



Department of Environment and Conservation



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*If you think you have seen any of the rare or priority plants shown in this book, or you would like more information, please call the Department of Environment and Conservation's Northam office on (08) 9622 8940.*

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## Threatened, poorly known and other flora of Wongan-Ballidu

Wendy Johnston • Sonya Thomas • Shari Dougall  
Claire Hamersley • Lyn Phillips • Ian Smith







*Threatened, poorly known and other flora*  
of Wongan-Ballidu

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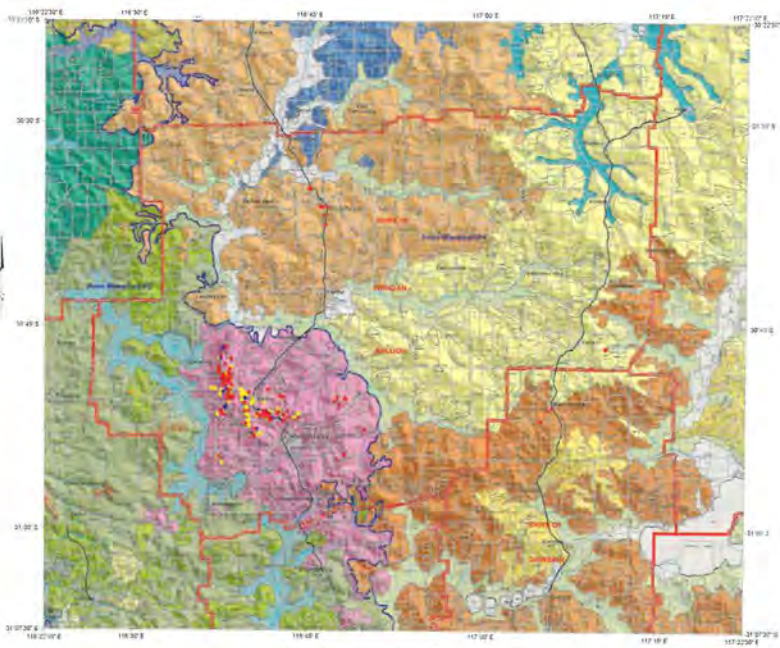


**Wongan-Ballidu's** spectacular flora is world-renowned for its rarity, diversity and the isolation of its species. In fact, many of them are found nowhere else on Earth.

Western Australia has 372 plant species listed as Declared Rare Flora (DRF) and 2632 species listed as Priority Flora. Priority flora are species thought to be rare or under threat of extinction.

Twenty-two Declared Rare Flora species and 28 Priority species occur in the Shire of Wongan-Ballidu. Twenty-one of these are endemic to the Shire (found nowhere else).

Although some plants are rare because of their requirement for a specific restricted habitat, most have become rare or threatened because of the activities of humans. Extensive land clearing and modification of the environment has resulted in the extinction of some plant species and has threatened the survival of many others. Continued land clearing, road works, grazing by domestic stock and rabbits, plant pathogens (particularly Phytophthora), exotic weeds and insects, inappropriate fire regimes and rising saline water tables threaten many of WA's plant species.



Concentration of rare flora in Wongan-Ballidu.

As well as the 50 Rare and Priority Flora listed in this book, there is also information about 20 species of dazzling, but more commonly found, plants.

### The Shire of Wongan-Ballidu

The Shire of Wongan-Ballidu is located within the Department of Environment and Conservation's (DEC's) Avon-Mortlock District. As with most of its surrounding shires, Wongan-Ballidu has largely been cleared for agricultural and infrastructure purposes. Sadly, just over five per cent of original native vegetation is left.

The Shire of Wongan-Ballidu has 21 nature reserves totalling 4179 hectares, or 1.2 per cent of the shire area.

These areas were set aside to maintain and restore the natural environment, and to protect, care for, and promote the study of Indigenous flora and fauna. They also preserve any feature of archaeological historical or scientific interest.

### Wongan-Ballidu Bushcare Group

The Wongan-Ballidu Bushcare Group was formed 2004, in conjunction with DEC. The group is made up of local community members who are passionate about Wongan-Ballidu's unique flora. Their aim is to preserve and restore the natural assets of the Wongan-Ballidu region through education and active management.

### Wongan-Ballidu flora

Wongan-Ballidu Shire has an unusually high number of plant



Mt O'Brien Lookout





Wongan Hills Rare Flora Garden

species – at least 1200. This is because of the diverse range of natural environments ranging from granite outcrops and woodlands to salt lakes. The Wongan-Ballidu Bush Care Group, DEC, the Botanic Gardens and Parks Authority and

the Wongan-Ballidu Shire worked together to develop the Wongan Hills Rare Flora Garden. The plants in the garden were grown from seed and cutting material collected in the Wongan Hills area, raising the community's awareness about the unique and rare flora. The garden is on the main street of Wongan Hills near the visitor centre.

### Botanical history of Wongan-Ballidu *Original impressions...*

The Wongan Hills area was first visited by Europeans in 1836 as part of an expedition by Mr G.F. Moore, Surveyor-General J.S. Roe, Surveyor



G.Smythe and policemen Heffron, Syred, Craigie and Hampshire. After the settlement of the Swan River Colony and expansion into areas of the Avon Valley, the Wongan Hills became a focal point for exploration by the settlers due to the prominence of the hills in the landscape and because they had been told about them by the Aboriginal people. Even in 1836, Wongan Hills was noted to have special significance as an area of rich flora diversity. The expedition of Moore, Roe, Smythe, Heffron and Syred noted the prevalence of dense bushland with mature and young gimlet trees, as well as fallen timber. They made mention of the variation in landforms including the hills, the steep valley surfaces covered in ironstone and the red soils. Roe named Lake Hinds and Mt Matilda, two landforms that were crossed in the Wongan Hills area.

### Changes over time

Later expeditions collected botanical specimens. One ornithologist noted the absence of malleefowl that were originally reported to have existed in the bushland areas. Their absence was thought to be due to frequent burning of the bush by pastoralists and/or the effect of drought conditions. Early pastoralists ran sheep and would burn the bushland to encourage the regrowth of suitable stock grazing species.



Settlement of Wongan Hills  
(photo courtesy of Wongan Hills and District Museum and Historical Society)

In 1976, WA botanist J.Beard mapped the vegetation of the region for the Vegetation Survey of WA. He collected extensively throughout the Shire of Wongan-Ballidu.

### The development of a town

Pastoral grazing of cattle, sheep and horses was the primary agricultural practice in the Wongan-Ballidu area until the first wheat crop was sown in 1906. Later, the land was cleared through the ringbarking or felling of native trees and bushland. This allowed grasses to grow and, once dried, they could be burnt and cleared. The extension of the railway line north from Northam to Goomalling in 1901 meant that the Europeans were able to move further northward to expand agricultural lands. By 1906, the population was very small. The township of Wongan Hills was declared on 13 June 1911 when a blacksmith shop opened. It was the same year that the railway was extended from Goomalling to Wongan Hills, which brought an influx of people to the town.





Members of the Wongan-Ballidu Bush Care Group

### Wongan-Ballidu geology

Wongan-Ballidu is located in the Yilgarn Block – a geological area that includes granites and gneiss with a number of greenstone belts of metamorphosed, layered rocks. The metamorphosed rock forms a range of hills with granites and gneiss underlying sandplains. The hills are distinct and are named the Wongan Hills.

The landforms of Wongan-Ballidu are represented by two Interim Biogeographic Regions (IBRA subregions); these are the Avon Wheatbelt 1 and Avon Wheatbelt 2 bioregions. They make up a set of

ecosystems that host the wide array of plants and animals that exist in the Shire of Wongan-Ballidu.

### Avon Wheatbelt 1 – Ancient Drainage

The Avon Wheatbelt 1 bioregion is typically a gently undulating landscape of low relief topography. It is characterised by scrub heaths that are rich with endemic species, on residual lateritic uplands and associated yellow sandplains. There is no connected drainage; salt lake chains occur as remnants of ancient drainage. These systems now only flow in very wet years.

Surrounding the Wongan Hills in the eastern part of the Wongan-Ballidu Shire is the wider sandplain with varying amounts of laterite and ironstone. The most distinct salt lakes and salt flats are associated with the Mortlock Creek and Mortlock River, for example Lake Hinds and Lake Ninan.

### Avon Wheatbelt 2 – Rejuvenated Drainage

The topography of the Avon Wheatbelt 2 bioregion is the erosional surface of gently undulating rises to low hills with abrupt breakaway country.

Continuous stream channels flow during most years. Soils are formed through the processes of rock weathering. The vegetation of this bioregion includes woodlands of wandoo, York gum and salmon gums with acacia and casuarina species.

The Wongan Hills are a series of flat-topped mesas that are intersected by deep gullies often containing scree slopes. It is this elevated topography located in the western half of the Shire of Wongan-Ballidu that is a part of the Avon Wheatbelt 2 subregion.



A survey for new populations of threatened flora.





Threatened flora monitoring.

## Wongan-Ballidu climate

The Shire of Wongan-Ballidu experiences a Mediterranean climate with hot, dry summers and cool, wet winters. The average temperature for January is 34.4°C and the average temperature during July is 17°C.

Annual rainfall in the Western Australian wheatbelt averages between 280 and 580 mm. The Shire of Wongan-Ballidu's annual average rainfall is 390 mm with an average of 250 mm falling between May and August.

## Threats to survival

Habitats are susceptible to ecological threats such as weed invasion, pests,

issues associated with rising water tables and the encroachment of salinity into previously non-saline environments. The threats may contribute to a reduction in genetic diversity for small, isolated plant populations limiting the ability of the species to adapt to changing environments.

Extensive clearing of land also threatens the survival of many other species, as small areas of isolated vegetation are less able to support viable populations of native mammals and insects that disturb the soil, stimulate germination and pollinate numerous native plant species.

## Addressing the threats

The community of Wongan-Ballidu and DEC are currently taking the following steps to help preserve threatened flora in the shire and, in doing so, are helping to create a more stable environment for these plants.

- Regular monitoring of known populations of threatened flora by DEC and the Wongan-Ballidu BushCare Group to determine their health.
  - Identifying, and where possible eliminating, specific threats.
  - Collecting and conserving seed and tissue material from threatened species. This is used to gather further information about the species.
  - Establishing new populations of threatened species with cultivated plants to improve their genetic diversity. These populations are also used to gather important information about the species.
  - Managing weeds and pest animals around populations of threatened flora to promote survival.
  - Erecting fencing around threatened species to prevent animal grazing.
  - Conducting surveys in areas of suitable habitat, in an attempt to locate other populations of threatened flora.
- Restoring habitat to support the ecological needs of threatened flora.
  - Facilitating plant regeneration by soil disturbance to stimulate the germination of threatened flora seeds.
  - Conducting prescribed burns in areas adjacent to threatened flora to minimise wildfire risk and to promote regeneration and germination of the seeds of some threatened species.
  - Regularly liaising with stakeholders to promote awareness and active management of threatened flora species.



Community involvement in species conservation.



