

Wonderful Australian Trees

Walk developed by Glenys Bishop, Rina Brettell, Pam Cooke, Jean Golding, Kay Saunders, Simon Smalley

Generally, this walk is about Australian trees. Specifically, we want to tell visitors about:

- Trees from a selection of different climates and habitats;
- Trees that occur naturally in the ACT;
- The three genera *Eucalyptus*, *Angophora* and *Corymbia* and how they differ;
- Trees with interesting or unusual characteristics;
- Endangered tree species and the role of the Gardens in their preservation.

By the end of this walk we want visitors to have a greater appreciation of the diversity of Australia's trees and their adaptations to the environment.

Alternative Routes for Wheelchairs

At stop 2, view *Eucalyptus imlayensis* from Banks Walk, then return to the clock and walk down to the nearest *Angophora costata* in the car park, then onto stop 4.

Return via the footpath between the Tasmanian rainforest and the car park, viewing *Eucalyptus regnans* (stop 5) from the footpath. *E. varnicosa* will have to be omitted.

At stop 6, omit *Nothofagus cunninghamii* because *Nothofagus* can be covered at stop 15W.

Follow the route to stop 14 and then come down along the main rainforest path, using stops indicated by a W.

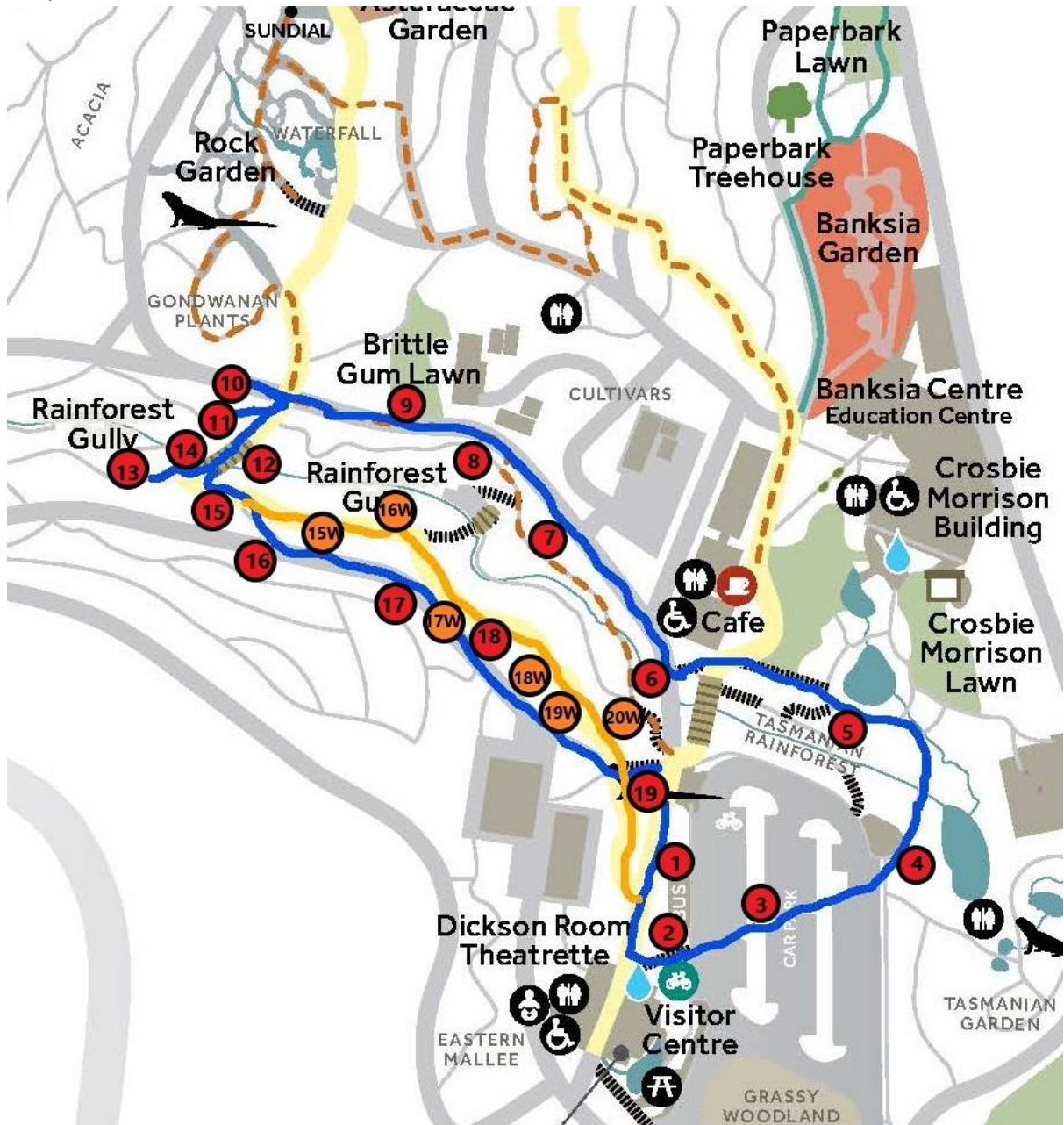
Plant List

Stop	Plants	Reason
1	<i>Eucalyptus macrorhyncha</i> (Red stringybark) <i>Corymbia ficifolia</i> (Red flowering gum) <i>Angophora costata</i> (Smooth-barked apple) [point out across carpark]	Three Eucalypt types
2	<i>Eucalyptus imlayensis</i>	Endangered species
3	<i>Angophora costata</i> (Smooth-barked apple)	Close look at Angophora
4	<i>Allocasuarina torulosa</i> (Forest oak)	Separate male and female trees
5	<i>Eucalyptus regnans</i> (Mountain ash) <i>Eucalyptus vernicosa</i> (Varnished gum)	Largest and smallest eucalypts
6	<i>Nothofagus cunninghamii</i> (Myrtle beech) and <i>Lagarostrobos franklinii</i> (Huon pine)	Tasmanian rainforest trees—1)ancient genus 2)long-life tree
7	<i>Correa lawreanceana</i> var <i>glandulifera</i> (Mountain correa)	Unusual tree
8	<i>Ficus fraseri</i> (Shiny sandpaper fig)	Fruit tree or bunch of flowers
9	<i>Syzygium paniculatum</i> Magenta Lillipilli	Fruit tree
10	<i>Davidsonia jerseyana</i> (Davidson's plum)	Fruit tree, cauliflory
11	<i>Toona ciliata</i> (Red cedar) <i>Gmelina leichhardtii</i> (White beech)	Timber trees
12	<i>Livistona australis</i> (Cabbage tree palm)	Trees that are not trees, e.g. palms
13	<i>Araucaria bidwillii</i> (Bunya pine)	Indigenous cultural value
14	<i>Macadamia janseni</i> (Jansen's macadamia)	Nut tree
15	<i>Eucalyptus viminalis</i> (Ribbon gum, Manna gum)	Local species, habitat for native animals
16	<i>Tristaniopsis laurina</i> (Kanooka, Water gum)	Timber – golf clubs
17	<i>Syncarpia glomulifera</i> (Turpentine tree)	Turpentine smell, stringy bark
18	<i>Pittosporum undulatum</i> (Sweet pittosporum)	A tree that has become a weed
19	<i>Agathis robusta</i> (Queensland kauri pine)	Ancient tree

