



# Mallee Trees and Shrubs for Seed Collection

field guide

# Acknowledgements

The Mallee Catchment Management Authority (CMA) acknowledges and respects Traditional Owners, Aboriginal communities, and organisations. We recognise the diversity of their cultures and the deep connections they have with Victoria's land and waters.

We value partnerships with them for the health of people and country. Mallee CMA Board, management and staff pay their respects to Elders past and present, and recognise the primacy of Traditional Owners' obligations, rights and responsibilities to use and care for their traditional lands and waters.

## Front Cover Image

*Dodonaea viscosa* subsp. *angustissima* - Koorlong State Forest © *vermilingua\_pygmaeus*, CC-BY-NC

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**Text:** VicFlora (2022). Flora of Victoria, Royal Botanic Gardens Victoria, <https://vicflora.rbg.vic.gov.au>, last accessed 20 Oct. 2022.

**Distribution Maps:** AVH (2022). Australia's Virtual Herbarium, Council of Heads of Australasian Herbaria, <http://avh.chah.org.au>. Victorian Biodiversity Atlas, © The State of Victoria, Department of Environment and Primary Industries (published Dec. 2014).

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Mallee Catchment Management Authority  
Mallee Trees and Shrubs Field Guide

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# Introduction

The biodiversity of the Mallee has been shaped by a climate of temperature extremes, low rainfall, and underlying geology.

This has created a series of unique ecosystems that are significant, particularly for reptiles and birds. This uniqueness combined with historical land clearing for agricultural development has seen a significant number of Mallee flora and fauna species, as well as ecological communities, listed as threatened in both Victoria and at a national level.

A primary threat to Mallee biodiversity is the loss of ecological processes, particularly in regard to ecosystem fragmentation, disturbed breeding and regeneration cycles, and species population imbalances. Habitat is the key to maintaining and enhancing biodiversity. The size, number, connectivity and quality of remnant vegetation determines how well ecological processes continue to function in the region.

## Who is this guide for?

This booklet has been developed as a companion document to *Seeding Victoria's Hints for Collectors of Indigenous Seed Collection in the Mallee*.

Please note: Seed collection on public land must be undertaken in line with appropriate guidelines, such as the the Department of Energy, Environment and Climate Action's *Application for a Permit to Take Protected Flora*.

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




# How to use this guide

The overview of each species will include:

- Scientific name
- Common name
- Distribution map
- Identification details (such as habit, phyllodes, flowers etc.)
- Photos
- Botanical illustrations

Distribution maps detail bioregions where each species is known to exist, along with recorded observations from the Victorian Biodiversity Atlas (VBA) and the Australasian Virtual Herbarium (AVH). The following legend is used on the distribution maps:

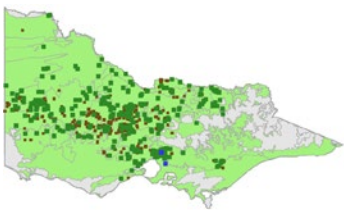
	Native	Origin and degree of establishment Introduced	Cultivated
AVH			
VBA			
Regions/ areas			

A glossary of botanical terminology is provided at the back of this booklet.

A ruler scale can be found on the inside of the back cover to assist with field identifications.

# Acacia acinacea

Gold-dust Wattle



**Habit** Bushy or straggly shrub, commonly to c. 2.5 m high; branchlets more or less angled at extremities, glabrous or hairy.

**Phyllodes** Usually asymmetric, narrowly oblong-elliptic, oblanceolate, broadly obovate or circular, usually 0.4–1.5 cm long and 2–8 mm wide, glabrous or hairy, more or less obtuse, usually with an oblique, minute mucro; midrib obscure or absent, lateral veins absent; glands 2, adjacent to mucro and near or below middle of phyllode, not prominent.

**Peduncles** 1–2 per node, 4–20 mm long, slender, glabrous, terminating a rachis c. 0.5 mm long; heads prolific, globular, 4–4.5 mm diam., 8–20-flowered, golden.

**Flowers** 5-merous; sepals free.



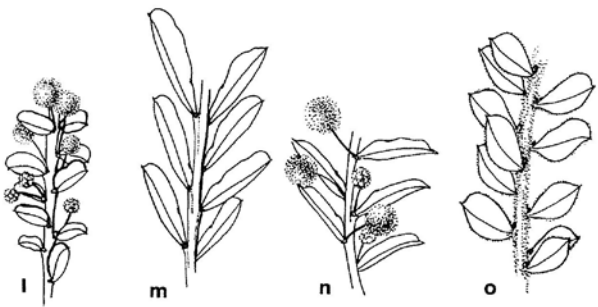
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20 mm

*I-o. phyllode variants*

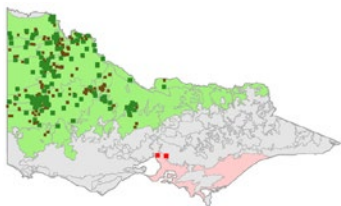
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**Pods** Circinnate to irregularly twisted or spirally coiled, 3–4.5 mm wide, crustaceous, glabrous; seeds longitudinal, more or less oblong, 4–5 mm long, shiny, dark brown, aril clavate and a quarter to a half the length of the seed.

**Flowering** Jul.–Nov.

# Acacia brachybotrya

Grey Mulga



**Habit** Rounded shrub, 1–3 m high; branchlets variably hairy, sometimes glabrous.

**Phyllodes** Variable, normally slightly asymmetrically oblong-elliptic to oblong-obovate (but frequently narrowly so) or obovate to oblanceolate, usually 1–3 cm long and 4–13 mm wide, 1.5–3.5 times as long as wide, indumentum similar to branchlets, hairs if present scattered, sometimes glabrous, grey-green to glaucous, obtuse to subacute; 1-veined, lateral veins not prominent; gland very small, near centre of upper margin, second gland sometimes present just above pulvinus.

**Inflorescence** 1–5-headed, rachis 0.5–5 mm long, hairy or glabrous; peduncles slender, 4–15 mm long, hairy, sometimes glabrous; heads globular, 18–30-flowered, golden.



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*j. flowering branch*

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**Flowers** 5-merous; calyx variably dissected.

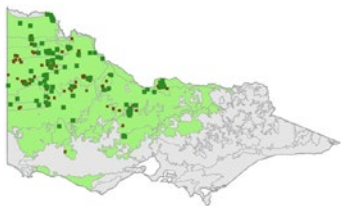
**Pods** Linear to narrowly oblong, to 9 cm long, 4–8 mm wide, firmly chartaceous to coriaceous, glabrous or hairy, dark brown or black, lightly pruinose; seeds longitudinal, 4–5.5 mm long, subshiny, brown to black, punctate about centre, funicle short, aril enlarged.

**Flowering** Jul.–Oct.



# Acacia hakeoides

Hakea Wattle



**Habit** Bushy shrub or tree, usually to c. 4 m high; branchlets glabrous.

**Phyllodes** Narrowly oblanceolate, sometimes linear, sometimes upper margin kinked at gland, usually 4.5–12 cm long, (3–) 6–12 mm wide, glabrous, narrowed at base, apex obtuse; midrib often slightly eccentric, lateral veins longitudinally anastomosing; gland normally 1–2.5 cm above pulvinus.

**Racemes** With rachis mostly 1–5 cm long, glabrous, drying dark brown to blackish; peduncles 2–5 mm long, stout, glabrous or subglabrous, drying dark brown to blackish; heads globular, usually 20–27-flowered, bright golden; bracteoles evident in buds, lamina more or less circular, dark brown to black and white-fimbriate.



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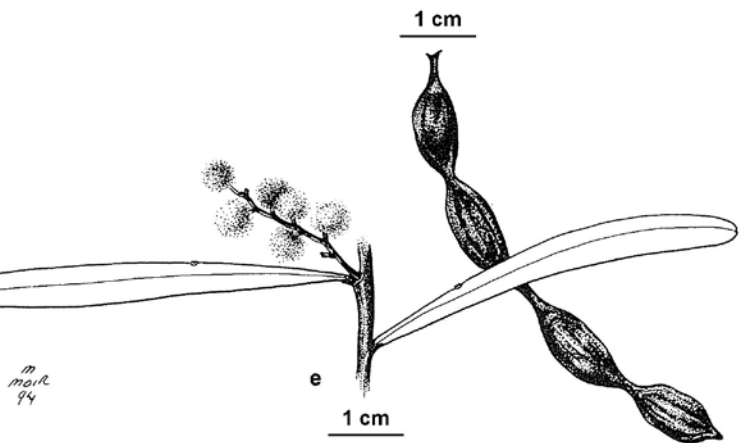


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*e.* flowering branch; pod

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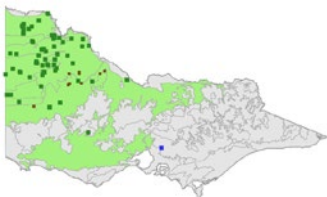
**Flowers** 5-merous; sepals united.

**Pods** Usually more or less moniliform, to 12 cm long, 4–6 mm wide, more or less thinly coriaceous-crustaceous, glabrous, very dark brown to black; seeds longitudinal, oblong to elliptic, 5–7 mm long, dull, black, aril clavate.

**Flowering** Jun.–Sep.

# Acacia microcarpa

Manna Wattle



**Habit** Glabrous shrub to 2.5 m high; branchlets somewhat angled at extremities.

**Phyllodes** Usually oblanceolate, sometimes oblong-oblanceolate, elliptic or elliptic-oblanceolate, usually 2–5.5 cm long, 4–10 mm wide, straight to slightly curved, smooth, slightly thickened, obtuse but frequently obliquely so, often retuse; midrib not prominent, lateral veins absent or obscure; stipules insignificant; glands 2, apical gland adjacent to mucro, lower one near or below phyllode middle, 0.5 mm long and normally shallowly concave.

**Peduncles** 2–5 per node, 4–10 mm long, drying yellow or blackish, each terminating a rachis c. 0.5 mm long; heads globular, 14–22-flowered, bright mid golden.



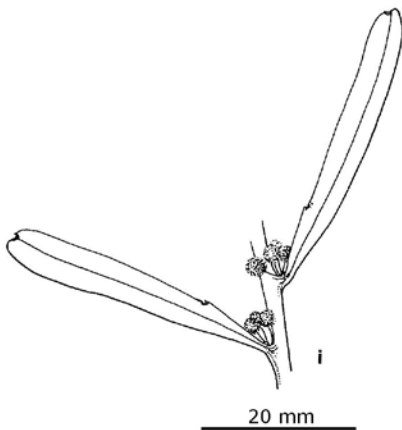
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*i. flowering branch*

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**Flowers** 5-merous; sepals free. Pods linear, prominently raised over seeds, to 8 cm long, 2–5 mm wide, slightly to prominently curved, firmly chartaceous; seeds longitudinal, elliptic to widely elliptic-oblong, 3–4 mm long, subglossy, dark brown, aril more or less clavate and a quarter to a third the length of the seed.

**Flowering** Sep.–Oct.

# Acacia oswaldii

Umbrella Wattle



**Habit** Shrub or tree, 0.5–8 m high: branchlets terete, glabrous or with appressed, minute hairs, sometimes minutely woolly, typically with many red, resinous hairlets.

**Phyllodes** Spreading to erect, terete to compressed, linear, elliptic, or oblong-elliptic, 2.5–10.5 cm long, 3–15 mm wide, straight to curved, rigid, glabrous, occasionally somewhat glaucous, acute to acuminate, or obtuse and mucronate, coarsely to sharply pungent or sometimes innocuous; main veins 3–6, distant, raised, with nearly as prominent secondary veins occasionally anastomosing.