# Flora conservation rankings in this book

Through the *Conservation and Land Management Act 1984*, DEC is responsible for the administration of the *Wildlife Conservation Act* and hence is responsible for the protection and conservation of flora and fauna on all lands and waters throughout the State. Section 23F of the Act states:

*'Where the Minister [for the Environment] is of the opinion that any class or description of protected flora is likely to become extinct or is rare or is otherwise in need of special protection he may, by notice published in the Government Gazette declare that class or description of flora to be rare flora for the purposes of this section throughout the State'.*

This gives the Minister statutory responsibility for the protection of those plant taxa that are listed as rare flora.

This book lists the 50 known species of Declared Rare and Priority Flora that occur in the Shire of Wongan-Ballidu. Each Priority Flora species has a DEC conservation ranking that is explained in the section below. The Declared Rare Flora rankings have been obtained using a combination of the World Conservation Union (IUCN) and DEC's ranking systems.

## IUCN Red List Categories

The IUCN has formed a system of classification of a wide range of organisms according to their specific level of risk. They are as follows:

### Critically Endangered (CR)

When a plant is considered to be 'Critically Endangered', it is considered to be facing an extremely high risk of extinction in the wild.

### Endangered (EN)

When a plant is considered to be 'Endangered', it is considered to be facing a very high risk of extinction in the wild.

### Vulnerable (VU)

When a plant is considered to be 'Vulnerable', it is considered to be facing a high risk of extinction in the wild.

## DEC's Priority Flora list

In addition to species listed as DRF, DEC maintains a list of 2246 priority species that are not well known and require additional surveys to determine if they meet criteria for DRF status or which are rare but not currently considered to be threatened.

The following categories make up the priority list according to the degree of perceived threat:

### Priority 1 – Poorly known taxa

These are species that are known from one or a few (generally less than five) populations or collections which are under threat. Threats include being located on road verges, urban areas, farmland and active mineral leases. Disease and grazing by feral animals are other threats. Plants with threatened populations on protected lands may also be included. These plants are under consideration for declaration as 'rare flora', but are in urgent need of further survey.

### Priority 2 – Poorly known taxa

These are species that are known from one or a few (generally less than five) populations or collections, at least some of which are not believed to be under immediate threat (i.e. not currently endangered). Such taxa are under consideration for declaration as 'Rare Flora', but are in urgent need of further survey.

### Priority 3 – Poorly known taxa

These are species that are known from several populations or collections but are not believed to be under immediate threat (i.e. not currently endangered) because the number of known populations is generally greater than five, or known populations are large, widespread or protected. Such taxa are under consideration for declaration as 'rare flora' but are in need of further survey.

### Priority 4 – Rare taxa

These are species that have been adequately surveyed and, while being rare (in Australia), are not currently threatened by any identifiable factors. These taxa require monitoring every five to 10 years.

***If you think you have seen any of the rare or priority plants shown in this book, or you would like more information, please call the Department of Environment and Conservation's Northam office on (08) 9622 8940.***



# Wongan grapebunch wattle

## *Acacia botrydion*

Family: Mimosaceae

Conservation status: Priority 4

### Habit

When mature *Acacia botrydion* is an intricately branched, harsh, weathered, dome-shaped, spreading shrub 0.5 to 1.3 m in height. Plants spread to about 3 m in diameter in exposed areas. The plant has numerous short, coarse lateral branches that terminate with a spine-like point, and often lack phyllodes (leaf-like structures).

### Flowers

There are one to two flower heads toward the ends of branchlets. Each flower head consists of about 40 bright yellow, globular-shaped individual flowers that are about 2.5 mm in length. Flowers have reddish-coloured stalks.

Flowering occurs from July to September.



Habit and habitat



Seed pod

### Fruit

The fruit forms a coiled legume, up to 4 cm long and 4 mm wide when uncoiled. It is red-brown, free from hairs and has fine, long wrinkles when dry. Seeds are a dull black colour with a large yellow aril that is folded once on top of the seed. The seeds lie lengthways in the pods and are 3.5 to 4.5 mm long and 2.5 to 3 mm wide.

### Leaves (phyllodes)

Phyllodes are dark green in colour with yellowish to orange-red-brown margins. They are 9 to 15 mm in length and 4 to 12 mm wide. Phyllodes are an uneven oval shape, with tapered ends; most notably the leaf tips are very sharp.



Flower and leaf



Habit

### Distribution and habitat

Distribution: This species is endemic to the Shire of Wongan-Ballidu. There are nine known populations located in nature reserves, on road verges and in private property.

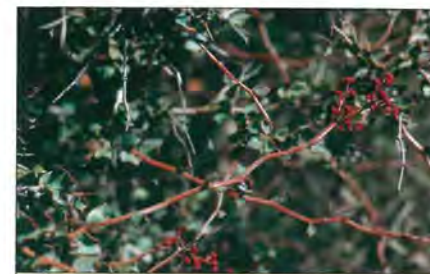
Habitat: It is found on gravelly, lateritic soils and on hill slopes.

### Similar species

*Acacia semicircularis* (P4).

### Associated species

*Eucalyptus ebbanoensis* (sandplain mallee), *Melaleuca undulata* (hidden honey myrtle) and *Phebalium brachycalyx* (P3).



Stem leaf and bud



# Wongan wonky wattle

*Acacia congesta* subsp. *wonganensis*

Family: Mimosaceae

Conservation status: Priority 2

## Habit

This is a shrub with dark grey bark that is 1 to 2 m in height.

## Flowers

Usually about 50 to 70 golden flower heads are present. They are arranged in racemes.

Flowering occurs from August to September.

## Fruit

Pods are up to 6 cm long, hairless and brown to yellow in colour. Seeds are longitudinal and dark brown in colour.

## Leaves (phyllodes)

Phyllodes are free from hairs, although sometimes the margins are sparsely hairy.



Fruit

## Distribution and habitat

Distribution: This subspecies is endemic to the Shire of Wongan-Ballidu and is known from six populations on private property and nature reserves.

Habitat: The subspecies grows on rocky or lateritic clay or loam and is present in mallee communities.

## Associated species

*Grevillea kenneallyi* (Kenneally's grevillea) (P2), *Verticordia* sp. and *Calothamnus asper*.



Fruit



Flower



Habit



Flower

Photography: Andrew Crawford, Bruce Maslin



# Sandpaper wattle

*Acacia denticulosa*

Family: Mimosaceae

Conservation status: Declared Rare Flora – Vulnerable

## Habit

This is an erect, open shrub or small tree between 2 and 4 m in height with smooth grey bark on the main trunk. It has rough, dark reddish-coloured bark on the branchlets.

## Flowers

Flower heads are dense, yellow and slightly curved. They are 1 to 5 cm in length and 5 to 8 mm in width. Flower heads are held on short, warty petioles and are arranged as one or two flower heads.

Flowering occurs from August to November.

## Fruit

Seed pods are light brown in colour, linear in shape and wrinkled. They may be straight or slightly curved.



Habit

Immature pods are a deep burgundy colour. Seeds are black, shiny and oval-shaped. They are 3.5 to 4 mm long and 2.5 to 3 mm wide.

Fruits are produced from December to January.

## Leaves (phyllodes)

Phyllodes are 5 to 7 cm in length and 2 to 5 cm wide, dark green and



Leaf

are round to oval-shaped. They are very stiff, quite sticky and rough to touch. The phyllodes have yellowish nerves and net-like veins.

Habitat: Usually found growing in shallow soils on granite outcrops.

## Associated species

*Allocasuarina campestris* (tamma), *Calothamnus asper*, *Borya* sp. and *Caladenia* sp.

## Distribution and habitat

Distribution: Sandpaper wattle is known from eight populations throughout the wheatbelt region.



Leaf and flower



# *Acacia drewiana* subsp. *minor*

*Acacia drewiana* subsp. *minor*

Family: Mimosaceae

Conservation status: Priority 2

## Habit

This is a subshrub growing 0.2 to 0.7 m high. Branchlets grow in a zigzag manner with coarse and stiff to minute, soft erect hairs.

## Flowers

Flower heads are golden in colour and globular, with one per leaf axil. Stalks are 10 to 20 mm long. The flower head is large and densely covered with 22 to 35 flowers.

Flowering occurs from May until July.

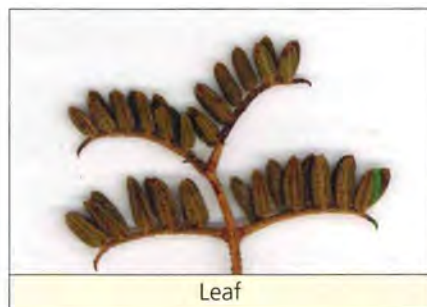
## Fruit



Pods are narrow and oblong, 3 to 7 cm long, 6 to 7 mm wide, crustaceous, often coarse and stiff to minute, soft erect hairs.



Flower



Leaf

## Leaves (phyllodes)

The main leaf is 5 to 20 mm in length. Leaf margins vary from being straight to curling underneath the main leaf. The pinnae are narrowly oblong, green to blue-green in colour and often have coarse stiff hairs. They have two to four pairs that are 2 to 12 mm in length, 1 to 1.5 mm wide and have no petiole. They curve downwards and backwards away from the stem.

Photography: Bruce Maslin



## Distribution and habitat

Distribution: It occurs in south-western WA from Eneabba to Mundijong, including the Wongan Hills and Newdegate areas.

Habitat: It grows in yellow sand soils, on slopes and in scrubland vegetation.

## Associated species

*Actinostrobus* sp. and *Eucalyptus pyriformis* (pear-fruited mallee).



# Acacia lirellata subsp. compressa

## Acacia lirellata subsp. compressa

Family: Mimosaceae

Conservation status: Priority 2

### Habit

This is a dense, low-spreading shrub that grows up to 1.5 m high. Its branchlets zigzag at the nodes.

### Flowers

Flowers are golden in colour, and are round or oblong. They are 5 to 7 mm long and have a diameter of 4 to 6 mm. Bracteoles are distinctly pointed or have a rounded point and are very dark brown.

Flowering occurs from June to August.

### Fruit

Pods look like strands of beads, are straight or loosely coiled, and flat. They are up to 7 cm long and 2 to 3 mm wide. Seeds lie along the pod, are oblong to oval shaped, with pointed tips. These tips are 2.5 to



Habit

3 mm long, glossy and dark brown. The aril is yellowish in colour.

### Leaves (phyllodes)

The upwards facing phyllodes are flat, narrow and long, with a pointed end. The phyllodes distinctively curve inwardly and are rolled in a downwards manner. They are 3 to 7 cm in length and 1.5 to 2 mm wide.

### Distribution and habitat

Distribution: It grows in scattered localities in the wheatbelt between Coorow and Ballidu south to Bruce Rock and Waterbidden Rock.

Habitat: It grows in yellow loam, sand, sandy loam and loamy clay, in open low scrub and heath.

### Associated species

*Grevillea dryandroides* subsp. *dryandroides* (CR).



Leaf and flower bud



Leaf and flower



Habit



Flower



Seed pod

Photography: Andrew Crawford, Wendy Johnston, Bruce Maslin



# Wongan gully wattle

*Acacia pharangites*

Family: Mimosaceae

Conservation status: Declared Rare Flora – Critically Endangered

## Habit

This is a spindly, open, erect shrub growing up to 4 m tall. The main stems are thinly branched towards the base of the plant. Phyllodes are concentrated toward the end of branches.

The bark is grey and slightly rough.

## Flowers

Flower heads are golden in colour and 7 to 10 mm in diameter. Flowers tend to be globular to obloid in appearance.

