



Plants of

'Grasstrees':

A photographic guide

Part 1: Trees & Mistletoes

Ross McKenzie

The tree that moves some to tears of joy is in the eyes of others only a green thing which stands in the way.

William Blake 1799

Edition 1

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About the author

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Notice to Guests

This guide is not comprehensive. It covers the plants identified so far on *Grasstrees*. If you come across a plant that is flowering or fruiting and it is not included in this guide, please notify Trish or John Stadtmiller so that it can be investigated and hopefully included in a later edition. Thank you. I hope you enjoy your stay!

Contents

| | |
|--|----|
| About the author | 2 |
| Notice to Guests..... | 2 |
| Introduction | 5 |
| Grasstrees Background | 5 |
| Trees - Conifers [Gymnosperms] (cone-bearing plants) | 7 |
| Pine | 7 |
| <i>Callitris endlicheri</i> (black cypress pine) [Cupressaceae] | 7 |
| Trees - Angiosperms (flowering plants) | 11 |
| She-oak | 11 |
| <i>Allocasuarina torulosa</i> (forest oak, forest she-oak) [Casuarinaceae] | 11 |
| Kurrajong..... | 15 |
| <i>Brachychiton populneum</i> (kurrajong) [Sterculiaceae] | 15 |
| Fig..... | 20 |
| <i>Ficus rubiginosa</i> (Port Jackson fig, rusty fig) [Moraceae] | 20 |
| Native olive | 23 |
| <i>Notelea microcarpa</i> (native olive) [Oleaceae] | 23 |
| Poison peach | 28 |
| <i>Trema tomentosa</i> (poison peach) [Ulmaceae] | 28 |
| Wattles..... | 32 |
| <i>Acacia fimbriata</i> (fringed wattle) [Mimosaceae] | 33 |
| <i>Acacia neriifolia</i> (silver wattle) [Mimosaceae]..... | 35 |
| <i>Acacia pycnostachya</i> (Bolivia Hill wattle) [Mimosaceae] | 37 |
| <i>Acacia venulosa</i> [Mimosaceae]..... | 39 |
| Gum trees – Eucalypts and ‘Apples’ [Myrtaceae] | 41 |
| <i>Angophora floribunda</i> (rough-barked apple) [Myrtaceae] | 44 |
| <i>Eucalyptus interstans</i> (narrow-leaved cabbage gum) [Myrtaceae] | 48 |
| <i>Eucalyptus prava</i> (orange gum) [Myrtaceae] | 52 |
| <i>Eucalyptus andrewsii</i> (gum-topped peppermint, New England blackbutt) [Myrtaceae] | 57 |
| <i>Eucalyptus caliginosa</i> (New England stringybark) [Myrtaceae]..... | 63 |
| <i>Eucalyptus caleyi</i> (Caley’s ironbark) [Myrtaceae] | 70 |
| Mistletoes – Angiosperms (flowering plants) | 75 |
| <i>Amyema pendula</i> subsp. <i>longifolia</i> (drooping mistletoe) [Loranthaceae] | 75 |

| | |
|---|----|
| <i>Notothixos cornifolius</i> (kurrajong mistletoe) [Viscaceae] | 78 |
| <i>Notothixos subaureus</i> (golden mistletoe) [Viscaceae] | 83 |

Introduction

I have compiled this guide to try to enhance your enjoyment and learning as guests on *Grasstrees*, the Bolivia Range private nature reserve owned and run by Trisha and John Stadtmiller who are my long-standing close friends.

Knowing the names and appreciating the diversity of the plants that can be seen while walking around *Grasstrees* should make the experience more memorable and give you as guests a better understanding of the beautiful and rich environment in which you are immersed.

All life on land depends on the capture of the sun's energy through the green pigment (chlorophyll) in plants and the use of that energy for growth. Plants provide food and oxygen for all animal life on land, directly or indirectly ... and that includes humans. As one slogan of koala conservation has it: **'No tree. No me.'**

In this guide, plant species are arranged within broad major categories that reflect the structure of the local vegetation:

- **Trees** – woody perennial plants 2-3 m or more tall
- **Mistletoes** – perennial plants parasitic on tree limbs
- **Shrubs** – woody perennial plants up to 2-3 m tall
- **Ground layer** – non-woody (herbaceous) perennial or annual small plants (forbs, grasses, sedges, ferns, orchids)

The images in this guide were all photographed on *Grasstrees* by me unless otherwise noted in the captions.

Grasstrees Background

Grasstrees is a post-pastoral freehold property on the Bolivia Range opposite the Bolivia Hill Nature Reserve, on the western side of the New England Highway 35 km south of Tenterfield, New South Wales. Its position is at 29° 18' S 151° 54' E and an altitude of about 1000 m above sea level. *Grasstrees* occupies the north-eastern slopes of high ridges at the western end of the range, with a series of spurs and gullies draining to the Deepwater River to their north. *Grasstrees'* northern neighbour is the long-established *Bolivia* pastoral station on the river flats below.