**Peduncles** 0.5–0.8 mm long, paired, with appressed, minute hairs; heads depressed globular, 4.5–5 mm diam., 8–15-flowered, pale golden.



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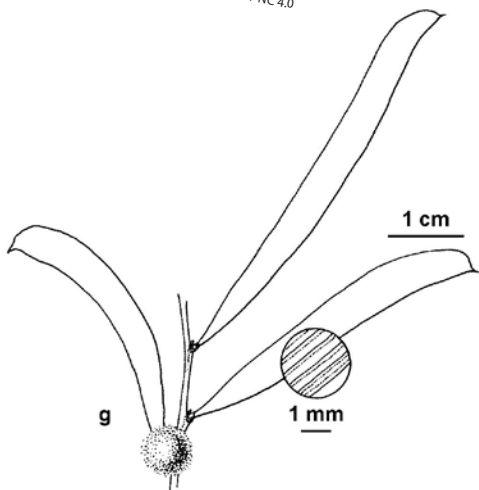


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*g. flowering branch with phyllode venation detail*  
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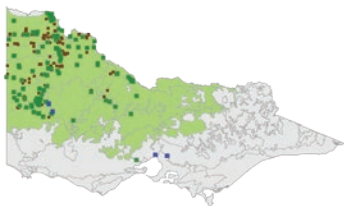
**Flowers** 5-merous; sepals one-quarter to two-thirds united.

**Pods** Linear, to 31 cm long, 6–10 mm wide, coriaceous, in one to several open coils, covered with minute appressed hairs and (when young) with many clumps of red tiny hairs; seeds longitudinal, oblong-elliptic, 6–8 mm long, glossy dark-brown, aril orange, subapical.

**Flowering** Nov.–Jan.

# Acacia rigens

Nealie



**Habit** Spreading shrub or tree, to 6 m high; branchlets strongly yellow-ribbed, with appressed, minute hairs between glabrous ribs.

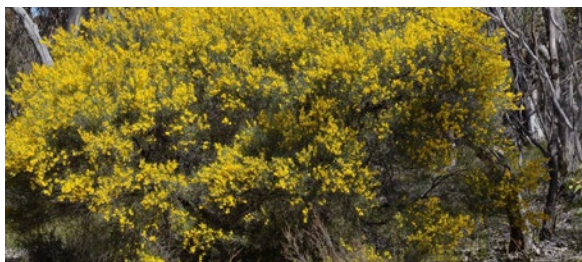
**Phyllodes** Terete to linear-compressed, 3–14 cm long, 0.8–1 mm diam. (subterete variant) to 2.5 mm wide (compressed variant), straight to shallowly curved, rigid, with appressed, minute hairs, sometimes glabrous between veins, apex sharply to coarsely pungent and often curved; veins numerous, closely parallel, raised, yellowish; gland basal.

**Peduncles** 2–6 mm long, 2 per node, with appressed, minute hairs; heads globular, 4–8 mm diam., 20–33-flowered, golden, sometimes resinous; bracteoles spatulate.

**Flowers** 5-merous; sepals free to half united.



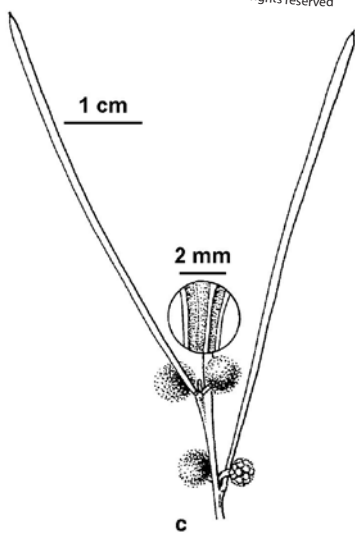
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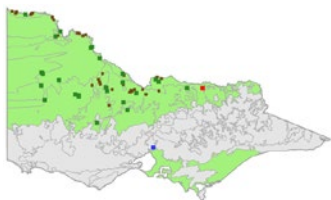
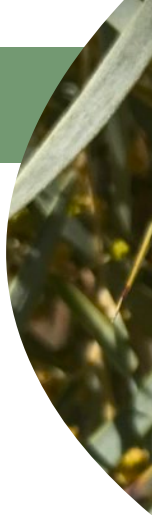
*c. flowering branch with stem detail*  
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**Pods** Linear, raised over and constricted between seeds, 3.5–10 cm long, 2–3 mm wide, chartaceous to coriaceous, straight to slightly curved, sometimes with appressed, minute hairs; seeds longitudinal, oblong-elliptic to narrowly elliptic, 3–4.5 mm long, glossy, pale brown, aril apical, conical.

**Flowering** Aug.–Nov.

# Acacia salicina

Willow Wattle



**Habit** Shrub or tree 3–13 m high, often clonal; branchlets pendulous, often zigzag between nodes, dark grey-brown, glabrous.

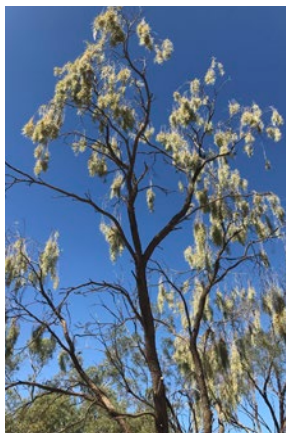
**Phyllodes** Pendulous, linear to narrowly oblanceolate or narrowly elliptic, 4–20 cm long, 4–30 mm wide, 4–40 times as long as wide, more or less flaccid, green to grey-green, sometimes glaucous, glabrous, apex acute to obtuse with small often oblique, mucro; pinnately veined, midrib prominent; glands 2–5, lowermost 0–5 mm above pulvinus, distal glands often prominent with one at base of mucro.

**Raceme** With rachis usually 1–5 cm long, glabrous, 2–8-headed; peduncles 5–15 mm long, glabrous; heads globular, moderately dense, 15–25-flowered, cream to pale yellow.

**Flowers** 5-merous; sepals united, more or less truncate.

**Pods** Narrowly oblong, to 12 cm long, 7–13 mm wide, woody, thick, longitudinally striate when dry, grey-green, glabrous; seeds longitudinal, elliptic to oblong-elliptic, 4.5–6 mm long, shiny, dark brown to black, aril scarlet.

**Flowering** Usually Mar.–Jun.



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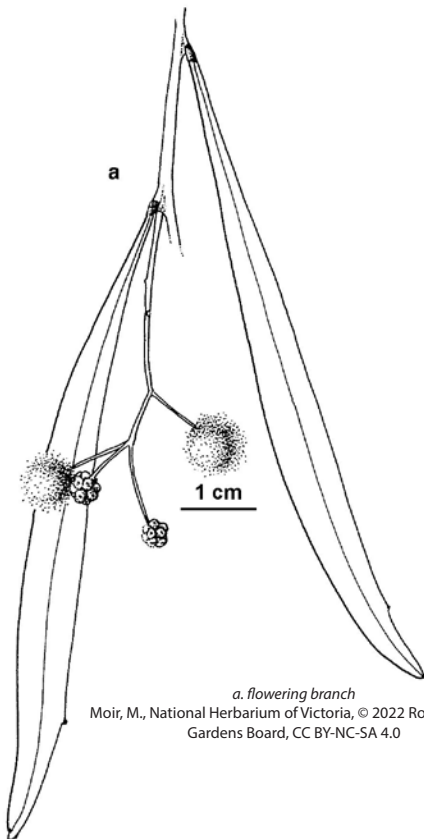


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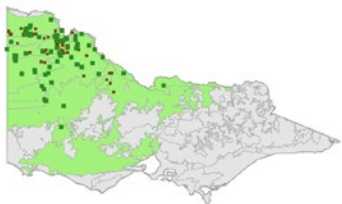


*a. flowering branch*

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# Acacia sclerophylla var. sclerophylla

Hard Leaf Wattle



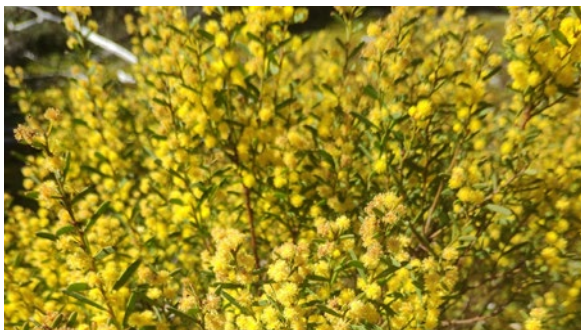
**Habit** Dense, rounded or flat-topped shrub, 0.2–3 m high; branchlets often twisted and pustulate, resinous, glabrous.

**Phyllodes** Usually linear-oblongate, 2–4 cm long, 1–4.5 mm wide, thick, somewhat curved, glabrous, obtuse, mucronate; main veins 3, distant, resinous, whitish, impressed in summit of ridges, with as many weaker, sometimes obscure, secondary veins; stipules persistent, triangular, c. 0.5 mm long.

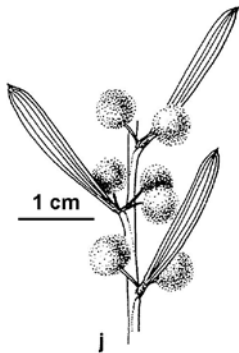
**Peduncles** 2–5 mm long, 2 per axil, glabrous; heads globular, 3–4 mm diam., 12–20-flowered, light-golden.



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*j. flowering branch*

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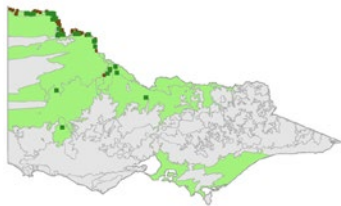
**Flowers** 5-merous; sepals free.

**Pods** Linear, to 6 cm long, 2–3 mm wide, curved to twisted, glabrous; seeds longitudinal, oblong to oblong-ovate, aril apical.

**Flowering** Aug.–Nov.

# Acacia stenophylla

River Myal



**Habit** Rounded shrub to spreading tree, 4–20 m high; branches normally pendulous, branchlets glabrous to minutely sericeous, often pruinose, sometimes angular.

**Phyllodes** Strap-like, 15–40 cm long, 2–5(–10)mm wide, straight to weakly curved, thinly coriaceous, glabrous or appressed-puberulous, acute to acuminate, apex often strongly arcuate; veins numerous, closely parallel, narrower than intervein spaces.

**Racemes** 3–5-headed, rachis 2–15 mm long, subglabrous or with appressed minute hairs; peduncles 6–13 mm long; heads globular, 6–9 mm diam., 25–40-flowered, creamy-white to pale yellow.

**Flowers** 5-merous; sepals three-quarters united.

**Pods** Moniliform, to 26 cm long, 8–12 mm wide, woody-coriaceous, smooth, glabrous except micro-puberulous between seeds; seeds longitudinal, broadly elliptic to oblong-elliptic, 7–9 mm long, dark brown, without aril, funicle enlarged, folded at seed apex and white.

