Field Guide to

KOALA HABITAT TREES

FAR NORTH COAST NSW

Proudly funded by
NSW GOVERNMENT
WWF
BYRON SHIRE COUNCIL

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This guide was authored by Dr Jo Green, Alison Ratcliffe and Dave Rawlins from Earthscapes Consulting. It was a collaborative effort to capture and produce as much practical information as possible.

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Draft review and testing the key - Koorindee Ridge Bush Regeneration workshop, Byron Shire Council Broken Head workshop, Marama Hopkins Tweed Shire Council SAT surveys.

3rd Edition - November 2025

CONTENTS

We acknowledge the Traditional Custodians of the Northern Rivers region. We recognise their continuing connection to the land and waters and acknowledge their long history of caring for and managing the land, its plants, and animals. We pay our respects to Elders past and present and extend that respect to all Indigenous Australians. We acknowledge the koala or boorabi, burabi, boodahbee as an important cultural feature of the northern NSW landscape.

INTRODUCTION

This guide is a tool to inform and empower koala conservation practitioners and those engaged in habitat restoration works.

This guide has not been written for botanists as a definitive taxonomic reference. For more specific taxonomic information refer to both PlantNET NSW and EUCLID - Eucalypts of Australia. This publication is aimed to be more accessible to land managers, naturalists, bush regenerators and ecologists. We hope that using this guide can rapidly let you identify a koala habitat tree to a species, or a group of species, from features you can see in the field.

DEVELOPMENT OF THE GUIDE

Koalas use a range of trees not just eucalypts and not just for food but also for shelter.

In the North Coast Koala Management Area, as outlined in `A review of koala tree use across New South Wales' report by Office of Environment and Heritage 2018, there are 61 koala habitat tree species identified.

The State Environmental Planning Policy (Biodiversity and Conservation) 2021 area includes 42 tree species identified as koala use trees. These 42 species are included in the 61 koala habitat trees mentioned above.

For this guide trees were excluded that were unlikely to occur in the Far North Coast. From the remaining *Eucalyptus* and closely related genera (*Angophora, Corymbia, Lophostemon, Syncarpia*) on the list, only species that occur in koala habitat on the Far North Coast - 32 species are included in the key on page 15.

Another 38 species, including uncommon Eucalyptus (page 69) and other non-eucalypt species associated with koala are included (page 75), but are not in the key.

There are many more non-endemic species of eucalypts that have been planted in our region. Some of these were planted in gardens, early farm re-afforestation projects, or in former State Forests that are now National Parks. The planted species are described on page 69.

Main koala food tree species are those recognised in NSW legislation or identified by koala experts.

The names used in this guide are from PlantNET NSW. In Queensland the names may be different.

AREA COVERED

The area covered by this guide is the Tweed, Brunswick,and Richmond catchments of the Far North Coast of NSW. These catchments are located in the Tweed, Byron, Ballina, Lismore, Kyogle and Richmond Valley Local Government Areas.

WHAT IS KOALA HABITAT?

Koalas *Phascolarctos cinereus* feed mainly on the leaves of eucalypt trees. Koalas feed almost exclusively on a few preferred tree species. One of the most important factors influencing the distribution and numbers of koalas in any area is the presence and density of their food tree species.

However, other tree species, including non-eucalypts, provide seasonal or supplementary food.

Koalas also need a range of other trees across their habitat for resting and shelter, particularly in extreme weather conditions. Examples of shelter trees include Turpentine, Cypress Pine, Brush Box and the non-native Camphor Laurels.

Koalas use isolated paddock trees, roadside and fence line trees to move between areas.

> Eucalypts are favoured by koalas because of the oil glands in the leaves. For most animals, eucalypts are poisonous, however the koala has an organ called a caecum which contains millions of bacteria to help break down the leaves into substances that are easiser to absorb.

Never seen a koala in the wild?

This is not unusual as they are difficult to see, but there are some telltale signs that koalas have been near.

- The distinctive double thumb sctratch on the trunks of feed trees.
- The bullet shaped scats that have rounded ends. Fresh scats also smell of eucalyptus!

IDENTIFYING EUCALYPTS

Eucalypts are known to be difficult to tell apart as there are species that look similar, individuals are variable, and some species are known to hybridise.

The bark is one of the most important ID features used in this guide. There are also other features that are used to help identify species which are described in the following pages.

Many species that were formally placed within the Eucalyptus genus have been reclassified to the Corymbia genus. Some species of Corymbia have recently been reclassified from sub genera to genus Blakella but in this publication, they are referred to as Corymbia pending further review by other studies. For further reading see Nicolle et al (2024). They look similar and have some shared characteristics but have some differences at the genus level. The genera Angophora and Lophostemon also look similar to Eucalyptus but have different fruits.

There are three main features to help determine the genus. They are leaf arrangement, bud and fruit shape (see pages 8 to 11 for descriptions).

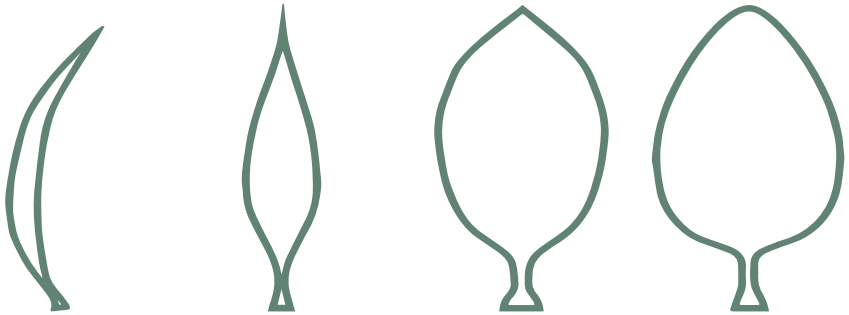
FEATURE	Angophora	Corymbia	Eucalyptus	Lophostemon
ADULT LEAVES (ON STEM)	Opposite	Alternate (disjunct)	Alternate (disjunct)	False whorls *
FRUIT	Ribbed, semi-soft	Urn-shaped	Shape varies	Roughly +/- hemispherical, semi-soft
BUDS / FLOWERS	No cap (has petals)	Has cap	Has cap	No cap (has petals)
	pages 80 & 81	pages 15 & 69	page 15	pages 44 & 67

* Syncarpia also have false whorls see page 68

LEAVES

Eucalypt leaf size and shape are often similar between species, so may not be a useful character for identification.

There are however, some leaf characteristics that are useful for ID.



Falcate
bow-shaped

Lanceolate
lance-shaped

Elliptic
even

Ovate
egg-shaped

Discolorous/Concolorous

Discolorous: the upper surface is darker and greener than the lower surface.
Concolorous: both surfaces are the same colour.

Discolorous

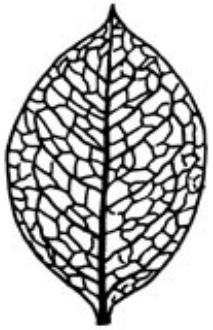
Concolorous

Venation

Penniveined: Feather-like; when the side veins of the leaf are very numerous, parallel, close together and at a relatively wide angle to the midrib.

Penniveined

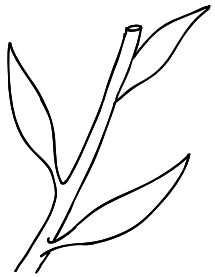
Reticulate: Forming a network (usually referring to the tertiary vein pattern of a leaf). See page 25 for more photos of different types of reticulation.



Reticulate

Opposite and decussate arrangement

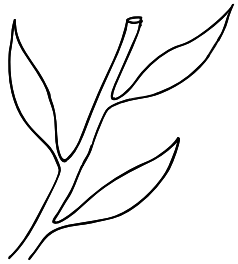
In the seedling stage, eucalypt leaves typically form in pairs on opposite sides of a square stem, with consecutive pairs arranged at right angles to each other (decussate).



Decussate

Disjunct-opposite

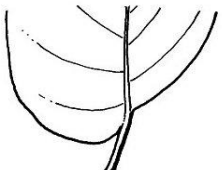
In mature eucalypt leaves the opposite and decussate leaf arrangement varies during development. The leaves of a pair become separated on the axis owing to elongation of the nodal region, often giving the appearance of an alternate leaf but distinguished by decussate, not spiral, sequence.



Disjunct Opposite

Oblique leaf base

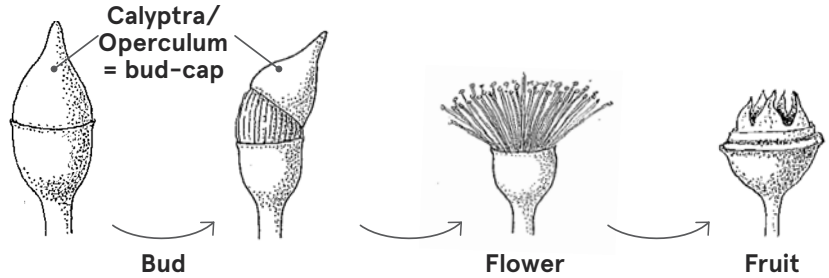
Base is asymmetric / unequal - one side lower than the other.



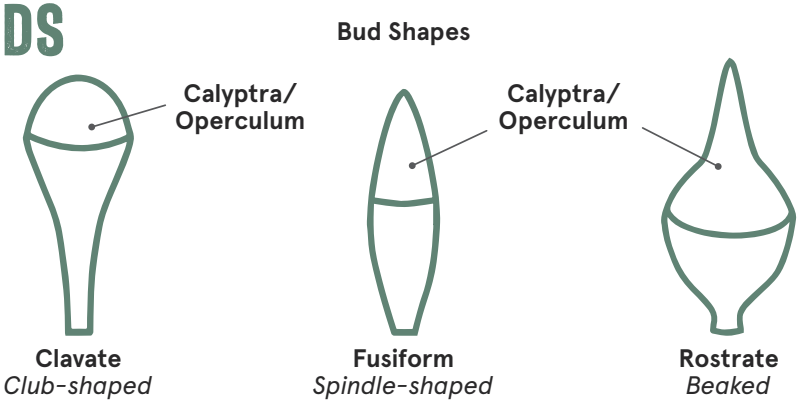
Oblique

BUDS – FLOWERS – FRUITS

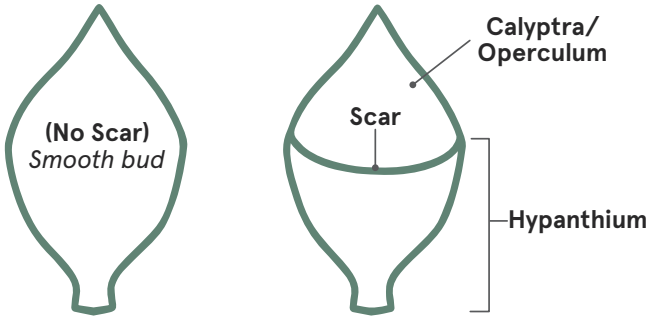
The shape of the developing bud and fruit can assist in eucalypt identification. Flower features are not used for identification in this guide.



BUDS

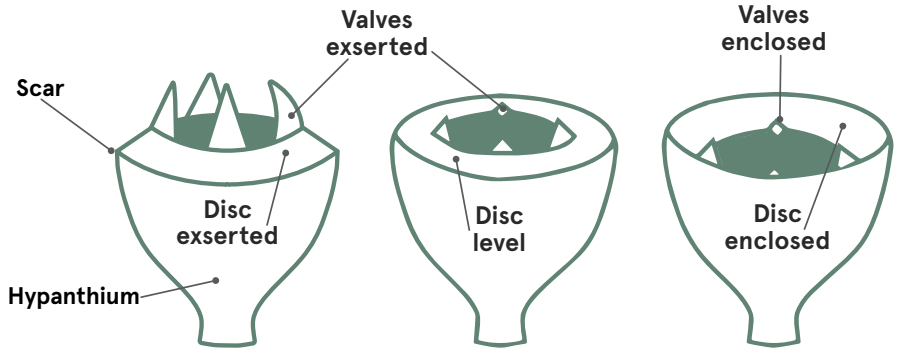


Flower buds have a cap that covers the stamens and ovary during their development, known as the calypta or operculum, which is made up of an inner and an outer layer. The operculum sheds in most species during development and the site of detachment is visible as a scar. However, some species have lost the outer operculum through evolution and therefore have a smooth bud with no scar.

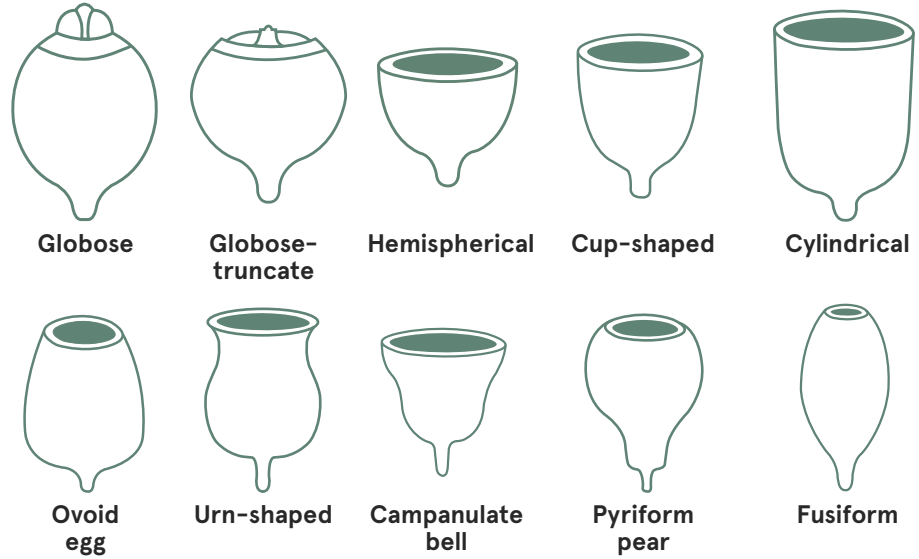


FRUITS

Once a flower has been fertilised, it enlarges to form a fruit capsule containing the seeds surrounded by the woody hypanthium. At the top of the hypanthium is an outgrowth of tissue known as the disc. The disc may be exserted (raised above the level of the scar), level, or enclosed (sunken below scar). The roof of the ovary will split in most species to form valves, which may also be exserted or enclosed. The number of valves can be an important characteristic for tree identification.



Fruit Shapes



HOW TO USE THIS GUIDE

This guide was designed as a quick reference to identify species by obvious field characteristics.

1. QUICK CHECKING

The guide is grouped into bark types. Colour photos and brief descriptions are provided for quick checking of familiar species. Using the photos for the bark and tree shape may help for quick identification. The similar species box will help to double check identifications. Further checking of fruit and leaves will also confirm correct identification.