Flowering occurs August to September.

## Fruit

Seeds are 3 to 3.5 mm in length, 2.5 mm wide and 2 mm thick. They are shiny black in colour with a yellow aril, which is about 3 mm long.

Seed pods are narrow, oblong and form in a drooping habit. They are



Leaf flower

up to 6.5 cm long and 4 mm wide, dark brown, smooth and narrow at each end. The pod surface is raised over each seed and more on one side.

## Leaves (phyllodes)

The leaves are mooth, almost cylindrical-shaped phyllodes that narrow towards the base. Each phyllode is 1.5 to 4 cm long and about 1 mm wide, with a sharp tip.

## Distribution and habitat

Distribution: *Acacia pharangites* is endemic to the Shire of Wongan-Ballidu and is only known from a single population.

Habitat: It grows in sheltered gullies in rocky (greenstone) red-brown clay along seasonally dry creeks. It also grows in the grey sands of creek beds.



Seed pod



Flower



Seed and seed pod



Habit

## Similar species

*Acacia tetanophylla*

## Associated species

*Calothamnus asper*, *Allocauarina campestris*, *Allocauarina acutivalvis*, *Melaleuca radula*, *Acacia acuminata*, *Allocauarina collina* and *Lysiosepalum abollatum* (CR).



Leaves



# Dwarf rock wattle

*Acacia pygmaea*

Family: Mimosaceae

Conservation status: Declared Rare Flora – Endangered

## Habit

This is a dwarf, erect, multi-stemmed shrub that grows to 70 cm in height. Bark is light grey at the base of the stems and becomes light brown at the end of branchlets.

## Flowers

Flowers are round and have white filaments that become orange as they age.

Flowering occurs from November to March.

## Fruit

Pods have a thick margin with a recurved stipe, narrowly oblong, and pointed. They are to 30 mm long and 3 to 4 mm wide.

Seeds are oblong, 4 to 5 mm long, shiny, dark brown and with an aril.



Leaf and flower

## Leaves (phyllodes)

The phyllodes have a wavy appearance, are yellowish-green in colour with yellowish marginal nerves that are pale red when younger. They are oval-shaped, with a pointed tip and tapered base.

## Distribution and habitat

Distribution: It is endemic to five populations in the Shire of Wongan-Ballidu. They occur in nature reserves and on private property.



Habitat



Leaves

Habitat: It grows in ridges of lateritic breakaways. It also grows in rock crevices with the roots thought to be reaching into underlying clay. It is associated with open mallee over open heath.

## Similar species

*Acacia disticha*, *Acacia obovata* and *Acacia myrtifolia*.

## Associated species

*Eucalyptus ebbanoensis* (sandplain mallee), *Allocasuarina campestris* (tamma), *Dryandra comosa* (P4), *Dryandra wonganensis* (P4), *Dryandra pulchella* (P4) and *Persoonia divergens*.



Fruit and leaf

Photography: Wendy Johnston, Bruce Maslin, Nicole Willers



# Wongan wattle

*Acacia semicircularis*

Family: Mimosaceae

Conservation status: Priority 4

## Habit

This is a wiry, open shrub that grows to 1 m in height. The branches tend to grow along the ground in a sprawling manner. They are straight and reddish-brown to light-brown in colour and somewhat shiny.

## Flowers

Flowers are found in the leaf axils and are scattered over the bush. Flower heads are a bright golden colour and globular in shape, with about 25 flowers in each head.

Flowering occurs from September to November.

## Fruit

Pods are reddish-brown in colour and subtly curved and raised over the seeds. They are up to 6 cm in length and 6 mm wide. Seeds lie lengthways in the pods and each is about 6 mm long and 3.5 to 4 mm wide. There is a large yellow-white aril with a short fold on the top side of the seed.



Flower

## Leaves (phyllodes)

Phyllodes are a light olive-green colour to grey/green with yellowish margins and midrib and vary from being slightly to very wavy in appearance. They are irregularly oblong in shape, about 10 to 20 mm long and 5 to 9 mm wide, with a sharp tip.

## Distribution and habitat

Distribution: It is endemic to and is known from 15 populations in the Shire of Wongan-Ballidu, occurring in nature reserves, road verges, private property and a water reserve.

Habitat: It grows on lateritic hills and in mallee woodlands, various heath and shrubland types and degraded road verges.



Flower and leaf



Leaf and stem

## Similar species

*Acacia botrydion* (P4) (Wongan grapebunch wattle).

## Associated species

*Microcorys eremophiloides* (VU), *Dryandra wonganensis* (P4), *Allocasuarina campestris* (tamma), *Grevillea* sp., *Westringia* sp., *Petrophile shuttleworthiana*, *Eucalyptus ebbanoensis* (sandplain mallee), *Eucalyptus drummondii* (Drummond's gum) and *Daviesia spiralis* (spiral-leaved daviesia) (P4).



Habit



# Vassal's wattle

*Acacia vassalii*

Family: Mimosaceae

Conservation status: Declared Rare Flora – Critically Endangered

## Habit

This is a low, spreading shrub, which grows up to 60 cm in height. In open areas it may grow to a dense cushion-shape whereas; in shaded situations it is more sparse and upright.

## Flowers

Flowers are golden in colour and globular in shape.

Flowering occurs from June to August.

## Fruit

Pods are linear, not (or scarcely) constricted between seeds and are openly curved or twisted. They grow to 2 cm long, and 1 to 1.5 mm wide.

## Leaves (phyllodes)

Phyllodes are dark green and slightly horizontally flattened. They have



Flower

hooked tips, are 4 to 8 mm long and 1 mm wide.

## Distribution and habitat

Distribution: Known from the Wongan Hills area, east of Moora, and north-east of Watheroo, they encompass a range of about 85 km.

Habitat: They are found in low scrub and heathlands. They grow in brown sands with gravel over laterite, or on yellow sands.

## Associated species

*Allocasuarina campestris* (tamma), *Acacia drummondii* (Drummond's wattle), *Dryandra fraseri* and *Dryandra carlinoides* (pink dryandra), *Actinostrobos arenarius* (sandplain cypress) and *Grevillea integrifolia* subsp. *biformis*.



Flower



Habit and habitat



Habit



Fruit



# Boronia ericifolia

## *Boronia ericifolia*

Family: Rutaceae

Conservation status: Priority 2

### Habit

*Boronia ericifolia* is an erect shrub growing up to 1.2 m high. It has star-shaped hairs on the branches.

### Flowers

Flowers are white or pale yellow, with short stalks and a pair of bracteoles. Individual flowers grow from the axis of leaves. Sepals are a narrow drop-shape about 2 mm long with dense, woolly star-shaped hairs. Petals are also drop-shaped, are 5 mm long and have minute, star-shaped, dense hairs on the outside with a distinctive midrib.

Flowering occurs between April and September.

### Fruit

The fruit consist of four fruitlets, each containing a single seed.

### Leaves

Leaflets are narrow, oval to almost cylindrical in shape, with pointed tips. They are about 7 mm long, hairless on the top and have star-shaped hairs on the lower surface.

### Distribution and habitat

Distribution: It grows in the Wongan Hills, Dalwallinu and Dumbleyung areas.



Flower

Habitat: It appears in low-lying areas on sandy loam, clay, lateritic soils in among mallee vegetation type.

### Associated species

*Persoonia* sp., *Phebalium* sp., *Petrophile* sp., *Hypocalymma* sp., *Grevillea* sp., *Acacia* sp. and *Allocasuarina* sp.

Photography: Sonya Thomas



Habit



Flower



# Crested spider orchid

## *Caladenia cristata*

Family: Orchidaceae

Conservation status: Priority 4

### Habit

*Caladenia cristata* is a tuberous, perennial herb, 18 to 40 cm in height. It has a comparatively long stem to the size of the flower head and the stem is covered in hairs.

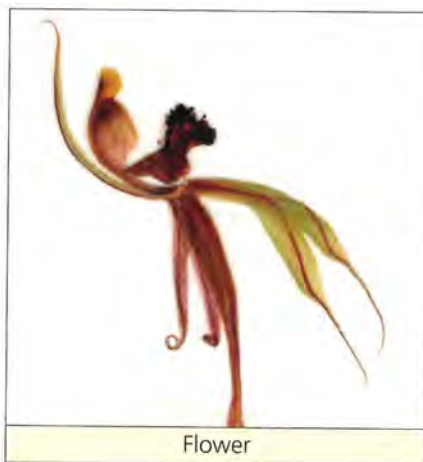
### Flower

This plant has one and rarely two flowers. The flower is a greenish-yellow colour with deep reddish-maroon-coloured stripes, 3 to 4 cm long and 1 to 2 cm wide. Its labellum is brownish-red in colour with a distinctively tall, thick central band of dark calli. The calli extend to at least three-quarters of the length of the labellum and stop at the dark maroon tip. The flower is usually small compared to the overall height of the plant.

Flowering occurs from August to September.

### Leaves

A single leaf grows from the base of the stem and has distinctive hairs; it is 8 to 15 cm in length and 0.4cm wide. It is linear and curves upwards and outwards away from the stem. The leaf is pale green in colour with the bottom third usually irregularly blotched with reddish-purple colour.



Flower

### Distribution and habitat

**Distribution:** It is known from scattered populations between Pithara, Coorow and Wongan Hills.

**Habitat:** It grows in sandy loam soils on slight rises above saline flats and near winter-wet areas in low woodlands and shrub thickets.

### Associated species

*Eucalyptus loxophleba* (York gum), *Melaleuca cardiophylla* (tangling melaleuca) and *Melaleuca uncinata* (broom bush).



Habitat



Flower



Flower



Habitat



# Hinged dragon orchid

## *Caladenia drakeoides*

Family: Orchidaceae

Conservation status: Declared Rare Flora – Critically Endangered

### Habit

*Caladenia drakeoides* is an erect, 20 to 30 cm tall tuberous herb that usually has one flower and sometimes two. The stems have hairs growing on them towards the base that become sparser towards the flower head. Young stems are a greenish-brown colour becoming dark brown with age.



Habit

### Flower

This plant has small hanging petals and sepals that are 13 to 17 mm by 2.5 to 4 mm. It has a small hinged labellum that is 5 to 7 mm in length with two slight side swellings to the sides, with hump-like shoulder calli.

Flowering occurs from August to October.

### Fruit

This plant produces thousands of tiny seeds that contain little testa. Seeds rely on a symbiotic

relationship with soil fungi for germination.

### Leaves

The leaf, which is located at the base of the plant, is hairy and narrowly oval-shaped with a pointed tip.

### Distribution and habitat

Distribution: It grows in seasonally moist rises above salt lakes between Mt Marshall, Coorow, Dalwallinu and Goomalling including the Shire of Wongan-Ballidu. There are also nine populations in the Moora District.