**Flowering** Irregular, mainly autumn.



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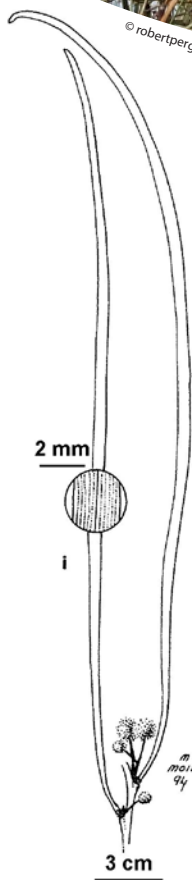


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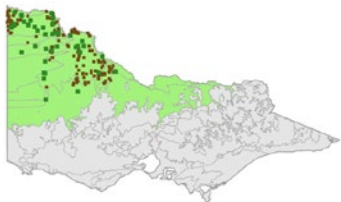
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*i. flowering branch with phyllode detail*  
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# Alectryon oleifolius subsp. canescens

Cattle Bush



**Habit** Shrubs or small trees to 6 m high, usually bushy with weeping or erect branches; branchlets, leaves and inflorescences densely white-pubescent.

**Leaves** Simple, sericeous when young, obovate to elliptic, (3–)5–8.5(–10) long, 0.4–1.6(–2.2) cm wide, obtuse, acute or subacute, mucronate, coriaceous; petiole 2–16 mm long.

**Inflorescence** Raceme- or panicle-like 1.5–9 cm long, 1.5–5 cm diam.; cymules (1–)2–9-flowered.



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*d. flowering branch and capsule; flower*

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**Flowers** Usually bisexual; pedicels 1.5–10 mm long; calyx 1.5–2.5 mm long, subentire, broadly 5–10-toothed at margins, silky white-hairy (in Victoria); petals absent; stamen filaments 1.5–4 mm long; ovary densely white tomentose to puberulent.

**Capsules** (1–)2–3-lobed, densely hairy, 10–25 mm diam.; pericarp subwoody, hairy or glabrous.

**Flowering** Sep.–Feb.

# Allocasuarina luehmannii

Buloke



**Habit** Dioecious tree, 5–15 m tall; penultimate branchlets woody. Bark furrowed.

**Branchlets** Ascending, to 40 cm long; internodes 8–22 mm long, 1–2 mm diam., often waxy, finely pubescent especially in furrows when immature; ribs flat to slightly rounded, minutely roughened.

**Teeth** 10–14, erect, tightly appressed, 0.5–1 mm long, slightly overlapping, usually withered.

**Male spikes** 1–5 cm long, 5–8 whorls per cm; anther c. 1 mm long; bracteoles deciduous individually.

**Cones** Very shortly cylindric, broader than long, pubescent at least when young, sessile or on peduncle to 5 mm long; cone body 5–12 mm long, 8–14 mm diam.; bracts inconspicuous; valves in 2 or 3 wheel-like rows, extending well beyond cone



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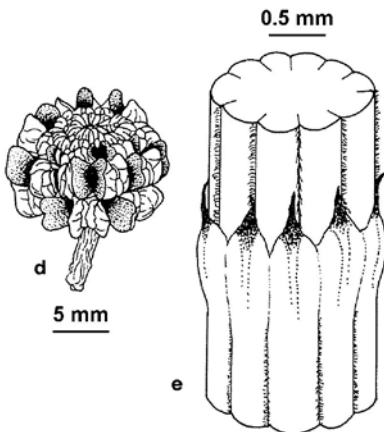


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*d. cone; e. branchlet*

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body, acute to obtuse, protuberance pyramidal or flattened, obtuse, entire, much shorter than bracteole body and diverging from it near base.

**Winged seeds** 4–5 mm long, red-brown.

**Flowering** Sep.–Nov.

# Atriplex nummularia

Old-man Saltbush



**Habit** Erect shrub to c. 3 m high, mostly dioecious.

**Leaves** Ovate, broadly elliptic or rhombic, 15–40 mm long and wide, margins entire, sinuate or coarsely toothed, often undulate, surfaces uniformly grey-green.

**Flowers** Male flowers in globose clusters commonly crowded along simple or branched spikes. Female flowers clustered in leafless panicles, in upper axils or sometimes a few subtending male flowers.



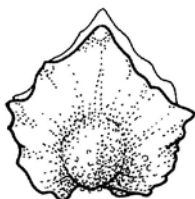
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z

2 mm

*z. fruiting bracteole (subsp. nummularia)*

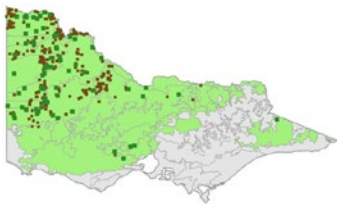
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**Fruiting bracteoles** Sessile, orbicular to rhombic, fused below widest part near base, mealy grey, thickened and corky for the greater part, but thin near apical margin, entire or finely toothed in the upper part, rounded at apex, mostly 6–10 mm long and wide, dorsal appendages absent.



# Callitris gracilis

Slender Cypress-pine



**Habit** Broad conical tree to 20 m high, or straggly tree in less favourable habitats.

**Leaves** 2–4 (rarely to 8) mm long, dark green, occasionally glaucous, outer side rounded.

**Female cones** Single or in groups of 2 or more, ovoid to subglobose, usually 2.5–4 cm diam. when open, persistent; scales thick, permanently adhering toward base, dorsal surface finely to coarsely rugose, frequently with tubercles, with very small dorsal point near apex; columella not lobed, usually short and thick.



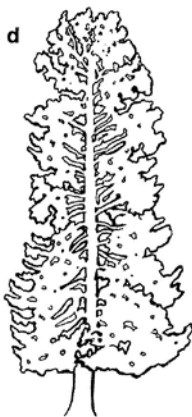
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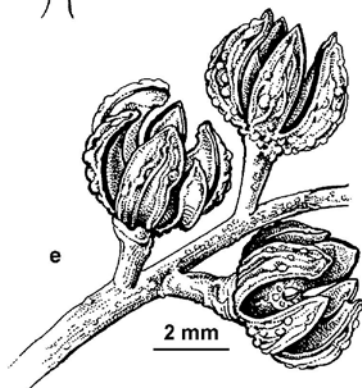
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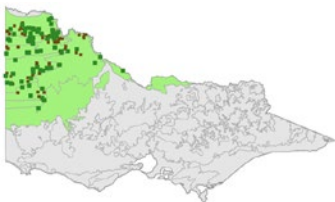


*d. outline of tree; e. opened cones*  
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# Dodonaea bursariifolia

Small Hop-bush



**Habit** Dioecious or rarely polygamodioecious, spreading shrub to 1.5 m high; branchlets terete to weakly angular, puberulent to glabrous.

**Leaves** Simple, more or less sessile, obovate, oblanceolate or oblong, 5–35 mm long, 3–15 mm wide, obtuse or rounded, entire, not viscid, glabrous.

**Flowers** Paired or in threes, or rarely in a few-flowered terminal cyme; pedicels 1.5–2.6 mm long; sepals (4 or)5, linear or linear-



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*f. leaves and fruit*

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lanceolate, 1.4–3 mm long, caducous; stamens (5–)8, longer than sepals; ovary glabrous.

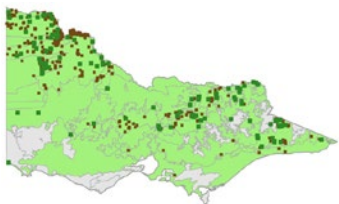
**Capsule** 3(–4)-angled, oblong to obovate in outline, 6–9 mm long, 5–8.5 mm wide, glabrous, wings 0.5–1 mm wide, sometimes above the middle of the capsule only, coriaceous, dehiscence septical; seed lenticular, 2–2.2 mm long, black, shiny, with hyaline membrane lifting at margin, exarillate.

**Flowering** Mostly spring and summer.



# Dodonaea viscosa subsp. angustissima

Slender Hop-bush



**Habit** Dioecious or polygamodioecious, spreading or erect shrub, or tree to c. 4 m; branchlets angled to flattened, usually slightly ribbed, puberulent to glabrous.

**Leaves** Leaves sessile, linear to narrowly oblong or narrowly oblanceolate, 3–9.5 cm long, 1–6 mm wide, acute to obtuse, shortly apiculate; margins irregularly sinuate to irregularly and minutely dentate; lateral venation conspicuous.

**Flowers** In terminal panicles; pedicels 3–9 mm long; sepals 3–4, lanceolate to ovate, 1.3–3 mm long, viscid, caducous; stamens



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*b. leaves and fruit*

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6–10, usually 8, usually longer than the sepals; ovary glabrous to pubescent.

**Capsule** 3–4-winged, broadly elliptic to transversely elliptic in outline, 8.5–22(–28) mm long, 11–22(–28) mm wide, glabrous, wings 2–6(–10) mm wide, membranous or sometimes coriaceous; seed lenticular, 2–3.1 mm long, black, dull, exarillate.

**Flowering** Mostly spring and summer.

# Enchylaena tomentosa var. tomentosa

Ruby Saltbush



**Habit** Prostrate, spreading or erect shrub to c. 1.5 m high, branchlets shallowly grooved, densely to lightly pubescent.

**Leaves** Sessile, terete or fusiform, 5–20 mm long, sometimes glaucous, sparsely to densely invested with short, straight to tightly curled, white to rusty hairs.

**Perianth** c. 1 mm diam. at anthesis; tube glabrous, lobes ciliate to densely woolly along margins.

**Fruiting perianth** Depressed-globular, somewhat elongate about the radicular slit, 3–6 mm diam., green, yellow or red.

**Flowering** Mainly Sep.–Apr.



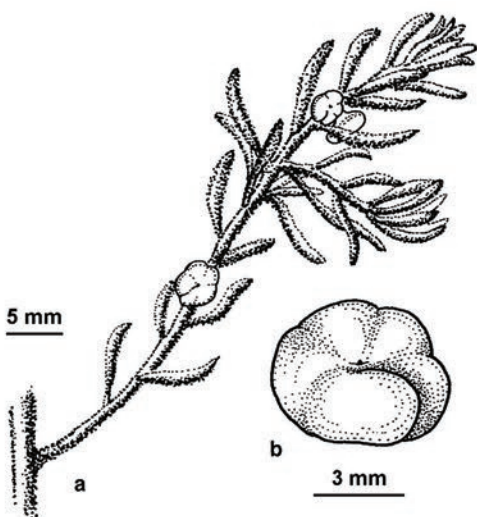
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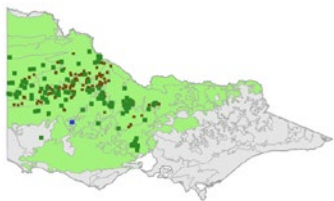


*a. fruiting branch; b. fruit*

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# Eucalyptus behriana

Bull Mallee



**Habit** Mallee to 12 m tall; bark rough, fibrous, over lower part of trunk, dark brown to brown-black; upper trunk and branches smooth, yellowish-green or grey-brown.

**Leaves** Juvenile leaves petiolate, alternate, ovate, to 12 cm long, 7 cm wide, dull, blue-green to glaucous; adult leaves petiolate, alternate, broadly lanceolate to ovate, 7–10 cm long, 1.5–3 cm wide, concolorous, glossy, green; intramarginal vein remote from edge; reticulation very dense, with numerous, mostly intersectional oil glands.

**Inflorescences** In leafless, terminal panicles; peduncles to 1 cm long, 3–7-flowered. Young buds sessile, narrowly oblong, becoming shortly pedicellate, clavate, to 0.7 cm long, 0.3 cm



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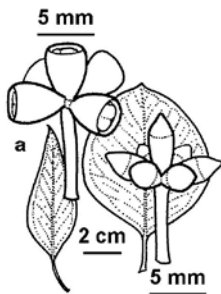


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*a. juvenile (right) and adult (left) leaves; bud and fruit*  
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diam., scar present; operculum conical; stamens irregularly flexed; anthers adnate, globoid; ovules in 4 vertical rows; flowers white.