2. IF THE TREE IS STILL UNKNOWN:

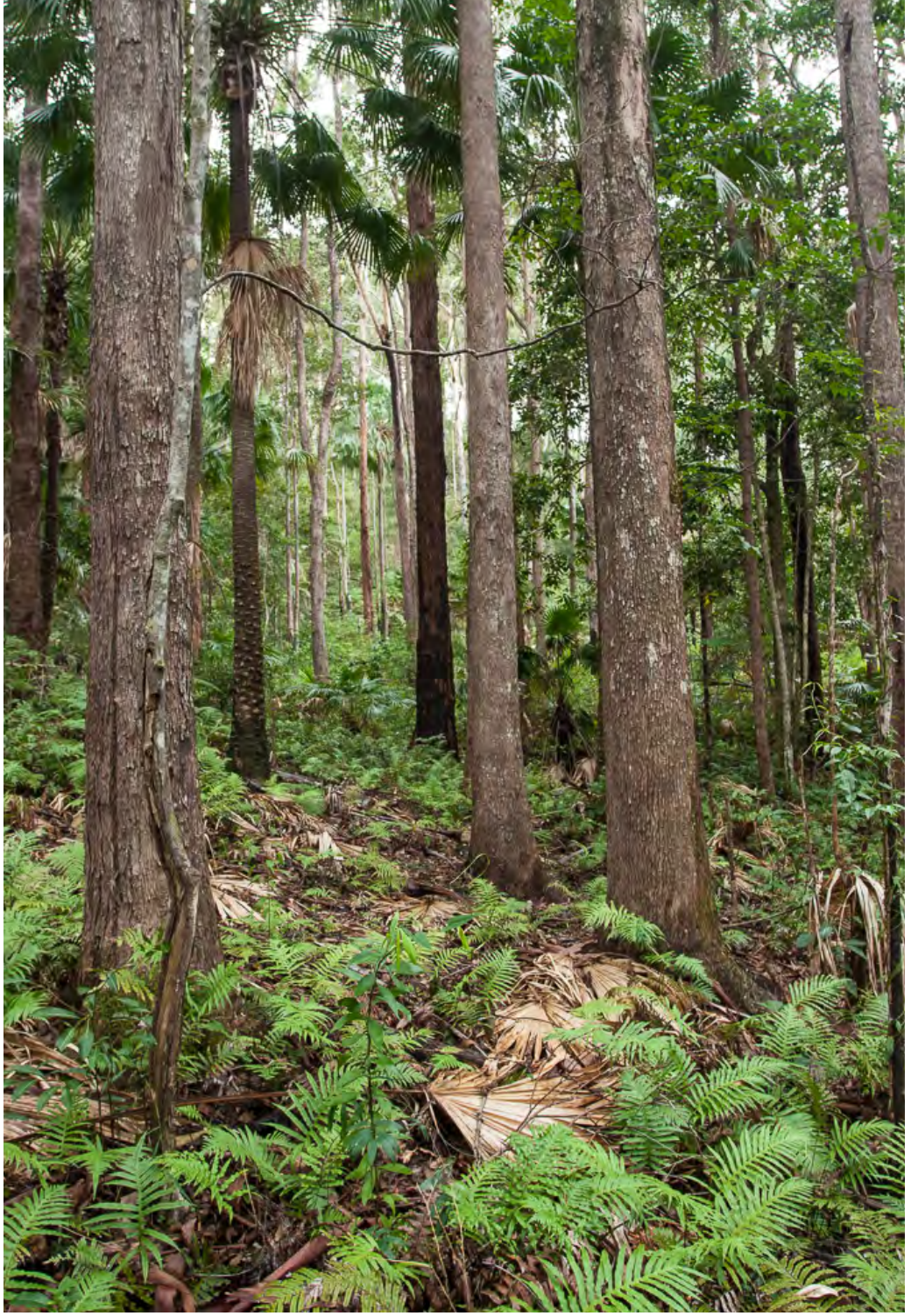
- To determine the genus see page 7.
- A botanical key to bark groups is provided on page 15. Follow the steps on page 14 on how to use the botanical key.
- For the common species on the coast, a quick reference guide is on page 92.
- Check the uncommon and planted group on page 69.

POINTS OF HELP IN IDENTIFICATION

Take note of all the visible features first. Following, are some questions to help identify trees in the field or from fresh specimens:

- Is it a *Eucalyptus*? It may be a closely related species, check on page 7.
- Are the trunk and branches rough or smooth-barked? This will guide you to the type of bark group.
- What colour are the adult leaves and are they the same colour on both sides of the leaf or lighter on the underside? Concolorous or discolorous?
- What shape are the adult leaves; are they narrow or broad?
- What shape are the buds?
- Is there an operculum scar?
- What shape is the fruit? Always check that the fruit is from the tree being identified (buds and fruit may fall a long way from the parent tree).
- Are the valves of the fruit exserted or enclosed?

Don't be dicouraged if you can't find your tree - keep persisting! Ask a friend. Or the herbarium is a resource that experts use if they aren't sure.



HOW TO USE THE FOLLOWING KEY:

1. Decide on the bark type on the trunk of your specimen and select the appropriate group on page 15, then go to the relevant page.

2. Read the statements 1a and 1b which offer two alternatives. Choose the statement which is most appropriate to the tree you wish to identify.

3. Read the next two statements e.g. 2a and 2b and choose the most appropriate again.

4. Continue in this way until you reach the species name.

5. Check the description and images in the guide to verify.

† *Mature buds only should be used.*

† *Measurements do not include stalks (ruler inside back cover).*

ICONS

Main Koala Food Tree*

T Tweed catchment

B Brunswick catchment

R Richmond catchment

Flowering Period

** Main koala food tree species are those recognised in NSW legislation or idenfitied by koala experts.*

BARK GROUP KEY

GROUP 1 SMOOTH BARKS

Bark on trunk all smooth from ground to upper branches.

p.16 Key
p.29 Species

GROUP 2 HALFBARKS

Bark on lower trunk rough or fibrous stringy, not persistent to upper branches, mostly smooth above.

p.18 Key
p.37 Species

GROUP 3 IRONBARKS

Bark on trunk and branches persistent to top of tree. Hard fibrous, and difficult to pull off.

p.21 Key
p.45 Species

GROUP 4 BLOODWOODS

Bark firm not hard, but fibrous, corky-flaky, tessallated (squarish plates), and persistent to small branches.

p.22 Key
p.49 Species

GROUP 5 BOXBARKS

Bark shortly fibrous, rough and flaky. Usually persistent or rough to small branches, grey-black. Mainly Richmond Catchment.

p.23 Key
p.53 Species

GROUP 6 STRINGY BARKS

Bark with short or long fibres, with or without fissures persistent to small branches. Or trees with stringy / flaky bark.

p.24 Key
p.57 Species

KEY GROUP 1: SMOOTH BARKS

Bark on trunk all smooth from ground to upper branches, sometimes peeling in strips or flakes. Leaves concolorous (same colour both sides) or discolorous (darker on upper side).

1a Bark whitish, grey or orange shedding in strips or ribbons. Often has zig zag scribbles. Go to 2a

1b Bark whitish, grey or orange shedding in polygonal flakes or shedding bark not evident. Go to 2b

2a Trunk may be marked by zig zag scribbles, bark white or yellow, with orange-brown, shedding in short ribbons. Leaves dull grey-green concolorous.
Eucalyptus signata page 36

2b Trunk sometimes with indentations or dimples or bark smooth orange, pink, grey or sometimes patchy as bark shedding in flakes. Leaves green semi-glossy or dull green, concolorous of discolorous. Go to 3

3a Bark whitish grey to red-brown or pink, often with numerous dimples or round indentations. Leaves concolorous only. Go to 4

3b Bark patchy or smooth whitish grey, brown to orange or pink, without indentations. Leaves discolorous or concolorous. Go to 5

4a Leaves lanceolate, green, semi-glossy, 5-28cm long, 2.5-4.5cm wide.
Corymbia henryi page 30

4b Leaves narrow-lanceolate to lanceolate, green, 10-23cm long, 1-2.8cm wide. Adult leaves with length:breadth ratio mostly 5-15:1.
Corymbia variegata page 31

5a Bark whitish, grey or smooth, sometimes patchy, grey-brown, salmon or orange, shedding in large plates or flakes. Leaves discolorous. Go to 6

5b Bark grey to dull grey, brown. Leaves dull green and concolorous. Go to 7

6a Leaves lanceolate, 8–14cm long, 1.5-2.5cm wide, dark green, glossy, discolorous, penniveined. Fruit 3-6mm diam. Shortly pedicellate. Main species on North Coast.
Eucalyptus propinqua page 33

6b Leaves lanceolate, 8–15cm long, 1.5-3cm wide, dark green, glossy, discolorous, penniveined. Fruit 5-10mm diam. Distinctly pedicellate 0.2-0.8m. Occurs in the Richmond catchment.
Eucalyptus punctata page 34

7a Leaves lanceolate or broad-lanceolate, 8-20cm long, 2-5cm wide. Calyptra usually cylindrical. Mainly in Richmond catchment.
Eucalyptus bancroftii page 32

7b Leaves narrow-lanceolate, 10-18cm long, 1-2cm wide, dull green, concolorous. Calyptra conical.
Eucalyptus seeana page 35

TOP TIP!
Also check Half Barks for similar species e.g. *E. tereticornis* page 43. Also see *Angophora* species on pages 80 & 81.

KEY GROUP 2: HALF BARKS

Bark on trunk mostly smooth above with a rough stocking at base of tree from <1m to upper branches.

1a Rough brown bark on lower trunk and smooth pinkish brown bark on upper trunk and branches, shedding in ribbons. Leaves appear whorled.
Lophostemon confertus page 44

1b Bark on trunk rough, fibrous shedding in ribbons or flakes, sometimes persistent on lower trunk. Trunk smooth, sometimes powdery, white or grey. May have other colour on trunk. Leaf arrangement alternate appearance, known as disjunct. Go to 2

2a Bark fibrous, shed in very long belt like ribbons (30cm+), scribbles sometimes present. Large round fruit. Go to 3a

2b Bark shed in ribbons, large plates or flakes. Go to 3b

3a Bark on trunk fibrous or stringy, brown or black, often persisting to upper branches. Leaves lanceolate, 9–16cm long, 1.5–3cm wide, green, glossy, concolorous. Main branches angled at 45° to trunk.
Eucalyptus pilularis page 41

3b Bark on trunk above darker base is smooth, white, or grey to red-brown or green with bark shedding in ribbons, plates or flakes. Leaves concolorous or discolorous. Go to 4

4a Bark on trunk base dark with bark above shiny grey to white, bluish with yellow patches. Some dark patches, often low branching. Bark occasionally peeling to ground level, leaving no dark skirt. Leaves narrow-lanceolate or lanceolate, 10–20cm long, 1–3cm wide, green to grey-green, dull, concolorous.
Eucalyptus tereticornis page 43

4b Bark on trunk above base smooth, white, greenish, or grey. Bark shedding in large plates, ribbons or flakes. Leaves green, glossy or dull, concolorous or discolorous. Go to 5

5a Bark on trunk smooth or with loose greyish bark slab at base, sometimes persisting in patches up trunk. Smooth bark becoming granular with age, blotchy white, cream, yellow, grey, brown, pink or blue-grey. Stems on younger growth square in cross-section and prominently winged. Check fruit for subspecies.
Eucalyptus amplifolia page 38

5b Bark on trunk smooth, white or grey, bark shedding in short ribbons or with loose greyish slabs, sometimes persistent on lower trunk. Leaves concolorous or discolorous. Go to 6

6a Bark on trunk smooth, powdery, white or grey. Bark decorticating over the whole trunk in large plates or flakes. Leaves lanceolate, 12–18cm long, 2–3cm wide, green or grey-green, dull, concolorous. Mainly in Richmond catchment.
Eucalyptus glaucina page 39

6b Bark grey, fibrous-flaky, persistent on lower trunk up to a few metres only or shed in short flakes and long ribbons. Trunk white smooth above. Leaves discolorous, penniveined. Go to 7

Group 2: Half Barks continued over page

KEY GROUP 2: HALF BARKS CONT.

7a Bark persistent at base, thin fibrous grey-brown to dark brown. Bark shed in ribbons above. Trunk above white shiny smooth. Leaves 10–16cm long, 2–3cm wide, dark green, glossy, (blueish beneath). Fruits with broad, blunt incurved valves. Often in gullies.
Eucalyptus grandis page 40

7b Bark rough, grey-brown, short fibres, persistent at base, often tessellated, trunk above white smooth, grey-green or blue-green, sometimes blotchy. Adult leaves broad-lanceolate, 10–17 cm long, 2–3 cm wide, dark green, glossy. Fruit with valves thin, pointed and strongly erect or outward curved. Often up slope.
Eucalyptus saligna page 42

TOP TIP!
Also check planted species such as *E. dunni* on page 74.

KEY GROUP 3: IRONBARKS

Characterised by bark which can be pale grey to black, usually thick, tough, and very hard with deep fissures. The bark is difficult to remove from the trunk (distinct from Bloodwoods) and can have kino.

1a Bark sometimes flaky, hard or soft, grey, black, grey-brown. Leaves ovate to broadly lanceolate or lanceolate, 8.5–20.5cm long, 1.5–4.5cm wide, concolorous slightly glossy or dull, green to grey-green.
Eucalyptus fibrosa page 47

1b Bark to small branches, grey, brown or black, hard, deeply furrowed. Go to 2

2a Leaves lanceolate to falcate, 8.5–17.5cm long, 1.5–3cm wide, concolorous, dull, or glossy, green, side-veins greater than 45° to midrib.
Eucalyptus siderophloia page 48

2b Leaves linear to narrowly lanceolate to lanceolate, 5.5–18cm long, 0.7–2.7cm wide, concolorous, dull, green to grey-green to rarely glaucous, side veins sometime less than 45° to midrib. Generally leaves appear finer than *E siderophloia*.
Eucalyptus crebra page 46

KEY GROUP 4: BLOODWOODS

Bark grey or brown, rarely black, corky flaky or scaly flaky (tessellated) with short fibres. Bark persistent to small branches.

1a Leaves lanceolate, 10–15cm long, 2–3cm wide, green, glossy, discolorous, penniveined. Fruit strongly urn-shaped and shiny, up to 2 x 1.4cm. Underbark usually red. Bark on small branches looks smooth.

Corymbia gumifera page 50

1b Leaves lanceolate, 10–16cm long, 2–4cm wide, green, dull or glossy, discolorous, penniveined. Fruit ovoid or rarely urn-shaped often with white dots, size up to 2.1x1.6cm. Underbark pink. Bark on small branches looks rough.

Corymbia intermedia page 51

TOP TIP!

Also check common planted *Corymbia* species on page 69.

KEY GROUP 5: BOX BARKS

Bark rough to shortly fibrous – flaky, grey or brown to small branches, box-type, usually tessellated, grey to black or with white patches.

1a Leaves lanceolate to falcate, 8–17cm long, 1–3cm wide, **discolorous,** glossy, green, side-veins greater than 45° to midrib, densely to very densely reticulate. Mainly in Richmond catchment.

Eucalyptus rummeryi page 55

1b Leaves broadly lanceolate to lanceolate, 7–17cm long, 1.5–6.5cm wide, concolorous, glossy, green, side-veins at an acute or wider angle to midrib, densely to very densely reticulate. Mainly in Richmond catchment.

Eucalyptus moluccana page 54

FUN FACT!

Yellow Box *E. melliodora* is common in western regions and may be found in the Upper Richmond, however, due to it's infrequent occurrence, it is not included in this guide.

KEY GROUP 6: STRINGYBARKS & MAHOGANIES

Bark rough and persistent to small branches, thick fibrous, spongy and/or stringy or long fibrous flaky with vertical fissures. Sometimes densely reticulate (true Mahoganies) or with long or short fibres and vertical fissures (Stringybarks).

1a Non-eucalypts - leaves appear whorled. Bark may be stringy or papery. Go to 2

1b Eucalypts - leaves alternate (disjunct) lanceolate. Go to 3

2a Leaves are opposite but resemble a whorled group of four leaves. Ovate to elliptical in shape 7–10 cm long, 2.5–4.5 cm wide with recurved margin. Thick light brown fibrous bark, sometimes papery with deep vertical furrows, running down the trunk. Leaves soft, white, hairy, appearing discolorous. In dry forest.
Syncarpia glomulifera page 68

2b Leaves whorled. Soft to rough flaky or papery brown bark on lower trunk persisting to upper trunk and branches. Leaves are pseudowhorled. In swampy sites.
Lophostemon suaveolens page 67

3a Bark fibrous, finely stringy grey or grey-brown, leaves concolorous or discolourous, with densely reticulate venation. White Mahoganies. Go to 9

3b Bark fibrous, coarse or finely stringy grey or grey-brown or red-brown. Leaves concolorous or discolorous, reticulate venation sparse or dense. Go to 4

4a Bark thick, spongy or stringy grey or red-brown. Leaves glossy green, venation densley reticulate or penniveined. Go to 11

4b Bark thick or thin, grey-brown or red-brown. Leaves, fruit and venation various. Go to 5

5a Bark thick (coarse) stringy, with true long fibres, grey, brown with shallow longitudinal fissures, red under bark. Leaves concolorous, not densely reticulate, thick, grey appearance, lanceolate to falcate, rarely ovate, 6–14cm long, 1.2–3.7cm wide. Leaves not strong smelling. Prefers sandy soils. Fruit sessile. True stringybark.
Eucalyptus tindaliae page 65

5b Bark thick or thin, stringy or fibrous, grey, grey-brown to red-brown, with short or long fibres, deep or shallow fissures. Leaves concolorous or discolorous, venation various. Go to 6

6a Bark finely stringy with long fibres, brown-grey to

Group 6: Stringybarks and Mahoganies continued over page

KEY GROUP 6: STRINGYBARKS & MAHOGANIES CONTINUED

reddish-brown, small holes. Leaves lanceolate to ovate or slightly falcate, often 6cm, but sometimes up to 15cm long, 1.5–3.5cm wide, discolorous, soft, glossy, yellow-green, side-veins greater than 45° to midrib, moderately to densely reticulate. Leaves have strong Eucalypts smell when crushed.
Eucalyptus microcorys page 61

6b Bark rough stringy, short or long fibres, or bark thick, spongy or appearing fibrous, grey, brown to red-brown. Leaves various. Go to 7

7a Bark rough stringy, short fibres and shallowly fissured down trunk, usually dark brown, often prickly. Leaves lanceolate to falcate, 8–26cm long, 1.5–3.5cm wide, concolorous, glossy, green to blue-green, side-veins at an acute or wider angle to midrib, moderately reticulate. Distinctive ribbed woody capsule often on ground. Mainly In Richmond catchment.

