

WANDOO BOTANICAL NOTES

Wandoo (*E. Wandoo*) is an attractive, smooth-barked tree which may grow to a height of 100 ft. with a bole length of 30 to 40 ft. and a breast height diameter of 4 ft.

Under forest conditions, however, the height is generally between 70 and 80 ft. with a 20 to 25 ft. bole and a breast height diameter of two to three feet.

The bark is yellow-ish white in colour with purple-grey patches of more persistent bark. On a mature tree the bark is about one inch in thickness and decorticates in patches.

The tree closely resembles *E. accedens* (powder bark wandoo) both in appearance and silvicultural characteristics, and often the two species are found growing in mixture. A point of distinction is that the bark of mature trees of *E. accedens* bears a fine, white powder which may be rubbed off with the hands. Also the bud cap of the wandoo is long and tapering, while that of the powder bark wandoo is blunt. In the young stages the two species may be readily separated by the differences in juvenile leaves.

Unlike the jarrah, karri and tuart formations, the wandoo forest does not present a uniform woodland, but a series of associations in which the tree takes a leading part. It does not grow in close formation, but in open savannah woodland type forests. Wandoo occurs both as pure forest and in mixture with poor class jarrah, stunted marri and powder bark wandoo. Usually it is found growing on lower lying country than these species, but on the middle and upper slopes of gently undulating country wandoo occurs in mixture with them.

Throughout the range of wandoo, york gum (*E. loxophleba*) is found in association, but not as a mixture—the separation of site being determined mainly by soil factors. In the centre and to the east of its range, wandoo associates with the mallets (*E. astringens*, *E. gardnerii*, *E. falcata*). Yate (*E. cornuta*) and swamp yate (*E. occidentalis*) occur in association with wandoo towards the limits of its range where its quality is poor. Flooded gum (*E. rudis*) is also found with wandoo along some gullies.

Distribution

A native to the south-west of Western Australia, wandoo is generally found between the 15 and 30 in. rainfall limits. It extends as far north as Moora, but reaches its maximum development in the vicinity of Toodyay where it occupies two areas, one on either side of the Darling Range.

Wandoo on the west side of the range is not extensive and exists mainly as odd clumps of trees along the foothills of the Darling Scarp, as indicated by the diagrammatic map.

On the east of the Darling Range it encroaches well into the jarrah forest along the gullies,

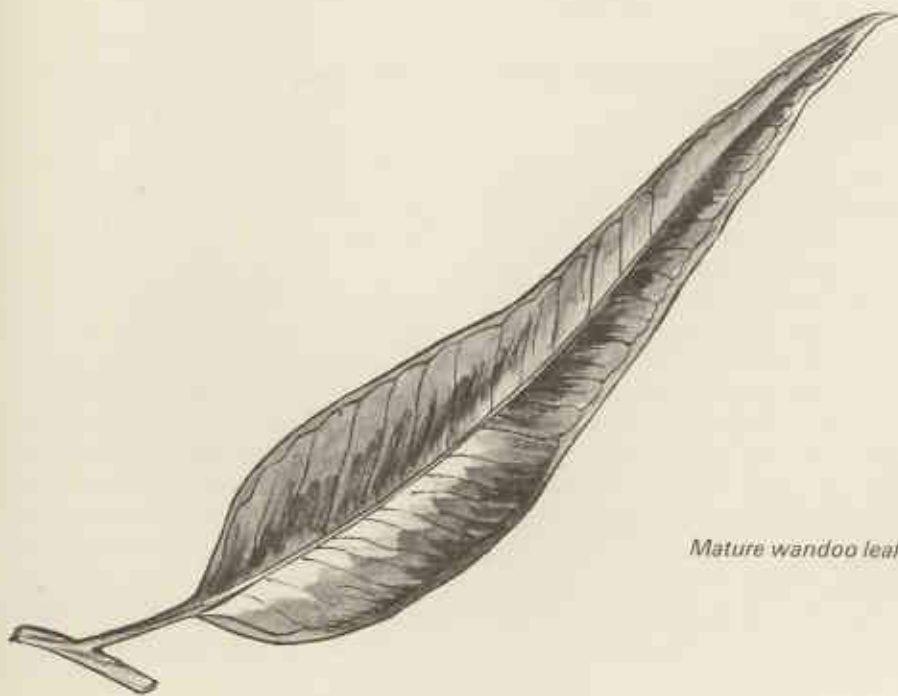
The prime wandoo forests occur from Boddington to Toodyay, either in broad gullies or on low ridges. Extending south from Boddington, the quality of the forest falls off until it reaches the southern limit of its distribution in the Stirling Ranges.

Soils of the Wandoo forest

The surface layers of typical wandoo soil are dark brown loamy sands or sandy loams containing some gravel. Occasionally in the bottom of a valley the texture of the surface soil becomes a clayey loam. Usually clay occurs at a shallow depth in wandoo soils, varying from six inches to almost four feet, depending on the slope of the land. Surface drainage is fair only, and down the profile the drainage can be poor.

Timber

Wandoo timber is light brown to light yellowish brown in colour. It is fairly close-textured with a wavy or interlocked grain, with which some figure may be associated. It is one of the heaviest eucalypts and one of the most durable of Australian hardwoods.