For Wheel Chairs, Stops 1-14 as above

15W	<i>Nothofagus moorei</i> (Antarctic beech)	Gondwana tree see stop 6
16W	<i>Callitris macleayana</i>	Australian pine
17W	<i>Doryphora sassafras</i>	Aromatic fragrance
18W	<i>Eucalyptus viminalis</i>	See stop 15 above
19W	<i>Tristaniopsis laurina</i> (Kanooka, Water gum)	See stop 16 above
20W	<i>Brachychiton acerifolius</i>	Green trunk photosynthesis

Map



Stop 1. Three Eucalypt genera

Opposite the clock for the Eucalyptus and Corymbia. Point out the Angophora (see stop 3) in the top row of northern car park on the rainforest gully end.

Theme Point: Comparison of three genera of Eucalypts - *Eucalyptus*, *Angophora* and *Corymbia*— an example of each can be seen from here. Eucalypts are iconic Australian trees, a defining feature of the Australian landscape. [See [Images 2](#)]

There are around 800 species of *Eucalyptus*. Many different bark types (stringy, ribbon, iron bark, smooth, box, minni ritchi). Leaf shape varies as the tree grows; mature leaves are usually alternate. *Angophora* has 9 species and has been recognised as a distinct genus since 1797 (more on this at stop 3).

The genus *Corymbia* was separated out in 1995, contains about 100 species, is named for the 'corymb' shaped cluster of flowers. Leaves are generally alternate. Large woody 'urn-like' fruits.

There are two broad groups - the bloodwoods and the ghost gums.

Because of their history they are all called Eucalypts.

There are only four Eucalypts that not native to Australia and a further seven or eight that are native to Australia and elsewhere. The other places are Timor, Indonesia, Papua New Guinea and the Philippines. Eucalypts growing in China, California, Portugal, North Africa, Sicily etc were imported from Australia.

Other:

***Eucalyptus macrorhyncha* (Red stringybark)**

Macrorhyncha 'long nose' refers to the beak-shaped cap on the flower bud. This is a local tree in the ACT as well as ranges and tablelands of NSW, Vic, and SA. This particular tree is old enough to have been here already when the Gardens were established. (John Turnbull information).

The rough, stringy, grey to reddish brown bark is not shed each year but builds up in layers. On the trunk and branches and lance-shaped alternate adult leaves. It is dark grey on the outside but the inner bark is red.

***Corymbia ficifolia* (Red flowering gum, Albany redgum)**

This is a good tree to illustrate the operculum. *Eucalyptus* means 'well covered' referring to the cap (operculum) which covers the flower bud before it blooms.

Ficifolia refers to the leaf shape resembling that of the genus *Ficus*. Not at risk in the wild, it comes from SW WA around Walpole Albany and in the Stirling Range. Growing to only 10 metres it is widely used as an ornamental tree in Perth and worldwide, e.g. Ireland, Hamilton, NZ. While it is called the 'red' flowering gum, it actually produces flowers of various colours.

Trees of a particular colour are selected and grafted to maintain their colour. (Seeds taken from them would result in random distributions of colour.) We see here Summer Red, Precious Pearl and Dwarf Orange.

In areas of summer rainfall, *C. ficifolia* does not do well and so it has been hybridised with *C. ptychocarpa*, from the Kimberley and NT top end. *Corymbia gummifera* and *C. intermedia* may be successfully used as root stock for heavier soils.

References: [Corymbia Cultivars \(anpsa.org.au\)](http://anpsa.org.au)

[Botanic Gardens and Parks Authority - Corymbia ficifolia \(bgpa.wa.gov.au\)](http://bgpa.wa.gov.au)

[Corymbia plant notes \(bgpa.wa.gov.au\)](http://bgpa.wa.gov.au)

Wrigley and Fagg, (2010) *Eucalypts: a celebration*

Stop 2. *Eucalyptus imlayensis* (Mt Imlay Mallee)

One of the rarest trees in Australia, growing naturally only in the Mt Imlay NP, in southern NSW. It is a mallee meaning that it has a lignotuber, from which new shoots can emerge after fires. It grows to about 7 metres and in the wild is multi-stemmed as most mallees are. But we can see here, when grown in different conditions, a mallee can have a single stem.

Theme point: ANBG role in conservation of species.

The ANBG holds the last 3 remaining adult trees: this is one. We have a collaborative project with the NSW Dept Planning & Environment and supported by the Office of the Threatened Species Commissioner, to trial specialised propagation methods (Grafting) to try to conserve all known genotypes in our *ex situ* collections. If we can successfully graft plant material onto compatible rootstock (which is tricky, with lots of variables influencing success), we will grow the plants and when large enough, plant them into our seed production area. We can then conduct cross-pollinations to obtain 'pure' seed with good population-level diversity.

Other:

Eucalyptus imlayensis trees were all burnt in the Black Summer bushfires and the fire was so hot that even the lignotubers of young plants were killed and only 17 clonal colonies, i.e. genetically distinct groups of trees, survived the fires and these are resprouting. The species is threatened primarily because it will be many years until resprouting plants are reproductive and there was very little seed in storage prior to the fire, and so, without seed storage, any catastrophic event that destroys regenerating plants may lead to extinction.

The wet summer of 2021-22 resulted in the spread of *Phytophthora cinnamomi* and *E. imlayensis* could succumb to it and if so, the ANBG collections could become very important in future.

As part of our project, our team is also propagating other threatened plants from the geologically (and vegetatively) unique Mt Imlay region, e.g. *Hibbertia circinata* nearby.

Full details at [cunninghamia-2023-001-mcdougall-mt-implay.pdf \(friendsanbg.org.au\)](https://www.friendsanbg.org.au/cunninghamia-2023-001-mcdougall-mt-implay.pdf)

Stop 3. *Angophora costata* (Smooth-barked apple, Sydney red gum)

Angophora a goblet or cupped shaped carrier, referring to the cup-shaped fruit; 'costata' a rib, refers to the ribbed fruit. Ribbed fruit example available.