Eucalyptus planchoniana page 62

7b Bark thick or thin stringy, grey, brown not as above. Go to 8

8a Bark thick fibrous stringy orange brown to dark brown with long deep prominent fissures, Leaves lanceolate to falcate, 6–16cm long, 0.9–3.5cm wide, thin-textured, slightly discolorous or concolorous, glossy, green, moderately reticulate.

Eucalyptus eugenioides page 60

8b Bark thin, stringy with fissures or short fibres. Go to 9

9a Bark fibrous, grey or grey-brown, held in flattish strips, finely stringy. Leaves alternate (disjunct) lanceolate, 8-12cm long, 0.9-5cm wide, discolorous, weakly glossy to quite glossy, green, side-veins about or greater than 45° to midrib, moderately to densely reticulate.

Eucalyptus acmenoides page 58

9b Bark rough to small branches, thick stringy or fibrous, grey or grey-brown Go to 10

10a Bark thick, but finely stringy grey to brown-grey, short fibres. Leaves lanceolate or falcate, 8–17cm long, 1.7–4cm wide, base usually oblique, concolorous to weakly discolorous, dull, blue-green, side-veins usually greater than 45° to midrib, moderately to densely reticulate.

Eucalyptus umbra page 66

10b Bark thin, stringy grey to red-brown, short fibres. Leaves lanceolate or falcate, 8–17cm long, 1.7–4cm wide, base usually oblique, concolorous to weakly discolorous, dull, blue-green, side-veins usually greater than 45° to midrib, moderately to densely reticulate. On stony soils.

Eucalyptus carnea page 59

Group 6: Stringybarks and Mahoganies continued over page

KEY GROUP 6: STRINGYBARKS & MAHOGANIES CONTINUED

11a Bark thick, stringy or spongy grey-brown to red-brown, held in long slabs with shallow fissures in between. Leaves lanceolate to falcate, usually 8cm but up to 18cm long, 1.5-4cm wide, discolorous, glossy, strongly penniveined, densely to very densely reticulate. It is found on slopes and flats, often sheltered and wetter sites and in more northern occurrences even in rainforest. Check fruits for subspecies.

Eucalyptus resinifera page 63

11b Bark thick, spongy, grey-brown but more often red-brown, with prominent holes in bark, sometimes tessellated. Leaves broadly lanceolate to ovate, leathery usually 8.5cm, but can be up to 17cm long, 2.5–7cm wide, discolorous, glossy, green, strongly penniveined, moderately to densely reticulate, sometimes the occasional red leaf evident. Stems of fruits broadly flattened.

Eucalyptus robusta page 64

TOP TIP!

Mahoganies can be very variable and notoriously difficult to differentiate, often experts disagree. Watching the tree throughout the year can help to confirm the ID.

GROUP 1: SMOOTH BARKS

Bark on trunk all smooth from ground to upper branches, sometimes peeling in strips or flakes. Leaves concolorous (same colour both sides) or discolorous (darker on upper side).

FUN FACT

There are a group of Red Gums that are very similar. EUCLID has very good descriptions of smooth barks.

TOP TIP!

Also see *Angophora* species on pages 80 & 81.

Corymbia henryi

LARGE-LEAVED SPOTTED GUM NOV-JAN

R

Locally abundant in dry forest on sandy (sandstone-derived) soils.

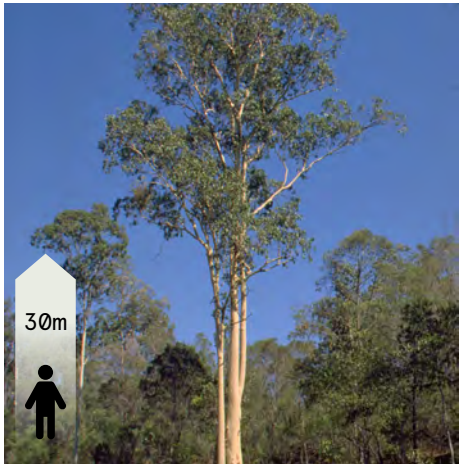
Three Spotted Gums are currently recognised in NSW (Hill and Johnson 1995), *Corymbia henryi*, *C. maculata* and *C. variegata*. *C. maculata* is limited to south of the Macleay River.

Bark: smooth throughout, grey to red-brown or pink, shedding in small polygonal flakes.

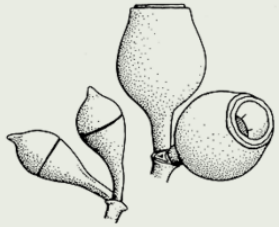
TOP TIP!

Larger leaves and fruit than other Spotted Gums but intermediates are possible.

Buds - calyptra conical, as long and wide as hypanthium.



Adult leaves: disjunct, lanceolate, 15–28cm long, 2.5–4.5cm wide, green, semi-glossy, concolorous.



Buds: ovoid or obovoid, 10–13mm long, 4–6mm diam, scar usually absent. Fruit: ovoid or urn-shaped, often wrinkled, warty 12–20mm long, 10–16mm diam; disc depressed; valves enclosed.

SIMILAR SPECIES

C. variegata, but fruit of *C. henryi* are wider >11mm.

Corymbia variegata

RICHMOND RANGE SPOTTED GUM APR-AUG

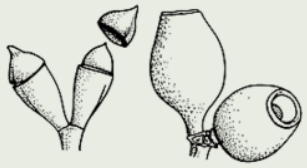
R

In open forest on soils of medium fertility, but often on hilly country.

C. variegata a synonym of *C. citriodora subsp. variegata* (a citronellal-free chemotype - the leaves are not lemon scented when crushed). *C. citriodora subsp. citriodora* is Lemon Scented Gum, often planted (leaves lemon scented).

Bark: smooth throughout, creamy white, to pale grey or pink, often spotted, shedding in small polygonal flakes.

Adult leaves: disjunct, narrow-lanceolate to lanceolate, 10–23cm long, 1–2.8cm wide, green, concolorous.



Buds: compound; 3-flowered; peduncle terete, 4–8mm long; pedicels terete, 1–5mm long. Fruit: globoid to ovoid or urceolate, slightly warty, 8–11mm long, 5–7mm diam; disc depressed; valves enclosed.

TOP TIP!

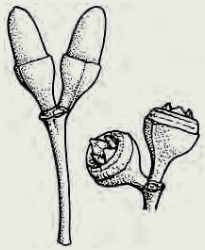
Indentations on trunk look like it was hit by cricket balls.

Eucalyptus bancroftii

ORANGE GUM NOV

Locally frequent but sporadic in dry woodland on poor sandy soils in low, swampy sites. Crooked trunk. A relatively small tree compared to similar species.

Bark: smooth, patchy grey, salmon and orange (new bark), shedding in large plates or flakes, granular with age.



SIMILAR SPECIES

E. seeana has leaves < 2.5 cm wide, *E. punctata* and *E. propinqua* have discolorous leaves, *E. tereticornis* and *E. amplifolia* only rarely are smooth barked to ground.

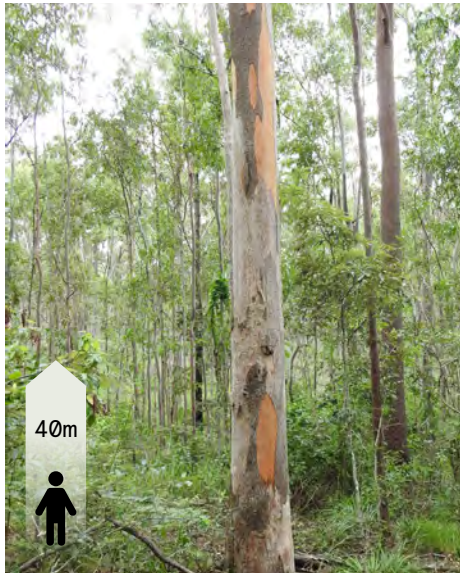
Adult leaves: disjunct, lanceolate or broad-lanceolate, 8–20 cm long, 2–5 cm wide, green, dull, concolorous.

Buds: cylindrical or conical, constricted near middle, 10–15mm long, 4–6mm diam, scar present; calyptra elongate obtuse, longer than and narrower or as wide as hypanthium. **Fruit:** hemispherical or conical, 7–9mm long, 8–9mm diam; disc raised; valves exserted and attached below rim.

Eucalyptus propinqua

SMALL-FRUITED GREY GUM JAN,FEB & APR

Locally frequent in wet open forest (not swampy) on soils of low to medium fertility.



TOP TIP!

Yellow orange when bark sheds in summer.

Bark: smooth, patchy, matte, grey or grey-brown, shedding in large plates or strips, with bright orange new bark.

SIMILAR SPECIES

Other Grey Gums, *E. punctata* is very uncommon and has larger fruit. *E. tereticornis* usually has stocking of persistent bark on the lower trunk.

Adult leaves: disjunct, lanceolate, 8–14cm long, 1.5–2.5cm wide, dark green, glossy, discolorous, penniveined.

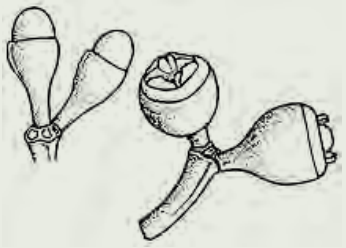
Buds: ovoid or globose, 4–5mm long, 3–4mm diam, scar present; calyptra hemispherical or conical, as long and as wide as hypanthium. **Fruit:** hemispherical or conical, small 2–5mm long, 3–6mm diam; disc flat or raised; valves exserted, in groups of 8-13. Pedicel 0.1-0.5cm long.

Eucalyptus punctata

GREY GUM DEC-MAY

Locally frequent in dry forest or woodland on low to medium fertility soils. Occurs east of Tenterfield in Northern NSW but does not grow near the coast.

Bark: smooth, patchy, matte, white, grey, grey-brown, salmon or orange, shedding in large flakes or patches.



SIMILAR SPECIES

E. propinqua has smaller fruit.

Also synonym *E. biturbinata* (EUCLID).

Adult leaves: disjunct, lanceolate, 8–15cm long, 1.5–3cm wide, dark green, glossy, discolorous, penniveined. Densely to very densely reticulate.

Buds: ovoid, 9–11mm long, 4–6mm diam, scar present; calyptra conical, longer than and at least as wide as hypanthium. **Fruit:** cylindrical or hemispherical, large 5–12mm long, 5–10mm diam; disc flat or slightly raised; valves exserted. Pedicel 0.2–0.8cm long.

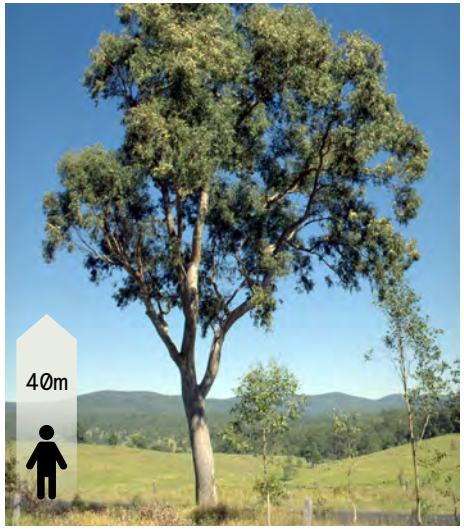
Eucalyptus seeana

NARROW-LEAVED RED GUM NOV-DEC

Scattered and sporadic in woodland and low scrub. Often on the edge of floodplain and swampy margins on sandy soils.

TOP TIP!

The narrow, slightly weeping leaves give the canopy a very attractive delicate look.



Bark: smooth, white or dark grey or grey brown, shedding in large plates or flakes at base. New bark is not orange.

SIMILAR SPECIES

E. brancroftii leaves 2–5cm wide, *E. punctata* and *E. propinqua* have discolorous leaves, *E. tereticornis* and *E. amplifolia* only rarely smooth barked to ground.

Adult leaves: disjunct, narrow-lanceolate, 10–20cm long, 1–2cm wide, green, dull, concolorous.

Buds: cylindrical or fusiform, 8–15mm long, 3–4mm diam, scar present; calyptra elongate acute, longer and narrower than hypanthium. **Fruit:** hemispherical, 4–7mm long, 4–7mm diam; disc raised; valves exserted and attached below rim.

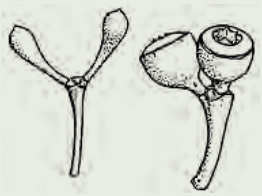
Eucalyptus signata

NORTHERN SCRIBBLY GUM JAN–FEB & JUL–SEP

Widespread but localised in dry forest or woodland on sandy, often swampy flats.

The NSW Herbarium (PlantNET) considers *E. signata* a distinct species due to distribution and its wider leaves >1.9cm. EUCLID classifies *E. signata* as synonymous with the disjunct *E. racemosa*, found near Sydney.

Bark: smooth, with scribbles, white or yellow, shedding in short ribbons.

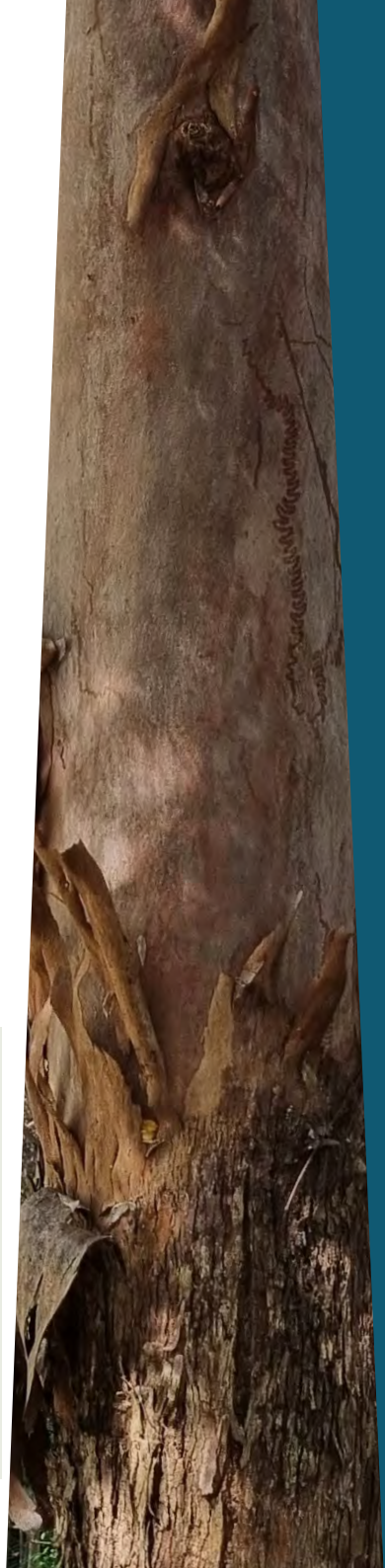


SIMILAR SPECIES

E. tereticornis sometimes does not have persistent stocking, some individuals of *E. signata* do not always have scribbles. *E. pilularis* sometimes has scribbles.

Adult leaves: disjunct, lanceolate, 7–14 cm long, 2–3 cm wide, green, glossy or semi-glossy, concolorous.

Buds: ovoid or clavate, 4–6 mm long, 2–4 mm diam., scar absent; calyptra hemispherical, shorter and narrower than hypanthium. **Fruit:** hemispherical or pyriform, 4–7 mm long, 4–7 mm diam.; disc flat or slightly raised; valves enclosed.



GROUP 2: HALF BARKS

Bark on trunk mostly smooth above with a rough stocking at base of tree from <1m to upper branches.

TOP TIP!

There are a couple of species that you may come accross that are not included in this booklet.

Blue Mountains Ash *E. oreades* has rare occurrences in the Richmond.

New England Blackbutt *E. campanulata* occurs above 700m on the edge of the Richmond catchment.

TOP TIP!

Also check planted species such as *E. dunni* on page 74.

Eucalyptus amplifolia

CABBAGE GUM NOV–JAN

T R

Locally frequent on moist, gravelly soils. There are two subspecies – *E. amplifolia subsp amplifolia* in the Richmond Range and has a pedicel (bud stalk), and *E. amplifolia subsp sessiliflora* (appears to be more coastal, Tweed River to Lismore).

TOP TIP!

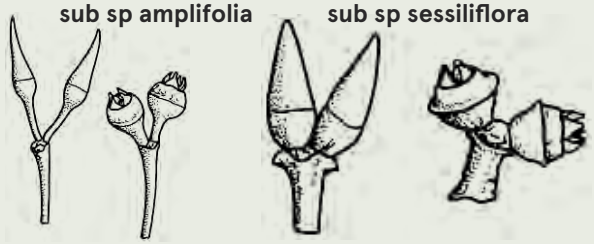
Stems on younger growth square in cross-section and rominently winged.