**Fruit** Sessile or shortly pedicellate, cupular or barrel-shaped, to 0.6 cm long, 0.5 cm diam.; disc descending; valves 4, rim level or below; seed brown, irregularly ovoid and slightly flattened, surface shallowly reticulate, hilum ventral

**Flowering** Sep.–Feb.

# Eucalyptus camaldulensis

## subsp. camaldulensis

River Red Gum



**Habit** Tree to 40 m tall; bark smooth, mottled, shedding at intervals throughout the year showing white, yellow and grey, becoming roughened at base.

**Leaves** Juvenile leaves petiolate, soon alternate, broadly lanceolate to lanceolate, to 11 cm long, 3 cm wide, dull green; adult leaves petiolate, alternate, lanceolate, 10–20 cm long, 1–2 cm wide, concolorous, dull, green; reticulation dense, with numerous (rarely few or absent), clear, yellow and green island oil glands.

**Inflorescences** Axillary, unbranched; peduncles to 2 cm long, 7-flowered; buds pedicellate, hypanthium hemispherical; operculum beaked, to 1 cm long, 0.5 cm diam., scar present; stamens inflexed; anthers dorsifixed, cuneate; ovules in 6 vertical rows; flowers white.



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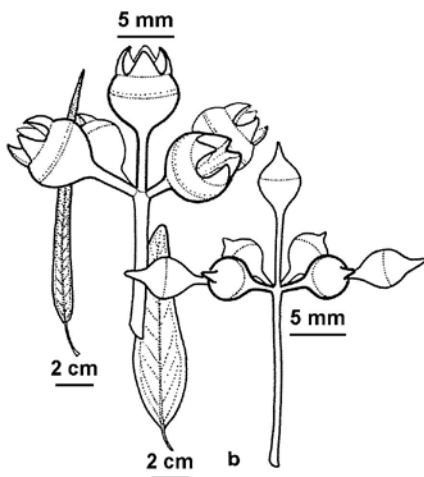


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*b. juvenile (right) and adult (left) leaves; bud and fruit*  
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**Fruit** Pedicellate, hypanthium hemispherical, to 0.6 cm long, 1 cm diam.; disc ascending; valves 4, exserted; seed yellow or yellow-brown, cuboid, smooth, hilum terminal.

**Flowering** Summer.

# Eucalyptus dumosa

Dumosa Mallee



**Habit** Mallee; bark smooth or rough and loose at base. Pith of branchlets glandular.

**Leaves** Juvenile leaves petiolate, alternate, ovate, to 14 cm long, 6 cm wide, dull, green; adult leaves lanceolate, 6.5–14 cm long, 1–2 cm wide, concolorous, at first dull maturing slightly glossy, light green or grey; reticulation dense, with erose veinlets, oil glands numerous, mainly intersectional.

**Inflorescences** Axillary, unbranched; peduncles to 1.6 cm long, 7-flowered; buds shortly to distinctly pedicellate, oblong, to 1 cm long, 0.5 cm diam., scar present; operculum conical to slightly beaked; stamens inflexed; anthers dorsifixed, cuneate; ovules in 4 vertical rows; flowers white.



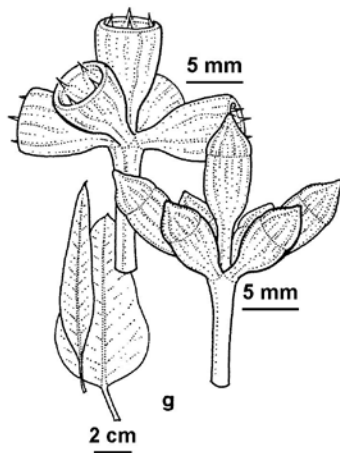
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*g. juvenile (right) and adult (left) leaves; bud and fruit*

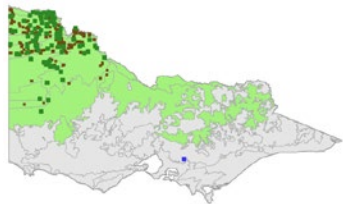
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**Fruit** Shordy pedicellate, cupular to cylindric, to 0.9 cm long, 0.8 cm diam.; disc descending; valves 4, to rim level; seed lustrous ruby-red, flattish, with distinct, shallow reticulum, hilum ventral.

**Flowering** Oct.–May.

# Eucalyptus gracilis

Yorrel



**Habit** Mallee or small tree; bark rough on lower part of stems, tessellated.

**Leaves** Juvenile leaves petiolate, opposite for few pairs then alternate, lanceolate, to 6 cm long, 1 cm wide, dull, blue-green; adult leaves petiolate, alternate, narrowly lanceolate, 5–8 cm long, 0.8–1.2 cm wide, concolorous, glossy, green; reticulation incomplete, obscured by large irregular oil glands, side veins acute, particularly at base.

**Inflorescences** Axillary, unbranched; peduncles slender, to 1 cm long, 7-flowered; buds pedicellate, clavate, to 0.6 cm long, 0.3 cm diam., scar present; operculum shallowly hemispherical; stamens ascending and flexed tangentially, then inflexed, with outer staminodes, much twisted in flower; anthers basifixed, cuboid or globoid; ovules in 4 vertical rows; flowers creamy white.



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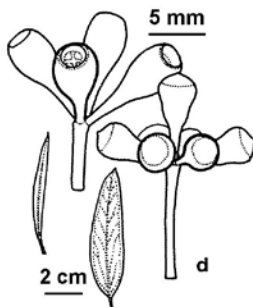


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*d. juvenile (right) and adult (left) leaves; bud and fruit*  
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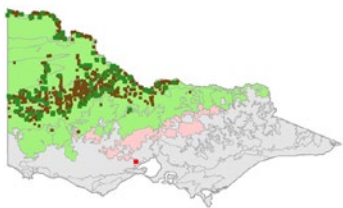
**Fruit** Pedicellate, cupular or barrel-shaped, to 0.6 cm long, 0.3 cm diam.; disc vertically descending; valves 3 or 4, below rim; seed pale red-brown, flattened-ellipsoid, smooth with longitudinal grooves, hilum ventral.

**Flowering** Apr.–Jan.



# Eucalyptus largiflorens

Black Box



**Habit** Tree to 20 m tall; bark rough to the small branches, fibrous, dark grey.

**Leaves** Juvenile leaves shortly petiolate, alternate, linear, often curved, to 15 cm long, 1 cm wide, bluish; adult leaves petiolate, narrowly lanceolate, 9–18 cm long, 0.8–1.8 cm wide, concolorous, dull, green or blue-green; intramarginal vein remote from edge; reticulation very dense, with scattered intersectional oil glands.

**Inflorescences** Terminal panicles; peduncles to 1 cm long, 7–11-flowered; buds pedicellate, clavate to ovoid, to 0.5 cm long, 0.3 cm diam., scar present or outer operculum shed late; operculum conical to hemispherical; stamens irregularly flexed; anthers adnate, globoid; ovules in 4 vertical rows; flowers white, rarely pink.



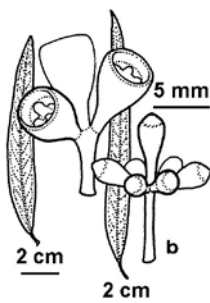
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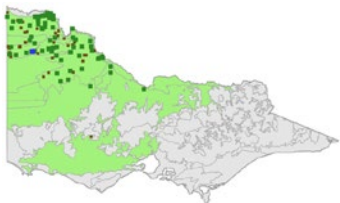
*b.* juvenile (right) and adult (left) leaves; bud and fruit  
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**Fruit** Pedicellate, cupular to obconical, to 0.6 cm long, 0.5 cm diam.; disc descending; valves (3)4, below rim; seed brown, irregularly ovoid and slightly flattened, surface shallowly reticulate, hilum ventral.

**Flowering** Spring–autumn.

# Eucalyptus oleosa subsp. oleosa

Oil Mallee



**Habit** Mallee; bark rough on lower part of trunk, fibrous, usually loose.

**Leaves** Juvenile leaves shortly petiolate, linear, spirally arranged, later leaves decussate, linear to narrowly lanceolate, to 8 cm long, 0.8 cm wide; adult leaves petiolate, alternate, narrowly lanceolate, 7–10 cm long, 0.8–1.5 cm wide, concolorous, glossy green; side veins weakly pinnate, fine; oil glands very numerous, round, island.

**Inflorescences** Axillary, unbranched; peduncles slightly flattened, to 1.3 cm long, 11- or 13-flowered; buds pedicellate, oblong or ovoid, to 0.8 cm long, 0.3 cm diam., scar present; operculum obtuse, often narrower than hypanthium, rarely acute; stamens irregularly flexed; anthers scarcely versatile, basifixed, globoid; ovules in 4 vertical rows; flowers white or creamy-white.



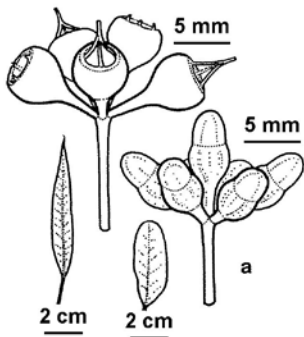
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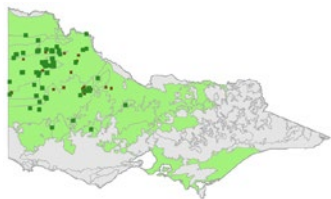
*a. juvenile (right) and adult (left) leaves; bud and fruit*  
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**Fruit** Pedicellate, truncate-globose, to 0.6 cm long, 0.6 cm diam.; disc vertically descending; valves 3 or 4, enclosed, surmounted by semi-persistent, fragile, style remnants; seed grey, flattened-ellipsoid, smooth with shallow, longitudinal furrows, hilum ventral.

**Flowering** Jan.–Jul.

# Eucalyptus porosa

Black Mallee-box



**Habit** Small tree branching low, to 12 m tall, or mallee; bark rough over trunk and large branches or over most of stems, box-type.

**Leaves** Juvenile leaves petiolate, opposite for few pairs then alternate, elliptic to ovate, to 6 cm long, 2 cm wide, green; adult leaves petiolate, alternate, lanceolate, often slightly crenulate, 6–13 cm long, 1–2 cm wide, concolorous, glossy, green; intramarginal vein remote from edge; reticulation moderate to dense, sometimes obscured by numerous oil glands.

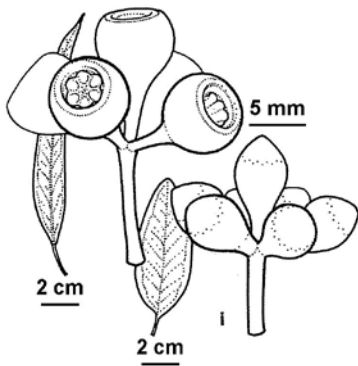
**Inflorescences** Axillary, unbranched; peduncles to 1 cm long, 7-flowered; buds pedicellate, clavate to ovoid, to 0.7 cm long, 0.4 cm diam., no scar; operculum conical or hemispherical; stamens inflexed or irregularly flexed; anthers adnate, globoid.







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*i. juvenile right) and adult (left) leaves; bud and fruit*

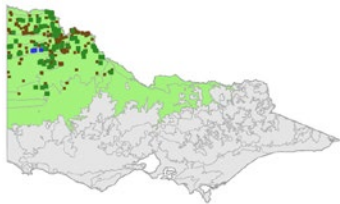
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**Fruit** Pedicellate, barrel-shaped, to 0.7 cm long, 0.6 cm diam.; staminal ring falling intact; disc descending; valves 4 or 5, below rim; seed brown, irregularly ovoid and slightly flattened, surface shallowly reticulate, hilum ventral.