Grasstrees lies in the **Northern Tablelands** botanical division of New South Wales. The vegetation type is **Northern Tableland Dry Sclerophyll Forest** of the subtype growing on leucogranite and has shallow gritty sandy soils consisting of Bolivia Hill leucadamellite. Large granite outcrops are a feature. The deep past here was volcanic, not peaceful.

Much of the mature tree cover was poisoned in the last decade of the twentieth century and the block excised from the more westerly and much larger *Highfield* pastoral holding. The current owners of *Grasstrees* have been in control since 2009 and are allowing natural regeneration of the native plant communities. Fire has been suppressed during this time.

Native grazing-browsing terrestrial mammals on *Grasstrees* include common wallaroos (*Macropus robustus*), swamp wallabies (*Wallabia bicolor*) and red-necked wallabies (*Macropus rufogriseus*). Current

feral mammal threats to the flora are rabbits, goats and pigs. Cattle from the neighbouring pastoral property *Highfields* still have sporadic access to *Grasstrees* in small numbers.

Trees - Conifers [Gymnosperms] (cone-bearing plants)

Pine

Callitris endlicheri (black cypress pine) [Cupressaceae]

- Upright pine tapering to a peak (pyramid-shaped)
- Cones



Callitris endlicheri (black cypress pine): Mature trees in habitat



Callitris endlicheri (black cypress pine): Fruiting branches



Callitris endlicheri (black cypress pine): Female cones



Callitris endlicheri (black cypress pine): Open cones & leafy branch



Callitris endlicheri (black cypress pine): Open cones

Trees - Angiosperms (flowering plants)

She-oak

Allocasuarina torulosa (forest oak, forest she-oak) [Casuarinaceae]

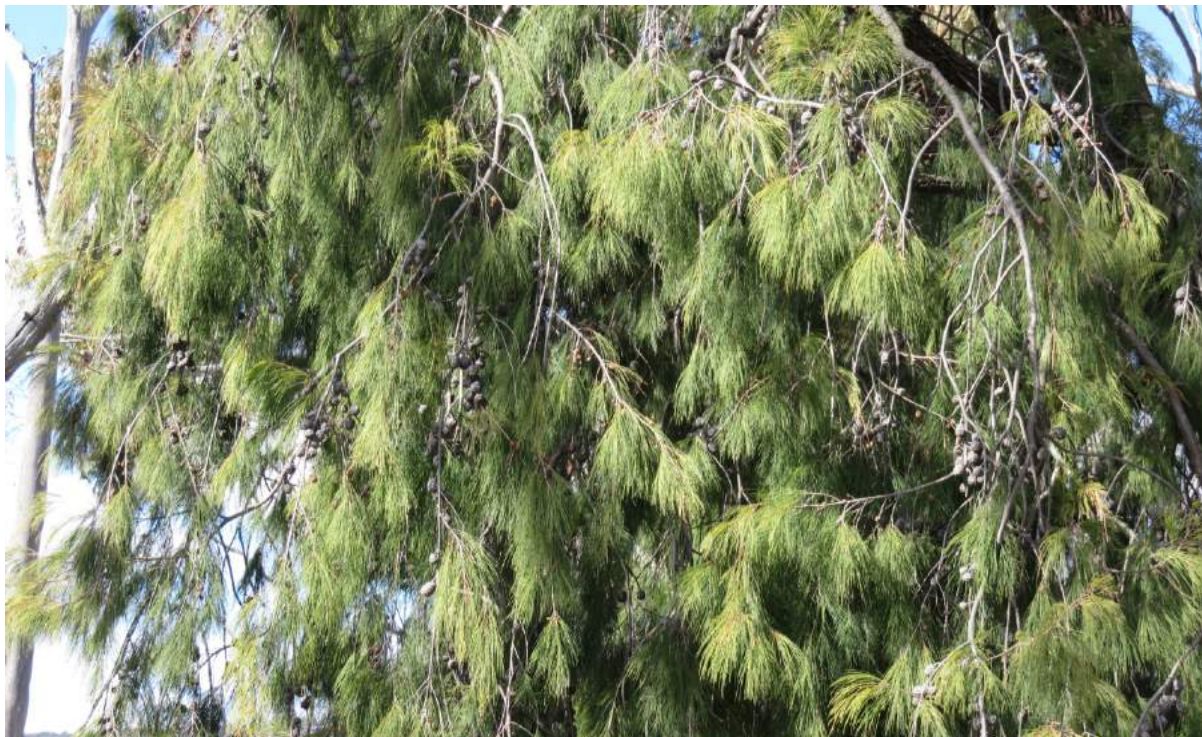
- Upright 'shaggy' tree
- Separate male & female flowers
- Knobbly hard fruit (cones)
- Fine drooping branchlets ('leaves')
- Thick deeply-fissured bark