Bark: smooth, white or grey to red-brown or green, shedding in large plates or flakes.

SIMILAR SPECIES

E. tereticornis buds are wider at base.

Adult leaves: 9–20cm long, 1.5–4.5cm wide, green, glossy or dull, concolorous.



Buds: fusiform, 9–20mm long, 3–5mm diam, scar present; calyptra conical or elongate acute, longer than and as wide as hypanthium. **Fruit:** globose or ovoid, 4–6mm long, 5–8mm diam; disc raised; valves strongly exserted. Pedicellate in *subsp amplifolia*, sessile in *subsp sessiliflora* and smaller and clustered.

Eucalyptus glaucina

SLATY RED GUM AUG–DEC

R

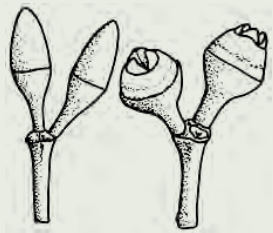
Locally frequent in dry or grassy forest or woodland, on heavier, often deep soils of moderate fertility; low to medium elevation. Limbs have a spreading habitat.

THREATENED SPECIES

NSW BCA: Vulnerable
Commonwealth EPBC: Vulnerable

Bark: smooth, white or slatey grey, shedding in large plates or flakes. Patches can be pink, orange or green.

Adult leaves: disjunct, lanceolate, 12–17cm long, 2–3cm wide, green or grey-green, dull, concolorous. Round to oval shaped grey leaves with whitish bloom.



Buds: fusiform, glaucous, 8–15mm long, 5–6mm diam, scar present; calyptra conical or elongate acute, longer than and as wide as hypanthium. **Fruit:** globose or ovoid, 3–5-locular, 7–10mm long, 7–10mm diam; disc raised; valves 3-5 strongly exserted.

SIMILAR SPECIES

Grey Gums/ other Red Gums.

Eucalyptus grandis

FLOODED GUM FEB-APR JUL-AUG

T B R

Community dominant in tall wet forest or rainforest margins on fertile alluvial soils along valley floors. North from near Newcastle.

TOP TIP!
Large straight trunked tree with skirt of black bark at bottom.

Bark: persistent on lower trunk (a few metres only), grey, fibrous-flaky, smooth above, powdery, white or grey, shedding in short ribbons or flakes.

SIMILAR SPECIES
E. tereticornis has grey, silvery leaves and longer pointy bud caps. *E. saligna* may have more coloured blotches on trunk, valves are not incurved, naturally grows on higher slopes.

Adult leaves: disjunct, lanceolate, 10–16cm long, 2–3cm wide, dark green, glossy, discolorous (bluish beneath), penniveined.

Buds: ovoid, ± glaucous, 6–8mm long, 4–5mm diam, scar present; calyptra conical, as long and wide as hypanthium. **Fruit:** conical to pyriform, 4–5-locular, 5–8mm long, 4–7mm diam; disc depressed; valves exserted.

Eucalyptus pilularis

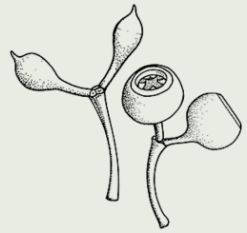
BLACKBUTT ALL EXCEPT MAY, JUN & SEP

T B R

In wet eucalypt forests or rainforest margins on moderately to highly fertile soils on slopes, low hills, and floodplains.

TOP TIP!
Large distinct “pill like” fruit and branches come out at 45° angle from the trunk.

Bark: persistent on full trunk, grey-brown, shortly fibrous to stringy, smooth above, white to grey, shedding in long ribbons. Occasional scribbles.



SIMILAR SPECIES
E. grandis generally has smaller fruit and branches higher up. *E. pyrocarpa.*

Adult leaves: disjunct, lanceolate, 9–16 cm long, 1.5–3 cm wide, green, glossy, concolorous.

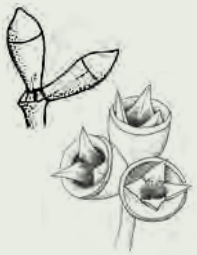
Buds: clavate or fusiform, 7–10mm long, 3–5mm diam, scar absent; calyptra conical or rostrate, at least as long as and as wide as hypanthium. **Fruit:** globose, hemispherical or ovoid, 6–11mm long, 7–11mm diam; disc depressed or flat; valves enclosed or rim-level.

Eucalyptus saligna

SYDNEY BLUE GUM JAN–MAR

Widespread and abundant in wet forest on soils of moderate fertility, often in higher altitude areas.

Bark: smooth, powdery, white or grey, shedding in short ribbons or flakes, sometimes persistent on lower trunk. Sometimes with rough patches.



SIMILAR SPECIES

E. tereticornis has grey, silvery leaves and longer pointy bud caps.

E. grandis may have a whiter trunk, valves are incurved, grows in lower moister gullies.

Adult leaves: disjunct, broad-lanceolate, 10–17cm long, 2–3cm wide, dark green, glossy, discolorous, penniveined.

Buds: ovoid to cylindrical or fusiform, 5–8mm long, 3–4mm diam, scar present; calyptra conical (slightly beaked), as long and as wide as hypanthium.
Fruit: cylindrical, pyriform or campanulate, 5–8mm long, 4–7mm diam; disc depressed; valves exserted upright or outcurved.

Eucalyptus tereticornis

FOREST RED GUM ALL EXCEPT MAR & DEC

Community dominant; widespread in grassy, wet or dry forest or woodland on soils of medium to high fertility, often on edge of the floodplain or swampy margins on sandy soils. Major koala food tree.

TOP TIP!

Silvery looking canopy. Distinct fruit 'round cups' with exserted valves.

Bark: smooth, white, creamy yellow, or pinkish or grey, shedding in large plates or flakes. Upright habit of limbs. Often with rough bark accumulating at base. New bark not orange. At certain times of year can appear as smooth bark.

SIMILAR SPECIES

E. brancroftii has leaves >2 cm wide, *E. punctata* and *E. propinqua* have discolorous leaves, and *E. amplifolia* can have patches of red brown bark.

Adult leaves: disjunct, narrow-lanceolate, 10–20cm long, 1–3cm wide, green, dull, concolorous. Long leaves broad ovate, blue green. Juvenile leaves ovate.

Buds: cylindrical or fusiform, 8–15mm long, 3–4mm diam, scar present; calyptra elongate acute, longer and narrower than hypanthium.
Fruit: hemispherical, 4–7mm long, 4–7mm diam; disc raised; valves exserted.

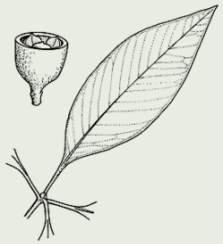
Lophostemon confertus

BRUSH BOX OCT -DEC

T B R

Large to very large tree in rainforest, littoral rainforest or wet forest, often emergent in or near rainforest margins. Can be a small stunted tree in coastal environments.

Bark: rough brown on lower trunk and smooth pinkish brown bark on upper trunk and branches.



TOP TIP!

Big green glossy leaves in whorl.

Can squash fruit between fingers.

Adult leaves: broad-elliptic to ovate to lanceolate, in false whorls of 4–5 leaves at the end of each year's growth. 9–17.5cm long, 2.5–4.5cm wide, apex acute to acuminate, base cuneate, leathery, glossy green, glabrous; petiole 20–25mm long.

Flowers: in clusters of 3–7, white with a feathery apperance due to numerous stamens on 5 fascicles. **Fruit:** turbinate to hemispherical, 8–12mm diam; seeds 2–3mm long. Not as hard as in eucalypts. No calyptra as in eucalypts.

GROUP 3: IRONBARKS

Characterised by bark which can be pale grey to black, usually thick tough, and very hard with deep fissures. The bark is difficult to remove from the trunk (distinct from Bloodwoods) and can have kino.

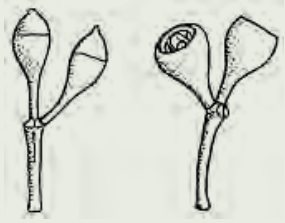
Eucalyptus crebra

NARROW-LEAVED RED IRONBARK MAR-JAN

Confined to upper Richmond and Clarence catchments. In grassy woodland or forest on shallower or sandy soils of medium fertility, typically on upper slopes in undulating country.

Bark: persistent throughout (to small branches), hard, grey-black, deeply and coarsely furrowed.

TOP TIP!
Narrow leaves are distinctive in this region.



SIMILAR SPECIES
E. siderophloia has wider leaves. *E. fibrosa* has softer bark that can be shed by hand.

Adult leaves: disjunct, narrow-lanceolate or lanceolate, 7–15 cm long, 0.9–1.7 cm wide, green or grey-green, dull, not glaucous, concolorous.

Buds: ovoid, clavate or shortly fusiform, 3–6mm long, 2–4mm diam, scar present; calyptra hemispherical or conical, as long and as wide as hypanthium. **Fruit:** hemispherical, cylindrical or ovoid, 3–7mm long, 3–6mm diam; disc depressed or flat; 3 or 4 valves enclosed or rim-level.

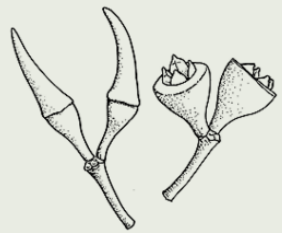
Eucalyptus fibrosa

BROAD-LEAVED RED IRONBARK APR-DEC

Confined to upper Richmond and Clarence catchments. In dry forest on shallow, sandy to loamy, and infertile soils.

TOP TIP!
Fruits with conical beak. The only local Ironbark that may have brown bark or more than 4 valves.

Bark: persistent throughout (to small branches), hard or flaky, grey-black, to black or brown, deeply and coarsely furrowed, red under-bark in furrows.



SIMILAR SPECIES
E. crebra and *E. siderophloia* have bark that is more raised and harder to peel than *E fibrosa*.

Adult leaves: wide, disjunct, lanceolate or broad-lanceolate, 12–18(22)cm long, 2.5–5cm wide, grey-green, dull to semi-glossy, concolorous.

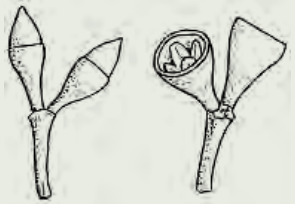
Buds: fusiform, 10–17mm long, 4–5mm diam, scar present; calyptra conical to elongate acute, longer than and as wide as hypanthium. **Fruit:** conical or pyriform, 4 or 5 locular, 6–12mm long, 5–10mm diam; disc raised; valves 3-5 exserted (or rim-level).

Eucalyptus siderophloia

GREY IRONBARK MAY–JUL & SEP–DEC

Locally frequent (restricted to coast and adjoining hinterlands) in wet forest, occasionally in dry forest, on soils of moderate fertility.

Bark: persistent to main branches, smooth upper branches, grey to grey-black, deeply and coarsely furrowed.



SIMILAR SPECIES

E. fibrosa has larger fruit and buds.

E. crebra has cup-shaped to hemispherical fruit and finer leaves.

Adult leaves: disjunct, lanceolate or broad-lanceolate, 8–15cm long, 1–2cm wide, green or grey-green, dull, concolorous.

Buds: fusiform (short or long), 5–8mm long, 3–4mm diam, scar present; calyptra conical, elongate-acute or rostrate, shorter than or as long as and narrower than hypanthium. All stamens fertile. **Fruit:** conical, 5–8mm long, 5–7mm diam; disc depressed; valves usually 4 enclosed or rim-level or exserted.

GROUP 4: BLOODWOODS

Dark grey or brown, rarely black, corky flaky or scaley flaky (tessellated) with short fibres. Bark persistent to small branches.

TOP TIP!

Also check uncommon and planted *Corymbia* species on page 69.

Corymbia gummifera

RED BLOODWOOD DEC–JUN

T B R

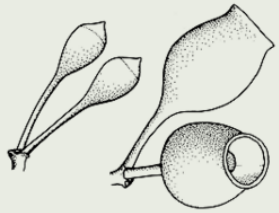
Abundant in dry forest or woodland on low-fertility sandy or sandstone soils. Usually single trunk, but stunted or mallee habit on coastal sands and rocky outcrops. Often exudes obvious red kino resin. Red timber.

Bark: tessellated, persistent but becoming smooth on smaller branches, red-brown or grey-brown.

TOP TIP!

Fruit can have pronounced curved rim, resembling an urn.

Adult leaves are penniveined.



SIMILAR SPECIES

C. intermedia has rough barked small branches and narrower leaves and no rim on the fruit.

Adult leaves: disjunct, lanceolate, 10–16cm long, 2–4cm wide, green, glossy, strongly discolorous.

Buds: clavate to pyriform, 9–11mm long, 5–6mm diam, scar absent; calyptra hemispherical or conical (slightly beaked), shorter than and as wide as hypanthium. **Fruit:** urn-shaped 12–20mm long, 10–15mm diam; disc depressed; valves enclosed.

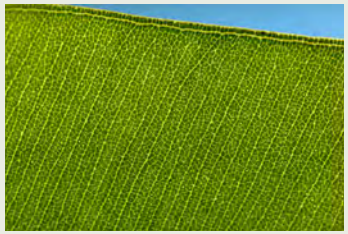
Corymbia intermedia

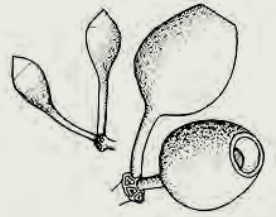
PINK BLOODWOOD DEC–FEB

T B R

Locally abundant in wet and dry forest, indluding rainforest margins, on soils of medium fertility. Limited red kino resin exudate. Timber and under bark are pink.

Bark: persistent, grey-brown, corky/ flaky, rough barked smaller branches, **tessellated.**





SIMILAR SPECIES

C. gummifera has smooth barked small branches, broader leaves, rim on the fruit, more visible dark kino.

Adult leaves: disjunct, lanceolate, 10–15cm long, 2–3cm wide, green, dull or glossy, discolorous, penniveined (vein angles 60 -70 degrees).

Buds: ovoid to pyriform, 6–8mm long, 3–4mm diam, scar absent; calyptra hemispherical or conical, shorter and narrower than hypanthium. **Fruit:** ovoid or urn-shaped sometimes white-scurfy, 12–20mm long, 10–15mm diam; disc depressed; valves enclosed.

GROUP 5: BOX BARKS

Dark rough to shortly fibrous - flaky, grey or brown to small branches, box-type, usually tessellated, grey to black or with white patches.

TOP TIP!

Yellow Box *E. melliodora* is common in western regions and may be found in the Upper Richmond, however, due to it's infrequent occurrence, it is not included in this guide.

Eucalyptus moluccana

GREY BOX ALL EXCEPT JUL & SEP

R

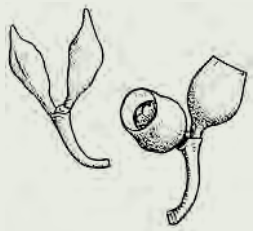
Widespread and community-dominant, in grassy woodland or forest on loamy soils of moderate to high fertility. On lower slopes and flats in undulating country. Upper slopes usually suport spotted gum and ironbarks.

Bark: rough bark persistent on part or all trunk. Tesselated grey with whitish patches, fine, fibrous-flaky (`box'), smooth pale grey above.

TOP TIP!

Box bark shiny, smooth above, shedding in ribbons. Distinctive leaf venation - densely reticulate, and intermarginal vein.

Adult leaves: disjunct, lanceolate to ovate, 8–14 cm long, 2–3.3 cm wide, green, glossy, concolorous.



Buds: ovoid to fusiform, 5–9mm long, 3–4mm diam, scar absent; calyptra conical or beaked, shorter than and as wide as hypanthium. **Fruit:** cylindrical or ovoid, 5–9mm long, 4–6mm diam; disc depressed; valves enclosed.

SIMILAR SPECIES

other box barks e.g. *E. melliodora*

Eucalyptus rummeryi

STEEL BOX NOV-DEC

R

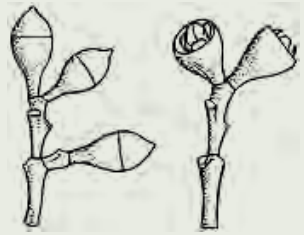
Uncommon but locally frequent in wet or grassy forest on fertile soils. On low hills between the coastal plain and tableland North-west of Casino.

FUN FACT!

Eucalyptus rummeryi: after George Edward Rummery (1877–1958). Casino forester.