**Flowering** May–Nov.

# Eucalyptus socialis

Grey Mallee



**Habit** Mallee; bark smooth, or only partly shed on lower part of trunk.

**Leaves** Juvenile leaves sessile, opposite for many pairs, elliptic to ovate, to 4 cm long, 2 cm wide, dull, green, more or less glaucous on growing tips; adult leaves petiolate, alternate, lanceolate, 6–9(–13) cm long, 1.2–2(–3) cm wide, concolorous, dull, light green to blue-green, rarely glossy and green; side veins weakly pinnate, fine; oil glands numerous, round, island.

**Inflorescences** Axillary, unbranched; peduncles slightly flattened, to 2.3 cm long, 7–13-flowered; buds pedicellate, hypanthium cupular; operculum beaked, to 1.8 cm long, 0.6 cm diam., scar present; stamens irregularly flexed; anthers scarcely versatile, basifixed, globoid; ovules in 4 vertical rows; flowers white or creamy white.



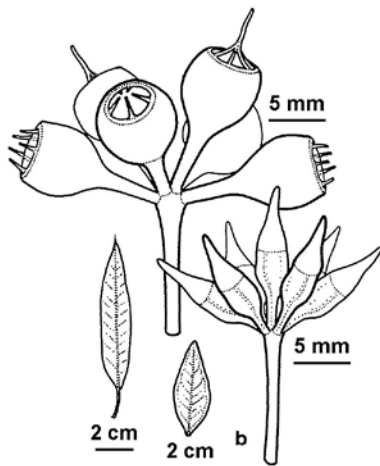
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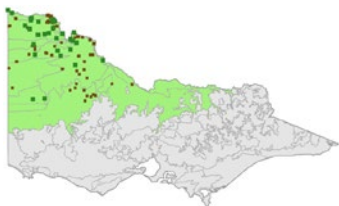


*b. juvenile (right) and adult (left) leaves; bud and fruit*  
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**Fruit** Pedicellate, truncate-globose or truncate-ovoid, to 1(–1.8) cm long, 0.8 cm diam.; disc vertically descending; valves 3 or 4, enclosed, surmounted by semi-persistent, fragile style remnants; seed grey, flattened-ellipsoid, smooth with shallow, longitudinal furrows, hilum ventral.

# Hakea leuoptera subsp. leuoptera

Kulua



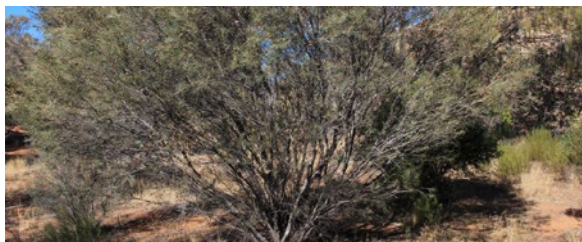
**Habit** Shrub or tree 1–8 m high; branchlets pubescent.

**Leaves** Rigid, terete, 3.5–10 cm long, 1.3–2 mm wide, not grooved, white-pubescent when young; apex straight, rarely curved.

**Inflorescence** 18–45-flowered; rachis 6–14 mm long, white-woolly-pubescent; pedicel 2–6.5 mm long, glabrous; perianth 3–4.5 mm long, white, glabrous; pistil 7–11 mm long; pollen presenter an oblique disc.

**Fruits** Obliquely ellipsoid, 1.7–3.2 cm long, 1–2 cm wide, smooth, sometimes sparsely warted, beaked for c. one-third its length, horns obscure; seed not occupying whole valve face, with wing decurrent half to fully down one side only, cream to brown-white, sometimes darker at base.

**Flowers** Predominantly Oct.–Dec.



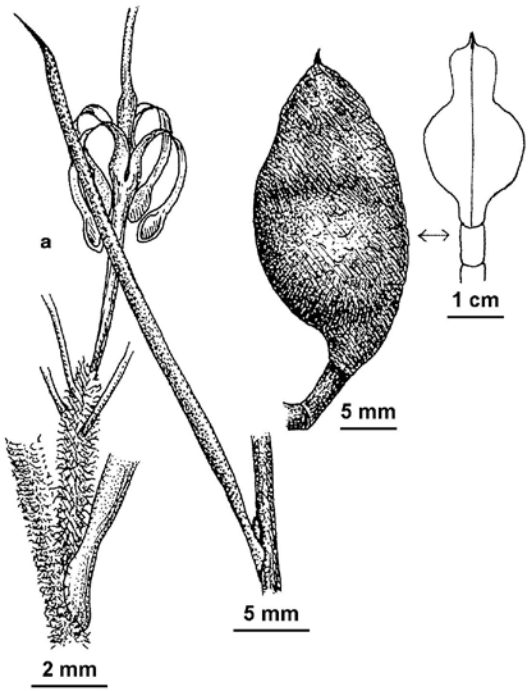
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*a. leaves; flowers; fruit (silhouette, dorsal view)*

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# Hakea tephrosperma

Hooked Needlewood



**Habit** Shrub or small tree; branchlets minutely pubescent, becoming glabrous.

**Leaves** Rigid, terete, 3–8 cm long, 1–1.5(–1.8) mm wide, not grooved, glabrescent; apex abruptly curved.

**Inflorescence** 6–22-flowered; rachis 1–3 mm long, densely appressed brown-pubescent; pedicel and perianth appressed white and brown-pubescent; pedicel 3.5–7 mm long; perianth 5–6 mm long, white or cream; pistil 7–10 mm long; pollen presenter an oblique disc.

**Fruit** Broadly ovoid, 2–3 cm long, 1.5–2 cm wide, smooth, sometimes warted, beaked for c. one-third the length, horns blunt, to 2 mm long; seed not occupying whole valve face; wing decurrent down one side only, grey-yellow to blackish.

**Flowers** Mainly Sep.–Oct.



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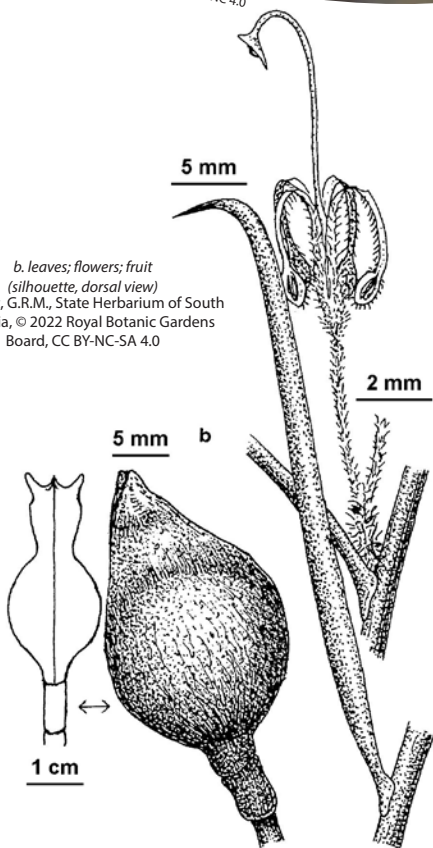


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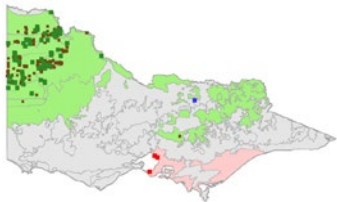
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*b. leaves; flowers; fruit*  
*(silhouette, dorsal view)*  
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# Leptospermum coriaceum

Mallee Teatree



**Habit** Shrub to 4 m high; bark on smaller stems smooth, persistent. Young stems with a groove near base of petiole.

**Leaves** Elliptic to narrowly obovate, 8–15 mm long, 3–5 mm wide, glabrous, usually yellow-green or light green; apex acute to shortly acuminate, flat to incurved; margins incurved to recurved.

**Inflorescence** 13–18 mm diam.; hypanthium c. 2.5 mm long, usually glabrous, occasionally silky, sessile; sepals narrowly triangular to triangular, c. 2 mm long, glabrous on outer surface and usually with a tuft of hairs at the apex, or sparsely silky on outer surface, persisting on fruit; petals 4–7 mm long, white; ovary 5–8-locular, apex shortly silky all over.



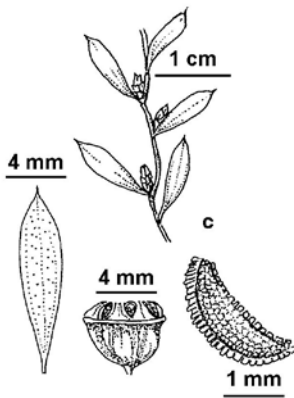
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*c. branchlet, leaf, capsule, seed*

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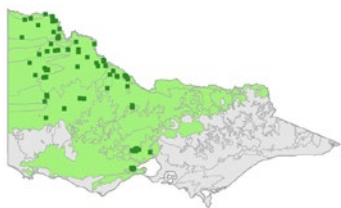
**Fruit** Deciduous, obconical, 5–8 mm diam., surface glabrous and wrinkled; seeds c. 2 mm long, often winged, with a reticulate surface pattern.

**Flowers** Mainly Aug.–Nov.



# Maireana brevifolia

Short-leaf Bluebush



**Habit** Erect or rounded shrub to c. 1.3 m high; branches striate, sparsely woolly.

**Leaves** Alternate, obovoid to linear, 2–5 mm long, fleshy, glabrous.

**Flowers** Bisexual, ciliate on perianth lobes, otherwise glabrous.



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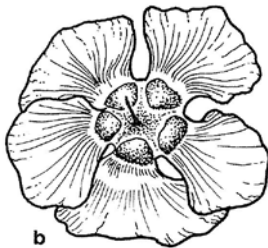


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2 mm

*b. fruiting perianth*

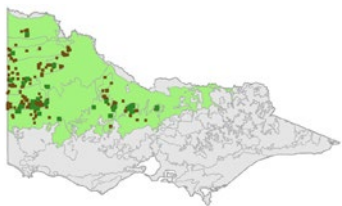
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**Fruiting perianth** 6–9 mm diam., flat at apex; tube c. 2 mm diam., thin-walled, hemispherical and weakly 10-ribbed below wings; wings 5, spreading, fan-shaped, papery, dark-veined; perianth lobes domed, spongy, prominent at base of wings; radicular slit not apparent.

**Fruits** Mainly Feb.–May.

# Melaleuca uncinata

Broom Honey-myrtle



**Habit** Erect broom-like shrub to 3 m high; bark papery on old stems.

**Leaves** Sessile or subsessile, terete, rarely slightly flattened, c. 1.5–5.0 cm long, c. 1 mm wide, tip narrowly acute, recurved, glands usually present.

**Inflorescence** A dense, shortly pedunculate, globoid or obloid head, c. 1–2 cm long; axis hairy, growing on into a leafy shoot.

**Fruiting perianth** In triads; stamens 4–8 per bundle, white to yellow, claw c. 2 mm long, free part of filaments c. 3–4 mm long.