Allocasuarina torulosa (forest oak): Young tree in habitat



Allocasuarina torulosa (forest oak): Bark



Allocasuarina torulosa (forest oak): Drooping branchlets ('leaves'), fruiting tree



Allocasuarina torulosa (forest oak): Branchlets (leaves are whorls of tiny scale-like structures)



Allocasuarina torulosa (forest oak): Fruit (seed capsules)



Allocasuarina torulosa (forest oak): Female flowers



Allocasuarina torulosa (forest oak): Male flowers

Kurrajong

***Brachychiton populneum* (kurrajong) [Sterculiaceae]**

- Grey bark
- Lobed leaves
- Cream & red bell-like flowers
- Boat-shaped pods with yellow seeds embedded in a prickly matrix



Brachychiton populneum (kurrajong): Whole plant in habitat



Brachychiton populneum (kurrajong): Whole plant in habitat with a flush of new leaves



Brachychiton populneum (kurrajong): Bark and leaves



Brachychiton populneum (kurrajong): Bark



Brachychiton populneum (kurrajong): Flowering leafy branch



Brachychiton populneum (kurrajong): Flowers [Photographed in Cobar NSW 2014]



Brachychiton populneum (kurrajong): Ripe pods with seeds [Photographed in Sydney NSW 2013]

Fig

Ficus rubiginosa (Port Jackson fig, rusty fig) [Moraceae]

- Broad leaves
- Red shoots at branch ends
- Small oval fruits, yellow then red when ripe



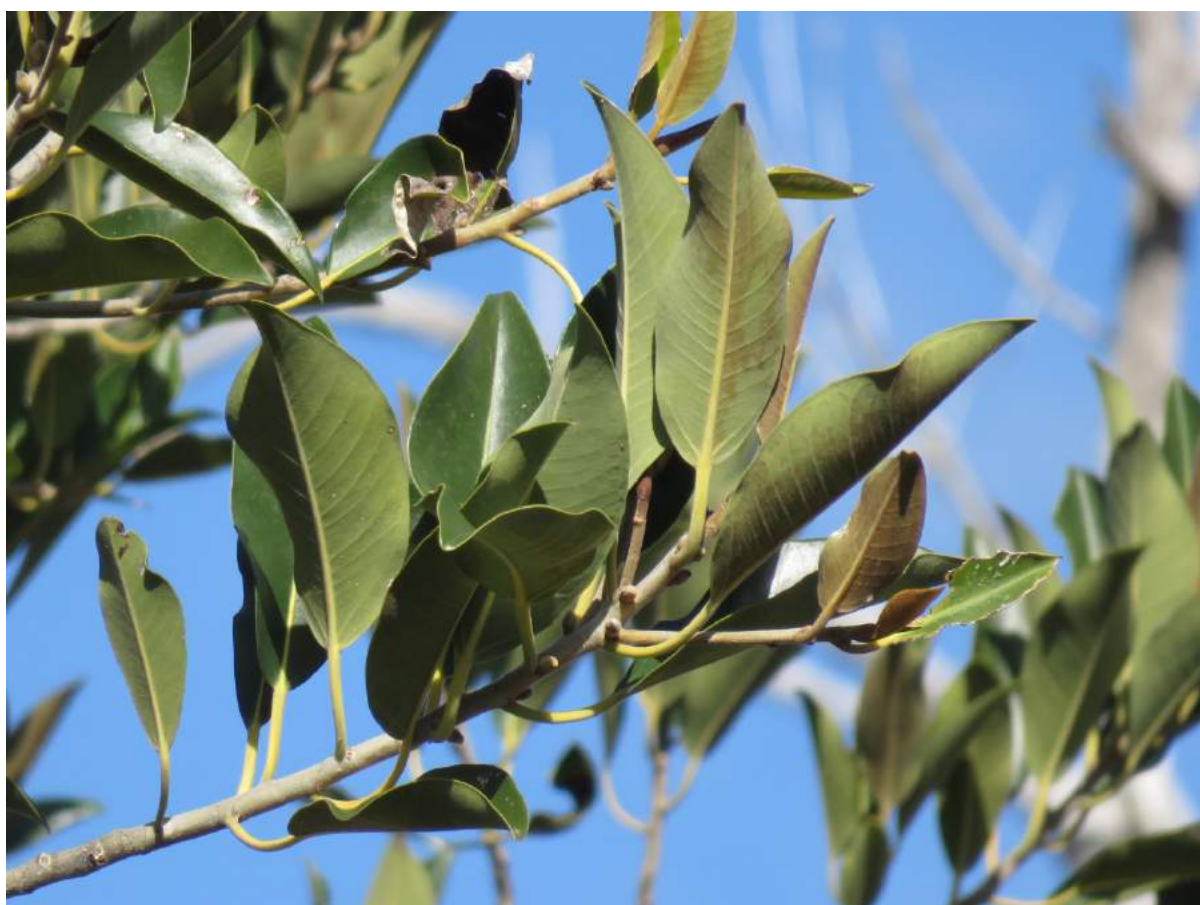
Ficus rubiginosa (Port Jackson fig): Mature plant in habitat