Theme Point: Contrast with other eucalypts. *Angophora* lacks the cap over the flower bud, has a ribbed fruit, and has mature leaves that are opposite, rather than alternate. [Fruit sample](#).

Other:

- *Angophora costata* was first collected by Joseph Banks and Daniel Solander in Botany Bay in 1770 and the common name Apple was applied to a number of eucalypt species in the early days of the colony.
- This is the only smooth-barked *Angophora* species, and the bark is shed in mid-summer, leaving distinctive pink- or orange-coloured trunks. Over the year, these fade to grey. The trunks are often stained with a reddish gum known as kino.
- It grows well on Hawkesbury sandstone as well as southeast Queensland and down the east coast of NSW. It occurs in open forests in coastal regions. It has an attractive appearance and is a well-known tree of the Sydney basin. It is a large, wide, spreading tree growing to a height of between 15 m and 25m.
- The flowers are white and in large showy bunches. The individual flowers are about 2 cm wide with a large number of long stamens – fluffy appearance. The usual recorded flowering time is December or January. This showiness is their main attraction. [\[See image 3\]](#)
- Its timber is rather brittle and is rarely used except for firewood.
- Many creatures use older trees for breeding and roosting, the nectar is a major source of food for insects and flying foxes, and birds eat the seeds.

Notes are all taken from the 2022 Eucalypt walk; though edited.

Stop 4 *Allocasuarina torulosa* (Forest Oak, Rose She-oak)

Allocasuarina torulosa, is a tree which grows as an understorey plant in open tall Eucalypt forests of Qld and NSW.

Theme Point: Separate male and female trees are side by side at this location. The female tree has many woody fruits and the male tree has a load of pollen at the end of its branchlets. *Allocasuarina* flowers do not have petals. The male flowers are brown, in elongated catkin-like clusters at the end of the branchlets. Female flowers are red in tight clusters.

Other: The Forest Oak appears to have needle-like leaves, but these are actually twigs; the real leaves are tiny and in the joint of the needles and appear in whorls of four. These needles have a weeping, pendulous appearance. Fallen 'needles' form a dense, soft mat beneath sheoaks, preventing the development of undergrowth and making sheoak woods remarkably quiet. Another characteristic feature are the spiny "cones", about the size of an acorn but with a texture more resembling a conifer cone. However, sheoak "cones" are a woody fruit.

Sheoak roots possess nodules containing symbiotic nitrogen fixing bacteria; together with their highly drought-adapted foliage, this enables sheoaks to thrive in very poor soil and semi-arid areas. However, sheoaks are much less bushfire-tolerant than eucalypts.

The timber of *Allocasuarina torulosa* is reddish pink to brown, hence the common name of Rose She-Oak. It is very hard to work and so is used by woodworkers and woodturners to make smaller things such as wood turnings, knife handles and other specialist items. In early days, the timber of *Allocasuarina torulosa* was valued for making roof shingles, since it splits easily. *Allocasuarinas* have very dense timber (1 m³ weighs approx. 1 tonne) and so make good firewood that was used by early bakers in their ovens that had to burn for long time.

<https://www.biodiversitylibrary.org/item/211447#page/420/mode/1up>

<https://bie.ala.org.au/species/https://id.biodiversity.org.au/node/apni/2898576>

https://www.softschools.com/facts/plants/casuarina_facts/2185/

Casuarina: There are about 17 species in Australia, the Pacific and SE Asia; the mature dried winged seed is pale grey and dull; cone bracteoles thinly woody, prominent, extending well beyond cone body, with no dorsal protuberance; they often grow on riverbanks and in coastal areas; they lose their woody fruits every year. Used for poles and firewood in other countries, e.g. Egypt, Vietnam.

Allocasuarina: There are about 60 species, found only in Australia; the mature dried winged seeds are shiny brown to black; cone bracteoles thickly woody and convex, mostly extending only slightly beyond cone body, and usually with a separate angular, divided or spiny dorsal protuberance; they tend to grow on more challenging sites, i.e. rocky, nutrient poor, low rainfall; they grow slowly and are not very straight.

Information provided by John Turnbull.

NB Compare these *Allocasuarinas* with *Casuarina cunninghamia* near stop 5.

Stop 5. *Eucalyptus regnans* (Mountain ash), *Eucalyptus vernicosa* (Varnished gum)

Eucalyptus regnans grows in Victoria and Tasmania, in cool, mountainous areas that receive over 1,000 mm of rain per year. *Eucalyptus vernicosa* is endemic to alpine regions in the west and southwest of Tasmania, including Cradle Mountain.

Theme Point: Contrast of tallest and smallest eucalypts. *E. regnans* is the tallest tree in Australia and the tallest flowering plant in the world. A living tree 'Centurion' in southern Tasmania, was recorded at 100.5 metres in November 2018, using laser technology, having grown 80 cm in ten years. Taller trees in US (Californian redwoods) are conifers - non-flowering plants. This specimen is about 30 m tall.

E. vernicosa can be almost prostrate, a shrub to about 1 m high, or a small mallee to about 4 m high.

Other:

- During the summer 2019 bushfires in the Huon Valley, the Centurion was damaged. (NB this was the summer before the Black Summer fires of mainland Australia.) Efforts were made to protect it, but the fire burnt the base of the tree and the surrounding understorey. However, it appears to be OK. There were four *E. regnans* in Victoria that were taller than 90 m and they were destroyed in the 2009 bushfires.
- There are unverifiable reports from Victoria of much taller trees varying from 128 - 160 m in the past.
- *E. regnans* can live for 500 years so existing trees may reach that height in future. The Californian Redwoods can live for 2000 years. It is not planted overseas because it does not grow well in other countries.
- There is a competitor for the title of tallest flowering plant, Yellow meranti (*Shorea faguiana*) from Borneo, the Malay Peninsula and Thailand. One of these in the Danum Valley in Sabah on Borneo has been measured at 100.7 m.
- *Regnans*, "ruling", refers to the height and dominance of the trees. *Vernicosus*, "varnished", refers to the surface appearance of the leaves.
- *E. vernicosa* is exceptionally hardy and one of the most extreme of all eucalypts. Its habitat typically has high average rainfall varying from 1000 mm to 2500 mm per year, and very cold winters with continuous frosts and snow for several months. The harsh climate and nutritionally poor soils probably explain the small size and tough leaves. It usually grows above the tree line and can be a dominant plant in the heath communities. Leaves are small, oval-shaped and a glossy dark green with no difference between juvenile and adult foliage.

Stop 6 *Nothofagus cunninghamii* (Myrtle beech) and *Lagarostrobos franklinii* (Huon Pine)

[If using the wheelchair walk omit this tree and discuss Gondwana at stop 15W. Otherwise choose one of these trees at this stop.]