Mature wandoo leaf

A first class structural timber, wandoo is best suited for purposes where strength and durability are of importance. It is used in considerable quantities for sleepers (one of Australia's best) and is in great demand for poles.

It is particularly suitable for flooring subject to heavy wear and in building construction where durability, strength and hard wearing qualities are desired. Clear-finished wandoo floors and panelled walls are very attractive.

A remarkable quality of this timber is that, when used in conjunction with steel, there is no chemical action between the wood and the metal. Bolts have been taken from under-frames of trucks after 20 years' use and found to be quite as clean as when put there, while the auger marks were still visible in the holes.

Wandoo is unusual in that it contains a high percentage of tannin, which is extracted by cooking the chipped wood in large vats and evaporating the liquors to a heavy black viscous extract.

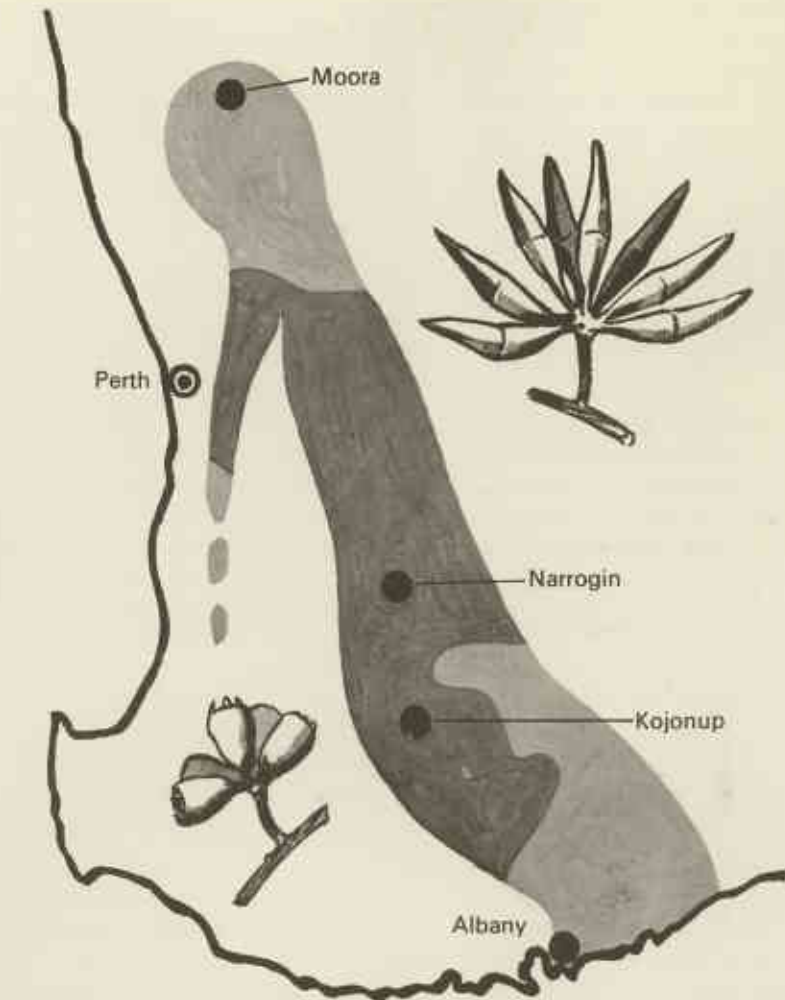
Natural Regeneration

The formation of the bud, fruit and seed of wandoo follows a similar pattern to jarrah.

For an average season, new leaf growth begins in January and reaches a maximum during February. In conjunction with leaf formation, new flower buds form in the axils of the leaves. Many of these buds do not mature further.

Twelve months later during February when the buds have fully developed, flowering occurs. These flowers set and require a further twelve months after flowering for the seed to ripen. The fruit capsules do not remain on the tree for long after ripening.

From the first formation of the bud it requires two years to obtain the ripe seed which is generally shed while the fruit is still held on the



A wandoo (*Eucalyptus wandoo*) surrounded by regeneration in the Mundaring Forest Division, see back cover.

crown. After a ground fire a heavy fall of seed will result.

Generally seed years occur about once in every three years. Flowering throughout the forest does occur every year, but to a limited extent.

Present observations indicate that under natural conditions wandoo seed will only germinate satisfactorily on an ash bed.

As with jarrah, the aerial shoot from the germinating seed of wandoo does not grow immediately to form one erect stem. Several shoots develop to assume a low bushy habit and the plant enters into a resting period during which the ligno-tuber increases in diameter. Approximately ten years after germination the ligno-

tuber, which has grown to about three inches in diameter, puts forth one single vigorous shoot from the bushy advance growth to assume dominance and develop into a sapling.

Due to the establishment of the vigorous ligno-tuber below ground level following germination, a light fire does little damage to regeneration. Intensive fires, however, may cause lack of advance growth under virgin wandoo forest. In areas where there have been severe fires, a marked effect on the soundness of the timber in mature tree is apparent. Wandoo burnt at the butt, or with a dry side, is usually not suitable for milling.