Bark: persistent on trunk and larger branches, grey to black with whitish patches, fibrous-flaky. Usually **tessellated.**

Adult leaves: disjunct, lanceolate, 8–16cm long, 1–2.3cm wide, green, dull, discolorous. Side-veins >45° to midrib. Densely to very densely reticulate.



Buds: ovoid to shortly fusiform, 4–7mm long, 2–3 mm diam, scar present; calyptra conical, as long and as wide as hypanthium. **Fruit:** hemispherical, pyriform or turbinate, 3–5mm long, 3–4mm diam; disc depressed; valves rim-level or exserted.

SIMILAR SPECIES

E. largeana overlaps the southern distribution in the Macleay). But *E. rummeryi* has as discolorous leaves.

GROUP 6 : STRINGY BARKS & MAHOGANIES

Dark rough and persistent to small branches, thick fibrous, spongy and/or stringy or long fibrous flaky with vertical fissures. Sometimes densely reticulate (true Mahoganies) or with long or short fibres and vertical fissures (Stringybarks).

TOP TIP!

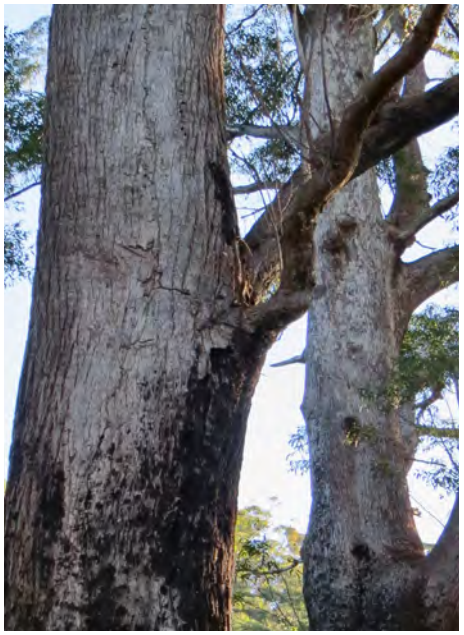
Mahoganies can be very variable and notoriously difficult to differentiate, often experts disagree. Watching the tree throughout the year can help to confirm the ID.

Eucalyptus acmenoides

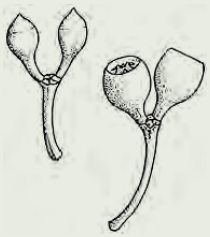
WHITE MAHOGANY JUL-DEC

T B R

Locally frequent in wet (and dry) forest or woodland on deeper soils of moderate fertility and regular moisture.



Bark: persistent throughout, grey brown, thin, flattish strips / fibrous & finely sub-stringy.



SIMILAR SPECIES

E. microcorys has finer leaves and bark has horizontal breaks and small insect borer holes. *E. resinifera* has exerted valves. *E. carnea* & *E. tindaliae* have concolorous leaves.

Adult leaves: disjunct, lanceolate or broad-lanceolate, 8–12cm long, 1.5–2.5cm wide, green, glossy, densely reticulate strongly discolorous.

Buds: ovoid to fusiform (diamond shape), 5–7mm long, 3–4mm diam, scar absent; calyptra conical, beaked; at least as long and as wide as hypanthium. **Fruit:** hemispherical to globular truncate , 4–8mm long, 4–7mm diam; rim thin, disc depressed or flat, narrow; valves 4 enclosed or rim-level.

Eucalyptus carnea

THICK-LEAVED MAHOGANY SEP-NOV

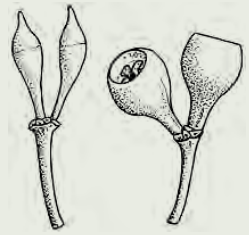
T B R

Widespread and frequent in dry forest on shallower loamy or stony soils on shales and slates. Small to medium or mallee form on extreme sites.

TOP TIP!

Adult leaves broader than 2.5cm. Distinctive round fruit with fat stems.

Bark: persistent throughout, sub fibrous thin, grey to red-brown, stringy.



SIMILAR SPECIES

E. acmenoides and other stringybarks.

Adult leaves: disjunct, lanceolate or broad-lanceolate, 6–18cm long, 1.5–4cm wide, grey-green to bluish, dull, concolorous.

Buds: ovoid to fusiform, 6–9mm long, 3–4mm diam, scar absent; calyptra conical to rostrate, as long and as wide as hypanthium. **Fruit:** hemispherical, 3–5-locular, 5–8mm long, 5–9mm diam; disc ± flat, narrow; valves rim-level.

Eucalyptus eugenioides

THIN-LEAVED STRINGYBARK JUN–JAN

Locally frequent in dry or grassy forest or woodland on heavier often deeper soils of moderate fertility. At low to medium elevation.

Bark: persistent, grey to red brown (orange-brown), stringy.

TOP TIP!
Round fruits similar to Blackbutt, deep stringy bark.

Adult leaves: disjunct, lanceolate, 10–14 cm long, 2–3.3 cm wide, green, dull, thin, slightly discolorous or concolorous.

Buds: ovoid to shortly fusiform, 4–7mm long, 3–4mm diam, scar absent; calyptra conical, as long and as wide as hypanthium.
Fruit: hemispherical, 4–8mm long, 5–9mm diam; disc flat or raised; valves 3-4 rim-level or slightly exserted.

SIMILAR SPECIES
E. carnea, E. umbra and *E. acemenoides.*

Eucalyptus microcorys

TALLOWWOOD AUG–NOV

In wet eucalypt forests or rainforest margins on moderately to highly fertile soils. On slopes, low hills, and floodplains.

TOP TIP!
Yellow-green triangle or diamond shaped leaves are strong eucalyptus smelling and sticky when rubbed. Low, wide branching. Only stringybark with distinct conical fruit.

Bark: Stringy persistent bark which is more flaky than others, has horizontal breaks and can be pulled off in long strips. Typically red brown bronze in colour with pustules and minute holes.

Adult leaves: disjunct, lanceolate to triangular, 8–12cm long, 1.5–2.5cm wide, green, glossy, discolorous.

Buds: clavate, 4-6mm long, 2-3mm diam, scar usually absent, calyptra hemispherical.
Fruit: conical or pyriform,3-4 locular, 5-9mm long, 4-6mm diam; disc depressed; valves 3-4 ± rim-level.

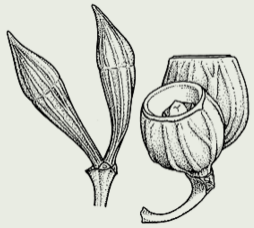
SIMILAR SPECIES
Other stringy barks. *E. resinifera* has larger, glossier leaves and distinctive exserted valves. *E. acmenoides* has flattened bark and short fibres.

Eucalyptus planchoniana

BASTARD TALLOWWOOD/NEEDLEBARK STRINGYBARK OCT-DEC

Locally frequent in dry forest or woodland on sandy soils on inland granite areas or coastal sand.

Bark: persistent to smaller branches, red-brown to yellow-brown, stringy (thick and spongy), prickly, smooth above, grey, shedding in ribbons.



TOP TIP!
Distinctive ribbed woody capsule often on ground under tree.

Adult leaves: disjunct, lanceolate or broad-lanceolate, 12–17.5cm long, 2–3.3cm wide, grey-green, glossy, concolorous.

Buds: 7-to>11 flowered; peduncle terete, 5–15mm long; pedicels terete, 2–5mm long.

Fruit: large, ovoid, ribbed, 17–26mm long, 15–26mm diam; disc depressed; valves enclosed.

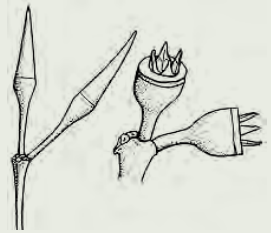
Eucalyptus resinifera

RED MAHOGANY NOV-FEB

Locally abundant in wet or dry forest on deeper soils of medium to high fertility.

FUN FACT!
Flowers are an important source of pollen through winter.

Bark: persistent, red-brown, stringy and spongy.



SIMILAR SPECIES
E. microcorys and other stringybarks – don't have exserted valves.

Adult leaves: disjunct, lanceolate, 9–16 cm long, 2–4 cm wide, dark green, glossy, discolorous, strongly penniveined.

Buds: fusiform, 12–15mm long, 6mm diam, scar present; calyptra elongate acute or rostrate, longer than and narrower or as wide as hypanthium. **Fruit:** hemispherical or ovoid, 5–11mm long, 5–10mm diam; disc flat to raised; valves exserted.

Eucalyptus robusta

SWAMP MAHOGANY JUL–OCT, DEC–JAN

T B R

Single-trunked rough bark, with spreading crown. In swamp forest or wet forest, swampy damp locations on coastal lowlands. Rarely far from the coast.

Bark: rough, persistent to small branches, red-brown, stringy (shortly fibrous), thick, deeply fissured and longitudinal spongy slabs.

TOP TIP!
Big green glossy leaves. Often found in swamps alongside paperbarks.

Adult leaves: glossy dark green, disjunct, broad-lanceolate, 10–17cm long, 2–4.5cm wide, discolorous, thick, penniveined. Old leaves may turn red before dropping.

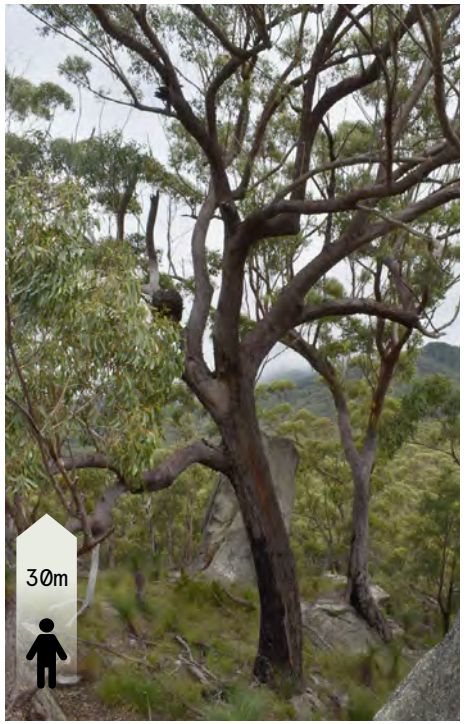
Buds: fusiform, 16–24mm long, 6–8mm diam, scar present; calyptra elongate acute or rostrate, as long and as wide as hypanthium. **Fruit:** cylindrical, 10–18mm long, 6–11mm diam; disc depressed; valves rim-level or slightly exserted, usually apically joined (across the orifice). **Both:** with prominent pedicels.

Eucalyptus tindaliae

STRINGYBARK MAY–JUN & AUG

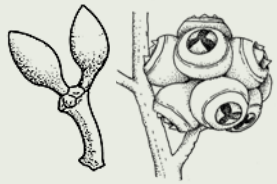
R

Widespread and locally frequent in coastal forest on sandy soils.



TOP TIP!
Tight crowded clusters of large fruits with small pedicel.

Bark: persistent, grey to red-brown, stringy. Long fibres.



SIMILAR SPECIES
Other Stringybarks, Red Mahoganies. *E. resinifera* and *E. notabilis* - don't have clustered fruit.

Adult leaves: disjunct, lanceolate, 7–13cm long, 1.3–3cm wide, green or grey-green, glossy to semi-glossy, concolorous, rarely slightly discolorous. Sparsely reticulate or reticulation absent.

Buds: ovoid or clavate, 4–5mm long, 2–3mm diam., scar absent; calyptra conical, shorter than or as long as and as wide as hypanthium. **Fruit:** clustered, hemispherical or flattened-globose, 4–8mm long, 6–11mm diam; disc raised. Broad bright red when fresh; valves enclosed or rim-level.

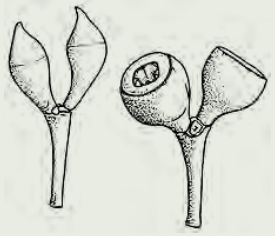
Eucalyptus umbra

R

BROAD-LEAVED WHITE MAHOGANY SEPT -DEC

A small to medium-sized tree in dry forest or woodland. Locally frequent where endemic in New South Wales. Mainly coastal distribution usually on sites of shallow sand over sandstone.

Bark: persistent throughout, thin, grey to red-brown, stringy but not as coarse as stringybarks.



SIMILAR SPECIES

E. acmenoides - Fruit broad in comparison and leaves strongly discolorous.

Adult leaves: disjunct, lanceolate, 10–14cm long, 2.5–3.5cm wide, green, semi-glossy, concolorous. Densely reticulate venation in adult leaves.

Buds: ovoid to fusiform, 7–9mm long, 3–4mm diam, scar absent; calyptra conical or beaked, as wide as hypanthium. **Fruit:** globose or hemispherical, 3–5 locular, 6–8mm long, 7–9mm diam; disc flat or raised. Valves rim-level or exserted.

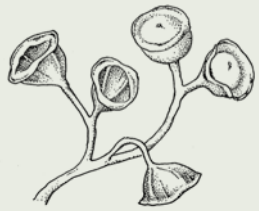
Lophostemon suaveolens

T B R

SWAMP BOX OCT -DEC

Medium tree in forest, widespread and common, often on swampy ground or alluvial flats.

Bark: red-brown, fibrous-papery, persistent bark.



TOP TIP!

Papery bark, can be found in association with *M. quinquinervia* in swampy habitats.

Adult leaves: ovate to elliptic, in false whorls of 3–4 leaves at the end of each years growth, 9–15cm long, 4–5cm wide, apex obtuse or shortly acuminate, base rounded to cuneate, leathery, light green, smooth to hairy, petiole 10–20mm long.

Flowers: in clusters of 3–7. Petals circular, 4–5 mm long with a feathery apperance due to numberous stamens. **Fruit:** hemispherical, 5–8mm diam; seeds 1.5–2mm long.

Syncarpia glomulifera

TURPENTINE OCT -DEC

T B R

Tall tree, frequently associated with wet forests and rainforest edges. Typically on heavier soils.

Bark: brown fibrous sometimes papery persistent bark.

TOP TIP!

Distinctive 'UFO' shaped fruit. Deeply fissured, sometimes papery bark that spirals around the trunk.

Adult leaves: ovate to narrow-ovate, 7–11cm long, 2.5–4.5cm wide, upper surface dull green, lower surface usually white-hairy; petiole 0.7–1.3mm long. Leaves are opposite, symmetrical at base and appear in a whorl at the end of branches.

Flowers: usually hairy; peduncle 2.5–5cm long. Sepals are short, persistent in fruit. Petals ovate, 5–8mm long. Stamens apparently in 2 whorls, 8–10mm long. **Fruit:** globose to depressed-globose, 10–20mm diam, hairy or sometimes glabrescent.

UNCOMMON AND PLANTED EUCALYPTUS, AND CORYMBIA SPECIES (NOT INCLUDED IN KEY)

Uncommon Eucalyptus and Corymbia

Planted Eucalyptus and Corymbia

Hybrid Eucalyptus

Corymbia tessellaris

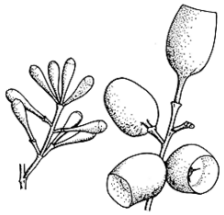
CARBEEN / MORETON BAY ASH

Tree in forest and woodlands on flat, deep soils of medium to high fertility. Tweed catchment only.

Bark: Stocking of tessellated bark over lower part of the trunk changing to smooth white above.

Adult leaves: 8–18cm x 1–1.8cm, green to grey-green, dull, concolorous.

Buds: pyriform, 4–6mm long, 3–4mm diam, scar present; calyptra patelliform, shorter than and as wide as hypanthium.



Fruit: cylindrical or ovoid, ± striate, 8–11mm long, 6–8mm diam; disc depressed; valves enclosed.

Eucalyptus notabilis

MOUNTAIN MAHOGANY

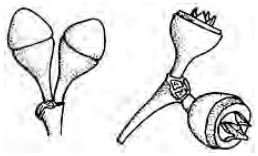
Small to medium sized tree, sometimes mallee habit in extreme sites. On dry forest ridges and slopes at intermediate to high elevations. Byron LGA only.

Bark: Persistent, grey to red-brown, stringy.

Adult leaves: disjunct, lanceolate, 10–15cm x 1.7–2.5cm dark green, glossy, discolorous, penniveined.

Buds: ovoid, clavate or conical, 9–13mm long, 4–6mm diam, scar present; calyptra conical or hemispherical, as long and at least as wide as hypanthium.

Fruit: conical or hemispherical, ± ribbed, 6–8mm long, 6–10mm diam; disc flat; valves exserted



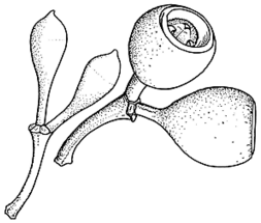
Eucalyptus pyrocarpa

LARGE FRUITED BLACKBUTT

Very similar to Eucalyptus pilularis. Restricted but locally frequent in wet sclerophyll or grassy forest on lighter soils in sloping country.