These trees grow in cool temperate rainforests in Tasmania and the *Nothofagus cunninghamii* is also found in Victorian rainforests.

Theme point: *Nothofagus* is an ancient genus that was present in Gondwana rainforests and today is found in South America, New Zealand, New Guinea and New Caledonia as well as in Australia. Fossil records of *Nothofagus* have also been found in Antarctica.

Other: *Nothofagus cunninghamii* is named in honour of Alan Cunningham, an explorer, naturalist and botanist who probably collected more Australian plant specimens in the 19th century than anyone else. Commonly known as myrtle beech or Tasmanian myrtle, it is a dominant species in cool temperate rainforests in Tasmania and Southern Victoria. Temperate myrtle beech rainforests are not protected in many areas of Tasmania and are threatened by mining and logging.

Boland, D.J. et al., Forest trees of Australia, Nelson, CSIRO, 1984, p.130

https://anpsa.org.au/plant_profiles/nothofagus-cunninghamii/

https://en.wikipedia.org/wiki/Nothofagus_cunninghamii

Theme point: *Lagarostrobos franklinii* (Huon pine) grows very, very slowly in SW Tasmania and is possibly the longest-lived tree in Australia. The common name comes from the Huon River where logs were first discovered in the riverbed. Living trees sampled by increment borer have yielded ring counted ages of up to 3600 years.

Other: Probably the most durable of Australian timbers due to the presence of the essential oil, methyl eugenol. Logs which apparently have lain on the ground for several hundred years are still being harvested and milled. The oil also has preservative qualities and deters insect attack. It has been said 'the only thing slower than a Huon pine's growth is its decay! The timber is resistant to attack by rot and marine organisms, which makes it useful for ship-building. Excellent timber for building boats, furniture, and for joinery and turning. Now widely used for craft items but only reclaimed timbers.

This featured on the ABC program Australia's Favourite Tree in 2022. [Australia's Favourite Tree: ABC iview](#)

(Huon pine) was first recorded in 1818 by Alan Cunningham. Lagaros = thin, strobos = cone and *franklinii* was after Sir John Franklin, an early governor of Tasmania from 1836 to 1843. The Huon pine can reproduce by layering and suckering as well as by seed. It is one of the few conifers that can form clonal thickets by vegetative reproduction, that is, where a branch touches the ground, it can be covered over and produce roots. Male and female cones are usually found on separate trees and seeds are spread by water and birds. It is a protected species, though there is an old-growth stand along the Wilson River in the Tarkine area in Tasmania that is threatened by mining.

Boland, D.J. et al., Forest trees of Australia, Nelson, CSIRO, 1984, p.58

<https://www.conifers.org/po/Lagarostrobos.php>

Stop 7 *Correa lawrenceana* var *glandulifera* Mountain Correa, Tree Correa

Theme Point: an interesting plant because we normally know Correas as a shrub.

Correa lawrenceana, commonly called the Mountain Correa, usually grows to about 10m and rarely to 16m tall. It has branchlets covered with rusty hairs and the tubular flowers are greenish yellow to red. The stamens project well beyond the end flower tube. Many Australian gardens have correas but they are usually small shrubs.

Correa lawrenceana has 8 accepted variations. This one is var *glandulifera* and occurs in a very limited area of north-eastern NSW, Qld border area. It grows on the margins of rainforest, in mountains from the Gibraltar Range in New South Wales to the McPherson Range in Qld. It has egg-shaped leaves and greenish yellow flowers arranged singly or in groups of up to five with woolly hairs on the outside. It tends to flower all year round.

<https://bie.ala.org.au/species/https://id.biodiversity.org.au/node/apni/2901215>
https://en.wikipedia.org/wiki/Correa_lawrenceana_var._glandulifera

Stop 8 *Ficus fraseri* (White Sandpaper Fig, Shiny Sandpaper Fig)

This is one of the sandpaper figs from NSW, Qld as well as New Caledonia and Vanuatu. [NB the tree with the dappled bark]

Theme Point: Unusual as the fruit is really an internal collection of flowers. The rounded figs are 1 to 1.5 cm long and start out yellow in colour, maturing to orange-red between May and February in the species' native range. They are edible, but insipid. Closer inspection shows that the inside the round fig are the flowers. They are pollinated by a wasp whose lifecycle is very unusual.

A female fig wasp carrying pollen crawls through a narrow entrance at the top of the fig, often losing her wings and antennae as she does. She spreads the pollen around the inner chamber of the fig, fertilising the flowers. She then lays her eggs and dies. When the eggs hatch, the flightless male wasps appear first and mate with the developing female wasps in their egg sacs. The males then dig a wide tunnel to exit and with their job done, they die. Soon thereafter, the females emerge. They look very different with antennae and large eyes, powerful wings and a long ovipositor. They collect pollen as they move inside the fig, emerging through the tunnels dug by the males carrying fertilised eggs as well as pollen. They fly to a fig of a similar species as they recognise the scent. And then they enter the immature fig, completing the cycle.

Other: The grey-headed flying fox feeds on the figs. To rehabilitate rainforest, begin by planting figs to encourage flying foxes into the area and they will encourage seed spread of other species. Indigenous people used the leaves as sandpaper for tools but also for medicinal purposes, scouring the skin and applying the sap of the fig as a treatment for fungal infections.

<https://bie.ala.org.au/species/https://id.biodiversity.org.au/node/apni/2910529>

<https://theconversation.com/sandpaper-figs-make-food-fire-medicine-and-a-cosy-home-for-wasps-96404>

Stop 9 *Syzygium paniculatum* (Magenta Lilly Pilli)

There are about 50 species of *Syzygium* (pronounced Sigh-zij-ium) in Australia occurring in the Kimberly region of WA, the Northern Territory, Queensland and NSW and Victoria, widespread in rainforest, from the coast to ranges. The Magenta Lilly Pilly is an endangered species, found only in NSW, in a narrow, linear coastal strip from Upper Lansdowne to Conjola State Forest. It is spread around because of cultivars in gardens. [Magenta Lilly Pilly - profile | NSW Environment, Energy and Science](#).

Theme point: White flowers appear in summer and are followed by large, fleshy, magenta-coloured fruits, which can be eaten raw or made into jam. The fruits of *Syzygium smithii*, next to these, has paler fruit which although edible are much less palatable. Probably the best tasting is *S. australe*.

Other: The *S. smithii* species was widely known for many years as *Acmena smithii*, and, despite being reclassified to the genus *Syzygium* in 1893 by a German botanist, it was not until 2009 that the Council of Heads of Australasian Herbaria Australian Plant Census confirmed the recognition of this current name. The lilly pilli is usually a medium to tall tree up to 20m, but can be reduced to a shrub in exposed coastal situations. The foliage is usually dense and glossy, making it a useful ornamental tree that can be kept pruned as a hedge. *Syzygium smithii* and various cultivars are widely planted as ornamental and shade trees. The SA Country Fire Service regards it as a fire-retardant plant. Many bird species have been recorded eating the berries as well as [brushtail possums](#) and [flying foxes](#). [Ringtail possums](#) eat fresh leaves and several species of moth larvae also feed on the leaves.