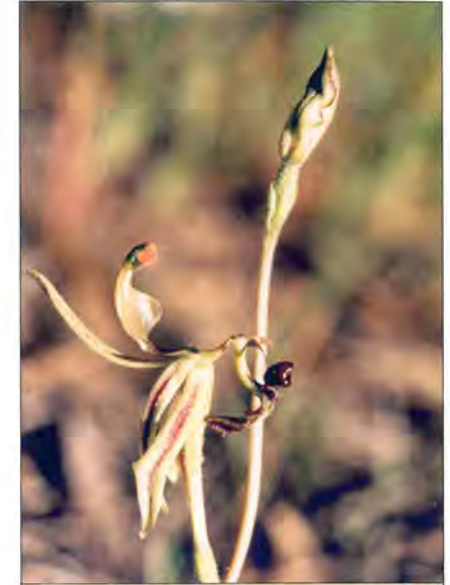
Habitat: It grows in medium to tall shrubland that consists primarily of *Melaleuca* and *Acacia* species over low shrubs and annual vegetation species. Soils vary although consist mainly of grey sandy loam.



Habitat



Flower



Flower

### Similar species

On rare occasions, *Caladenia drakeoides* crosses with *Caladenia exilis* and *Caladenia longicauda*. The resulting species have been named *x Caladenia ornata* and *x Caladenia enigma* respectively.

### Associated species

*Melaleuca uncinata* (broom bush), *Melaleuca* sp., *Acacia* sp., *Caladenia cristata* (crested spider orchid) (P4), *Eucalyptus loxophleba* (York gum), *Caladenia flava* (cowslip orchid) and *Santalum acuminata* (sweet quandong).

Photography: Andrew Brown, Joel Collins, Val English



# Piawaning clawflower

*Calothamnus accedens*

Family: Myrtaceae

Conservation status: Declared Rare Flora – Critically Endangered

## Habit

This is an erect shrub that grows to 1.8 m tall with numerous branches.

This species was thought to be extinct, until it was rediscovered in 2004.

## Flowers

Flowers grow in small clusters of four to 10 on the lower parts of stems, generally where leaves have fallen. Usually they grow on one side of the stem but sometimes they grow around the stem.



Flowers have a bell-shaped calyx tube that is hairy at the base. The hairs become shorter and fewer higher up. Flowers have five narrow, orange to brown petals that are up to 7 mm long and five equal staminal claws, 20 to 25 mm long, that are pinkish-red to dark crimson in colour.

Flowering occurs from January to February.

## Fruit

Fruit is a compressed globe-shaped capsule that is initially covered in dense hairs and has five short lobes that wear away with age. They are 5 to 6 mm in length and 6.2 to 8 mm wide. The dark chocolate-brown seeds are 1.5 to 2 mm in length.



## Leaves

Leaves are densely-crowded at the ends of branches, which have prominent leaf and bud scarring. The leaves are yellowish-green in colour and are 10 to 15 mm long and 0.8 to 1 mm wide. They have no petioles and are stiff, thick and linear. The young leaves have long, spreading, white-coloured hairs that are shed with age.

## Distribution and habitat

Distribution: It grows in Wongan-Ballidu, the Piawaning area, Three Springs and south Moora.

Habitat: It appears on bare brown loam over granite, uplands, slopes and red-brown sandy clay.

## Similar species

*Calothamnus brevifolius* and *Calothamnus hirsutus*.

## Associated species

*Calothamnus brevifolius* and *Calothamnus hirsutus*.

Photography: Andrew Crawford, Rosemarie Rees



# Wongan conostylis

## *Conostylis wonganensis*

Family: Haemodoraceae

Conservation status: Declared Rare Flora – Endangered

### Habit

This is a small perennial herbaceous shrub that reaches 20 cm in height with a basal diameter of 10 cm. It grows in dense tufts with a short, wiry rhizome root system.

### Flowers

Flowers are a creamy yellow colour and covered with dense hairs on all surfaces. The flower tube is 5 to 8 mm in length, and the lobes are a further 3 to 6 mm in length. Flowers are located at the base of



Flower

the leaves and flower stems are less than one third the length of the leaves.

Flowering occurs from late July through to early September.

### Fruit

The fruit is a dehiscent papery capsule. The plant has a placenta that can have up to five ovules per locule. The ovules are attached on the lower surface of the placenta.

### Leaves

Leaves are up to 17 cm in length and 0.9 mm in diameter, erect, thin cylindrical and slightly tapering. They are green in colour except for their bases that are yellow-brown. Leaves are hairless except for small, short spines that are evenly spaced along the margins.



Leaf and flower



Habit

### Distribution and habitat

Distribution: There are five known populations in the shires of Wongan-Ballidu and Dowerin.

Habitat: It grows in yellow sand over clay or laterite on gradual slopes high in the landscape.

It is scattered though an emergent mallee heath with abundant species.

### Similar species

*Conostylis teretiuscula*, *Conostylis dielsii*.

### Associated species

*Eucalyptus pyriformis* (large fruited mallee), *Ecdeiocolea monostachya*, *Hakea scoparia*, *Allocasuarina campestris*, *Conospermum brownii*, *Grevillea paniculata*, *Grevillea armigera* (thorny grevillea), *Grevillea eryngioides* and *Stylidium coroniforme* subsp. *coroniforme* (Wongan triggerplant) (EN).



Habitat

Photography: Stephen Hopper



# Wongan dampiera

## *Dampiera glabrescens*

Family: Goodeniaceae

Conservation status: Priority 1

### Habit

This is a small, erect perennial that grows only to 20 cm in height with a triangular stem. Its appearance varies from being covered with white hairs, to being hairless.

### Flowers

Flowers are arranged in groups of one to three, and are a deep blue-purple colour with a white centre.

Flowering occurs in September.



Flower and leaf



Habit

### Fruit

The fruit is a nut. The seeds are not winged.

### Leaves

Leaves of this plant are located along the stems and branchlets. They are thin and narrow in shape and are slightly wider towards the base. They have a continuous smooth leaf margin and can often have patches of small, dense, down-like hairs.

### Distribution and habitat

Distribution: *Dampiera glabrescens* is endemic to and known from only one population in the Shire of Wongan-Ballidu.

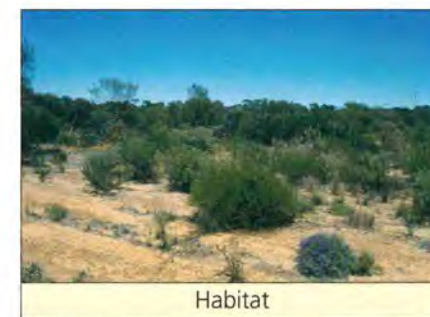
Habitat: It is found in gravelly, white or grey-yellow sandy soils. It can also be found in the highly disturbed habitats of gravel pits, roadsides and rail reserves.



Flower and leaves

### Associated species

*Acacia* sp., *Borya* sp., *Allocasuarina* sp., *Grevillea* sp. and *Gastrolobium* sp.



Habitat

Photography: Kate Brunt, Andrew Crawford



# Wongan cactus

## *Daviesia euphorbioides*

Family: Papilionaceae

Conservation status: Declared Rare Flora – Critically Endangered

### Habit

*Daviesia euphorbioides* is a mostly leafless, spreading shrub up to 45 cm in height. It has erect, cylindrical, very thick and slightly tapering branches.

### Flowers

The pea-like flowers occur in small bunches and are located in the axils of the scales. They have a deep yellow-orange standard petal and deep red or maroon keel petals.

Flowering occurs from June to August.

### Fruit

The fruit is a triangular pod, with a sharp tip, that opens to reveal one of two seeds per pod.

### Leaves

In the place of leaves, there are small, prickly conical-shaped scales.



Habit



Flower

Some leaves do exist on the lower portions of the plant. There are very few and they are drop-shaped, dark green in colour with a lighter green midrib and a brownish petiole.

### Distribution and habitat

It is known to occur in the shires of Wongan-Ballidu, Dowerin and Goomalling.

Habitat: *Daviesia euphorbioides* is found in tall heath with open shrub mallee and often disturbed road verges.

### Associated species

*Actinostrobus arenarius* (native cypress), *Allocasuarina campestris* (tamma) and *Eucalyptus rhodantha* (rose mallee) and *Hemigenia viscida* (sticky hemigenia) (P4).



Habit



Flower



Seed and pod



Seed pod

Photography: Joel Collins, Andrew Crawford, Stephen Hopper, Wendy Johnston



# Spiral-leaved daviesia

## *Daviesia spiralis*

Family: Papilionaceae

Conservation status: Priority 4

### Habit

*Daviesia spiralis* is a broad shrub that grows to 1.5 m in height. It is complex in its appearance and is round in shape.

### Flowers

Flower heads are made up of one to two pea-like flowers. The standard petal is yellow, broad and oval shaped with pointed tips. It measures 6.5 to 7.5 mm in height and is 8 to 10 mm wide. The centre of the flower has an intense yellow pattern enclosed by a red marking. The wings and keel are red and becomes maroon in colour towards the tip. The presence of stipules is one of the distinguishing features of *Daviesia spiralis*.

Flowering occurs from August to January.



Flowers

### Fruit

The plant has a pod that is flat on one side. Pods are 10 to 13 mm in length and 4.5 to 5 mm wide. Seeds are pale brown, speckled, black in colour and flattened on one side. They are 3 to 4 mm in length and 2 to 2.5 mm wide and have a distinctive aril that is about 1.5 mm long.

### Leaves

Phyllodes are arranged alternately along branchlets. Each phyllode is linear and twisted into a right-handed spiral and points in an upwards direction.

### Distribution and habitat

Distribution: *Daviesia spiralis* is endemic to and known from 13 populations in the Shire of Wongan-Ballidu. Populations occur on nature reserves, private property and a road verge.



Habit



Flower

Habitat: It grows on laterite-derived clay and gravel. It is found in mallee shrubland although is more prevalent where there are openings in the vegetation.

### Similar species

*Daviesia elongata*, *Daviesia costata* and *Daviesia lancifolia*.

### Associated species

*Eucalyptus eudesmioides*, *Eucalyptus drummondii* (Drummond's gum), *Allocasuarina campestris* (tamma), *Dryandra comosa* (P4) (shaggy Wongan dryandra) (P4) and *Dryandra pulchella* (silver Wongan dryandra) (P4).



Leaves

Photography: Andrew Brown, Anne Cochrane, Nicole Willers



# Shaggy Wongan dryandra

## *Dryandra comosa*

Family: Proteaceae

Conservation status: Priority 4

### Habit

*Dryandra comosa* is a prickly, dense, bushy shrub that grows to about 3 m in height. Its stems are covered by flat, matted hairs.

### Flowers

Flowers are sessile or on short branchlets on older stems. There are 110 to 150 individual flowers per head. The perianth measures 25 to 27 mm in length, is yellow and has coarse, stiff hairs at the base with claws that are flat and densely hairy. Flowers are often hidden amongst the tangled mass of leaves.

Flowering occurs from August to October.

### Fruit

The fruit is an oval-shaped follicle that is considerably wider towards the tip and comes to a tapered point towards the base. Each fruit is 11 to 15 mm in length and covered in



Flowers

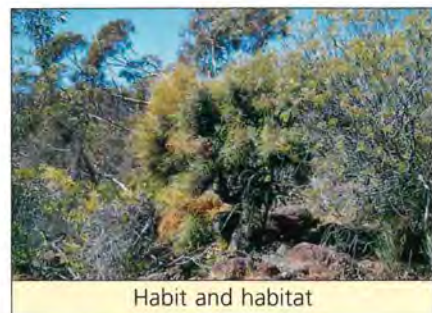
short, stiff, down-like hairs. The one to two seeds have a papery wing.