Adult leaves: 10–20cm x 1.5–3cm, concolorous. peduncle narrowly flattened or angular, pedicels terete.

Buds: clavate or fusiform, glaucous, 11–14mm long, 5–6mm diam, scar absent; calyptra conical, at least as long as and as wide as hypanthium.



Fruit: globose, hemispherical, pyriform or ovoid, 4 locular, 8–15mm long, 7–17mm diam; disc depressed or flat or raised; valves enclosed or rim-level.

Bark: Persistent on trunk and larger branches, grey-brown, shortly fibrous to stringy; smooth above, white to grey, shedding in long ribbons.

Eucalyptus patentinervis

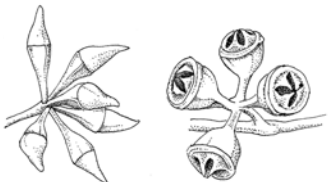
BASTARD MAHOGANY

HYBRID tree - *E. robusta x tereticornis*. Known to occur where stands of both parent species are within close proximity to each other, particularly transition zones. Can be variable in growth forms, can be smooth or rough bark and have characteristics of either *Eucalyptus robusta* or *Eucalyptus tereticornis*.

Adult leaves: Variable may be similar to Eucalyptus tereticornis or more like E. robusta. Usually: disjunct, lanceolate, 9–16cm long, 2–4cm wide, dark green or grey, glossy to dull, usually discolorous.

Fruit: globose or ovoid, 4-or 5-locular, 4–6mm long, 4–8mm diam; valves exserted.

Flowers: autumn winter and spring.



TOP TIP!
Favourite koala food tree.

Bark: sometimes rough throughout, sometimes with smooth bark on branches.

Corymbia citriodora

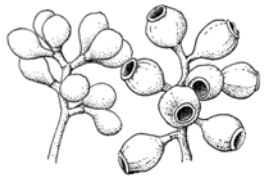
LEMON SCENTED GUM

Often planted tree. Endemic to temperate and tropical eastern Australia, naturally occurring from Cooktown to south of Gladstone Queensland.

Adult leaves: Alternate, narrowly lanceolate to falcate, 10–23cm x 0.6–3.5cm concolorous, penniveined, reticulate. Lemon-scented.

Buds: obovoid to pyriform, 0.6–1cm long, 0.5–0.7cm wide, usually smooth, scar usually absent, operculum rounded to conical or slightly beaked.

Fruit: pedicellate. urceolate or barrel-shaped, 0.8–1.5cm long, 0.7–1.2cm wide, disc descending, valves 3, enclosed.



Bark: Smooth throughout, white to pink or coppery, often powdery. Sometimes with dimples. Sheds beginning of summer from cracks within curling rosy flakes.

Corymbia maculata

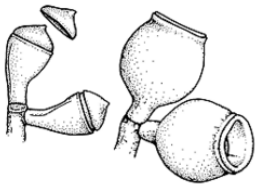
SPOTTED GUM

Often planted tree. Endemic to south of the Macleay catchment, NSW.

Adult leaves: Disjunct, lanceolate, 10–21cm long, 1.5–3cm wide, green, concolorous.

Buds: ovoid, 10–11mm long, 6–7mm diam, scar usually absent; calyptra hemispherical or rostrate, shorter than and as wide as hypanthium.

Fruit: ovoid or slightly urceolate, 10–14mm long, 9–11mm diam; disc depressed; valves enclosed.



Bark: Smooth throughout, powdery, white, grey or pink, often spotted, shedding in small polygonal flakes.

Corymbia ptychocarpa

SWAMP BLOODWOOD

Widely planted tree. Endemic to the western Kimberly region of Western Australia.

Adult leaves: sub-opposite to alternate, broadly lanceolate, 11–46cm long, 2.7–13cm wide.

Buds: obovoid to pyriform, 1.3–2.4cm long, 1.1–1.8cm wide, sharply longitudinally ribbed, white to pink and scurfy, scar absent (both opercula shed together at flowering).

Fruit: pedicellate, barrel-shaped, 3.2–5.5cm long, 2.6–4.5cm wide, longer than wide, with 7–9 prominent sharp longitudinal ribs, disc descending, valves enclosed.

Bark: rough to the small branches, thick, fibrous and fissured to tessellated, brown to grey-brown.

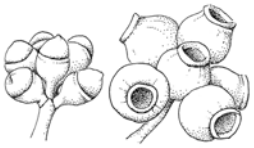
Corymbia torelliana

CADAGHI

Often planted tree. Endemic to North Queensland. Regarded as a weed in Northern NSW.

Adult leaves: Alternate paler on the lower surface, egg-shaped to heart-shaped or lance-shaped, 6–16cm x 15–85mm. New growth red and hairy. Leaves often affected by sooty black mould.

Buds: oval, 7–8mm long and 5–7mm wide with a rounded, conical or slightly beaked operculum.



Fruit: woody capsules 9-13mm long and 10-14mm wide, rounded or urn-shaped and have three compartments.

Bark: Smooth, greenish grey to white, peeling in spring. Rough, tessellated greyish on base of older trees.

Eucalyptus parramattensis

DROOPING RED GUM

Commonly planted tree. Endemic to around Sydney, NSW.

Adult leaves: Narrow-lanceolate or lanceolate 7–20cm x 1–3.5cm, concolorous.

Buds: ovoid, 4–10mm long, 4–6mm diam, scar present; calyptra hemispherical to conical, at least as long and at least as wide as hypanthium.

Fruit: hemispherical or globose, 4–9mm long, 5–9mm diam; disc flat or raised (slightly); valves exserted.

Bark: Smooth with bark persistent (not shedding cleanly), white or grey, shedding in large plates or flakes.

Eucalyptus dunnii

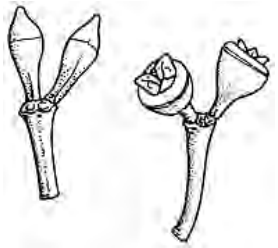
DUNNS WHITE GUM

Very commonly planted tree. Restricted and scattered in Clarence catchment.

Adult leaves: Narrow-lanceolate lanceolate, 13–20cm x 1.3–2.5cm concolorous.

Buds: ovoid, 5–7mm long, 3–4mm diam, scar present; calyptra hemispherical or conical, ± rostrate, as long as and as wide as hypanthium.

Fruit: hemispherical or conical or campanulate, 3–5 locular, 4–5mm long, 5–8mm diam; disc flat or raised; valves exserted.



Bark: Persistent, grey to grey-brown, fibrous-flaky, on lower trunk, smooth above, white or grey, shedding in short ribbons.

OTHER SPECIES ASSOCIATED WITH KOALA HABITAT (NOT INCLUDED IN KEY)

Acacia

Allocasuarina & Casuarina

Angophora

Banksia

Melaleuca & Callistemon

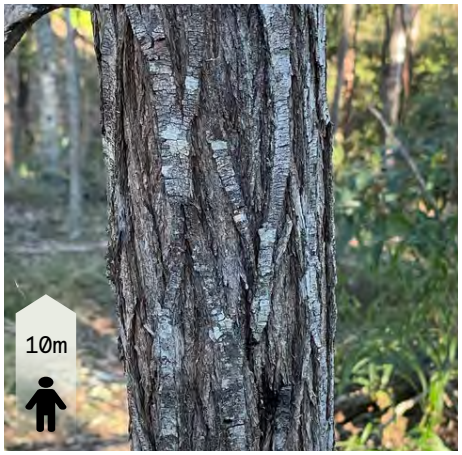
Koala Shelter Trees

Rainforest Species

Acacia concurrens

BLACK WATTLE

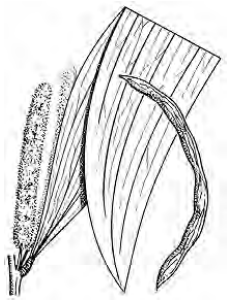
Erect or spreading tree to 10m high or shrub to 3m high. Open forest and woodland on shale or sandstone-derived soils on coast north from Swansea, NSW.



Bark: Slightly furrowed at base, grey or brown, branchlets angled or flattened.

Adult leaves: Phyllodes vary elliptic to falcate, 10–16cm long 12–40 mm wide, 3/4 longitudinal veins, the lower 2 joining near base, 1 basal gland.

Fruit: Pods mostly curved straight or coiled 1–2 times, 3–12.5cm long 2–4mm wide.



Acacia disparrima

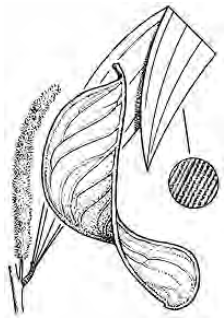
SOUTHERN SALWOOD

Tree to 12m high or shrub to 3m high. Coastal forests and woodland, sand dunes and on margins of rainforest. North from Bellinger River. *A. aulacocarpa* may be found in lower Richmond catchment and Grafton, Clarence catchment.

Bark: Fissured, dark grey to brown; branchlets angled or flattened at extremities, sometimes resinous.

Adult leaves: Phyllodes usually falcate, 5–12cm x 4–30mm wide, grey-green, many longitudinal veins. Lower veins joining with leaf base, 1 gland.

Fruit: Pods straight to curved, often twisted, ± flat, 2.5–10cm long, 10–20mm wide, ± woody. Veins more raised than *A. aulacocarpa*. Check as similar species.

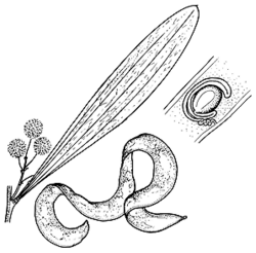


Acacia melanoxylon

BLACKWOOD

Erect tree to 30m high or spreading tree to 6m high. Dry forest and rainforest. Common regrowth tree after clearing or disturbance. Widespread in NSW.

Adult leaves: Phyllodes vary oblanceolate, to subfalcate, 6–14cm long, 7–30mm wide, sometimes narrow 3–5 longitudinal veins. Apex with a mucro; 1 gland. **Juv leaves:** bipinnate partially formed phyllodes.



Fruit: Small cone sparsely and minutely hairy, 7–14mm long, 4–6mm in diameter, with broad-acute bracteoles. Samara 3–4mm long.

Bark: Deeply fissured, dark grey-black; branchlets angled or flattened, ± hairy, glabrescent.

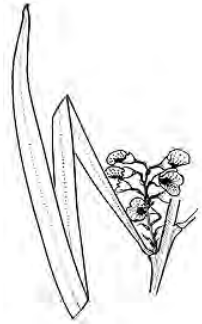
Daviesia arborea

GOLDEN TREE PEA

Small tree to 14m high or shrub with weeping branches and shiny foliage. Mostly in wet forest, on coastal hills to mountain slopes and ridges.

Adult leaves: Phyllodes linear-elliptic, 4–20cm long, 4–12mm wide, apex and base tapered, green, discolorous; venation fine and parallel.

Fruit: Yellow pea flowers. Pods 7–9mm long, 4–5.5mm wide.



TOP TIP!
Daviesia arborea looks like a wattle, but are a pea. Critical mid-storey species.

Bark: Corky, rough and fissured.

Allocasuarina littoralis

T B R

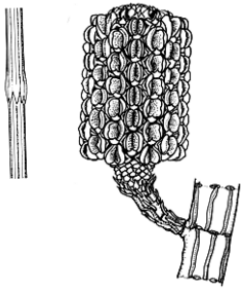
BLACK SHE-OAK

Casuarina growing in coastal and adjoining tableland regions. In woodland or occasionally tall heath, on sandy or otherwise poor dry soils.

Bark: fissured, grey-brown.

Adult leaves: Needle like branchlets to 20 (rarely 35)cm long. Leaves reduced to 6–8 teeth around stem (rarely 5 or 9), erect or rarely spreading, usually withering, 0.3–0.9mm long.

Fruit: Cones cylindrical length greater than diameter, on peduncle 4–23mm long; cone body 10–30 (rarely 45)mm long, 8–21mm diam. **Seeds:** **black samara, 4–10mm** long.



Allocasuarina torulosa

T B R

FOREST OAK

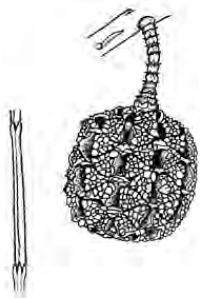
Large *Casuarina* growing on coastal hills and ranges. Midstorey in open forest to tall open forest. Generally on higher-nutrient fertile, moist sites.

Bark: corky, rough.

Adult leaves: Needle like branchlets to 14 cm long, Leaves reduced to 4 or 5 teeth around stem, erect, not withering, 0.3–0.8mm long.

Fruit: Cones round warty; 15–33mm long, 12–25mm diam. **Seeds:** dark samara 7–10mm long.

FUN FACT!
These 4 species are dioecious which means male and female flowers on separate trees. Food tree for Glossy Black-Cockatoo.



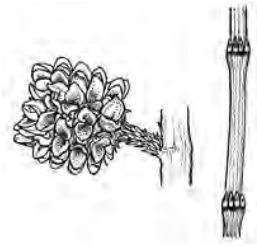
Casuarina cunninghamiana

T B R

RIVER OAK

Tree with branchlets drooping in vigorous specimens, erect in young or weakened trees. Along permanent freshwater streams.

Adult leaves: Edges of furrows often marked (in dried specimens) by a slight ridge; 8-10 erect teeth, withering, 0.3–0.5mm long. Anther 0.4–0.7mm long.



Fruit: Small cone sparsely and minutely hairy, 7–14mm long, 4–6mm in diameter, with broad-acute bracteoles. Seeds: pale grey small samara 3–4mm long.

Bark: rough and finely fissured.

Casuarina glauca

T B R

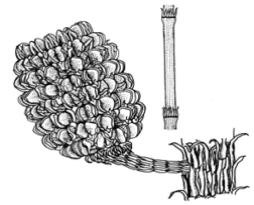
SWAMP OAK

Tree frequently producing root suckers. On river flats and coastal land in brackish situations.

Adult leaves: reduced to 12–20 teeth, erect, 0.6–0.9mm long; teeth on young permanent shoots long-recurved.

Fruit: Cone cylindrical, 9–18mm long, with broad-acute bracteoles.

Seeds: Light samara 2.5-5mm long.



TOP TIP!
Thicker stems than other *Casuarinas*.
Often forms pure stands.

Bark: finely fissured, scaly, grey to light brown, frequently with lichen.

Angophora costata

R

SMOOTH-BARKED APPLE, SYDNEY RED GUM, RUSTY GUM

Tree, broad and spreading, sometimes gnarled or crooked with rusty stains. Old trees often have dimples. Occurs naturally on sandy soils and stony ridges, but is often planted. Rare coastal and inland distribution in the Richmond catchment, south of Evans Head.

Bark: Smooth, pinkish or orange-brown when new, fading to grey with age. Shedding in spring in thin flakes.

Adult leaves: Lanceolate, sometimes falcate, opposite, 21cm long, 6.5cm wide, apex acute, base tapering rounded, ± glabrous, discolorous, regularly penniveined.

Flowers: showy white or cream 2cm wide.

Fruit: capsules are ovoid or campanulate, ribs and teeth, to 20mm long by 20mm wide; disc descending.

TOP TIP!

Angophora flowers retain petals and sepals, not fused into a calyptra.

Angophora floribunda

T R

ROUGH-BARKED APPLE

Tree, widely scattered and locally abundant, usually on deep alluvial sandy soils.

Bark: Persistent, grey, shortly fibrous.

Adult leaves: Lanceolate, opposite 8–12cm x 2–3cm Leaf apex acute, base acute; discolorous, penniveined.

Flowers: bright cream to white, 1–2cm wide.

Fruit: capsules are ovoid to globose with conspicuous ribs and teeth, to 10mm long by 10mm wide with a flat disc.

TOP TIP!

Contorted canopy makes it readily identifiable.

Angophora paludosa

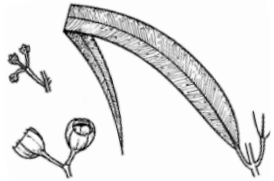
T R

NARROW-LEAVED APPLE

Tree, locally frequent but sporadic on sandy soils.

Adult leaves: Lanceolate, 7–11cm long, 0.8–1.5cm wide, apex acute, base acute, glabrous, discolorous, regularly penniveined.