Boland, D.J. et al., Forest trees of Australia, Nelson, CSIRO, 1984, p.180

https://anpsa.org.au/plant_profiles/syzygium-smithii/

https://en.wikipedia.org/wiki/Australian_Plant_Census

<http://plantselector.botanicgardens.sa.gov.au/Plants/Details/17953>

<https://plantnet.rbg Syd.nsw.gov.au/cgi-bin/NSWfl.pl?page=nswfl&lvl=sp&name=Acmena~smithii>

Stop 10: *Davidsonia jerseyana* (Davidson's plum)

This tree is listed as **Endangered**. It is found in native rainforest between Ballina and Tweed Heads. It grows to 10 m tall, either with a single unbranched stem or several stems arising from the base. The large, hairy leaves are bunched towards the top of the trunk, and are divided into 7 - 17 large, toothed leaflets.

Theme point: Small pinkish flowers are borne directly from the main stem in long, loose clusters. These are followed by edible, sour, dark burgundy bush fruit that grow in clusters along the stem. This is an example of Cauliflory, a botanical term referring to plants that flower and fruit from their main stems or woody trunks, rather than from new growth and shoots. This can allow trees to be pollinated or have their seeds dispersed by animals that climb on trunks and sturdy limbs to feed on the nectar and fruits. The plums can be made into jams and jellies, or sweet and savoury sauces, and is high in antioxidants. Freeze-dried plums can be purchased on the internet. The fruit is also used in skin lotions.

Other: This plant is threatened by domestic grazing, land clearing, fire, extensive fruit collection, invasion by weeds and roadworks. Protection methods include encouraging habitat regeneration, protection from fire, and grazing and weed control.

Aborigines ate the plums raw, and used the tree trunks to make harpoons for catching turtles and dugong (a marine mammal).

There are two other species also called Davidson's plum. [Davidsonia - Wikipedia](#)

[Cauliflory - Wikipedia](#)

Stop 11: *Toona ciliata* (Red Cedar) and *Gmelina leichhardtii* (White Beech)

Toona ciliata is a forest tree in the mahogany family which grows throughout southern Asia. In Australia, it is widespread in warmer rainforest on the coast and coastal ranges, north from Milton in NSW into Queensland. This particular tree is forked because a storm blew the top out of the tree a few years ago.

***Gmelina leichhardtii* (White Beech)** [NB *Gmelina* pronounced 'mel-eye-na'] is a plant of the lowland, moist tropics and subtropics, scattered individuals or small groups of trees naturally occur from the Illawarra district, possibly as far south as the Clyde River, of New South Wales to near Proserpine in tropical Queensland. The tree grows to about 30m tall and is semi-deciduous.

Theme point: These two species were heavily logged to commercial extinction in the 19th century. *Toona ciliata* is highly desirable as the wood is a magnificent deep rich red and is easy to work and it is also pest and water-resistant. It is not grown commercially in plantations because the cedar-tip moth attacks the growing tip causing the main stem to branch and so there is no long straight trunk. Trees growing in dark rainforests are less susceptible to this moth. These tip moths are common in mangroves, another host. *Gmelina leichhardtii*, prized for templates, pattern making, carving and turnery, also used for indoor joinery, flooring, cabinet and carriage work and planking of boat hulls, was heavily logged and is now considered uncommon in Queensland and endangered in the Illawarra region. Unlike the red cedar, the white beech has not recovered particularly well after logging in the 19th and 20th centuries, possibly because its seeds are difficult to germinate.

Other: In the pioneering days of Australia, the 'Cedar Cutters' frequently preceded more permanent settlers and were often responsible for the 'opening-up' of new areas, but because the timber was highly desirable, the tree was over-exploited and the 'Red Gold' as it was known, was cut to commercial extinction by the beginning of the 20th century. Red Cedar is one of the few deciduous native trees in Australia and this worked against it. In spring the flush of beautiful coppery-red leaves made them stand out like signposts to the cedar cutters. The most accessible of the trees grew in fertile, deep, well-drained basalt soils east of the Great Dividing Range, primarily along rivers and creeks. This allowed the cedar cutters to take advantage of one of its other attributes – it floated. The transport of cut logs was greatly simplified as they were rafted down these ready-made water highways. <https://www.anbg.gov.au/gnp/trainees-2017/toona-ciliata.html>
https://en.wikipedia.org/wiki/Toona_ciliata#External_links

Beechmont, a town in the Gold Coast hinterland in Qld, was originally called Beech Mountain due to the once prolific numbers of White Beech trees found in the area. However, numbers dwindled due to the White Beech being highly sought after by timber getters in the 1800s, who were the first settlers in the area.

The fruit of White Beech trees are purple when ripe between February and May; they are eaten by the paradise riflebird, topknot and Wompoo pigeons.

Boland, D.J. et al., Forest trees of Australia, Nelson, CSIRO, 1984, p.642

<https://tropical.theferns.info/viewtropical.php?id=Gmelina+leichhardtii>

https://australian.museum/about/history/exhibitions/trailblazers/ludwig-leichhardt/?gclid=Cj0KCQjwocShBhCOARIsAFVYq0ilwMW7GQd5wYholnwEp7Kmtt-l_BFcxl1f6HWPSi-ucC1-IEsM9tUaArSrEALw_wcB

https://en.wikipedia.org/wiki/Gmelina_leichhardtii

[Beechmont – Scenic Rim Regional Council, White beech \(sunshinecoast.qld.gov.au\)](#)

Stop 12 *Livistona australis* (Cabbage tree palm)

Definition of a tree: A tree is the tallest form of plant floral diversity that is generally perennial, woody, and branched. Trees differ from herbs and shrubs in being woody, perennial, tall (>5 metres, according to the UN), intensively branched, tightly bound to the soil.

<https://www.biologyonline.com/dictionary/tree#:~:text=Biology%20definition%3A,herbs%2C%20shrubs%2C%20or%20trees>.

Theme Point: Palms called trees but when a tree is a tree, trunk needs to be woody so this is technically not a tree. The palm trunk is composed of old dried petiole bases tightly stacked on each another and has no bark as hardwood trees do.

