





Perth's

trees
and
tall
shrubs

Perth's native trees and tall shrubs play highly important roles in our ecosystems. What trees and shrubs occur in the region naturally, and what are their benefits to other forms of life?

by Robert Powell

Perth is within the South-West Botanical Province, the south-west corner of Western Australia between Shark Bay and Esperance, which is renowned for the richness of its flora. Perth itself has a rich flora, with about 1,500 species occurring naturally in the Perth metropolitan region.

The vast majority of Perth's plant species, however, are low shrubs or herbs (soft plants). Only 30 to 40 species would satisfy the normal definition of a tree: a woody plant growing to a moderate height and branching some distance from the ground.

If we include shrubs that commonly grow more than three metres tall, Perth's trees and tall shrubs number about 80 species. Being the largest of Perth's plants, these are often the easiest to spot, and are also the likeliest to have been retained on land developed for housing or agriculture. They are

quite varied: between them they belong to 14 different plant families, and grow in almost all the available habitats. Wherever you live in the Perth metropolitan region, your natural environment would have included some of them.

Groups of species

The largest group of Perth's trees and tall shrubs is the eucalypts (genera *Eucalyptus* and *Corymbia*), with 16 species. The most typical is jarrah (*Eucalyptus marginata*). It occurs widely both in the Darling Range, as a tall forest tree, and on the sandy soils of much of the coastal plain, where it is less tall but stout and spreading. Another abundant tree, particularly in the Darling Range and on the eastern side of the coastal plain, is marri (*Corymbia calophylla*), whose large, woody fruits are known as 'honkey nuts'. Tuart (*Eucalyptus*

gomphocephala) is a large and vigorous tree of the sandy and limestone soils near the coast. Flooded gum (*E.rudis*) occurs in many of the region's wetlands and in the Darling Scarp.

Less common in the Perth area are such species as salmon white gum (*E. lane-pooleri*), butter gum (*E. laeliae*), Fremantle mallee (*E. foecunda*), rock mallee (*E. petrensis*) and Yanchep mallee (*E. argutifolia*). The mallees are small, shrubby species, with several stems arising from a large underground rootstock, or lignotuber. Mallees are generally more typical of much drier regions, further inland. The three species that occur in the metropolitan region grow on very shallow soils over limestone, where larger eucalypts cannot.

Mallees begin life with a single stem. When, however, the stem is killed in a fire, or is eaten or dies in a drought, the plant sprouts more than one stem from its lignotuber. As the plant develops, the lignotuber grows and becomes capable of producing more and more new stems. For some species, specimens may occasionally be found arranged in a circle perhaps as large as 50 metres in diameter. For some of these stands it has been determined that the specimens are genetically identical, formed from the gradual expansion of the lignotuber which, after a time, rots away in the centre. Such a stand, therefore, may comprise an individual plant thousands of years old.

In the same family as the eucalypts, the myrtle family, Myrtaceae, are the paperbarks and honey-myrtles, in the genus *Melaleuca*, of which eight Perth species grow as trees or tall shrubs. Whereas many people may think there is only one Perth paperbark, there are two widespread species, freshwater paperbark (*Melaleuca rhaphiophylla*) and modong (*M. preissiana*). A third,



Previous page

Main Tuart trees at Manning Lake, Hamilton Hill.

Photo - Jiri Lochman

Left Wetland with freshwater paperbarks at Star Swamp.

Photo - Rob Olver



Above Jarrah forest.
Photo – Jay Sarson/Lochman
Transparencies

Right Flower-spike of firewood banksia.
Photo – Jiri Lochman

Far right Flowers and foliage of basket bush.
Photo – Marie Lochman



saltwater paperbark (*M. cuticularis*), can be found round Lake Coogee, as well as by the Swan Estuary at Pelican Point and near Mount Henry. With a little practice, one can distinguish between these three, even at a glance. Two other species, banbar (*M. teretifolia*) and gorada (*M. lateriflora*), have somewhat papery bark too. Apart from the paperbarks, the best-known Perth melaleucas include moonah (*M. lanceolata*) and chenille honey-myrtle (*M. huegelii*). Moonah, also called Rottnest tea-tree, is common on Rottnest Island, and both are often seen in cultivation.

There are also eight Perth species of banksia that grow as trees or tall shrubs. With their proteoid roots (dense clusters of roots near the soil's surface), banksias absorb nutrients efficiently, and are especially well adapted to the infertile, sandy soils that occupy much of the coastal plain. Sadly, they are dying out in many places, unable to cope with changes associated with European settlement, such as sudden

drops in the water table. Candle banksia (*Banksia attenuata*) and firewood banksia (*B. menziesii*) are especially common on the coastal plain, with bull banksia (*B. grandis*) most typical of the Darling Range. Banksias now include the dryandras, two species of which occur in the metropolitan region as tall shrubs, parrotbush (*B. sessilis*) and pingle (*B. squarrosa*).