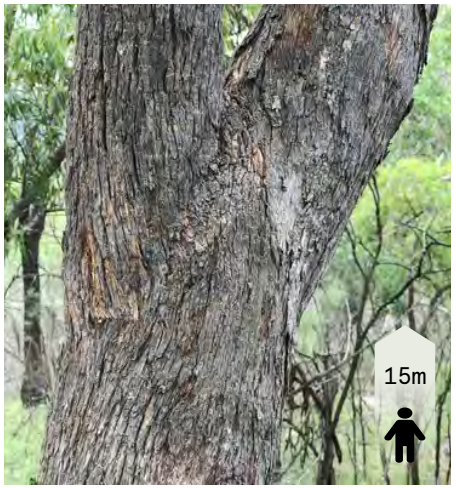
Flowers: bright cream to white, 1–2cm wide.



Fruit: capsules are ovoid to globose with conspicuous ribs and teeth, to 10mm long by 10mm wide with a flat disc.

SIMILAR SPECIES

A. floribunda has wider leaves.



Bark: Persistent, grey, shortly fibrous.

Angophora subvelutina

T B R

BROAD-LEAVED APPLE

Tree with large spreading canopy, widely scattered and locally abundant, usually on deep alluvial soils.

Adult leaves: Ovate or oblong, 7–10cm, 3–5cm wide, apex acute, base cordate, discolorous, penniveined.

Flowers: bright cream to white, 1–2cm wide.

Fruit: capsules are ovoid with conspicuous ribs and teeth, to 10mm long by 10mm wide with a flat disc.

SIMILAR SPECIES

Angophora floribunda has leaves on longer petioles (stems) and attenuate leaf bases.

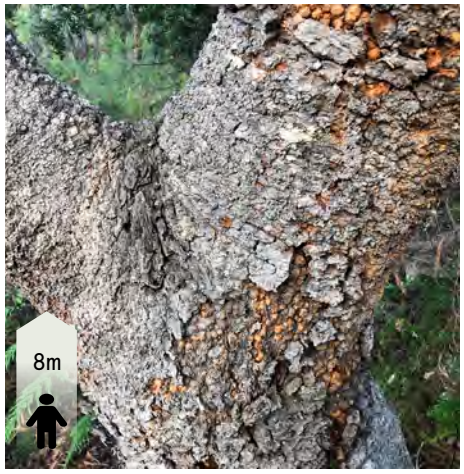
Bark: Persistent, grey, fibrous-flaky.

Banksia aemula

WALLUM BANKSIA

T B R

Tree in low woodland or tall shrubland (wallum) on sand dunes.



Adult leaves: Alternate, obovate to oblong, 3–20cm x 5–30mm, with a mucro, margins toothed, both surfaces rusty-hairy to smooth with age.

Flowers: cream or pale yellow spikes to 8cm diam and 20cm long.

Fruit: cones have very large protruding follicles which split to reveal one or two winged seeds.

Bark: Warty, slightly friable, brownish; branchlets tomentose.

Banksia integrifolia

COAST BANKSIA

T B R

Tree to 25m high or shrub to 5m high, sometimes narrow erect, but sometimes up to 10m wide. Widespread, in coastal sites to the ranges.

Adult leaves: Whorled, obovate to narrow-elliptic, 4–20cm x 10–36mm, margins entire or with a few short teeth, underside white, midrib and secondary veins rusty-hairy.

Flowers: bright to pale yellow, 12cm long and up to 5cm diam.
Fruit: cone with follicles to 15mm long that open to release winged seeds. Cones are often found lying at the base of the tree

Bark: Rough, tessellated or fissured. branchlets angled or flattened at extremities, sometimes resinous.

Banksia serrata

OLD-MAN BANKSIA

T B R

Tree to 16m high or stunted shrub to 3m high in open coastal environments. Usually in dry forest or woodland on sandstone or sand dunes.

Adult leaves: Alternate, oblong to narrow-obovate, 5–20cm x 15–40mm, with short mucro, margins ± toothed without teeth for 1–5cm. from base, underleaf sometimes rusty hairy.

Flowers: yellow to creamy green, 20cm long (although sometimes longer in very old plants) and 10cm diam.
Fruit: cones with folicles about 3cm long that open to release 2 winged seeds.

Bark: Warty, ± friable, grey-brown; branchlets ± hariy.

TOP TIP!

Banksia aemula and *B. serrata* are similar but generally *B. aemula* is a smaller plant, has narrower leaves and the leaves form dense false-whorls underneath the generally shorter flower spikes.

FUN FACT

Banksia regenerate after fire from the seed bank and from epicormic shoots.

Callistemon salignus

WILLOW BOTTLEBRUSH

Tree to 10m high or large shrub to 3m high. Mostly grows on low-lying river flats and damp creeks.

Adult leaves: Narrow-elliptic, mostly 6–9cm x 5–14mm, apex acute; midrib, marginal and lateral veins distinct.New growth purplish pink.

Flowers: spikes are to 5cm long by 3.5cm diam, creamy white to yellow with stamens to about 15mm long.

Fruit: woody capsule 5mm diam.

Bark: Papery and peeling; branchlets flexuous.

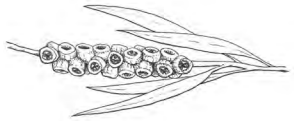
Callistemon viminalis

WEEPING BOTTLEBRUSH

Small tree to 18m high or shrub to 8m high. Mostly grows along watercourses, chiefly in sandstone or granite areas.

Adult leaves: Linear to narrow-elliptic with one side straighter than the other, 3–7cm x 3–7mm apex acute, lateral veins obscure. New growth emerges from the ends of the inflorescence and the young leaves have bronze-coloured hairs.

Flowers: borne in spikes 40-150mm long with prominent red stamens 15-25mm long.



Fruit: 5-6mm diam. Seed is held for a few seasons.

Bark: Dark, furrowed; branches generally pendent.

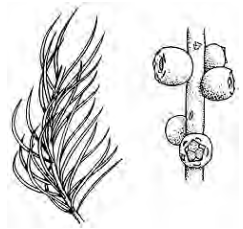
Melaleuca alternifolia

NARROW-LEAVED PAPERBARK

Tree to 10m high or tall shrub to 7m high. Grows along streams and on swampy flats.

Adult leaves: Irregularly arranged, scattered to whorled, linear, 10–35mm x about 1mm Leaf apex acute, glabrous, petiole 1mm long.

Flowers: white flower spikes, to 5cm long, 6mm wide and holding up to 60 stamens; profuse and conspicuous, appearing mostly in summer.



Fruit: capsules 3mm diam and produced on the flowering spike after flowering.

Bark: Papery and peels away in strips.

Melaleuca bracteata

BLACK TEA-TREE

Shrub or tree to 15m high. Widespread, along watercourses or on heavier inland soils in depressions.

Adult leaves: Alternate, narrow-ovate to ovate, 10–28mm x 1.5–3mm 5–11-veined, apex acute to Leaves acuminate, usually sessile.

Flowers: white, arranged in groups of 3, in spikes 3.5cm long, carried on or near the ends of the branches. Fruit: globe-shaped capsule, 3mm in diam, arranged in the same structure as the flowers.

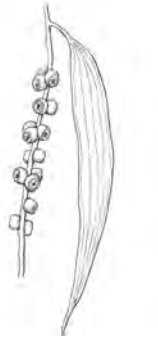
Bark: Hard, fissured.

Melaleuca leucadendra

WEEPING TEA-TREE

Tree to more than 20m. A northern Australian tree often planted in NSW, naturally in swamp rainforest, beaches and watercourses.

Adult leaves: blades more than seven times as long as wide, about 11.5-17 x 0.8-2.1cm, with five longitudinal veins more prominent. White hairs on twigs.



Flowers: Spikes 25-30mm diam, usually in threes. Have a strong sweet odour and long flowering season.

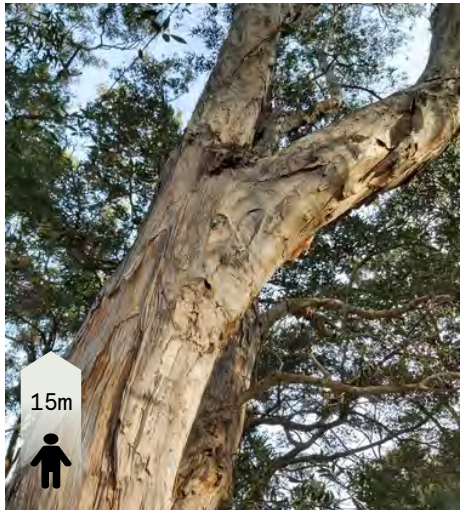
Fruit: Capsules sessile, glabrous, more than 4mm diam.

Bark: Thick, white, papery bark and weeping thinner branches. Dead bark layered.

Melaleuca quinquenervia

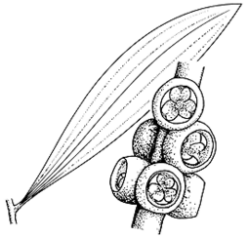
BROAD-LEAVED PAPERBARK

Tree 10–15m high. Widespread in coastal swamps and around lake margins.



Adult leaves: Alternate, lanceolate to elliptic, 30–70mm x 8–24 mm, apex obtuse, 5 prominent longitudinal veins, often with appressed hairs

Flowers: spikes to 5cm long, white or cream, with flowers clustered in 3s within the spike, and bearing up to 50 stamens.



Fruit: capsules to 5mm diam, produced on the flowering spike after flowering.

Bark: Papery and peels off in strips.

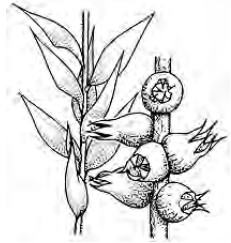
Melaleuca styphelioides

PRICKLY-LEAVED PAPERBARK

Shrub or tree up to 20 m high. Grows in moist situations, often along streams.

Adult leaves: Alternate, ovate to broad-ovate, glabrous, sessile 7–15mm x 2.5–6mm with 15–30 longitudinal veins, apex pungent.

Flowers: held in terminal, white spikes to 2cm long, clustered in 3s and each flower having to 100 stamens.



Fruit: capsules. In this species, they are to 3 mm wide and produced on the flowering spike after flowering.

Bark: Paper and peels off in strips.

TOP TIP!

The genus *Melelauca* has been subject to recent taxonomic revision with early and recent botanists including Ferdinand von Mueller and Lyndley Craven proposing to expand the genus to include all *Callistemon spp.* and others. Craven et al. (2014) published new species combinations which included the renaming of all *Callistemon* species to *Melaleuca*, based on evolutionary relationships and DNA evidence and other features.

Currently, the NSW Herbarium advises that the *Callistemon* genus can still be used.

FUN FACT

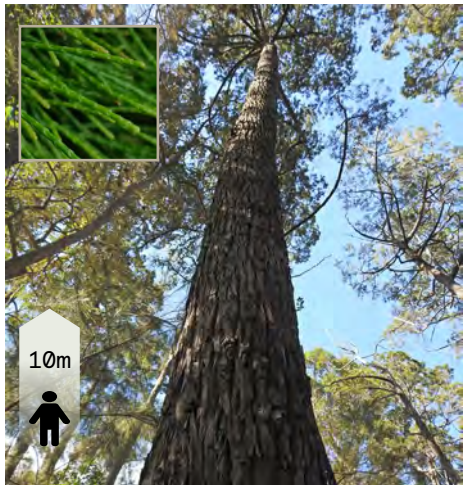
Melaleuca – is derived from the Ancient Greek mélas (μέλας) meaning “dark” or “black” and leukós (λευκός) meaning “white”, apparently because one of the first specimens described had fire-blackened white bark.

Callitris columellaris

COASTAL CYPRESS PINE

T B R

Coniferous tree to 10m with spreading but usually erect branches. Grows on coastal sandy soils, often in heathland north from Angourie.



Adult leaves: scale-like 1–3mm long, 0.5mm across, arranged in whorls of three on slender shoots.

Fruit: Female cones solitary on slender fruiting branchlets, ovoid to depressed-globose to 20mm diam.

Bark: Rough, fissured or fibrous, grey.

FUN FACT

Columellaris refers to the columella, the small pillar of woody tissue at the heart of a *Callitris* seed cone.

Cinnamomum camphora

CAMPHOR LAUREL

T B R

Large spreading tree often forms monocultures. Historically planted shade tree, now extensively naturalised in coastal and hinterland areas. Considered a weed.

Adult leaves: 5–10cm long, 2.5–5cm wide, upper surface glossy green, underside glaucous, smelling of camphor. Often with appressed hairs.

Flowers: masses of very small fragrant and white.

Fruit: globose, 10 mm diam., black, seated on shallow cupular receptacle; ripe Apr.–June.

Bark: Greyish brown, rough, often furrowed.

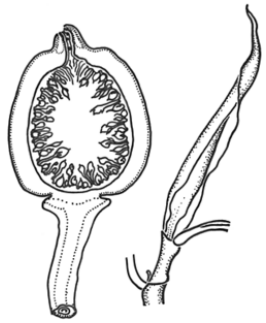
Ficus species

FIG SPECIES

T B R

Trees or large shrubs, some epiphytic or strangling. Latex usually milky, sometimes watery.

Adult leaves: Mostly entire, glabrous. Stipules pointed and rolled on terminal buds, falling early, usually leaving circular scars.



Flowers: Inflorescences axillary, sometimes cauliflorous, flowers compact.

Fruit: True fruits achenes, multiple fruit a syconium or fig.

Bark: Bark on twigs and branches tough, or smooth.

TOP TIP!

Koala populations utilise a mosaic of landscape-types across the region. As well as the eucalypts that are their feed trees they also require a range of other trees across their habitat for resting and shelter, particularly in extreme weather conditions.

Alphitonia excelsa

RED ASH

T B R

Small to medium-sized tree with buds and young stems grey to golden-brown, and hairy. On margins of rainforest, open forest, sheltered gullies or steep slopes.

Adult leaves: Elliptic to oblong, mostly 5–14cm x 2–5cm dark green, glossy, reticulate above, white-hairy below with the veins raised.

Flowers: small, cream-colored, and star-shaped, and bloom in late autumn and early winter.

Fruit: ovoid to globose, 5–10mm diam, black.

TOP TIP
Crushed young shoots have a peculiar smell similar to sarsaparilla.

Bark: fissured and grey, smaller branches are smoother and grey or white.

Endiandra sieberi

HARD CORKWOOD

T B R

Small to medium-sized tree. Widespread in all types of warmer rainforest and in eucalypt forest on the coast and ranges, especially common in littoral rainforest. Young stems with prominent lenticels (breathing pores), densely hairy with brownish hairs, becoming hairless.

Adult leaves: Leaves ± opposite, narrow-elliptic, 5–10cm x 1–3cm, glabrous, glossy, margins yellowish; midrib flattened on lower surface, petiole 5–8mm long, reddish when fresh.

Flowers: cream or pinkish, 4-5 mm in diameter, with 6 'petals', hairy with fine hairs. Flowers in branched clusters shorter than or as long as the leaves.

Fruit: ovoid, 20mm long, black; ripe Mar-Aug.

Bark: Hard, fissured and corky.

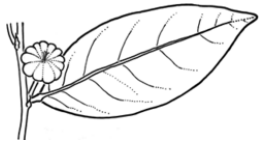
Glochidion ferdinandi

CHEESE TREE

Shrub to medium-sized tree but often much smaller. Widespread in coastal districts. Common regrowth tree.

Adult leaves: Elliptic to oblong-elliptic, shortly pointed, mostly 3–10cm long, 1.5–4cm wide; petiole 3–5mm long.

Flowers: pedicellate in leaf axils, but not on a common peduncle. Perianth 2–3mm long.



TOP TIP
Fruit look like a small green pumpkin or mozarella cheese.

Fruit: Lobed stalked capsule, 12–20mm diam, green turning whitish pink to deep red when ripe; segments open to reveal bright red seeds, ripe Nov–Feb.

Bark: brownish-grey and flaky, and sheds in patches or longitudinal flakes.

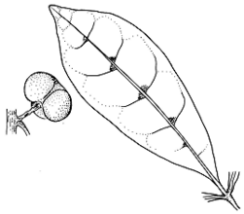
Synoum glandulosum

SCENTLESS ROSEWOOD

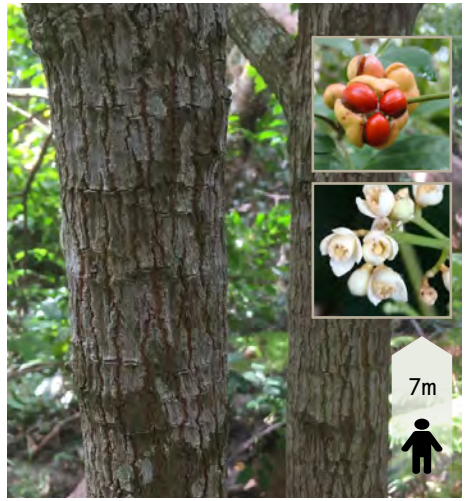
Small tree to 7m high. Widespread in warmer rainforest and regrowth. New growth pubescent.