Other: *Livistona* is a genus of palms (family Arecaceae), native to Asia, Australasia, and the Horn of Africa. They are fan palms, the leaves with an armed petiole (leaf stalk) terminating in a rounded, costa-palmate fan of numerous leaflets. [NB Costapalmate leaves are midway between pinnate and palmate.] It occurs in coastal rainforests from eastern Vic to SE Qld, the most widespread as well as the most southerly palm in Australia. Most southerly is at Cabbage Tree Ck near Orbost, Vic. The growing heart of the new fronds, also known as the terminal bud, gives the tree its "cabbage" name, since this can be extracted as a food and tastes like the heart of a cabbage or an artichoke.

Cabbage tree hats. Known as first distinctive Australian hat made for sun protection. Early settlers made hats from the fronds which were boiled, then dried and bleached in dewy night air. The fronds were cut into very fine strips with leaf splitting tool like miniature rake and then woven into narrow strands which were plaited by all family members. The hat maker took the plaits and shaped them into a hat. They started at centre of crown, then down sides. The brim was attached with the band – often button was placed in crown centre. The result was a hat with a high domed crown and wide, flat brim.

[Livistona australis - Wikipedia](#)

[Palm Leaf Structure - Gardening Solutions - University of Florida, Institute of Food and Agricultural Sciences \(ufl.edu\)](#)

[Sabal palmetto - Wikipedia](#)

Stop 13 *Araucaria bidwillii* (Bunya pine)

This grows 30-45 metres, with a straight, rough-barked trunk, and a very distinctive symmetrical, dome-shaped crown. It is an emergent species in subtropical rainforest (i.e. pokes up above the canopy of the forest) from Queensland, mainly in the south east and west to the Bunya Mountains, with a small occurrence in the north.

Theme Point: Indigenous heritage.

During the years of bumper harvest Aboriginal people from all over SE Queensland and northern New South Wales would gather, having been invited by messengers to join the local people in the feast. Each clan, regardless of where they were from had ownership over particular trees, or stands of trees. The family groups would camp nearby and take part in large inter-tribal ceremonies before returning to their own countries. The festival was an opportunity for people to come together in harmony and also for the important business of trade, to share knowledge, stories, song, tools, weapons and dance.

Many groups would take seeds back to their homes and plant them. Stands of trees that were planted in this fashion can still be found as far south as the Clarence River in Bundjalung Country, northern New South Wales. [Bunya Pine \(*Araucaria bidwillii*\) - Traditional Aboriginal food & beverage - Koori History - Aboriginal History of South Eastern Australia](#)

Other: The large, female fruiting cones are very large (football sized) and generally mature in summer through to early autumn but only every two to three years. [Araucaria bidwillii - Australian Native Plants Society \(Australia\) \(anpsa.org.au\)](#)

A female cone weighs up to 10kg and is very dangerous when it falls. Each mature Bunya cone consists of approximately 60 seeds attached to a core. The seeds are edible, having a flavour similar to chestnut. However, they do have a tough, leathery texture when eaten raw. The nuts are considerably more palatable when they are roasted, boiled or are ground into flour which is gluten free.

Stop 14 *Macadamia jansonii* (Bulberin Nut, Jansen's macadamia) Several small trees at knee height behind the wall.

Macadamia jansonii is the rarest of Australia's four species of macadamia nuts.

Theme point: *Macadamia jansonii* is an endangered and extremely rare species native to Queensland. This small collection in the ANBG is one of four insurance populations of *Macadamia jansonii*. Threats in the wild emphasise the important role of the ANBG in conservation and scientific research.

Other: *Macadamia jansonii* is closely related to the macadamias we eat, but its nuts are bitter and inedible. It was first brought to the attention of plant scientists in 1983 by Ray Jansen, a sugarcane farmer and amateur botanist from South Kolan in Queensland. It was only described as a new species in 1991. In the wild it grows as a multi-stemmed 6–9m tall evergreen tree, with leaves having entire margins and generally in whorls of 3. It was discovered as a single population of around 60 plants in the wild. In 2018 about 60 new mature *Macadamia jansonii* trees were located, although a quarter of these were thought to have been destroyed in the bush fires of 2019. An expedition in October 2020 located some additional small clusters of this rare species and it has been discovered that some of plants thought to have been destroyed in the fires, have re-sprouted. The entire known population of Bulberin Nut is now 210 plants.

<https://apps.des.qld.gov.au/species-search/details/?id=8185>

https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=55597

<https://www.fame.org.au/news/new-expedition-finds-additional-sites-of-rare-macadamia>

https://en.wikipedia.org/wiki/Macadamia_jansonii

[The Four Macadamias - Macadamia Conservation Trust \(wildmacadamias.org.au\)](http://wildmacadamias.org.au)

Beside the path on the way to *Eucalyptus viminalis* is ***Macadamia integrifolia***.

The edible macadamia, ***Macadamia integrifolia*** (Macadamia Nut) is native to rainforests in south east Queensland and northern New South Wales. Listed as vulnerable in the wild, this tree is rarely cultivated for ornamental purposes, but is grown commercially in Australia, Hawaii, Mexico and other countries in Latin America, Africa and Asia as well as in California and Florida.

https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=7326

<https://www.growables.org/information/TropicalFruit/Macadamia.htm>

https://en.wikipedia.org/wiki/Macadamia_integrifolia

Stop 15. *Eucalyptus viminalis* (Ribbon gum / Manna gum)

E. viminalis is widespread in well-watered parts of south-eastern Australia from Eyre Peninsula and Kangaroo Island through Victoria, Tasmania and eastern New South Wales as far north as the tablelands at Inverell east to the escarpment ([Euclid](#)).

Theme Point: Local species in the ACT and also a significant food source for various fauna. It is the primary diet of koalas in certain areas, because its leaves have a high protein content ([Manna Gum - ClimateWatch Australia- Citizen Science App](#)). Koalas are folivores, ie. they are leaf eaters, and their choice of leaf is a trade- off between the content of plant secondary metabolites and the protein content of the leaves, which varies by species and among individual trees of a species. Plant secondary metabolites are chemical compounds that affect taste, digestibility (e.g. tannins) and toxicity (e.g. cyanide) of the leaves. ("[Eucalypts as food for folivores" presented by Karen Marsh - YouTube](#) ANU Research School of Biology). See also Main koala food trees on Guides Web [oeh koala food species list.docx \(live.com\)](#)

Other:

- Manna refers to the sweet crumbly white gum (a sugary material) exuded from the bark which can be eaten raw and is available in summer. It is a very pleasant, sweet taste and eaten by Indigenous peoples.
- Endangered species (Leadbeater's Possum, Helmeted Honeyeater, Forty Spotted Pardalote, Yellow-bellied and Sugar glider) rely on it for food; they scratch or bite the bark to release the sugary gum or 'Manna' ([Climatewatch](#)).
- Manna makes up 80% of the diet of fledgling Forty Spotted Pardalotes while they are growing and still reliant on their parents ([Wing, 2020](#)).
- *Eucalyptus viminalis* small to very tall tree to 90 metres. **Bark** smooth over whole trunk or with a thick stocking of rough bark consistently to 2–6 m above base. The crown is usually ribbony and the bark is mostly smooth in mountain forms although many populations elsewhere have a black butt or rough bark over most of the trunk ([Euclid](#)). The timber is not strong or durable and is sometimes used for pulpwood or indoors.