The wattles, genus *Acacia*, are very typical of much of Australia. Of the Perth species that grow as trees or tall shrubs, three occur near the coast: red-eyed wattle (*Acacia cyclops*), summer-scented wattle (*A. rostellifera*) and white-stemmed wattle (*A. xanthina*). Another species, coojong, or golden-wreath wattle (*A. saligna*), stands out in spring, with its showy display of

yellow flowers. It is also the most widespread, occurring in almost all the region's habitats. With its long-lived seeds, it often pops up where the land has been disturbed, even on demolition sites in the inner city. The tree itself is extremely vigorous and quite short-lived, often surviving less than 12 years.

Of Perth's remaining species of trees and tall shrubs, several grow near the coast, including peppermint (*Agonis flexuosa*), dune sheoak (*Allocasuarina lehmanniana*), Rottnest cypress (*Callitris preissii*), coast hop-bush (*Dodonaea aptera*), corkybark (*Gyrostemon ramulosus*), coast pittosporum (*Pittosporum ligustrifolium*) and basket bush (*Spyridium globulosum*). In this environment, sea winds are very salty and thus very



damaging to foliage. Species such as Rottneest cypress and coast pittosporum develop dense foliage, within which the individual leaves are protected. Basket bush, when growing near the coast among low shrubs, spreads wide but keeps very low, gaining protection from the surrounding shrubs.

Another habitat where many of Perth's tall shrubs grow is river valleys, particularly in the Darling Range. The species include wonnich (*Callistachys lanceolata*), toobada (*Callistemon phoeniceus*), river pea (*Gastrolobium ebracteolatum*), valley grevillea (*Grevillea diversifolia*), tall labichea (*Labichea lanceolata*), albizia (*Paraserianthes lophantha*) and brook peppermint (*Taxandria linearifolia*). Brook peppermint, which often occurs in thickets, is significant for the shade it provides along watercourses, creating a cool, damp habitat for frogs and aquatic life, as well as cover for birds, such as the red-eared firetail. Thickets of brook peppermint are the best places to look

Above left Marris and balgas, John Forrest National Park, Darling Range.
Photo - Rob Olver

Above Fruiting branches of coast pittosporum.
Photo - Robert Powell

Left Coojong, with candle banksia in the background.
Photo - Jane Emberson

Right Jewel bugs (*Coleotichus costatus*) feed on the seed-stalks of red-eyed wattle. Photo – Jan Taylor

Below right Christmas tree. Photo – Robert Powell

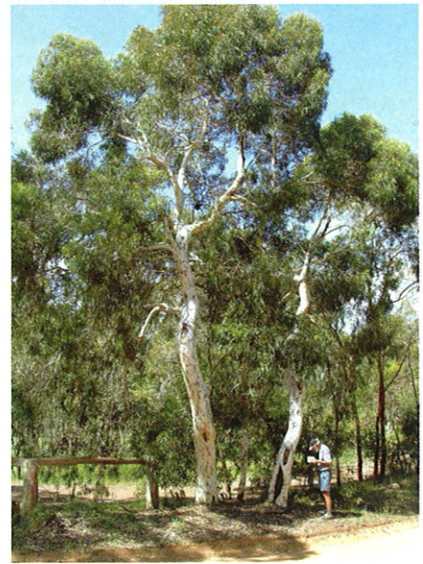
Below far right Recording insects on butter gum. Photo – Robert Powell



for a very scarce species of dragonfly, and Western Australia's largest, the western petaltail.

A highly unusual species is Christmas tree (*Nuytsia floribunda*), which is the only member of its genus. It actually belongs to the mistletoe family, but is very different from other mistletoes in that it grows as a tree in the ground, rather than on the branches of host trees. It is famous for the brilliance of its flowers in early summer. During the short period when they are produced, they are one of the richest sources of pollen and nectar for insects and birds.

A similarly unusual Perth shrub is kingia (*Kingia australis*), which, like Christmas tree, is the only member of its genus. This grasstree is in a different family from and quite unrelated to Perth's other grasstrees, in the genus *Xanthorrhoea*.



Conservation status

Some 24 of Perth's trees and tall shrubs are uncommon in the Perth metropolitan region. Many occur widely elsewhere, but some species, such as Yanchep mallee and rock mallee, are uncommon in general. Yanchep mallee is declared as 'rare flora' under State legislation, and listed as 'vulnerable' under Commonwealth legislation. All these mallees occur on limestone ridges, which are of limited extent. Moreover, many ridges have been quarried for limestone, or had their vegetation cleared for housing.

Another habitat type that has diminished greatly in extent is the alluvial soils on the eastern side of the coastal plain, which began to be developed for agriculture soon after European settlement.

Sadly, environmental changes are affecting many of the common species too. As mentioned previously, banksias are dying out in many places. Many marri and jarrah trees have died or declined in health. Stresses such as the recent droughts have lowered their resistance to attack by fungi or wood-boring insects.

Value to biodiversity

Perth's trees and tall shrubs are of enormous value to biodiversity in supporting other forms of life. This is particularly true where the tree or shrub is a local species, occurring naturally on the site, or planted where it would have occurred naturally.