**Capsules** c. 3 mm wide, aggregated into dense globular clusters.

**Flowers** Mostly in spring.



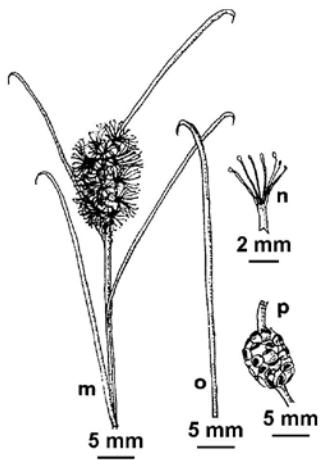
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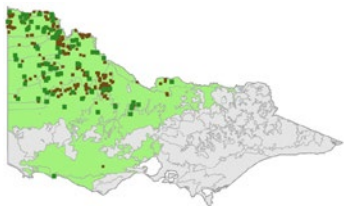
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*m.* flowering branches; *n.* stamen bundles; *o.* leaves; *p.* fruiting spikes  
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# Myoporum platycarpum

Sugarwood



**Habit** Shrub or tree to c. 10 m high, glabrous; branches sparsely or rarely densely tuberculate, viscid.

**Leaves** Alternate, scattered, linear-lanceolate to elliptic, mostly 3–9 cm long, 3–14 mm wide, often falcate, apex acute to acuminate, uncinata, margins dentate in upper half, entire in lower half; petiolate.

**Inflorescence** 4–11-flowered; pedicels 4–6 mm long, glabrous, viscid.



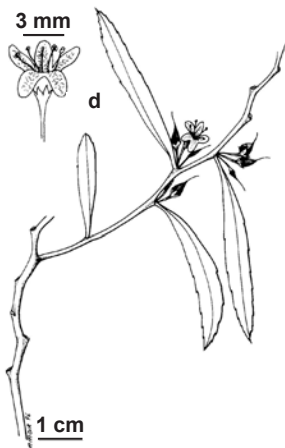
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*d. Flowering and fruiting branch*

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**Sepals** Triangular, 0.5–1 mm long, acute, valvate, glabrous, viscid; corolla 3.5–16 mm long, glabrous outside, inside of lobes and upper part of tube villous, white, often tinged purplish-pink, spotted or unspotted; stamens exserted; ovary and style glabrous.

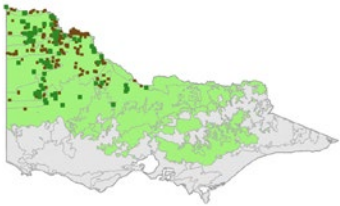
**Fruit** Ovate, 4–5.5 mm long, 3–3.5 mm wide, compressed, acute.

**Flowers** Mainly Aug.–Dec.



# Olearia pimeleoides

Pimelea Daisy-bush



**Habit** Erect shrub to c. 1 m high; branchlets and leaf undersurfaces densely white-tomentose, usually mixed with a few resin droplets.

**Leaves** Alternate, subsessile, obovate to narrowly obovate or elliptic, 3–15 mm long; 1–6 mm wide, discolourous, green and glabrous or sparsely pubescent above.



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*b. flowering branch; involucre*

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**Capitula** c. 15–35 mm diam., sessile, solitary (rarely paired) and terminal; involucre broadly conical to hemispherical, 6–7.5 mm long; bracts 3–5-seriate, graduating, the outer wholly white-tomentose, the inner often glabrous except for a subapical cottony patch, often purple-tipped.

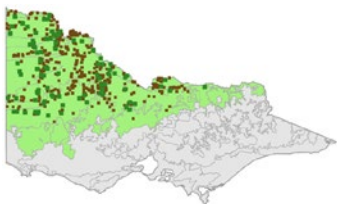
**Ray florets** 8–25, white, ligules 8–20 mm long; disc florets c. 14–50, pale yellow.

**Cypsel**a Narrowly obovoid, 1.5–3 mm long, densely sericeous, obscurely ribbed; pappus pale, 7–9 mm long.

**Flowers** Aug.–Oct.

# Pittosporum angustifolium

Native Apricot



**Habit** Slender shrub or tree to c. 10 m high; branchlets usually pendulous.

**Leaves** Linear or oblong, 5–12 cm long, 2–10 mm wide, usually uncinuate at apex, glabrous; margins plane or slightly recurved.

**Flowers** Unisexual (possibly sometimes bisexual), sweet-scented, males mostly in axillary clusters of up to c. 6, females usually solitary in axils; pedicels decurved, 2–15 mm long; sepals free, broadly ovate or obovate, c. 2 mm long, greenish, glabrous or minutely ciliate on margin; petals oblong or narrowly obovate, c. 1 cm long, yellow, recurved toward apex; staminodes present in female flowers.

**Capsules** Flattened-ovoid, c. 10–20 mm long, often indented at base, glabrous, yellowish, inner face pale and smooth; seeds usually 6–10, 3–5 mm long, red-brown.

**Flowers** Sep.–Nov.



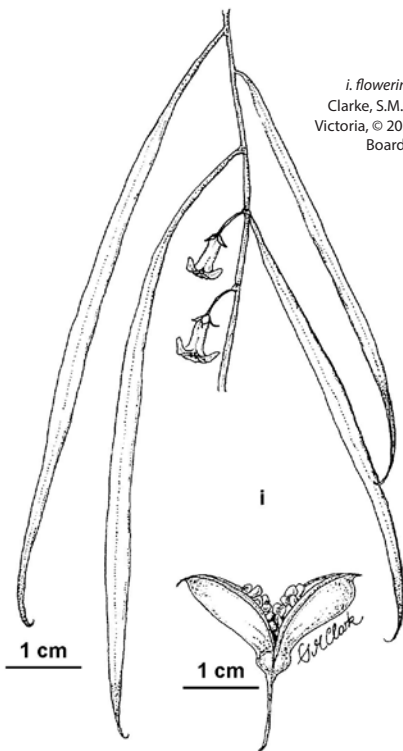
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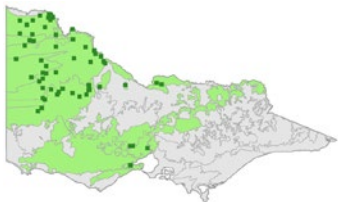


*i. flowering branch and capsule*  
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# Senna artemisioides subsp. coriacea.

Silver Cassia



**Habit** Shrub 1–3 m high. Leaves variable; gland 1, between lowest pair of leaflets, sessile and flat; leaflets in 1–8 pairs, variable, equal or increasing in size from base of leaf; stipules minute, triangular, early caducous.

**Peduncles** To c. 15 mm long; pedicels to c. 10 mm long; sepals 6–8 mm long, greenish; petals (4–)7–10 mm long; fertile stamens 10, anthers 4–5 mm long, 7 adaxial anthers on filaments c. 1 mm long, 3 abaxial anthers on filaments c. 2 mm long.

**Pods** Linear, 5–10 cm long, 8–15 mm wide, compressed, straight, glabrous; seeds several, c. 4 mm long, brown, dull.

**Flowers** Winter–spring.



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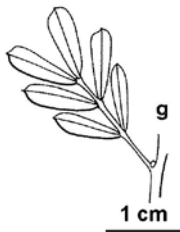


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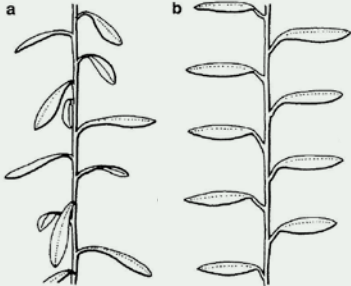
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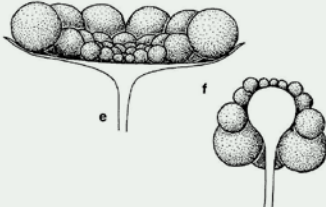
*g. leaf*

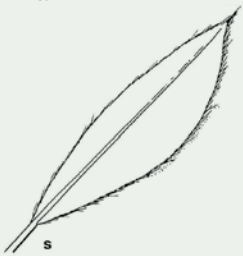
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# Glossary




Word	Definition
abaxial	the side away from the axis; e.g. the under-surface of an erect leaf. Is Opposed To <b>adaxial</b>
acuminate	tapering gradually to a point. Figure 217d. 
acute	sharply pointed; converging edges making an angle of less than 90°; cf. obtuse. Figure 217e. Is Opposed To <b>obtuse</b> 
adaxial	the side next to the axis; e.g. the upper surface of an erect leaf in respect to a vertical stem. Is Opposed To <b>abaxial</b>
adnate	fused to an organ of a different kind; e.g. a stamen fused to a petal; cf. connate. Is Opposed To <b>connate</b>
alternate	[as adjective] leaves or flowers borne singly at different levels along a stem (includes spiralled parts); or [as verb] when something occurs between something else, e.g. stamens alternating with petals; cf. <b>opposite</b> . Figure 216a–b. Is Opposed To <b>opposite</b> 

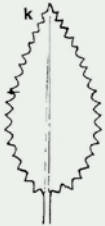
Word	Definition
anastomosing	when veins are joined by cross-veins to form a network.
anther	pollen-bearing part of the stamen.
anthesis	time of flowering (when the flower opens); in <i>Grevillea</i> , developmental stage at which the pollen is released from the anthers inside the bud onto the pollen-presenter, usually corresponding with flower opening.
apiculate	terminating in a short, sharp, flexible point; less abrupt than <b>mucronate</b> .
appressed	pressed closely, but not fused; e.g. leaves against a stem.
arcuate	curved; bent like a bow.
aril	(adjective <b>arillate</b> ) a membranous or fleshy appendage (formed by expansion of the funicle) which partly or wholly covers a seed.
ascending	spreading horizontally, then becoming erect.
axil	angle formed by leaf or bract and the branch bearing it.
axillary	borne in or arising from the axil of a leaf.
basifixed	something attached by its base; e.g. an anther attached to the filament.
beak	a pointed projection.

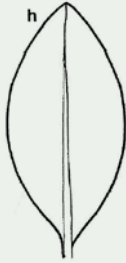


Word	Definition
bisexual	bearing both male and female reproductive organs; usually, flowers with both stamens and carpels; <i>hermaphrodite</i> .
bract	modified leaf associated with flower or inflorescence, differing in shape, size or colour from other leaves (and without an axillary bud).
bracteole	small bract borne singly or in pairs on pedicel or calyx.
caducous	falling off early.
calyx	(plural <b>calyces</b> ) the outer whorl of a flower, usually green; the sepals of one flower collectively.
capitulum	<p>(plural <b>capitula</b>) a dense cluster of sessile, or almost sessile, flowers or florets; a head. Figure 220e–f.</p> 
capsule	a dry fruit formed from two or more united carpels and dehiscent when ripe (usually by splitting into pieces or opening at summit by teeth or pores).
chartaceous	paper-like in texture.

Word	Definition
cilia	<p>(singular <b>cilium</b>, adjective <b>ciliate</b>) generally, hairs more or less confined to the margins of an organ, like eye-lashes. Figure 217s.</p> 
circinate	<p>spirally coiled with the tip innermost, e.g. the developing fronds of most ferns. Has Variation <b>circinnate</b></p>
circinnate	Is Variation Of <b>circinate</b>
clavate	club-shaped.
columella	<i>in flowering plants</i> , the central axis of the cone or fruit, e.g. in <i>Callitris</i> .
compressed	flattened lengthwise, either laterally (from side to side) or dorsally (from front to back).
concolorous	the same colour throughout.
cone	a fruit, usually woody, ovoid to globular, including scales, bracts or bracteoles arranged around a central axis, e.g. in gymnosperms and <i>Casuarinaceae</i> .
conical	cone-shaped, with the broad end at the base.
coriaceous	leathery; stiff and tough, but somewhat flexible.
corolla	inner whorl of non-fertile parts in a flower, often soft and coloured conspicuously; the petals of a flower collectively.