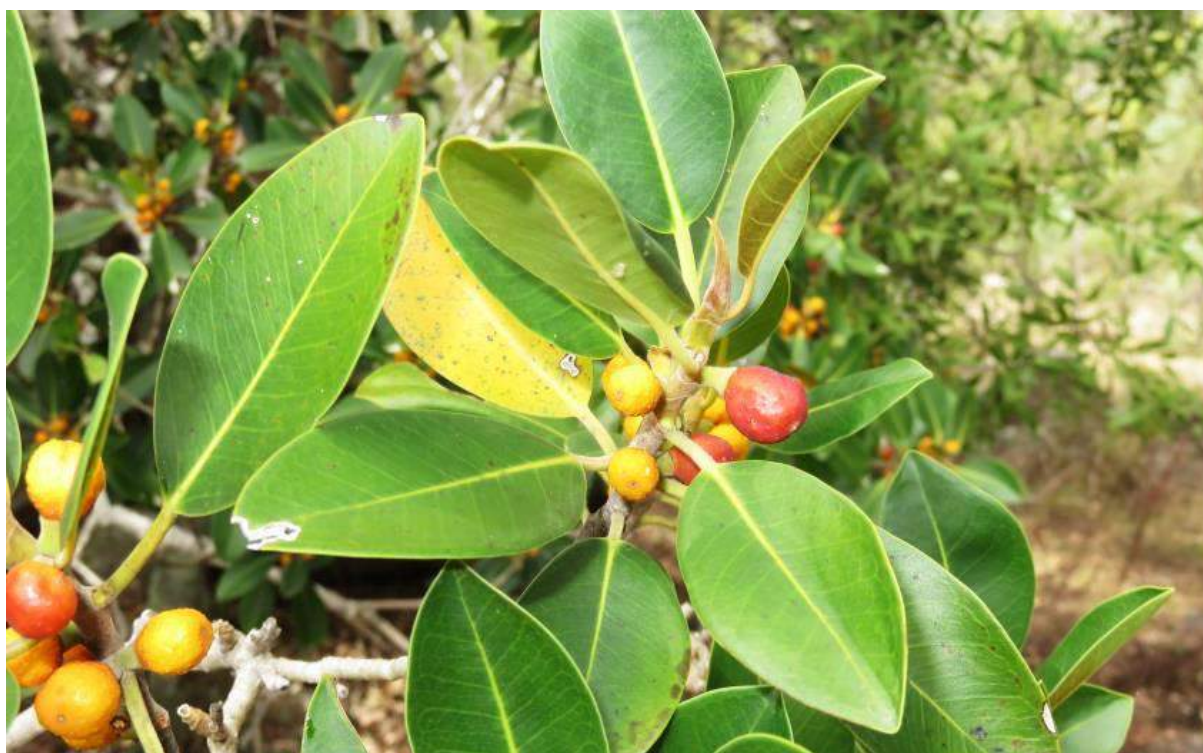
Ficus rubiginosa (Port Jackson fig): Leaf



Ficus rubiginosa (Port Jackson fig): Leaves and young shoots



Ficus rubiginosa (Port Jackson fig): Leafy branch



Ficus rubiginosa (Port Jackson fig): Fruiting branch



Ficus rubiginosa (Port Jackson fig): Fruit (ripe)

Native olive

***Notelea microcarpa* (native olive) [Oleaceae]**

- Small tree 4-10 m tall x 4 m across
- Long narrow tapered leaves in opposite pairs with prominent veins on upper surface
- Flowers; spring
- Fruit small globular
- Thick lower bark, smooth grey upper bark; grey smooth bark in saplings



Notelea microcarpa (native olive): Mature tree in habitat



Notelea microcarpa (native olive): Mature tree in habitat



Notelea microcarpa (native olive): Mature tree lower trunk bark



Notelea microcarpa (native olive): Branch bark



Notelea microcarpa (native olive): Young tree in habitat



Notelea microcarpa (native olive): Young tree trunk bark



Notelea microcarpa (native olive): Young tree leaves



Notelea microcarpa (native olive): Fruiting twig



Notelea microcarpa (native olive): Young fruit

Poison peach

***Trema tomentosa* (poison peach) [Ulmaceae]**

- Small tree, grey bark
- Drooping alternate leaves, serrated edges, rough when stroked upwards from the tip
- Small white flowers, inconspicuous
- Small black berries, attractive to birds



Trema tomentosa (poison peach): Tree in habitat



Trema tomentosa (poison peach): Fruit



Trema tomentosa (poison peach): Branch



Trema tomentosa (poison peach): Fruiting twig



Trema tomentosa (poison peach): Young tree in habitat [photographed in Pullenvale Q October 1999]



Trema tomentosa (poison peach): Flowering twig [left] photographed at Pullenvale Q October 1999; Young bark [right] photographed at Ashgrove Q September 2007



Trema tomentosa (poison peach): Flowers photographed at Ashgrove Q October 2005

Wattles

The two most common and widespread wattles on *Grasstrees* are *Acacia neriiifolia* (silver wattle) and *Acacia fimbriata* (fringed wattle). *Acacia pycnostachya* (Bolivia Hill wattle) is a rare species with a limited distribution. *Acacia venulosa* is also of limited distribution.