Especially significant forms of life are invertebrate animals, which include insects, spiders, springtails, scorpions,

mites, centipedes, millipedes, snails and earthworms. Comprising many thousands of species, invertebrates are a large part of biodiversity; they are also essential in keeping ecosystems functioning.

Perth's larger eucalypt species support a huge number of invertebrates. Studies have shown that jarrah or marri, growing in its natural environment, probably supports something like 800 different insects and spiders, in the foliage, stems and bark and in the leaf litter or topsoil under the tree. Flooded gum and tuart, which grow in more fertile soils, are likely to support even more. The larger wattle species too support a great many insect species. Trees also provide hollows for nesting birds and food for a variety of vertebrate species.



Above Flooded gums by the Swan River at Ascot.

Photo – Robert Powell

Most of the trees and shrubs commonly cultivated in Perth's city and suburbs are non-local species, from other parts of Australia or other countries, and these generally support far fewer invertebrates. If we seek to maintain Perth's biodiversity, we should retain or grow Perth's trees and tall shrubs wherever possible.

Beauty

Trees and shrubs can be striking for their masses of flowers—but there is so much more that can be admired or enjoyed in their subtler aspects, such as their shape, structure, patterns and details. Whatever the species of local tree or shrub, we can begin to appreciate its beauty once we get to know it better.

Perth's local trees and shrubs can give us a sense of place. Jarrah and tuart, for example, occur naturally in no other capital city, and moreover reflect our natural environment. Jarrah's woody character and very moderate size on the coastal plain reveal the infertility of Perth's sandy soils. Tuart's elegant splitting habit, and its broad,

rounded canopy and comparatively dense foliage, are a response to the salty winds near the coast. Because local trees and shrubs are used by many associated insects, they develop interesting irregularities and detail. By contrast, non-local trees and shrubs are more regular, and have less character.

Where Perth's trees occur in bushlands, with their associated plants, there is beauty in the whole plant combination, which defines a particular type of vegetation, or plant community, in response to the natural environment.

Unfortunately, as mentioned previously, many specimens of local trees are now in poor health, and no longer very natural in appearance. Nevertheless, there are still many fine specimens to find and admire.

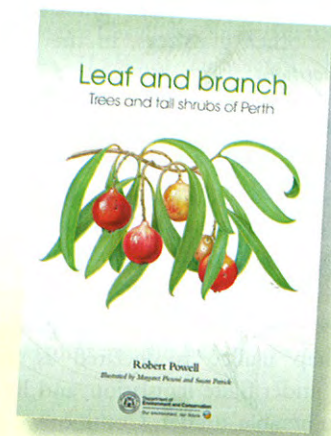
The public

Perth now spreads out in a vast area of suburbs, and it is this environment with which we are most familiar. Within the suburbs the housing density is increasing, leaving less and less room for trees. Most of those trees that do survive in grassed parks are non-local, planted species. Few Perth people today have much experience of local trees.

Perth does, however, have many bushlands, where local trees are readily

available to be discovered. To those of us unfamiliar with bushlands, they may seem strange and 'foreign', but there are many people who appreciate them. This is evidenced by the large number of 'friends' groups that have formed for Perth bushlands. Such groups do valuable work in helping to manage and protect the bushland concerned, as well as raising the public's awareness of it. Additional community groups focus on larger areas, carrying out revegetation programs with local trees and shrubs to increase the area's biodiversity. An excellent way to begin to learn about your local trees, and your natural environment in general, is to join a group that operates in your area.

In our rapidly changing world, the future survival of much of our natural flora is threatened. To keep our flora, we must be aware of our natural heritage and be caring custodians of it. The new edition of *Leaf and branch: Trees and tall shrubs of Perth*, published by the Department of Environment and Conservation, aims to encourage that awareness. It is full of information to help the reader not only to identify the species concerned but also to understand and appreciate them.



Robert Powell has recently retired from the Department of Environment and Conservation, where he worked for 34 years. Robert is the author of *Leaf and branch: Trees and tall shrubs of Perth*, which he recently revised. The book is available for \$29.95 from bookshops and tourist outlets, by phoning WA Naturally Publications on (08) 9334 0333 or by ordering online at www.dec.wa.gov.au/shop.

- 42 Perth's trees and tall shrubs
The trees and tall shrubs that are native to Perth are vital to supporting biodiversity, more so than introduced species that often replace them.
- 50 Marvellous mangroves
Uncovering the secrets of mangroves in Shark Bay.
- 57 Bushland management with friends
Land for Wildlife celebrates the registration of its 2,000th property.

Regulars

- 3 Contributors and Editor's letter
- 21 Bookmarks
Wildlife of Australia
Field Guide to Frogs of Western Australia
Shark Bay Gutharragudu
- 40 Feature park
Stokes National Park
- 49 Endangered
Quartz-loving synaphea
- 62 Urban Antics
Christmas Tree Gully...

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