### Leaves

Leaves grow in a tangled mass and are narrow in shape. The undersides of the leaves are white and the upper surface has a prominent midrib. They are 10 to 35 cm in length, 4 to 8 mm wide and the leaf petioles are 2 cm in length. Eight to 15 stiff, sharp, serrated points form along the leaf margins. These points are about 3 mm in length, spaced 2 cm apart and point upwards. A few long floral leaves surround flower heads.

### Distribution and habitat

Distribution: *Dryandra comosa* is endemic to the Shire of Wongan-Ballidu. It is known from seven populations that are located in nature reserves, on private property and on road verges.



Habit and habitat



Flower

Habitat: It is found on orange-brown gravelly clay or shallow gravelly soil over laterite conglomerate. It also appears on the summits of mesas, their upper slopes and sometimes

their lower slopes. This species grows in areas of open woodlands of various mallee species and varied smaller shrubs.

### Similar species

*Dryandra pulchella* and *Dryandra wonganensis*

### Associated species

*Eucalyptus ebbanoensis* (sandplain mallee), *Eucalyptus drummondii* (Drummond's gum), *Allocasuarina campestris* (tamma), *Hakea scoparia*, *Melaleuca* sp. and *Microcorys eremophiloides* (VU).



Flower

Photography: Ray Cranfield, Margaret Pieroni, Sonya Thomas



# Silver Wongan dryandra

## *Dryandra pulchella*

Family: Proteaceae

Conservation status: Priority 4

### Habit

*Dryandra pulchella* is a bushy shrub growing to 3 m in height. Stems have short, curled, down-like hairs that become scarce.

### Flowers

Flowers are almost sessile, growing on older stems and surrounded by leaves. The flower heads are small, about 30 mm in diameter and are located on the ends of shorter, lateral branches with 30 to 50 flowers per head. Flowers are yellowish-green in colour.

Flowering occurs in October.

### Fruit

Fruits are round follicles. They have coarse, stiff, hairs and are 6 to 8 mm in length.

### Leaves

Leaves are densely arranged on the ends of lateral branches and are



Leaves

greyish-green in colour. They have deeply saw-toothed margins to the midrib. The teeth curve outwards to a sharp point and a petiole that is 2 cm in length.

### Distribution and habitat

Distribution: *Dryandra pulchella* is endemic to the Shire of Wongan- Ballidu. It is known from 10 populations that occur on private property, a road verge and nature reserves.

Habitat: It is found on orange-brown clay-gravel soils and lateritic hillsides. They are associated with open and dense mallee woodlands and shrublands where various species and smaller shrubs are present.

### Similar species

*Dryandra comosa* and *Dryandra wonganensis*

### Associated species

*Eucalyptus drummondii* (Drummond's gum), *Eucalyptus ebbanoensis* (sandplain mallee), *Eucalyptus longicornis* (red morrell), *Eucalyptus eudesmioides*, *Eucalyptus gracilis* (yorrell, white mallee), *Allocasuarina campestris* (tamma), *Dryandra* sp. aff. *hewardiana*, *Acacia semicircularis* (Wongan wattle) (P4), *Isopogon divergens* (spreading coneflower) and *Daviesia* sp.



Habit and habitat



Leaves

Photography: Wendy Johnston, Gillian Stack



# Long-toothed Wongan dryandra

## *Dryandra wonganensis*

Family: Proteaceae

Conservation status: Priority 4

### Habit

*Dryandra wonganensis* is a sprawling to erect shrub. Stems have a small number of flat hairs toward the base, but they soon disappear.

### Flowers

Flowers are large and do not have any scent. They are made up of pale yellow to cream-coloured stamens.

Flowering occurs from August to October.

### Fruit

The fruit is a triangularly-shaped follicle that splits at the seam and has coarse, stiff hairs. It is 7 to 8 mm in length.

### Leaves

Leaves are grey-green in colour with a distinctive yellow petiole. They are linear in shape with long, sharp, pointed teeth along their margins. Each leaf is distinctly curved with



Flower

soft, short hairs underneath. Leaves are 4 to 16 cm in length and 9 to 18 mm wide. The tip of the leaf is pointed.

### Distribution and habitat

Distribution: This species is endemic to the Shire of Wongan-Ballidu. There are five known populations on nature reserves and private property.

Habitat: It is found in gravelly loam soils and lateritic soils, often near breakaways. The species grows in woodland areas and dense scrub.

### Similar species

*Dryandra comosa* (P4), *Dryandra hewardiana*, *Dryandra pulchella* (P4) and *Dryandra trifontinalis*.

### Associated species

*Dryandra comosa* (shaggy Wongan dryandra) (P4) and *Microcorys eremophiloides* (VU).



Leaves



Habit



Leaves and flower

Photography: Wendy Johnston, Sonya Thomas, Nicole Willers



# Sargent's eremophila

*Eremophila sargentii*

Family: Myoporaceae

Conservation status: Priority 2

## Habit

This is a medium to large shrub that grows between 30 cm and 3 m in height, with a dense crown.

## Flowers

Flowers range from pale lilac, pink and white to purple in colour and are tubular in shape.

Flowering occurs from September to October.

## Fruit

The fleshy fruit is indehiscent, dry and hairy.

## Leaves

The narrow linear leaves are small and 2 to 3 mm in length by 1 mm wide. They are arranged alternately and are hairless, have no petiole and are rounded towards their base with single, shortly-curved or hooked tips.



Fruit



Leaf and fruit

## Distribution and habitat

Distribution: They are found between Wongan and Kalannie.

Habitat: This plant has been found growing in sandy loam and laterite aprons with *Eucalyptus* species surrounding it.

## Associated species

*Eucalyptus loxophleba* (York gum), *Acacia acuminata* (raspberry jam tree), *Allocasuarina campestris* (tamma) and *Melaleuca radula* (graceful honey myrtle).



Flower



Flower



Flower



Leaf and flower

Photography: Andrew Brown, Anne Cochrane



# Wongan eremophila

## *Eremophila ternifolia*

Family: Myoporaceae

Conservation status: Declared Rare Flora – Vulnerable

### Habit

*Eremophila ternifolia* is a low spreading shrub that is 30 to 50 cm in height and 50 to 70 cm in width.

### Flowers

Flowers are solitary and sessile. Flowers are 10 mm in length and lilac in colour, with a white throat and purple spots inside. They have small, down-like hairs on the outside, and are noticeably bearded on the lowermost lobe that extends down into the tube.

Flowering occurs from October to November.



Flower



Habitat

### Fruit

Fruits are dry and indehiscent, drop-shaped and have a prominent beak. The fruit is split in the upper section unlike that of *Eremophila veronica*. The fruits are 2.3 to 3.2 by 2.2 to 2.8 mm in size, and have dry and coarse hairs. The seeds are small and pale yellowish-white in colour.

### Leaves

The leaves are densely arranged in alternate whorls of three. They are green on the upper leaf surface and often reddish-brown beneath. The leaves vary from being thin and narrow with a slightly rounded base to being oval-shaped and pointed at each end. Leaves are hairless and 6 to 11 by 2.7 to 4 mm in size.

Photography: Andrew Brown, Gillian Stack, Sonya Thomas, Nicole Willers



Leaf and flower

### Distribution and habitat

*Eremophila ternifolia* is endemic to and known from three populations in the Shire of Wongan-Ballidu. These populations are located on private property and on a nature reserve.

### Similar species

*Eremophila veronica*

### Associated species

*Eucalyptus erythronema* (red flowering gum), *Eucalyptus longicornis* (red morrell), *Eucalyptus salubris* (gimlet), *Eucalyptus gracilis* (yorrell), *Santalum acuminatum* (sweet quandong), *Melaleuca adnata* and *Acacia orbifolia*.



Leaf and flower



Leaf and flower



# Varnish bush

*Eremophila viscida*

Family: Myoporaceae

Conservation status: Declared Rare Flora – Endangered

## Habit

This erect shrub, 2 to 6 m tall, has sticky, shiny brown, hairless branches.

## Flowers

Flowers are tubular in shape, about 2 cm in length and are located in the leaf axils. Flowers usually grow singularly or sometimes in pairs and have a 1 cm long stalk which becomes larger underneath the flower. The colourful calyx lobes are 10 to 15 mm long and the purple to red-marked, greenish-white to pink flowers are strongly veined. The stamens project well beyond the floral tube.



Flower



Flower and leaf

Flowering occurs from August to October.

## Fruit

Fruits are egg-shaped and hairy on their upper section. They are 5 to 7 cm in length and about 4 mm wide.

## Leaves

Leaves are narrow, green and glossy. They are 5 to 8 cm in length and are up to 2 cm wide. The leaf margins are finely serrated.

## Distribution and habitat

Distribution: It occurs between Geraldton and Westonia including Mukinbudin, Nungarin, Wongan-Ballidu and Dalwallinu.

Habitat: They are known to grow in light brown sandy loam or red-brown clay loam soils, in open woodland and scrub or on disturbed, grassy road verges.



Habit



Habit and habitat



Leaf and bud

## Similar species

*Eremophila lucida* (poverty bush). *Eremophila viscida* differs from *E. lucida* in its longer, narrower leaves, more colourful flowers and more northerly distribution.

## Associated species

*Eucalyptus* sp, *Grevillea* sp., *Stipa elegantissima* (feather spear grass), *Enchylaena tomentosa* (ruby saltbush), *Dianella revoluta* (spreading flax lily).

Photography: Andrew Brown, Anne Cochrane, Wendy Johnston



# *Eucalyptus macrocarpa x pyriformis*

## *Eucalyptus macrocarpa x pyriformis*

Family: Myrtaceae

Conservation status: Priority 3

### Habit

This is an erect, open mallee tree. It grows from 1.2 to 6 m in height. The trunks and main branches have shedding bark.

### Flowers

The large flowers are red in colour.

Flowering occurs from August to October.

### Fruit

Fruit is a large woody capsule, up to 5 cm in diameter.

### Leaves

Leaves are around 12 cm in length, greyish-green in colour and are thick and tough. They have distinctive yellow entire margins and midvein with a distinctly pointed tip that curls under or upwards. Leaves take on a wavy shape and the leaf petioles are reddish in colour. Leaf



pairs are arranged opposite each other. New stem growth is green while older growth is brown.

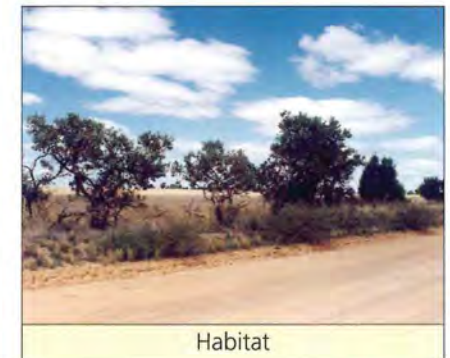
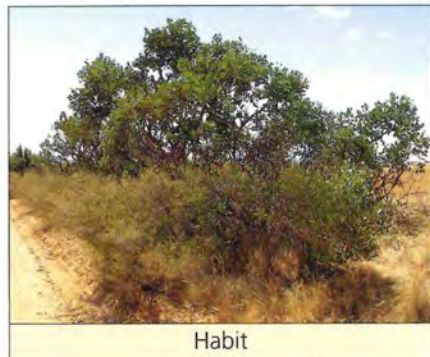
### Distribution and habitat

Distribution: Scattered plants are found in Dandaragan, Victoria Plains, Three Springs, Wongan-Ballidu, Moora, Goomalling and Mingenew.