Stop 16 *Tristaniaopsis laurina* (Water Gum, Kanooka)

The Water Gum (5 - 15m) occurs naturally along the east coast of Australia, from the Brisbane River in Queensland, through coastal New South Wales to the Gippsland region of Victoria. It is commonly found growing along creek banks, where the trunks and branches tend to be shaped in the direction of the current and give an indication of the flood height.

It is often called a gum, but it is not a eucalypt although it is in the Myrtaceae family.

Theme Point: The dark coloured wood is hard, tough, and close-grained. The wood is generally sound to the centre; it is very difficult to season and generally difficult to saw and machine because of high density, cutters may dull rapidly. It dresses to a smooth surface and turns excellently. The heartwood is generally reported to be resistant to attack by decay fungi and termites. It is used for tool handles, flooring, pallets, and heavy construction, specialty items (pulleys, rollers, mallets, wooden screws, bearings and cogs). It is also listed as being used for **golf clubs**.

Other:

The bright yellow flowers have a distinctive and, to some, unpleasant odour. There are reports that the smell resembles DMT (dimethyl tryptamine), a hallucinogenic drug but an on-line post says: *“DMT is odourless, so what you smelled is not DMT. The distinctive smell you are referring to is actually the breakdown products of DMT - skatol etc. this is a common substance in plants”*. (<https://www.shaman-australis.com/forum/index.php?/topic/26262-tristaniaopsis-laurina/>)

It gets its species name from the similarity of the leaves to the Laurel or Bay Tree. There is a cultivar called Luscious. New growth starts out a distinctive copper colour and leaves become dark green shiny and large, i.e. luscious, with the branches developing deep purple coloured bark which peels back to reveal a smooth, cream trunk. Its common name Water gum is a warning not to plant it near water pipes.

<https://www.anbg.gov.au/gnp/gnp10/tristaniaopsis-laurina.html>

https://en.wikipedia.org/wiki/Tristaniaopsis_laurina

<https://tropical.theferns.info/viewtropical.php?id=Tristaniaopsis+laurina>

The Useful Native Plants of Australia (including Tasmania) J H Maiden 1889

Stop 17 *Syncarpia glomulifera* (Turpentine)

Syncarpia glomulifera, commonly known as the turpentine tree, or yanderra, is native to New South Wales and Queensland. It looks a lot like a stringy bark and, like eucalypts, is in the Myrtaceae family.

Theme point: The aroma from the crushed leaves reminded the early settlers of turpentine which is how it got its common name but, paradoxically, it is one of the most difficult timbers to ignite. It looks a lot like a eucalypt but can easily be distinguished by its distinctive fruit. [[See image 5](#)]

Other: It is common as a verge plant in rainforests, often found in the transition zone between pure rainforest and eucalypt forest. The turpentine tree is one of the dominant species of the critically endangered Sydney Turpentine-Ironbark Forest ecological community. The largest known turpentine tree, located near the Williams River Recreation Reserve in the Barrington Tops National Park, New South Wales, measures 58 m tall, 7.90 m trunk circumference at breast height, and has a crown spread width of 20 m. *Syncarpia glomulifera* has a tall, straight trunk with grey/brown deeply furrowed, stringy bark. The branches tend to grow outwards and then upwards looking like a bent arm. The turpentine regenerates after bushfire by resprouting from its lignotuber and epicormic buds. Turpentine trees are thought to live up to 500 years. Turpentine timber is very durable and is used in heavy-traffic flooring, for poles and wharves. It resists marine invertebrates and termites.

Boland, D.J. et al., Forest trees of Australia, Nelson, CSIRO, 1984, p. 574

https://www.gardensonline.com.au/gardenshed/plantfinder/show_1958.aspx

https://en.wikipedia.org/wiki/Syncarpia_glomulifera

Stop 18 *Pittosporum undulatum* (Sweet Pittosporum, Mock Orange, Native daphne etc)

It grows naturally in Queensland, NSW and eastern Victoria; it is fast-growing to a height of about 15m, with conspicuous orange woody fruit about 1 cm in diameter, preceded by creamy white sweetly scented flower that are clustered in umbrella like groups.

Theme Point: This tree has become a weed. It has been planted widely and is frequently invasive. It has also proven to be very invasive in bushland, colonising moist areas, such as gullies, and areas of disturbed soil. It grows rapidly and quickly shades out most other plants. *Pittosporum undulatum* seems to adapt to soils with higher nutrient levels much more readily than other native species, hence grows well in areas where the soil has been changed in this way. Its berries are attractive to birds and thus may be carried quite far from the parent plant. It has become an environmental weed in Tasmania, Western Australia, Western Victoria and South Australia, as well as in bushland around Sydney. Its seeds do not need fire to germinate and so proliferates in areas where fires have been suppressed.

Other: *P. undulatum* has also become invasive in many parts of the world where it had been planted, eg South Africa, the Caribbean, Hawaii, the Azores and southern Brazil. It is the most invasive tree species in the Azores, and has spread through most of the mid to low altitude forests, outshading, replacing native trees there.

The earliest known record (according to the Australian Virtual Herbarium) of *Pittosporum undulatum* is from Port Jackson, Sydney, in 1803. Now, however, *P. undulatum*'s status around the Sydney area is contentious. Even though it is native to the region, it has spread to soils and bushland where it wasn't found before European settlement, often out-competing other plants.

It hybridises with *Pittosporum bicolor* which may threaten pure populations

<https://bie.ala.org.au/species/https://id.biodiversity.org.au/node/apni/2904297>

https://anpsa.org.au/plant_profiles/pittosporum-undulatum/

Weeds of the South-East An Identification Guide for Australia. Richardson, Richardson and Shepherd.

Stop 19 *Agathis robusta* (Queensland Kauri)

Agathis, commonly known as kauri, is a genus of 22 species of evergreen tree. This tree has its ancestral roots firmly in the fossil record. The genus is part of the ancient conifer family Araucariaceae, a group once widespread during the Jurassic and Cretaceous periods, but now largely restricted to the Southern Hemisphere.