Wattles on *Grasstrees* belong to species that do not have leaves on adult plants. True leaves are restricted to seedlings in these species and are shed as the plant grows. The structures that appear to be leaves on the mature trees are actually flattened stems called **phyllodes** that function like leaves. Wattles elsewhere with ‘ferny’ foliage do carry leaves on adult plants, so not all Australian wattles have phyllodes.

Wattles on *Grasstrees* may be grouped by **flower-head type** and then by **phyllode** (‘leaf’) **shape**:

- **‘Ball’** flower-heads:
 - *Acacia fimbriata* (fringed wattle) – short thin phyllodes (‘leaves’)
 - *Acacia neriiifolia* (silver wattle) – long thin phyllodes (‘leaves’)
 - *Acacia venulosa* – broad curved phyllodes (‘leaves’)
- **‘Spike’** flower-heads:
 - *Acacia pycnostachya* (Bolivia Hill wattle) – broad curved phyllodes (‘leaves’)

These are included below in alphabetical order.

***Acacia fimbriata* (fringed wattle) [Mimosaceae]**

- Yellow ball flowers in long sprays (racemes) in leaf-stem junctions; July-November
- Phyllodes (“leaves”) short 2-5 cm long, narrow 2-5 mm wide, more or less straight with finely hairy edges (need x 10 lens), 1 gland near the base (just visible without lens)
- Pods more or less straight and flat



Acacia fimbriata (fringed wattle): flowering plant



Acacia fimbriata (fringed wattle): plant in bud



Acacia fimbriata (fringed wattle): flowering branch

***Acacia neriifolia* (silver wattle) [Mimosaceae]**

- Yellow ball flowers in clusters (racemes) in leaf-stem junctions; June-October
- Phyllodes ("leaves") slightly curved, long narrow
- Pods long, narrow, flattened, slightly curved, pinched around the seeds



Acacia neriifolia (silver wattle): whole plant in flower



Acacia neriifolia (silver wattle): flowering branch



Acacia nerifolia (silver wattle): flowers

***Acacia pycnostachya* (Bolivia Hill wattle) [Mimosaceae]**

- Yellow flowers in spikes in 'leaf'-stem junctions; late winter-spring
- Phyllodes ("leaves") sickle-shaped (falcate), 6-10 cm long with many long veins
- Pods leathery, more or less straight and flat; summer



Acacia pycnostachya (Bolivia Hill wattle): whole plant in flower



Acacia pycnostachya (Bolivia Hill wattle): flowering branch



Acacia pycnostachya (Bolivia Hill wattle): flowering branch



Acacia pycnostachya (Bolivia Hill wattle): flower spike

***Acacia venulosa* [Mimosaceae]**

- Yellow ball flowers in leaf-stem junctions; June-November
- Phyllodes ("leaves") sickle-shaped (falcate)
- Pods straight, woolly



Acacia venulosa : flowering branches



Acacia venulosa : flowering branch



Acacia venolosa : flowers and phyllodes ('leaves')



Acacia venolosa : buds and flowers

Gum trees – Eucalypts and ‘Apples’ [Myrtaceae]

Gum trees produce bunches of flowers without petals and dominated by many stamens in a dense fringe around the rim of a cup-like receptacle that then develops into a ‘gum nut’, the fruit of the plant. To get an accurate botanical name for a particular gum tree, a botanist needs to examine both the **buds** and the **fruit** (‘gum nuts’) of the plant. Flowers themselves are seldom if ever useful. However, the **type of bark** on the trunk and branches can be useful.

Leaves on gum tree seedlings and saplings (young or juvenile plants) are often shaped differently to the leaves on more mature and adult plants. See *Eucalyptus caliginosa* (New England stringybark) below.