Habitat: It grows in brown sandy-loam conditions in a small depression. It prefers remnant mallee and shrubland vegetation.

### Associated species

*Actinostrobilus* sp., *Scholtzia* sp. (annual veldt grass), *Gastrolobium spinosum* (prickly poison).



Photography: Joel Collins



# Wongan mallet

## *Eucalyptus recta*

Family: Myrtaceae

Conservation status: Declared Rare Flora – Vulnerable

### Habit

This is a mallet that grows to 15 m in height. The trunk is straight and the smooth bark is shiny pale silver-grey or white.

### Flowers

Flowers are a creamy white to pale yellow colour. There are between nine and 11 buds that are supported by stalks. They are elongated or oval-shaped, with the floral cup smooth or slightly ribbed and the scar present. The stamens are inflexed and the anthers are cuboid. The style is long and straight while the stigma is blunt to rounded. Axillary, unbranched and drooping petioles are 1.5 to 2.5 cm in length.

Flowering occurs during May.

### Fruit

The fruits are capsules that are large and down-turned, supported by stalks. They are smooth and are light



Habit and habitat

brown to yellowish. The base of the fruit is semi-circular, cup-shaped, with a cone-shaped cap, and is 1 to 1.4 cm wide. The seed is brown-grey in colour, 1 to 3 mm long and oval-shaped or slightly pinched at one end. On the back surface of the seed, it is possible to see a network of veins with two length-way furrows that give it a wrinkled texture.

### Leaves

Mature leaves are arranged alternately. Stalks are 1 to 2.4 cm long. The blade is long and pointed at the tip, becoming wider toward the base – tapering to a narrower



Leaf and fruit

point. Sometimes it is sickle-shaped. The margins are continuous. Leaves are glossy, uniformly dark green in colour with a dense vein network and a vein running very closely along the leaf margin. They measure 7 to 14.5 cm long and 1 to 2.3 cm wide.

### Distribution and habitat

Distribution: It is known from scattered plants in Wongan-Ballidu and Dowerin.

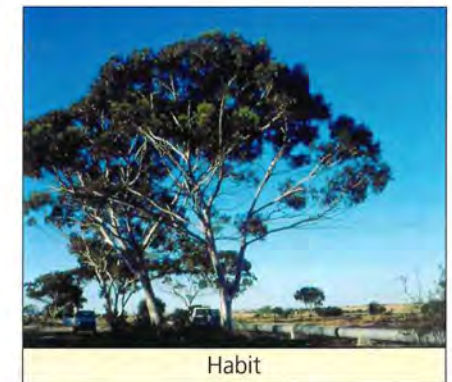
Habitat: It grows on lateritic slopes, white or pale yellow gravelly sand and in blue mallet woodlands.

### Similar species

*E. ornata*, *E. falcata*.

### Associated species

*Eucalyptus gardneri*, *Eucalyptus oldfieldii* (Oldfield's mallee), *Eucalyptus subangusta*, *E. tenera* (sand mallee), *Dryandra shanklandiorum*.



Habit

Photography: Anne Cochrane



# Cluster head frankenia

## *Frankenia glomerata*

Family: Frankeniaceae

Conservation status: Priority 3

### Habit

This is an intensely branching small shrub that can grow between 20 cm and 1 m in height. It has slender stems that have fine, upturned hairs that disappear with age.

### Flowers

Flowers are densely arranged in groups of three and located at the ends of branchlets. Each has a stalk and bracteoles. The stalks are wide, flat and very hairy near the tips. The flower has four or five petals that are long and pink with four stamens.

Flowering occurs in November.



### Fruit

Fruit is a cylindrical capsule.

### Leaves

Leaves are curved, 4 to 11.5 mm long and usually less than 1 mm wide. The upper surface of the leaf is hairless and shiny; the underside has down-like, dense, short hairs. The margins of the leaf curve downwards and cover the midrib.

### Distribution and habitat

Distribution: Plants have been found in the Wongan-Ballidu, Kulin and Wiluna shires.

Habitat: In the Wongan-Ballidu and Avon Wheatbelt areas it has been found growing in white and grey sand. It is associated with low scrub vegetation and has been found alongside saline watercourses.

### Associated species

*Melaleuca adnata*, *Samphire* sp.,  
*Melaleuca lateriflora* (gorada).



Photography: WA Herbarium



# Rock poison

*Gastrolobium callistachys*

Family: Papilionaceae

Conservation status: Priority 4

## Habit

This is a shrub with erect branches that stands from 1 to 3 m in height.

## Flowers

This is a typical pea flower shrub. The flowers are yellow and streaked with red. They are arranged in erect rigid racemes that are between 15 and 20 cm in length located at the ends of branchlets.

Flowering occurs from September to November.

## Fruit

Fruit is a stalked pod. Seeds are small and hard coated.

## Leaves

Leaves are arranged alternately, are narrow and erect, 1 to 3 mm wide, with blunt or notched tops. They taper at the base into a short petiole and tend to grow in a vertical direction.



Habit

## Distribution and habitat

**Distribution:** Has only been reported at restricted localities from the Irwin River southwards to the Dale River and eastwards to Mount Stirling, south of Kellerberrin.

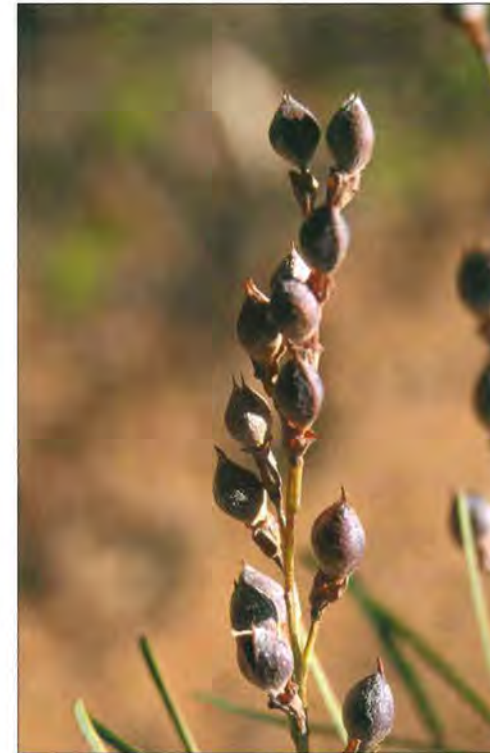
**Habitat:** Small populations on granitic soils usually around granite outcrops.

## Associated species

*Eucalyptus accedens* (wandoo),  
*Allocasuarina* sp., *Melaleuca radula*  
(graceful honey myrtle),  
*Leptospermum* sp., *Beyeria* sp., and  
*Grevillea* sp.



Habitat



Fruit



Flower

Photography: Anne Cochrane



# Spike poison, Wongan poison

## *Gastrolobium glaucum*

Family: Papilionaceae

Conservation status: Declared Rare Flora – Critically Endangered

### Habit

This is a dense, erect shrub with many stems and grows up to 90 cm in height from woody stock.

### Flowers

Flowers are orange and red, less than 1 cm long and are arranged in closely clustered sets of three, just above the leaves. Both the sepals and the stalks of the flowers are covered in dense hairs.

Flowering occurs from August to October.



Flower

### Fruit

The fruits are stalked pods. Seeds are small and hard coated.

### Leaves

The upward facing leaves are arranged in sets of three and are up to 1.7 cm long and 1.3 cm wide. Leaves are flat, fairly thick and rigid and blue-green or greyish in colour. The presence of small black stipules are a distinguishing feature of this plant.

### Distribution and habitat

Distribution: *Gastrolobium glaucum* is endemic to and is known from four populations in the Shire of Wongan-Ballidu.

Habitat: It is found in mixed soils that contain sand, gravel, loam and clay. It is also found on low shrubland communities on sandplains and rises.



Flower



Leaves



Habit



Habit

### Associated species

*Melaleuca* sp., *Hakea scoparia*, *Hakea incrassata* (marble hakea), *Allocasuarina campestris*, and *Gastrolobium hamulosum* (hook-point poison) (CR).

Photography: Shari Dougall, Nicole Willers



# Hook-point poison

## *Gastrolobium hamulosum*

Family: Papilionaceae

Conservation status: Declared Rare Flora – Critically Endangered

### Habit

This small, erect shrub grows up to 45 cm high. It tends to grow in a straggly manner and has numerous slender branchlets covered in short, light-coloured hairs.

### Flowers

Golden yellow, red-streaked pea flowers are arranged in clusters at the ends of branches. The calyx has deeply divided lobes that taper to long points and with long silky hairs.

Flowering occurs from August to October.



Habit and flower

### Fruit

Fruit is a stalked pod with small, hard coated seeds.

### Leaves

Leaves are blue-green in colour and they have prominent net veins and a midrib that is raised beneath. The oval-shaped leaves have a wide blunt end with a hooked tip. Leaves are arranged in sets of three along the stems.

### Distribution and habitat

Distribution: This plant grows only in the Wongan Hills, Victoria Plains and Moora areas.

Habitat: It grows on pale yellow clay loam with some sand and gravel on clay flats. It also grows in white and grey sand or sandy clay. It sometimes occurs in disturbed ground with other colonising shrubs, such as in low heath with tamma (*Allocasuarina campestris*),



Leaf and flower



Habitat



Leaf and flower



Leaves

*Melaleuca* sp., *Eucalyptus* sp. and tall sedges. This species has also been recorded from quartzite ridges.

### Similar species

*Gastrolobium parvifolium* (berry poison).

### Associated species

*Allocasuarina campestris* (tamma), *Gastrolobium glaucum* (CR), *Melaleuca* sp., *Eucalyptus* sp. and tall sedges.

Photography: Anne Cochrane, Wendy Johnston



# *Grevillea biformis* subsp. *cymbiformis*

*Grevillea biformis* subsp. *cymbiformis*

Family: Proteaceae

Conservation status: Priority 2

## Habit

This is a shrub that grows to around 1.5 m in height.

## Flowers

Flowers are pale yellow to cream in colour. Flower heads are terminal spikes.

## Fruit

Seeds are elliptical with a surrounding fleshy wing.

## Leaves

Leaves are linear and point upwards and are a mid-green colour.



Flowers



Flowers

## Distribution and habitat

Distribution: They are found in the Wongan Hills, Moora and Carnamah areas.

Habitat: The plants grow on white sand in the Shire of Wongan-Ballidu and on low heath with disturbed area around it.

## Associated species

*Grevillea integrifolia* (entire-leaved grevillea), *Verticordia grandis* (scarlet featherflower), *Hakea prostrata* (harsh hakea) and *Jacksonia floribunda* (holly pea).



Fruit



Habitat



Habit



# Phalanx grevillea

*Grevillea dryandroides* subsp. *dryandroides*

Family: Proteaceae

Conservation status: Declared Rare Flora – Critically Endangered

## Habit

This is a root-suckering shrub that grows to 50 cm in height. It usually forms colonies of less than five plants or is scattered as single plants among the associated vegetation.