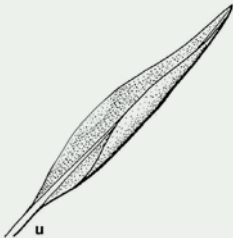


Word	Definition
crenulate	minutely scalloped. Figure 218b. 
crustaceous	hard, thin and brittle.
cuneate	wedge-shaped; with straight sides converging at base. Figures 216m. 
cupule	(adjective <b>cupular</b> ) a cup formed by a closely adhering involucre of a fruit.
cypsela	a dry, indehiscent, one-seeded fruit formed from an inferior ovary.
deciduous	falling seasonally, e.g. bark, leaves, petals; cf. persistent. Is Related To(cf.) <b>persistent</b>
decurrent	extending downwards beyond the point of insertion, e.g. when the base of leaf or pinna is prolonged downwards along the stem in a raised line or narrow wing.
decussate	opposite, with successive pairs borne at right angles to the last; e.g. leaf arrangement. Figure 216d. 

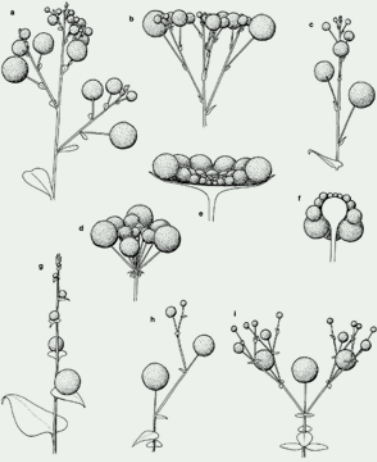
Word	Definition
dehiscent	<p>breaking open at maturity to release contents, e.g. anthers, some fruits.</p> <p>Has Partially Overlapping Synonym <b>dehiscing</b></p>
dentate	<p>toothed. Figure 218k.</p> 
depressed	<p>flattened from above.</p>
dioecious	<p><i>of plant</i>, with male and female reproductive structures developing on different individuals; cf. <b>monoecious</b>.</p> <p>Is Related To(cf.) <b>monoecious</b></p>
disc	<p>a plate or ring of structures derived from the receptacle, and occurring between whorls of floral parts; <i>in daisies</i>, the central part of capitulum, hence <i>disc flowers or florets</i>.</p> <p>Has Variation <b>disk</b></p>
discolorous	<p><i>of leaves</i>, with upper and lower surfaces of a different colour.</p>
dissected	<p>deeply divided; cut into many segments.</p>
distal	<p>remote from the point of attachment or axis; the free end; <i>anterior</i>; cf. <b>proximal</b>.</p> <p>Is Related To(cf.) <b>proximal</b></p>
dorsal	<p>the back; in particular, away from axis in lateral organ <i>or away</i> from substratum in prostrate plant.</p> <p>Is Related To(cf.) <b>ventral</b></p>
dorsifixed	<p>attached at or by the back, e.g. anthers on a filament.</p>
ellipsoid	<p>3-dimensional shape, elliptic in all sections through long axis.</p>




Word	Definition
elliptic	<p>shaped like a flattened circle, symmetric about both the long and short axis; oval. Figure 216h.</p> 
entire	<p>having a smooth margin, not lobed, divided or toothed (note that it may be wavy or scalloped, but not incised). Figure 218a.</p> 
erect	upright; more or less perpendicular to the ground or point of attachment.
erose	with the margin irregular as though nibbled or worn away.
exserted	projected beyond, e.g. stamens beyond corolla tube, awn beyond glume.
falcate	<p>curved like the blade of a scythe. Figure 216r.</p> 
fertile	capable of producing fruit; of flowers when producing seed or of anthers when containing pollen.
filament	(1) stalk of a stamen; (2) thread, one or a few cells thick.
fimbriate	fringed.

Word	Definition
flaccid	limp; tending to wilt; cf. <b>turgid</b> . Is Related To (cf.) <b>turgid</b>
floral tube	tube bearing the perianth and stamens, consisting of tissue derived from the receptacle and/or perianth and/or stamens; <i>hypanthium</i> .
floret	a small flower, especially when part of a larger inflorescence; <i>in grasses</i> , each flower together with lemma and palea that enclose it.
flower	the sexual reproductive structure of the angiosperms, typically with a gynoecium, androecium, perianth and an axis.
fruit	seed-bearing structure in angiosperms formed from the ovary, and sometimes associated floral parts, after flowering.
funicle	the stalk of an ovule. Has Variation <b>funiculus</b>
fusiform	3-dimensional, tapering gradually from middle towards each end; spindle-shaped.
gibbous	when part of an organ is swollen; usually, with a pouch-like enlargement at base. Has Variation <b>gibbose</b>
glabrescent	becoming glabrous; almost glabrous.
glabrous	without surface ornamentation such as hairs, scales or bristles.
gland	a secretory structure within or on the surface of a plant; <i>loosely</i> , a smooth, usually shining, bead-like outgrowth.
glaucous	blue-green in colour with a whitish bloom, e.g. the young leaves of many eucalypts.
globose	nearly spherical. Has Variation <b>globular</b>
globular	Is Variation Of <b>globose</b>

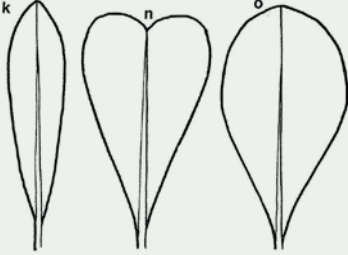

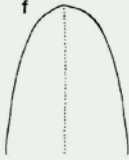
Word	Definition
gynoecium	female parts of flower; the carpels of a flower collectively; the pistil; cf. <b>androecium</b> . Is Related To (cf.) <b>androecium</b>
habitat	the place where a plant lives; the environmental conditions of its home.
hair	an elongated cell or row of cells borne on the surface of an organ either branched (Figure 218ff) or unbranched. 
head	see <b>capitulum</b> .
hemi-	half.
heteromorphic	of 2 or more distinct morphologies (i.e. of different size and shape).
hilum	the scar on a seed coat where it separates from its stalk (funicle).
hyaline	translucent; usually delicately membranous and colourless.
hypanthium	see <b>floral tube</b> .
incurved	bent or curved inwards; of leaf margins, when curved towards the adaxial side. Figure 217u. 
indumentum	any surface covering, e.g. hairs, scales; a collective term for such coverings.

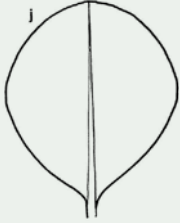
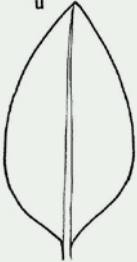


Word	Definition
inflexed	<p>bent sharply upwards or forwards; cf. deflexed.</p> <p>Is Related To (cf.) <b>deflexed</b></p>
inflorescence	<p>the group or arrangement of flowers on a plant. Figure 220.</p> 
internode	the portion of a stem between two nodes.
intramarginal	situated inside but close to the margin, e.g. a vein in a leaf.
involucre	<p>(adjective <b>involucral</b>) a group of bracts surrounding the base of a flowerhead; in <i>Hymenophyllaceae</i>, a layer of tissue enveloping the sporangia.</p>
juvenile leaves	formed on a young plant; sometimes different in form from the adult leaves.
lamina	the blade of a leaf or the expanded upper part of a petal, sepal or bract.

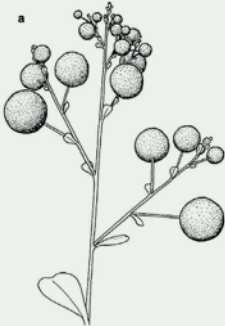
Word	Definition
lanceolate	<p>about 4 times as long as broad, broadest in the lower half and tapering to the tip; narrowly ovate (sometimes, and incorrectly, used for narrowly elliptic); like a lance. Figure 216q.</p> 
lateral	attached to the side of an organ, e.g. leaves on a stem.
leaflets	the ultimate segments of a compound leaf.
lenticular	shaped like a biconvex lens; disc-shaped but with convex sides.
lignotuber	a woody swelling of the stem below or just above the ground (contains adventitious buds from which new shoots can develop, e.g. after fire).
ligule	(1) small membranous appendage on the top of the sheath of grass leaves; (2) a minute adaxial appendage near the base of a leaf, e.g. in <i>Isoetes</i> and <i>Selaginella</i> ; (3) extended, strap-like corolla of some daisy florets.
linear	<p>very narrow in relation to its length, with the sides mostly parallel. Figure 216f.</p> 
lobe	<p>part of a leaf (or other organ), often rounded, formed by incisions about half-way to the midrib. Figure 218e.</p> 

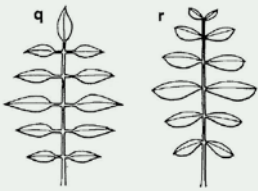
Word	Definition
mallee	growth habit in which several woody stems arise separately from a lignotuber; a plant with such a growth habit; vegetation characterized by such plants.
mealy	covered with coarse, flour-like powder (sometimes due to collapsed hairs).
membranous	thin, translucent and flexible, usually not green.
-merous	the number of parts per floral whorl, e.g. 3-merous in Liliaceae flowers.
midrib	the central, and usually most prominent, vein of a leaf or leaf-like organ; midvein.
moniliform	resembling a string of beads.
monoecious	of [ <i>vascular</i> ] plants, having the male and female reproductive structures in separate flowers but on the same plant; cf. <b>dioecious</b> . Is Related To(cf.) <b>dioecious</b>
mucro	a sharp, short point.
mucronate	terminating in a mucro. Figure 217a–b. 
node	the part of a stem where leaves or branches arise.



Word	Definition
ob-	<p>inversely; usually same shape as suffix but attached by the narrower end, e.g. <i>obconical</i>, <i>obcordate</i>, <i>oblanceolate</i>, <i>obovate</i>, <i>obovoid</i>. Figure 216k,n-o.</p> 
oblique	<p>slanting; of leaf, larger on one side of the midrib than the other, i.e. asymmetric. Figure 217q.</p>
obloid	<p>3-dimensional equivalent of oblong; as if composed of 2 hemispheres connected by a short cylinder of equal diameter.</p>
oblong	<p>length a few times greater than width, with sides almost parallel and ends rounded. Figure 216g.</p> 
obtuse	<p>blunt or rounded; converging edges making an angle of more than 90°; cf. <b>acute</b>. Figure 217f,l. is Opposed To <b>acute</b></p> 
operculum	<p>a lid or cover that becomes detached at maturity, e.g. in <i>Eucalyptus</i>, a cap covering the bud and formed by fusion or cohesion of perianth parts.</p>

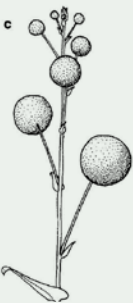
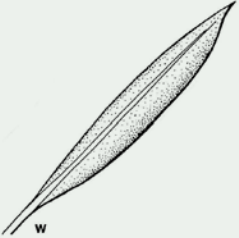
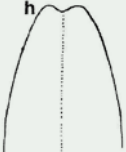
Word	Definition
orbicular	<p>flat and more or less circular. Figure 216j.</p> 
ovary	<p>the basal portion of a carpel or group of fused carpels, enclosing the ovule(s).</p>
ovate	<p>shaped like a section through the long axis of an egg and attached by the wider end. Figure 216u.</p> 
ovoid	<p>egg-shaped, with wider portion at base; three-dimensional object, ovate in all sections through long axis.</p>
ovule	<p><i>loosely</i>, the seed before fertilization; a structure in a seed plant within which 1 or more megaspores are formed (following fertilization it develops into a seed).</p>

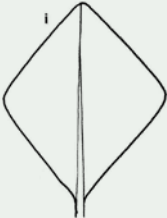
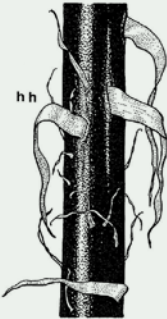