Broadly, gum trees include the so-called ‘apple’ trees (*Angophora* species), so they are included in this treatment. ‘Apple’ trees can be separated from other gum trees by their having **opposite pairs of leaves** on their branchlets, not an alternate arrangement of leaves as seen in the eucalypts:

- *Angophora floribunda* (rough-barked apple)

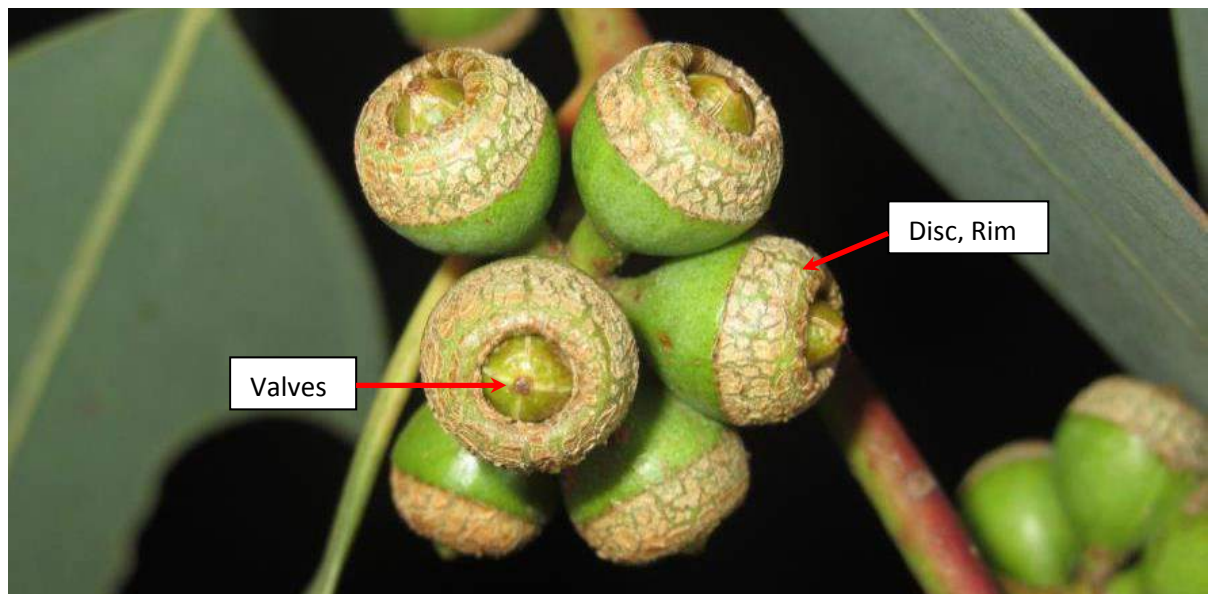
To name a gum tree (eucalypt), start by working out what **type of bark** it carries on its lower trunk:

- **Gum** bark – smooth, flaking off in sheets annually
 - *Eucalyptus interstans* (narrow-leaved cabbage gum)
 - *Eucalyptus prava* (orange gum)
- **Peppermint** bark – short fibres
 - *Eucalyptus andrewsii* (gum-topped peppermint)
- **Stringy** bark – long fibres
 - *Eucalyptus caliginosa* (New England stringybark)
- **Iron** bark – thick and fissured
 - *Eucalyptus caleyi* (Caley’s ironbark)
- **Box** bark – rough persistent

Gum bud structure:



Gum nut structure:



Bark Types:



Gum bark



Peppermint bark



Stringy bark



Iron bark

***Angophora floribunda* (rough-barked apple) [Myrtaceae]**

- Dense crown, 'twisty' branches
- Opposite smooth broad tapering leaves 8-12 cm long x 2-3 cm wide; leaf base tapered (acute), leaf stalks 8-12 mm
- Hairy or smooth flower buds
- White flowers
- 'Gum nuts' with external ribs



Angophora floribunda (rough-barked apple): Mature tree in habitat



Angophora floribunda (rough-barked apple): Mature tree in habitat



Angophora floribunda (rough-barked apple): Bark



Angophora floribunda (rough-barked apple): Flowers



Angophora floribunda (rough-barked apple): Flowers, buds and fruits ('gum nuts')



Angophora floribunda (rough-barked apple): Buds (left) and young fruit ('gum nuts')

***Eucalyptus interstans* (narrow-leaved cabbage gum) [Myrtaceae]**

- Gum bark, grey
- Branchlets red
- Leaves grey-green, asymmetrical about the midrib
- Buds
- Flowers
- Gum nuts globular, 4 valves protruding (exserted)