## Flowers

The flower heads are 3 to 4 cm long while the stalks are 1 to 1.5 cm long. Individual flowers are reddish-pink to orange-pink with a grey-green limb. The style is red or pink with a green tip. The perianth is 6 to 7 mm long and pink to orange-pink with a grey-green limb.

Flowering occurs from September or October to February.

## Fruit

Fruits are posteriorly slanting and on curved stalks. The fruit's surface is striped with several narrow lengthways stripes. Seed ellipsoid containing a surrounding fleshy wing.



Habit

## Leaves

Dull yellow-green in colour, growing upwards from the base of the plant. Each leaf has lobes that are 5 to 15 mm in length and free from hairs.

## Distribution and habitat

Distribution: This plant is endemic to and known from five populations in the Shire of Wongan-Ballidu with 71 known plants. Land tenure ranges from Main Roads road verges to railway reserves, a shire reserve and a shire road verge.

Habitat: It is found in grey sandy loam and yellow gravelly sand, often in open heath that has shrubs of *Allocasuarina* and *Melaleuca*.

## Similar species

*Grevillea dryandroides* subsp. *hirsuta* (VU).



Flower



Leaf

## Associated species

*Austrostipa* sp., *Sedge* sp., *Acacia* sp., *Melaleuca* sp., *Allocasuarina acutivalvis* (Black Tamma), *Grevillea* sp., *Waitzia acuminata* (Orange Immortelle) and planted *Eucalyptus camaldulensis*.



Habitat

Photography: Anne Cochrane, Joel Collins, Wendy Johnston



# Hairy phalanx grevillea

*Grevillea dryandroides* subsp. *hirsuta*

Family: Proteaceae

Conservation status: Declared Rare Flora – Vulnerable

## Habit

This is a tufty, prostrate shrub. It is root suckering and usually forms in colonies. It grows up to 30 cm high and up to 1 m in diameter. In natural stands, it tends to develop a spreading habit rather than being clumped.

## Flowers

Flower heads are located at the ends of the prostrate stems and grow up to 7 cm long. The individual flowers are dull-red with a grey limb, and the style is also dull-red with a yellowy-green tip.

Flowering occurs from September to March.

## Fruit

They are woody, covered in fine hairs and maroon markings and



Flower

about 1 cm long. They contain grey/black coloured seeds that are ellipsoid in shape and have a surrounding fleshy wing.

## Leaves

This plant has greyish-green leaves that grow up to 12 cm long and are covered in soft hairs. Leaf segments are up to 12 mm long and form a V-shape with a midrib. The leaf lobes are between 12 and 35 mm long with crisped hairs.

## Distribution and habitat

Distribution: It is found in the Corrigin-Quairading areas, and in shires of Kellerberrin, Dowerin and Wongan-Ballidu.

Habitat: It is found on limestone slopes, low plains and yellow sand heath vegetation.



Seed pod



Habit



Habit



Habitat

## Similar species

*Grevillea dryandroides* subsp. *dryandroides* (CR).

## Associated species

*Eucalyptus* sp., *Banksia* sp., *Grevillea armigera* (prickly toothbrush), *Mirbelia spinosa*, *Boronia coerulescens* and *Dampiera preissii*.

Photography: Joel Collins, Wendy Johnston



# Kenneally's grevillea

## *Grevillea kenneallyi*

Family: Proteaceae

Conservation status: Priority 2

### Habit

*Grevillea kenneallyi* is a dense, spreading shrub that grows to around 3 m in height and 3 m wide. Branchlets are cylindrical in shape and have a silky texture.

### Flowers

Flowers are white and, while young, the buds have a pink tinge. Shaggy, long soft hairs grow on the lower section of the flower head.

Flowering occurs from July to September.

### Fruit

Fruit sits erect on curved stalks. The fruit is hairless and the outer casing is around 1 mm thick. Seed is ellipsoid containing a surrounding fleshy wing.



Flower



Fruit

### Leaves

Leaves are 4 to 8 cm in length and are erect. The leaf's upper surface is nearly hairless while the lower surface consists entirely of the raised midvein.

### Distribution and habitat

Distribution: *Grevillea kenneallyi* is endemic to and known from 10 populations in the Shire of Wongan-Ballidu and spread over a distance of 10 km.

Habitat: This plant grows in lateritic clayey loams, often just below breakaways with mallee woodland vegetation over shrubs.

### Similar species

*G. subtiliflora*, *Grevillea teretifolia* (round-leaf grevillea).

### Associated Species

*Acacia* sp., *Grevillea petrophiloides*, *Micromyrtus racemosa*, *Allocasuarina campestris* (tamma) and *Petrophile shuttleworthiana*.



Seed



Leaves

Photography: Wendy Johnston, Sue Patrick



# Hemigenia conferta

## *Hemigenia conferta*

Family: Lamiaceae

Conservation status: Priority 4

### Habit

*Hemigenia conferta* is an erect, spreading shrub. It can reach 0.3 to 1.4 m in height. Branches are sparsely to moderately hairy along a narrow longitudinal region between leaf bases.

### Flowers

Flowers have pale purple petals that become white in the throat with yellowy-orange and pink spots. They are arranged in terminal racemes with eight to 16 flowers and stalks that are 2.3 to 2.6 mm in length.

Flowering occurs from September to October.

### Fruit

The fruit consists of four fruitlets.



Habit



Habit

### Leaves

Leaves are both 'floral' and 'non-floral'. They are arranged opposite each other along branchlets, are sessile and hairless.

Floral leaves have smooth margins and are oblong in shape with rounded tips. They are 7 to 10 mm in length and 5.5 to 7 mm wide.

Non-floral leaves vary from being narrow and having a rounded base and pointed tips to being more pointed at their base and with rounded tips. They are 9.5 to 15 mm in length and 3 to 5 mm in wide.

### Distribution and habitat

Distribution: This plant is known from three populations, all located in the Shire of Wongan-Ballidu.

Photography: Nicole Willers



Flower

Habitat: It grows on shallow soils on lateritic rises and is found around petrophile-dominated shrubland.

### Similar species

*Microcorys obovata*.

### Associated species

*Allocasuarina campestris* (tamma), *Calothamnus asper*, *Daviesia spiralis* (spiral-leaved daviesia) (P4), *Eucalyptus drummondii* (Drummond's gum), *Eucalyptus ebbanoensis* (sandplain mallee) and *Melaleuca radula* (graceful honey myrtle).



Habitat



Leaves



# Sticky hemigenia

## *Hemigenia viscida*

Family: Lamiaceae

Conservation status: Priority 4

### Habit

*Hemigenia viscida* is an erect bush or shrub that grows to 90 cm in height.

### Flowers

Solitary flowers are violet or purple in colour and are up to 2 cm in length. The stamen appendage is bearded.

Flowering occurs from November to January.

### Fruit

The fruit consists of four fruitlets.

### Leaves

It has almost stalkless leaves that tend to be clustered towards the ends of branches and stems. Leaves are a mid-green colour.



Habitat

### Distribution and habitat

Distribution: This plant is found in the Wongan Hills area and in areas south of Tammin.

Habitat: It grows on sand in low heath, and over laterite with some gravel in the soil.

### Associated species

*Daviesia euphorbioides* (Wongan cactus) (CR) and *Gastrolobium glaucum* (Wongan poison) (CR).



Habit



Leaves



Habitat



Habitat

Photography: Joel Collins, Mike Fitzgerald



# Lepidium pseudotasmanicum

## *Lepidium pseudotasmanicum*

Family: Brassicaceae

Conservation status: Priority 4

### Habit

This is an erect annual or biennial herbaceous plant growing from 0.2 to 0.4 m in height. The stem is hairless, smooth and round in cross-section.

### Flowers

Flowers are insignificant; white and/or green and tinged with purple. Sepals are 0.5 to 1 mm in length. Flowers are located along an extended stem.

Flowering occurs from February to December.



Flower

### Fruit

The fruit is an oval-shaped pod that comes to distinct points at each end, is 2.5 to 3 mm long and 2 mm wide. Each plant produces a large amount of seed.

### Leaves

The lower leaves have short 'teeth' and the higher leaves have smooth margins and are linear in form.

### Distribution and habitat

Distribution: This species has been found in locations such as Albany, Denmark, Porongurup Range, Yanchep, Stirling Range and the Shire of Wongan-Ballidu and is known to occur in other Australian states.

Habitat: It prefers loam and sand locations but has been found in the Shire of Wongan-Ballidu growing in red soils and open scrub locations.



Leaf



Habit

### Associated species

*Allocasuarina campestris* (tamma),  
*Melaleuca radula* (graceful honey myrtle) and *Spartochloa scirpoidea*.



Flower



# Leucopogon sp. Bungulla

## *Leucopogon sp. Bungulla*

Family: Epacridaceae

Conservation status: Priority 2

### Habit

This is an erect shrub that grows from 0.3 to 1 m in height to 1 m wide.

### Flowers

Flowers are white, tubular in form and 2.5 to 4 mm in length. The petal lobes curve and have white, woolly hairs. The style projects well beyond the tube.

Flowering occurs from April to June.

### Fruit

Fruit is small and stone-like, does not spilt when mature (indehiscent drupe) and possibly contains a number of cells.



Flowers



Flowers

### Leaves

The leaves are erect, concave, oval-shaped with a pointed end and taper to a distinct point towards the petiole. Leaves are 3 to 5 mm in length and 1 to 2.5 mm wide.

### Distribution and habitat

Distribution: Specimens of this plant have been found in Wongan, Dowerin, Yorkrakine and north

Kellerberrin in mixture of land tenures from water reserves, nature reserves through to road verges.

Habitat: It grows in white-yellow sand in the Wongan area, brown-yellow loam over clay and laterite, and appears on hills, plains, summits and disturbed sites.

### Associated species

*Hakea scoparia*, *Hakea* sp., *Drosera* sp., *Borya* sp., *Astroloma serratifolium* (kondrung), *Acacia cochlocarpa* subsp. *velutinos*, *Dodonaea bursariifolia* and *Melaleuca conothamnoides*.



Habit



# White footed sedge

*Loxocarya albipes*

Family: Restionaceae

Conservation status: Priority 4

## Habit

This is a densely tufted, sedge-like perennial. It is rhizomatous and herbaceous and grows to about 50 to 80 cm in height by 1.5 m wide. Rhizomes can be seen at the soil level and are reddish-brown in colour. They have dense, shaggy, long hairs with a continuous covering of white, woolly hairs that weather with age.

## Flowers

Male flowers are located along the stalks are very short and there are seven to 12 per spikelet. Bracts of flowers are light brown.



Habit



Flowers

Female flowers are arranged as two per spikelet. The bracts are striped and are covered with small wart-like outgrowths. They are reddish-brown in colour.

Flowering occurs from August to September.