Word	Definition
panicle	<p>(adjective <b>paniculate</b>) a compound raceme; an indeterminate inflorescence in which the flowers are borne on branches of the main axis or on further branches of these. Figure 220a.</p> 
pappus	in <i>daisy florets</i> , a tuft or ring of hairs or scales borne above the ovary and outside the corolla (representing the missing calyx); a tuft of hairs on a fruit.
pedicel	(adjective <b>pedicellate</b> ) the stalk of a flower.
peduncle	(adjective <b>pedunculate</b> ) the stalk of an inflorescence.
pendulous	<p>hanging, e.g. an ovule attached to a placenta on the summit of the ovary; cf. suspended.</p> <p>Is Related To(cf.) <b>suspended</b></p>
perennial	a plant whose life span extends over several years.
perianth	the calyx and corolla of a flower collectively (particularly used when the two are similar).
pericarp	the wall of a fruit, developed from the ovary wall.
persistent	<p>remaining attached to the plant beyond the usual time of falling, e.g. of sepals not falling after flowering; cf. <b>deciduous</b>.</p> <p>Is Related To(cf.) <b>deciduous</b></p>




Word	Definition
petal	<p><i>in a flower</i>, 1 of the segments or divisions of the inner whorl of non-fertile parts surrounding the fertile organs, usually soft and coloured conspicuously; cf. <b>sepal</b>.</p> <p>Is Related To(cf.) <b>sepal</b></p>
petiolate	subtended by a petiole.
petiole	the stalk of a leaf.
phyllode	<p>(adjective <b>phyllodinous</b>) a leaf with the blade much reduced or absent, and in which the petiole and or rachis perform the functions of the whole leaf; e.g. many acacias; cf. <b>cladode</b>.</p> <p>Is Related To (cf.) <b>cladode</b></p>
pinnate	<p>a compound leaf with leaflets arranged on each side of a common petiole or axis; may also be applied to the arrangement of lateral veins in relation to the main vein. Figure 218q–r.</p> 
pistil	see <b>gynoecium</b> .
pollen-presenter	<p>in <i>Proteaceae</i>, discoid or conical face (often slightly shiny) at the end of style onto which pollen is deposited from the anthers prior to anthesis (the stigma is usually central on the pollen-presenter).</p>

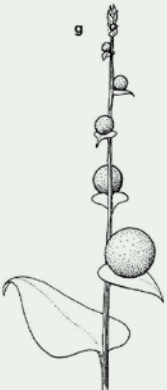
Word	Definition
polygamodioecious	<p>having bisexual and male flowers on some plants, and bisexual and female flowers on others; cf. androdioecious, andromonoecious, polygamomonoecious, polygamous.</p> <p>Is Related To(cf.) <b>androdioecious</b>  Is Related To(cf.) <b>andromonoecious</b>  Is Related To(cf.) <b>polygamomonoecious</b>  Is Related To(cf.) <b>polygamous</b></p>
prostrate	lying flat on the ground.
pruinose	covered with a powdery, waxy material; with a 'bloom'.
puberulent	Is Variation Of <b>puberulous</b> .
puberulous	<p>covered with minute, soft, erect hairs. Figure 219j.</p> <p>has Variation <b>puberulent</b></p> 
pubescent	<p>downy; covered with short, soft, erect hairs. Figure 219k.</p> 
pulvinus	a swelling at the base of a leaf or leaflet stalk, often glandular or responsive to touch.
punctate	marked with dots.
pustule	(adjective <b>pustulate</b> ) pimple or blister.

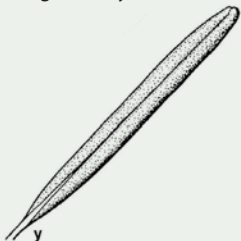
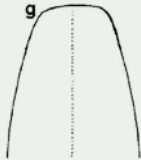
Word	Definition
raceme	<p>(adjective <b>racemose</b>) an indeterminate inflorescence in which the main axis produces a series of flowers on lateral stalks, the oldest at the base and the youngest at the top; cf. <b>spike</b>. Figure 220c.</p> <p>Is Related To(cf.) <b>spike</b></p> 
rachis	<p>(plural <b>rachises</b>; <b>rhachis</b>) the axis of an inflorescence or a pinnate leaf, distal to and including the lowermost pedicel attachment, e.g. ferns; secondary rachis is the axis of a pinna in a bipinnate leaf.</p>
ray	<p>(1) zygomorphic (ligulate) flowers in a radiate flowerhead, i.e. <i>ray-florets/flowers</i>, e.g. Asteraceae; (2) each of the branches of an umbel.</p>
recurved	<p>bent or curved backwards or downwards. Figure 217w.</p> 
reticulate	<p>forming a network (or <i>reticulum</i>), e.g. veins which join one another at more than one point.</p>
retuse	<p>with a blunt (obtuse) and slightly notched apex. Figure 217h.</p> 


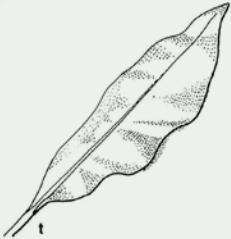
Word	Definition
rhombic	<p>like a <i>rhombus</i>, i.e. an oblique figure with four equal sides; cf. <b>obtrullate</b>, <b>trapeziform</b>, <b>trullate</b>. Figure 216i.</p> <p>is Related To(cf.) <b>obtrullate</b>  is Related To(cf.) <b>trapeziform</b>  is Related To(cf.) <b>trullate</b></p> 
rugose	wrinkled.
scale	<p>a reduced or rudimentary leaf, e.g. around a dormant bud; (2) a thin flap of tissue. Figure 218hh.</p> 
seed	a ripened ovule, consisting of a protective coat enclosing an embryo and food reserves; a propagating organ formed in the sexual reproductive cycle of gymnosperms and angiosperms (together, the <i>seed plants</i> ).
sepa	<p>in a <i>flower</i>, one of the segments or divisions of the outer whorl of non-fertile parts surrounding the fertile organs, usually green; cf. <b>petal</b>.</p> <p>Is Related To(cf.) <b>petal</b></p>
septicidal	<p>of a fruit, when it dehisces along the partitions between loculi; cf. <b>loculicidal</b>.</p> <p>Is Related To(cf.) <b>loculicidal</b></p>
sericeous	silky with dense appressed hairs.


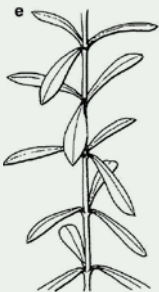
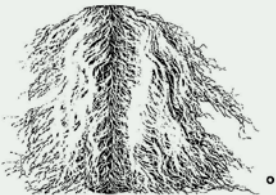


Word	Definition
sessile	without a stalk, e.g. of a <i>stigma</i> , when the style is absent.
shrub	a woody perennial plant without a single main trunk and smaller than a tree.
silky	densely covered in fine, appressed, shiny hairs. Figure 219l. 
simple	undivided, e.g. a leaf not divided into leaflets (note, however, that a <i>simple leaf</i> may be entire, toothed or lobed) or an unbranched hair or inflorescence.
sinuate	with deep, wave-like depressions along the margins, but more or less flat; cf. <b>undulate</b> . Figure 218d.  <p>is Related To(cf.) <b>undulate</b> has Variation <b>sinuous</b></p>
spathulate	spoon-shaped; broad at the tip and narrowed towards the base. Figure 216l.  <p>is Variation Of <b>spatulate</b></p>

Word	Definition
spike	<p>(adjective <b>spicate</b>)  an unbranched, indeterminate inflorescence in which the flowers are without stalks; cf. <b>raceme</b>.  Figure 220g.</p> <p>Is Related To(cf.)  <b>raceme</b></p> 
spiral	borne at different levels on the axis, in an ascending spiral. Figure 216a.
spreading	extending horizontally, e.g. branches; standing out at right angles to axis, e.g. leaves or hairs.
stamen	(adjective <b>staminate</b> ) male organ of a flower, consisting (usually) of a stalk (filament) and a pollen-bearing portion (anther).
staminode	a sterile stamen. often rudimentary, but sometimes petal-like (as in some Aizoaceae).
stipule	small appendage at the bases of leaves in many dicotyledons.
striate	striped with parallel, longitudinal lines or ridges.
style	an elongated part of a carpel, or group of fused carpels, between the ovary and the stigma.

Word	Definition
sub-	(1) somewhat or almost, e.g. <i>submarginal</i> = slightly inwards from the margin, <i>subdistichous</i> = not quite distichous; (2) under or inferior to, e.g. subgenus = a grouping between genus and species level, <i>subspecies</i> = a grouping within a species (usually used for geographically isolated and morphologically distinct entities).
terete	circular in cross-section; more or less cylindric. Figure 217y. 
tomentum	(adjective <b>tomentose</b> ) a dense covering of short, woolly hairs. Figure 219i; hairy with hairs ascending from the surface (but not erect), 'scruffy' in appearance, e.g. in some <i>Grevillea</i> species.
tree	a woody plant, usually with a single stem and more than c. 8 m high.
triad	a group of 3.
trigonus	triangular in cross-section and obtusely angled; cf. <b>triquetrous</b> . Is Related To (cf.) <b>triquetrous</b>
truncate	cut off squarely; with an abruptly transverse end. Figure 217g,m. 

Word	Definition
tubercle	<p>a small wart-like outgrowth. Figure 218ee.</p> 
tuberculate	covered in tubercles; warty.
uncinate	with a hook at the apex.
undulate	<p>wavy and not flat; see sinuate. Figure 217t.</p> <p>is Related To (cf.) <b>sinuate</b></p> 
unisexual	of 1 sex; bearing only male or only female reproductive organs.
valve	<i>of sepals and petals in bud</i> , which meet edge to edge but do not overlap.
vein	a strand of vascular tissue; <i>nerve</i> .
veinlet	a small vein; the ultimate (visible) division of a vein.
ventral	<p>the front; in particular, towards axis in lateral organ or towards substratum in prostrate plant; cf. <b>dorsal</b>.</p> <p>Is Related To(cf.) <b>dorsal</b></p>
versatile	<i>of anthers</i> , swinging freely about the point of attachment to the filament.

Word	Definition
villous	<p>shaggy with long, soft hairs. Figure 219p.</p> 
viscid	<p>sticky; coated with a thick, syrupy secretion.</p>
whorl	<p>a ring of organs borne at the same level on an axis, e.g. leaves, bracts, floral parts. Figure 216e.</p> <p>has Adjective <b>whorled</b></p> 
wing	<p>(1) a membranous expansion of a fruit or seed which aids in dispersal, e.g. on pine seeds; (2) a thin flange of tissue extending beyond the normal outline of a structure, e.g. on the column of some orchids, on stems, on petioles; (3) a lateral petal of a flower of Fabaceae.</p>
woolly	<p>densely covered in long, soft, matted (usually curly) hairs. Figure 219o.</p> 
zygomorphic	<p>bilaterally symmetric; symmetric about 1 vertical plane only; applies to flowers in which the perianth segments within each whorl vary in size and shape; cf. actinomorphic, irregular.</p> <p>has Exact Synonym <b>irregular</b> is Opposed To <b>actinomorphic</b></p>





**Field Ruler** Measured in centimeters (cm)

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For more information please contact:

**Mallee Catchment Management Authority**

Corner Eleventh Street & Koorlong Avenue

Irymple Victoria 3498

PO Box 5017 Mildura Victoria 3502

Telephone 03 5001 8600

Email [reception@malleecma.com.au](mailto:reception@malleecma.com.au)