Eucalyptus interstans (narrow-leaved cabbage gum): Whole plant in habitat



Eucalyptus interstans (narrow-leaved cabbage gum): Bark



Eucalyptus interstans (narrow-leaved cabbage gum): Leafy branch



Eucalyptus interstans (narrow-leaved cabbage gum): Mature leaf



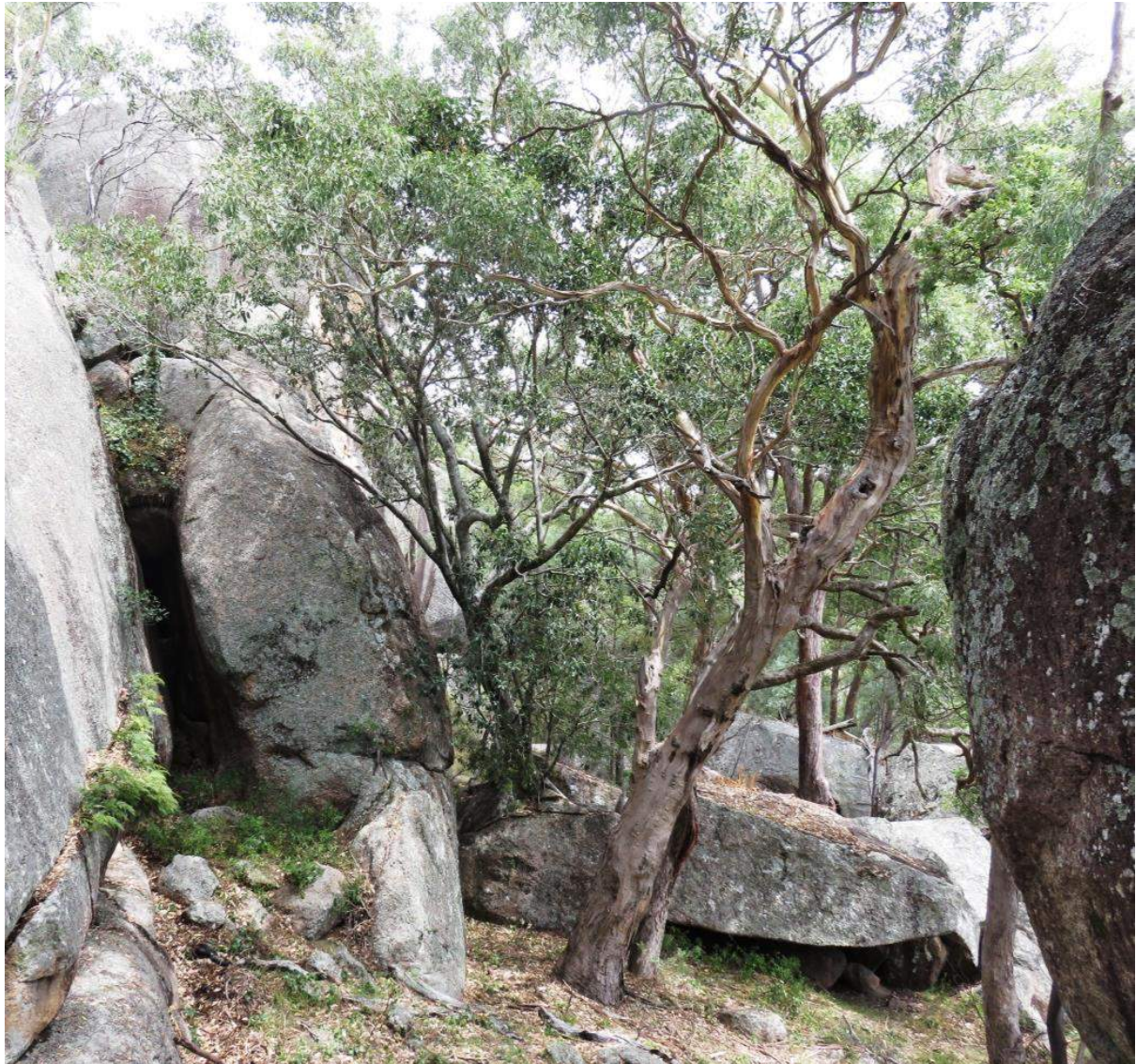
Eucalyptus interstans (narrow-leaved cabbage gum): Mature leaf



Eucalyptus interstans (narrow-leaved cabbage gum): Gum nuts (fruit)

***Eucalyptus prava* (orange gum) [Myrtaceae]**

- Gum bark, patchy grey or grey-brown, shed in large plates or flakes, orange or red-brown when newly exposed
- Buds cylindrical, cap longer than base, slightly pointed, with a surface bloom (glaucous)
- Flowers white; November-January
- Gum nuts in tight clusters, 6-10 mm globular to conical, raised disc, 4 valves protruding (exserted)



Eucalyptus prava (orange gum): Mature tree in habitat



Eucalyptus prava (orange gum): Plant in habitat



Eucalyptus prava (orange gum): Base of trunk



Eucalyptus prava (orange gum): Mature basal bark



Eucalyptus prava (orange gum): Trunk bark shedding to reveal orange young bark



Eucalyptus prava (orange gum): Fruiting leafy branchlet



Eucalyptus prava (orange gum): Gum nuts (fruit)



Eucalyptus prava (orange gum): Gum nuts (fruit)

***Eucalyptus andrewsii* (gum-topped peppermint, New England blackbutt)**

[Myrtaceae]

- Peppermint-type bark
- Upper branches smooth (gum-barked)
- Buds
- Flowers
- Gum nuts



Eucalyptus andrewsii (gum-topped peppermint, New England blackbutt): Tree in habitat



Eucalyptus andrewsii (gum-topped peppermint, New England blackbutt): Trunk



Eucalyptus andrewsii (gum-topped peppermint, New England blackbutt): Bark



Eucalyptus andrewsii (gum-topped peppermint, New England blackbutt): Leafy branches