Theme Point: *Agathis robusta* is commonly known as the Queensland kauri (pine) or smooth-barked kauri. Although sometimes called a pine it is not a true pine, having leaves rather than needles. It is a large evergreen tree with a straight cylindrical trunk which can often reach a height of up to 50m in some locations. It has male and female cones on the same plant. The male cones are smaller and release pollen. The female or seed cones are larger and measure up to 13 cm diameter with up to 440 scales which mature in 18–20 months after pollination. They disintegrate at maturity to release the seeds.

Agathis robusta occurs in three distinct locations — a southern population in SE Qld, another in NE Qld and the third in New Guinea

This tree produces a high quality timber which was used for a variety of purposes such as cabinetmaking, joinery, framing, and plywood. This led to it being heavily logged from the mid-19th century, with the result that the large stands of these trees which were once common are now gone, although many individual trees may still be found.

The fossil record contains well preserved leaves of *Agathis* species from the Jurassic period of 145-200mya.

Stop 15W: *Nothofagus moorei* (Antarctic Beech) See also stop 6. Near Gondwana sign.

The Antarctic beech grows in cool temperate rainforests from the Barrington Tops plateau in NSW, north to the Lamington Plateau and Springbrook Plateau, in southern Queensland, between altitudes of 480 m and 1550 m.

Theme: At one time it was believed that the Eastern Australian populations could not reproduce in present-day conditions, except by suckering (asexual reproduction), being remnant forest from a cooler time. It has since been shown that sexual reproduction may occur, but distribution in cool, isolated high-altitude environments at temperate and tropical latitudes is consistent with the theory that the species was more prolific in a cooler age. The pattern of distribution around the southern Pacific Ocean rim has fed speculation that the dissemination of the genus dates to the time when Antarctica, Australia and South America were connected, the theoretical common land-mass referred to as Gondwana. [Nothofagus moorei - Wikipedia](#)

Stop 16W: *Callitris macleayana* (Stringybark pine, Brush Cypress Pine, Port Macquarie Pine)

At MP 117, northern side.

This large, straight-trunked tree has furrowed bark with cones that are often solitary on larger fruiting branches. *Callitris* (pronounced cal-eye-tris) is a genus of coniferous trees in the cypress family. There are 16 recognized species in the genus, of which 13 are native to Australia and the other three native to New Caledonia.

Theme Point: This Australian native pine is significantly different from other Australian *Callitris* species in a number of ways.

- Firstly, it is a rainforest species whereas all other native pines occurring in dry areas.
- Secondly *Callitris* are usually small to medium-sized trees or large shrubs, reaching 5–25 metres, but *C. macleayana* can grow to 40 m.
- *Callitris* leaves are evergreen and scale-like. Young seedlings in all species have needle-like leaves. However, in *C. macleayana*, the needle-like leaves are found mixed with scale leaves throughout the tree's life.
- *Callitris* trees bear both male and female cones. The male cones 3–6 mm long at the tips of the twigs. The mature female cones are 1–3 cm long and wide, globular to ovoid with six overlapping, thick, woody scales. The shape of the female cone of *C. macleayana* is more pointed with eight scales.

Other: The cones remain closed on the trees for many years, opening only after being scorched by a bushfire; this then releases the seeds to grow on the newly cleared burnt ground.

Callitris macleayana, the Stringybark Pine occurs in coastal areas of northern NSW, in wet sclerophyll forests and occasionally in pockets of subtropical rainforest. It also occurs and far north Qld in open forests on humid highlands. Within these habitats the stringybark pine prefers exposed locations such as slopes and ridge tops, whilst generally being found in poorer soils.

The wood of cypress-pines is light, soft and aromatic. It can be easily split and resists decay; cypress-pine is also termite resistant. It is used to make furniture, indoor and outdoor panelling, and fence posts. Cypress-pines are occasionally planted as ornamental trees, but their use is restricted by the high risks imposed by their very high flammability in bushfires.

<https://bie.ala.org.au/species/https://id.biodiversity.org.au/taxon/apni/51295530>

Stop 17W: *Doryphora sassafras* (Yellow sassafras, Golden deal) MP 122 southern side, MP 123 northern side.

This is a tall rainforest tree found scattered or in small groups in coastal rainforest areas from southern NSW near the Victorian border, north to just over the southern Queensland border.

Theme point: The bark, sapwood and leaves all have a distinct aromatic fragrance. (Find a dead leaf, crush and smell)

Other: *Doryphora sassafras* is a tall rainforest tree with a small compact crown of glossy dark green leaves. The wood is pale yellow when freshly cut. The small white flowers appear in late autumn to winter. They are sweet smelling and have long bristle-like tips on top of the anthers. The name *Doryphora* comes from the Greek *doratus* meaning a spear and *phorus* meaning bearing, in reference to the sharp bristle-like points on the anthers. *Sassafras* is probably after the laurel of North America which has a similar fragrance in the wood.

The yellowish soft timber is used in floors, turnery, and cabinet work. The tree is used in reforestation and, as it is fast growing in moist and fertile soils and adaptable to different situations, it is a good tree for parks and farms, but generally too big to be used in home gardens.

Boland, D.J. et al., Forest trees of Australia, Nelson, CSIRO, 1984, p.172-4.

[Doryphora sassafras](#) · iNaturalist, [Doryphora sassafras – Sassafras | Gardening With Angus](#)

Stop 18W: *Eucalyptus viminalis* (Ribbon gum/Manna gum) MP 125 southern side. See stop 15 for information.

Stop 19W: *Tristaniospis laurina* (Water Gum, Kanooka) MP 126 southern side, two trunks. See stop 16 for information.

Stop 20W: *Brachychiton acerifolius* (Illawarra Flame Tree)

This tree is found in well-developed coastal rainforests from southern NSW to far north QLD. It also grows in drier, more seasonal forests. It may reach 30 to 35 m in its natural habitat, but is usually shorter in cultivation.

It is famous for the bright red bell-shaped flowers that often cover the whole tree when it is leafless. It is commonly known as the flame tree, Illawarra flame tree, lacebark tree, or (along with other members of the genus) kurrajong.

Theme Point: Leaves are about 250 mm long; adult foliage usually entire or shallowly 3-lobed, juvenile leaves often deeply 5-lobed. This species is a large deciduous tree which forms a pyramidal habit. The trunk is smoothly cylindrical and green or grey-green in colour, often tapering unbranched to the very tip of the tree. **The trunk of *Brachychiton* species is able to photosynthesise when it does not have leaf blades.**

Other: The seeds of *Brachychiton* species are edible - Indigenous Australians ate them either raw or roasted, after removing the irritating hairs that surround them in the pod. They are nutritious, containing 18% protein and 25% fat with high levels of zinc and magnesium. They also ate the roots of young trees.

<https://bie.ala.org.au/species/https://id.biodiversity.org.au/node/apni/2916722>
<https://bmcplantbiol.biomedcentral.com/articles/10.1186/s12870-021-03233-w>