Adult leaves: Compound leaves 10–30cm long, up to 20cm wide; leaflets 3–11cm long, up to 3cm wide. Terminal leaflet largest. Oblanceolate to obovate, hairy domatia.

Flowers: 4 sometimes 5 petals with 8 stamens and 1 carpel. Dainty, to 12mm wide, white/pink, produced in panicles to 5cm long, from the leaf axils.



Fruit: Brown/red capsule with 3 lobes. depressed-globose, 10–15mm long, 10–20mm diam. Seeds paired and red.



Bark: Brown irregularly scaly.

A QUICK GUIDE FOR TWEED AND BRUNSWICK

This quick guide gives distinguishing features for the most commonly occurring eucalypt species in the Tweed and Brunswick catchments.

Select the group below based on bark type (page 15) and then rule out other species in that group. Then look at the species page in the guide to confirm your selection.

GROUP 1: SMOOTH BARKS

Eucalyptus propinqua	Small-fruited Grey Gum	Bark granular, matte, grey, shed in large plates to reveal bright yellow or orange new bark. Discolorous leaves. Page 33
Eucalyptus signata	Scribbly Gum ^	Bark smooth, with scribbles, white or yellow, shedding in short ribbons. Concolorous grey-green leaves. Page 36
Eucalyptus tereticornis	Forest Red Gum^	Main branches steeply inclined - See group below. Page 43

^ When Scribbly Gum lacks scribbles it can be confused with Forest Red Gum specimens that have no stocking, however, fruit are distinct.

GROUP 2: HALF BARKS

Eucalyptus grandis	Flooded Gum*	Powdery pale grey grey to white bark (sometimes greenish), sheds in ribbons. Glossy, discolorous leaves. 4 or 5 incurved valves. Tall high fertile wet forest on lower slopes and gullies. Page 40
Eucalyptus pilularis	Blackbutt	Upper bark sheds in 30 cm+ ribbons, scribbles sometimes present. Green, glossy concolorous leaves. Page 41
Eucalyptus saligna	Sydney Blue Gum*	Bluish grey to cream, green, pink or brown bark, sheds in ribbons. Glossy leaves, strongly discolorous. 3 or 4 erect/outcurved valves. Moderately fertile wet forest, often higher on slopes. Page 42
Eucalyptus tereticornis	Forest Red Gum	Trunk shiny grey to white & sheds sheds in large plates and flakes / ribbons. Dull grey-green concolorous leaves. Sometimes little or no stocking. Fruit with raised disc. Page 43
Lophostemon confertus	Brush Box	Smooth pink-brown bark, false whorls of 4–5 leaves at the end of each year's growth. Large, shiny, symmetrical leaves. Page 44

* Can hybridise use fruit to distinguish. Flooded Gum has less blotchy and shinier trunk than Blue Gum. Flooded Gum does not have a lignotuber, Blue Gum does.

GROUP 3: IRONBARKS

Eucalyptus siderophloia	Grey Ironbark	Grey to grey-black, deeply and coarsely furrowed, kino-resin impregnated, dull leaves. Page 48

GROUP 4: BLOODWOODS

Corymbia gummifera	Red Bloodwood	Tesselated, outer branches smooth & reddish, fruit with goblet rim, kino common. Page 50
Corymbia intermedia	Pink Bloodwood	Tesselated, outer branches rough and grey, fruit without rim, kino uncommon. Page 51

GROUP 5: BOX BARKS

Usually no true Box Barks found in Tweed or Brunswick (planted only).

GROUP 6: STRINGYBARKS & MAHOGANIES WITH ALTERNATE LEAVES

Eucalyptus acmeniodes	White Mahogany	Grey bark, short fibres, large dark green leaves <25mm wide, strongly discolorous, medium sized round fruit, inserted valves. Page 58
Eucalyptus carnea	Thick-leaved Mahogany	Concolorous, adult leaves broader than 25mm. Drier habitat than White Mahogany. Page 59
Eucalyptus microcorys	Tallowwood	Red-brown short fibred bark with insect borer holes & horizontal breaks. Small, fine, thin, light green leaves in terminal clusters, discolorous. Distinctive conical fruit. Page 61
Eucalyptus resinifera	Red Mahogany	Red-grey bark with insect borer holes and horizontal breaks. Large darker, thick, shiny pointy leaves, discolorous, small fruit withprotuding valves. Well drained soil. Page 63
Eucalyptus robusta	Swamp Mahogany	Spongy slabs (sometimes very short fibres) red brown bark. Large, dark green, glossy, discolorous leaves. Page 64

GROUP 6: STRINGYBARKS & MAHOGANIES WITH WHORLED LEAVES

Lophostemon suaveolens	Swamp Box	Flaky papery bark. False whorls of 3-4 symmetrical leaves at end of each years growth. Page 67
Syncarpa glomulifera	Turpentine	Deeply furrowed bark. Leaves in false whorls on branchlet ends, lower surface usually white-hairy. Page 68

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p91 *Synoum glandulosum*
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photo fruit – inaturalist © stroma
photo flowers – inaturalist © richiehall
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p106 photo koala – © Jacob Crisp

GLOSSARY

TERM	DEFINITION
Acuminate	gradually tapering to a point, usually in regard to leaf tips.
Acute	ending in a sharp point (apex of leaf) or with an angle <45° to the midrib (leaf side veins).
Angular	at an angle or a sharp point.
Apically joined	joined or attached at the apex or top.
Apically narrowed	narrowed at the apex or top.
Axillary	the bud or buds formed in the angle between the stem and the subtending (enclosing) leaf or bract, the upper angle between the leaf and the stem.
Beak	a prominent terminal projection, especially of a carpel or fruit.
Box	a type of rough bark in eucalypts, where fibres are short, thin and form with narrow longitudinal fissures; may break into flakes or plates (tessellations).
Calyptra / operculum	a cap-like covering or lid of some flowers or fruits that becomes detached at maturity by abscission, also known as the outer operculum. Note eucalypt means true (eu) calyptra (cap) not in *Angophora or Lophostemon*. page 10.
Calyptrate	having a calyptra.
Calyx	the sepals of one flower collectively.
Campanulate	bell-shaped; of the fruit, but seen upside-down (see diagram on page 11).
Coastal	located on or near a coast and the sea (usually <100km) or vegetation influenced by coastal weather.
Compound	composed of several more or less similar parts.
Concolorous	with the same colour throughout or on both surfaces.
Conflorescence	a branch system of flowers in which the main axis bears a single unit inflorescence that is qualitatively different in structure.
Conical	cone-shaped, with the broad end at the base or top.
Cordate	of a leaf or leaf base, heart-shaped with a basal notch and stem in cleft.
Crenulate	of a margin, with shallow, rounded teeth.
Crowded	a tendency for oil glands to be clustered close together.
Cuboid	cube-like; a 3-dimensional shape.
Cylindrical	tubular or rod-shaped (see picture on page 11).

TERM	DEFINITION
Decorticate	shedding of the bark, shed yearly or at the end of a recurring growth period.
Decussate	a leaf arrangement where pairs of leaves are arranged along a stem at right angles to each other.
Depressed	flattened as if pressed down from the top or end, especially of 3 dimensional shapes.
Disc	an outgrowth of tissue from the receptacle in the form of a ring or plate, sometimes divided into lobes or separate bodies, occurring between whorls of floral parts; generally glandular.
Discolorous	coloured differently on the two surfaces.
Disjunct	arrangement in which during development the leaves of a pair become separated on the axis owing to elongation of the nodal region, often giving the appearance of 'alternate' leaf arrangement but distinguished by decussate (intersected or crossed in the form of an X), rather than spiral, sequence.
Disc	in eucalpts refering to the structure of the fruit that extends from where the stamens were once attached and the valves (openings in the top of the ovary where the seeds are released from). The disc can either ascend away from the stalk, it can be flat forming a flat top to the fruit or it can descend into the fruit towards the stalk (see page 11).
Disjunct opposite	a leaf arrangement where leaves are borne singly at different levels along a stem, often giving the appearance of 'alternate' leaf. This occurs because during development of the leaves into maturity, each pair becomes separated on the axis owing to the elongation of the nodal region, distinuished by decussate, (intersected or crossed in the form of an x) rather than spiral sequence. Juvenile leaves appear oppposite in eucalypts.
Elliptic	a 2-dimensional shape, oval in outline, broadest about the middle, small or no point.
Elongate acute	much longer than wide, at a sharp or severe angle often refering to the calyptra.
Elongate obtuse	much longer than wide, at a shallow angle of greater than 90 degrees, oftening refering to the calyptra.
Enclosed	surrounded or closed off on all sides, relating to valves in eucalypt fruit (see page 11).
Exserted	projecting beyond the surrounding objects, e.g. of valves projecting beyond the rim of a capsular fruit (see page 11).
Fibrous	a type of rough bark in eucalypts, stringy fibres are long and deeply furrowed.
Fissures	grooved longtudinally (usually refering to rough bark).

TERM	DEFINITION
Flaky	tendng to peel of or break away easily into flakes, common in smooth barks and half barks.
Fusiform	spindle-shaped, narrower at both ends than at the middle (see pictures on page10 and 11).
Glabrous	smooth without hairs or scales.
Gland	a structure, within or on the surface of a plant, with a secretory function, in eucalypts, small or minute oil containing structures.
Glaucous	dull blue-green in colour, with a whitish bloom which can often be rubbed off; sometimes characteristic of young leaves.
Globose	a 3-dimensional shape, ball-shaped, more or less circular in outline (see page 11).
Glossy	shiny and smooth, can refer to the appearance of eucalypt leaves on the tree.
Hemispherical	semiglobose (see diagram on page 11).
Hypanthium	a cup-like or tubular structure formed above the base, and often above the top, of the ovary with the stamens and perianth parts inserted on the rim (see diagram page 11).
Ironbark	a type of rough bark in eucalypts, where exudates harden the bark.
Kino	a botanical gum produced by various trees and other plants.
Lanceolate	lance-shaped; usually leaves, pointed at both ends; 3-6 times as long as broad and broadest below the middle and tapering to the apex .
Lateral	attached to the side of a part of the plant.
Locule	a more or less closed cavity, containing the pollen in anthers and the ovules in an ovary in eucalypt fruit.
Mucro	a short sharp point at the end of a part or organ.
Obscure	concealed or not clearly expressed.
Opposite	inserted at the same level, as in leaves on the opposite side of the stem, or in flowers the floral parts on the same radius.
Orbiculate	orb-shaped, strictly a 3-dimensional shape but often used for a 2 dimensional circular shape, as for leaves.
Ovate	egg-shaped; a 2-dimensional shape, with the length 1–3 times the breadth, and broadest below the middle.
Ovoid	the 3-dimensional equivalent of ovate; egg-shaped (see diagram page 11).
Pedicellate	with a stalk, refeing to the existence of a stalk on the fruit (opposite to sessile).

TERM	DEFINITION
Pedicels	the stalk of a flower (above the subtending bract or leaf), or bud or fruit.
Peduncle	the stalk of a cluster of flowers, buds or fruit.
Peltate	term describing an organ, usually a leaf, with a stalk or point of attachment on its lower surface away from the margin, often umbrella-like.
Penniveined	pinnately arranged veins in which the secondary veins are conspicuous and numerous and are more or less parallel to each other, as in a feather (see picture page 25).
Persistent	remaining until the part that bears it is fully matured in eucalypts, when the dead bark is not shed yearly and accumulates in the following forms - Stringy, Peppermint, Compact, Box, Ironbark.
Petiole	the stalk of a leaf.
Phyllodes	modified leaf stalks that look like leaves.
Plates	pieces of bark that shed annually in the smooth barks.
Powdery	resembling or characteristic of powder in texture in smooth barks.
Reticulate	arranged like a net see page 9 &25.
Ribbed	having a pattern of raised bands.
Ribbons	strips of bark that shed annually from smooth barks.
Samara	a winged achene, a type of fruit in which a flattened wing of fibrous, papery tissue develops from the ovary wall.
Scar	scar imprint left when the calyptra (outer operculum) has fallen away in eucalypt fruits.
Scurfy	rough to the touch; covered with scales or scurf.
Scribbles	irregular lines on the barks of some eucalypts, being the old tunnels burrowed by moths. Common in smooth barked *Eucaylptus* such as *E. signata*.
Spongy	having the texture of a sponge, the cells being seperated by air spaces and containing air.
Stringy	long fibred, or furrowed, often interlaced below the surface.
Tesselated	with colours or shapes arranged in squares or polygons to give a chequered appearence, eg of bark in Bloodwoods.
Valves	a lid of a capsule of a eucalypt fruit which opens and is often raised to allow the passage of seed and chaff.
Whorled	radiate from a single point and wrap around the stem (Psuedo whorled - slightly offset).

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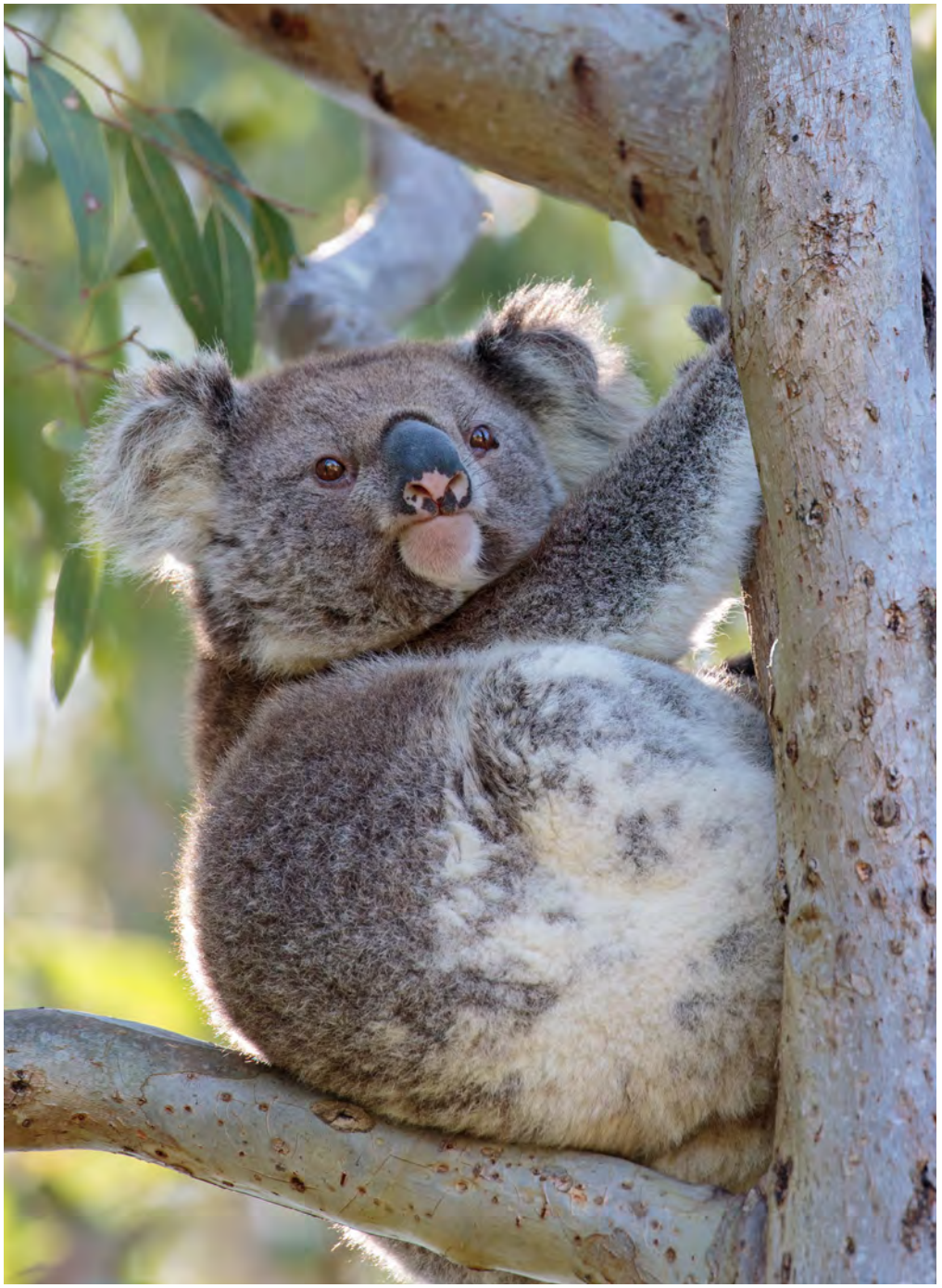

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