Eucalyptus andrewsii (gum-topped peppermint, New England blackbutt): Adult leaves



Eucalyptus andrewsii (gum-topped peppermint, New England blackbutt): Leafy twigs with flower buds and gum nuts (fruit)



Eucalyptus andrewsii (gum-topped peppermint, New England blackbutt): Flower buds and gum nuts (fruit)



Eucalyptus andrewsii (gum-topped peppermint, New England blackbutt): Flower buds



Eucalyptus andrewsii (gum-topped peppermint, New England blackbutt): Flower buds



Eucalyptus andrewsii (gum-topped peppermint, New England blackbutt): Young gum nuts



Eucalyptus andrewsii (gum-topped peppermint, New England blackbutt): Mature gum nuts

***Eucalyptus caliginosa* (New England stringybark) [Myrtaceae]**

- Stringybark
- Buds ovoid, cap conical
- Flowers white, 7+ in a cluster; April-June
- Gum nuts on short stalk, rounded, thick rim, 3-4 valves usually protruding (exserted)



Eucalyptus caliginosa (New England stringybark): Mature tree in habitat



Eucalyptus caliginosa (New England stringybark): Mature tree in habitat



Eucalyptus caliginosa (New England stringybark): Lower trunk bark



Eucalyptus caliginosa (New England stringybark): Bark



Eucalyptus caliginosa (New England stringybark): Juvenile tree in habitat



Eucalyptus caliginosa (New England stringybark): Juvenile leaves



Eucalyptus caliginosa (New England stringybark): Young tree in habitat



Eucalyptus caliginosa (New England stringybark): Adult leaves



Eucalyptus caliginosa (New England stringybark): Flower buds



Eucalyptus caliginosa (New England stringybark): Flowers



Eucalyptus caliginosa (New England stringybark): Young gum nuts (fruit)



Eucalyptus caliginosa (New England stringybark): Mature gum nuts (fruit)

***Eucalyptus caleyi* (Caley's ironbark) [Myrtaceae]**

- Ironbark
- Buds
- Flowers white; May-February
- Gum nuts



Eucalyptus caleyi (Caley's ironbark): Trees in habitat



Eucalyptus caleyi (Caley's ironbark): Tree in habitat



Eucalyptus caleyi (Caley's ironbark): Trees in habitat



Eucalyptus caleyi (Caley's ironbark): Bark



Eucalyptus caleyi (Caley's ironbark): Leaves



Eucalyptus caleyi (Caley's ironbark): Flower buds and mature gum nuts (fruit)

Mistletoes – Angiosperms (flowering plants)

Mistletoes are flowering plants that grow as parasites on the limbs of trees, tapping into the host tree for supplies of water and nutrients.

Amyema pendula* subsp. *longifolia (drooping mistletoe) [Loranthaceae]

- Long thin leaves
- Dull red flowers
- Fruits fleshy berries
- On limbs of *Eucalyptus* trees – seen on *E. andrewsii*, *E. caliginosa*



Amyema pendula subsp. *longifolia* (drooping mistletoe): Whole plant in habitat



Amyema pendula subsp. *longifolia* (drooping mistletoe): Flower buds and fruit



Amyema pendula subsp. *longifolia* (drooping mistletoe): Flower buds



Amyema pendula subsp. *longifolia* (drooping mistletoe): Fruit

***Notothixos cornifolius* (kurrajong mistletoe) [Viscaceae]**

- Broad leaves
- Tiny green flowers in clusters
- Fruits fleshy berries
- On *Brachychiton populneus* (kurrajong) trees



Notothixos cornifolius (kurrajong mistletoe): Single plant on *Brachychiton populneus* (kurrajong)



Nototbixos cornifolius (kurrajong mistletoe): Many plants on *Brachychiton populneus* (kurrajong). Do mistletoes kill trees? In small numbers – No. In large numbers – Perhaps, but the issue is complex and the host trees can fight back..



Notothixos cornifolius (kurrajong mistletoe): Single plant on *Brachychiton populneus* (kurrajong)



Notothixos cornifolius (kurrajong mistletoe): Flowering twigs



Notothixos cornifolius (kurrajong mistletoe): Leaf and flowers



Notothixos cornifolius (kurrajong mistletoe): Flowering branches



Notothixos cornifolius (kurrajong mistletoe): Flowers



Notothixos cornifolius (kurrajong mistletoe): Fruit

***Notothixos subaureus* (golden mistletoe) [Viscaceae]**

- Broad leaves covered with golden tomentum (short soft hairs)
- Tiny green flowers in clusters covered with golden tomentum (short soft hairs)
- Fruits fleshy berries covered with golden tomentum (short soft hairs)
- On *Amyema pendula* (drooping mistletoe) - hyperparasitism



Notothixos subaureus (golden mistletoe): Whole plant (red arrow) parasitic on a drooping mistletoe, itself on a stringybark tree



Nototbixos subaureus (golden mistletoe): Flowering plant