Queensland, New South Wales and South Australia. Tall open forests of Port Jackson pine (*C. rhomboidea*) grow in Tasmania and there are open forests of Rottneest Island pine (*C. preissii*) in coastal Western Australia and South Australia. Localised areas of woodlands dominated by black cypress pine (*C. endlicheri*) and family pine (*C. preissii* subsp. *verrucosa*) grow in localised areas in Queensland, New South Wales and the Australian Capital Territory, while slender cypress pine (*C. gracilis*) woodland forests grow in Victoria. Pygmy cypress pine (*C. oblonga*) is the only member of the genus adapted to riverine habitats, but it can also grow on very dry sites.

Ownership and management

While callitris forests are a small proportion of native forests, they are regionally significant. Most are found on leasehold and private land (Table 2). About 10% of callitris is managed as multiple-use forest.



Assessing timber regrowth in a stand of callitris

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

	Woodland	Open	Closed	Unknown crown cover	Total
Callitris	502 000	622 000	0	1 206 000	2 330 000
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*

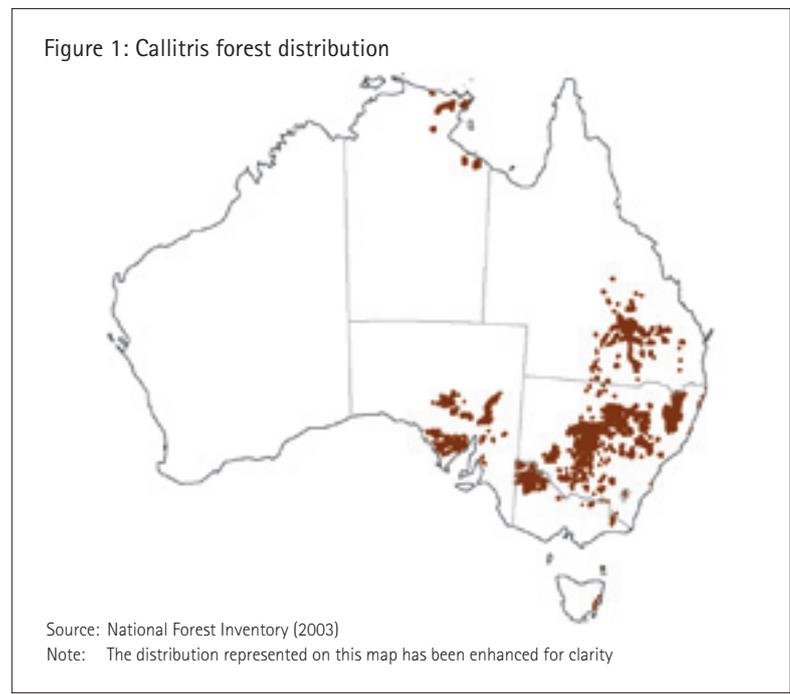


Table 2: Tenure of callitris forest, by State and Territory (hectares)

Tenure	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	Australia
Leasehold land	0	637 000	111 000	203 000	226 000	0	0	0	1 178 000
Multiple-use forests	0	108 000	0	128 000	0	0	5 000	0	240 000
Nature conservation reserves	0	54 000	0	6 000	24 000	0	40 000	0	124 000
Other crown land	0	62 000	5 000	0	2 000	0	2 000	0	70 000
Private land	0	379 000	270 000	41 000	6 000	0	9 000	0	706 000
Unresolved tenure	0	0	0	9 000	2 000	0	0	0	12 000
Total callitris forest	0	1 240 000	386 000	387 000	261 000	1 000	56 000	0	2 330 000

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

Values and uses

Wood

Callitris is the second most important genus in the native forest industry after *Eucalyptus*, and is the only significant softwood timber harvested commercially from native forests (hoop pine is native but always comes from plantations now). The strength and durability of the timber are important assets. It can resist decay and termites for up to 50 years, and so has been widely used for in-ground applications, such as house stumps, fence posts and telephone poles, as well as for flooring and furniture.

The major commercial species of callitris is the white cypress pine. In Queensland, more timber is produced from this species than from any other native tree outside plantations, and in New South Wales, more than from any other native species except blackbutt (*Eucalyptus pilularis*).

Approximately 250 000 cubic metres of callitris sawlogs are harvested each year from forests in New South Wales and Queensland. In 1999, the Queensland cypress industry generated \$30 million and employed more than 2000 people directly and indirectly.



Callitris preissii

Environmental

Callitris forest occupies a diverse range of habitats and supports a wide range of animals. Fauna diversity is high in mixed eucalypt/callitris forest but extremely low in pure callitris stands. A survey in mixed eucalypt/callitris forest in the Barakula State Forest (south Queensland) found 127 native animal species, including 84 birds, 6 bats, 19 reptiles and 2 rare or threatened species (the yellow-bellied glider, *Petaurus australis* and the yellow-tufted honeyeater, *Lichenostomus melanops*).

Indigenous uses

Callitris forests have been an important part of the culture of Australia's Indigenous people and contain significant sites of cultural value. Indigenous people use northern cypress pine (*Callitris intratropica*) wood for firewood and torches, as well as for spears, spear throwers, ceremonial objects, paddles and music sticks. Resin is used to make glue while the cones, bark, leaves and ash are used in various medicines. Callitris bark is used to make rope and to repel mosquitoes and, in Arnhem Land, Northern Territory, to make waist belts. The Walbiri people of central Australia make implements from the wood of the white cypress pine.





Other uses

Resin from the white cypress pine (*Callitris glauca*) has been used as a substitute for sandarac resin, a raw material for specialist varnishes, and incense. Blue cypress pine (*Callitris intropica*) produces an oil suitable for aromatherapy, with most production coming from plantation harvesting, rather than native callitris forests. Large areas of callitris forests are also used for grazing and bee keeping.

Assessing timber regrowth in a stand of callitris



Michael F. Ryan



Callitris

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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