## Fruit

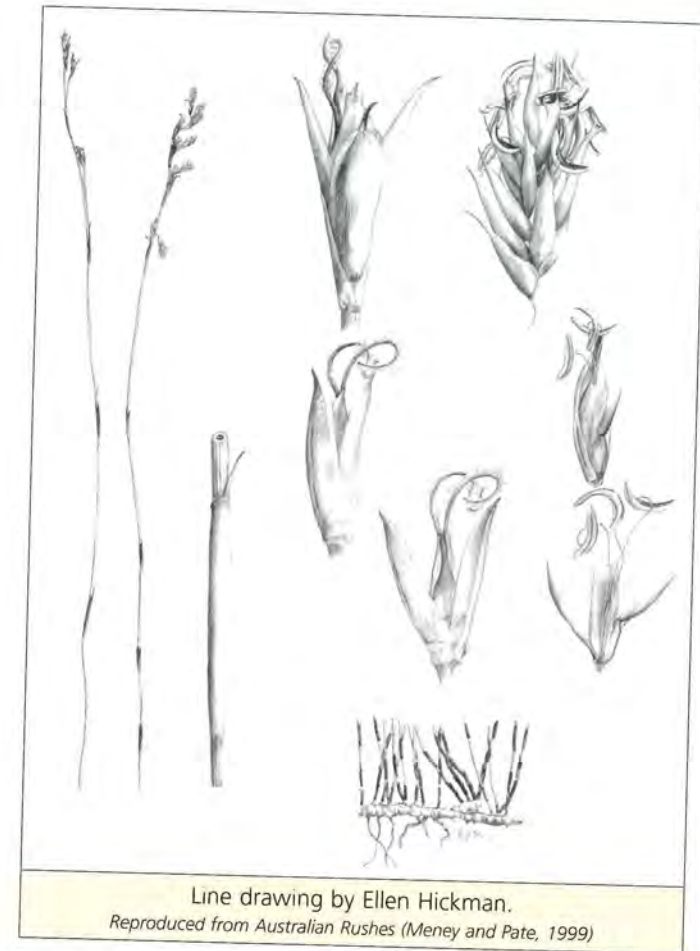
Fruits are heart-shaped capsules that have a flattened appearance with a distinctive, woody, stilar beak and they do not spilt open with age.

## Leaves

*Loxocarya albipes* has scale leaves that are widely spaced and orange-brown in colour.

## Distribution and habitat

Distribution: It is endemic to the Shire of Wongan-Ballidu and is known from three populations.



Line drawing by Ellen Hickman.

Reproduced from *Australian Rushes* (Menev and Pate, 1999)

Habitat: Found on red/brown gravel over laterite soils. Vegetative habitats include heaths and thickets.

## Similar species

*Loxocarya striata*.

## Associated species

*Daviesia spiralis* (spiral-leaved daviesia) (P4), *Isopogon* sp. and *Grevillea* sp.



# Woolly lysiosepalum

## *Lysiosepalum abollatum*

Family: Sterculiaceae

Conservation status: Declared Rare Flora – Critically Endangered

### Habit

This is a dense, erect shrub that is 1.5 m in height and 1.5 m wide. Stems and leaves are covered in white, woolly, 12 to 14 armed, star-shaped hairs that are 1 to 2 mm in diameter.

### Flowers

Flowers are star-shaped in form, and colours range from pink to blue and purple. The flower heads are 40 to 90 mm in length, with up to eight individual flowers. Flower stalks are 10 to 35 mm in length. Petals are usually horizontal and flat and the calyx has long silky hairs and deeply divided lobes.

Flowering occurs from August to September.

### Fruit

Fruit is a celled capsule surrounded by an enlarged calyx. Seeds can be black with a fleshy covering.



Fruit and seed

### Leaves

Leaves are erect or spreading, mid green in colour and drop-shaped. They are 10 to 16 x 2 to 3 mm long with a wrinkled appearance and have star-shaped hairs on both surfaces. Leaves have moderately downward-curving margins and short petioles. Bracteoles taper to a gradual, distinct point at their tip.

### Distribution and habitat

Distribution: It is endemic to and known from one population in the Shire of Wongan-Ballidu.

Habitat: Red and orange-brown sandy clay with laterite. Open mallee woodlands growing to approximately 5 m.

### Similar species

*Lysiosepalum rugosum*.



Fruit



Flower



Habitat



Habit



Flower

### Associated species

*Acacia pharangites* (Wongan Gully wattle) (CR), *Eucalyptus ebbanoensis* (sandplain mallee), *Halganina* sp., *Hibbertia* sp. and *Micromyrtus* sp.

Photography: Anne Cochrane, Sonya Thomas



# Wongan melaleuca

## *Melaleuca sciotostyla*

Family: Myrtaceae

Conservation status: Declared Rare Flora – Endangered

### Habit

This is a small shrub that grows to 1.5 m in height.

### Flowers

White flowers occur at the tips of branches. Generally they consist of four individual flowers with four series of six to eight bracts at the base, and are a reddish-pink colour.

Flowering occurs during August.

### Fruit

The fruit is barrel-shaped and papery or corky in texture. It contains many small seeds and 'chaff', or aborted ovules.



Fruit

### Leaves

Leaves are soft, greenish-grey and vary from being flat to almost cylindrical. They are up to 8 mm in length.

### Distribution and habitat

Distribution: Endemic to and known from three populations in the Shire of Wongan-Ballidu.

Habitat: Gravelly slopes near lateritic breakaways, scree slopes and dense shrubland.

### Similar species

*Melaleuca cuticularis* (saltwater paperbark), *Melaleuca haplantha*.



Habit and habitat



Flower

### Associated species

*Eucalyptus erythronema* (red flowering gum), *Eucalyptus obtusiflora* (Dongara mallee), *Eucalyptus sheathiana* (ribbon bark gum) and *Eucalyptus transcontinentalis* (redwood).



Flower



Leaf

Photography: Anne Cochrane, Wendy Johnston



# Melaleuca sclerophylla

## Melaleuca sclerophylla

Family: Myrtaceae

Conservation status: Priority 3

### Habit

This is a very low-lying shrub that on occasions is referred to as prostrate. It grows to 25 cm in height and 1 m wide.

### Flowers

Pink-purple flowers with yellow anthers are located at the ends of branchlets. The white petals have margins that appear to be feathered. The buds are enclosed by dark green, almost drop-shaped, deciduous bracts.

Flowering occurs in September.



Habitat

### Fruit

Fruits occur in roundish clusters of small, cup-shaped woody capsules that are about 2 mm in diameter. The capsules contain many small seeds and 'chaff', or aborted ovules.

### Leaves

Leaves are arranged in an alternate manner, and are mid to deep green in colour. They are thick, rough and leathery, have small, wart-like growths, are 0.8 to 3 cm in length and 0.2 to 0.5 cm wide. They are narrow and pointed at their tips and have rough margins and glandular nodes. The leaves have one visible central nerve. Young growth is light green and soft with a sparse cover of long, woolly hairs.



Fruit



Leaves



Leaves

### Distribution and habitat

Distribution: This plant is known from the Wongan Hills, Dowerin and Moora districts.

Habitat: Grey sand over laterite (Wongan Hills). Typically gravel or coarse sand with low closed heath patches among lichen-covered granite.

### Associated species

*Verticordia dasystylis* subsp. *vestipolia*, *oestopolia* and *Calytrix* sp.



# Wongan microcorys

## *Microcorys eremophiloides*

Family: Lamiaceae

Conservation status: Declared Rare Flora – Vulnerable

### Habit

This is an erect, openly branching shrub that grows to 2 m in height. Stems have bark that is slightly split, becoming more deeply split and corky with age.

### Flowers

The petals are 4 cm in diameter and a deep pink to red colour. The upper lip of the flower is much longer than the lower lip. Three lobes of the lower lip of the flower have pointed tips.



Leaf and flower

Flowers grow from the leaf axis on stems that are slim with a pair of accessory bracts below the calyx. The calyx is narrow and cylindrical, is 10 to 15 mm long and covered in hairs.

Flowering occurs from early September to early November.

### Fruit

The fruit is a nutlet that is dry, cylindrical, 3 to 4 mm in length and irregularly ribbed. They are dark brown in colour and remain attached, surrounded by the calyx.

### Leaves

Leaves are arranged opposite each other on branches and branchlets. They are more numerous toward the ends of the terminal branchlets. Leaves are linear in shape.



Habit



Leaf and flower

### Distribution and habitat

Distribution: *Microcorys eremophiloides* is known from 17 populations in the shires of Dowerin Wongan-Ballidu and Goomalling.

Habitat: It grows in shallow soils over massive laterite. This species occurs as scattered plants in closed heath with emergent mallees.

### Similar species

*Microcorys longifolia*.

### Associated species

*Allocasuarina campestris* (tamma),  
*Dryandra* spp., *Eucalyptus*



Fruit leaves

*drummondii* (Drummond's mallee)  
and *Eucalyptus ebbanoensis*  
(sandplain mallee).

Photography: Andrew Brown, Joel Collins, Sonya Thomas



# *Phebalium brachycalyx*

## *Phebalium brachycalyx*

Family: Rutaceae

Conservation status: Priority 3

### Habit

*Phebalium brachycalyx* is a shrub that grows to 1 m in height.

### Flowers

Flowers number between three and six. They are yellow, cream and white in colour and form in an umbel at the ends of branchlets.

Flowering occurs from August to September.

### Leaves

Leaves vary from being narrow and oblong in shape to almost triangular with the leaf tip being flat and tapering to a point near the petiole. The leaves are 10 to 15 mm x 1.5 mm. Leaf margins appear to be serrated with rounded tips that



Flower

point in a general upwards and outwards direction. They have warty areas that are distinctive on the lower midvein.

### Distribution and habitat

Distribution: This species occurs in the shires Wongan-Ballidu and Kondinin.

Habitat: It grows on sand, gravelly soils, lateritic uplands and hills. It is found in open woodland areas, mallee and scrub heath.

### Associated species

*Allocasuarina* sp. *Acacia* sp.,  
*Eucalyptus leptopoda* (tammin mallee.),



Habit



Habit and habitat



Leaves and flower



# Wongan philotheca

## *Philotheca wonganensis*

Family: Rutaceae

Conservation status: Declared Rare Flora – Endangered

### Habit

This is a hairless, erect, shrub that grows to 1 m in height. It has a number of erect branches rising from its base.

### Flowers

Flowers grow singularly on stalks that are about 5 mm in length, they have five star-shaped petals and are white except for a pink outer medial strip. The stamens project beyond the petals of a mature flower and the unopened flower buds are pink in colour.

Flowering occurs from August to October.

### Fruit

Fruits split into three to five segments. The seeds are black, 2.5 mm by 1.8 mm, and are of oblong, kidney-shaped appearance.



Leaf and flower

### Leaves

Leaves are scattered, erect, slender and about 5 to 10 mm in length and flattened on the upper surface. They are mid-green in colour.

### Distribution and habitat

Known from the shires of Wongan-Ballidu and Chapman Valley.

### Associated species

*Eucalyptus ebbanoensis* (sandplain mallee), *Eucalyptus loxophleba* (York gum), *Allocasuarina acutivalvis* (black tamma), *Allocasuarina campestris* (tamma) and *Baeckea crispiflora*.



Leaf and flower



Habit



Flower



Flower



# Drummond's phlegmatospermum

## *Phlegmatospermum drummondii*

Family: Brassicaceae

Conservation status: Priority 3

### Habit

*Phlegmatospermum drummondii* is an erect, annual herbaceous plant that grows to 0.3 m in height.

### Flowers

Flowers are creamy-white and arranged in what are initially dense racemes but become thinner and elongated during their flowering period. There are four sepals that are 1.5 to 2 mm in length and the four petals are 2 to 3 mm in length.

Flowering occurs from August to September.

### Fruit

The fruit of this plant is a two-chambered broadly oval-shaped pod



that is 6.5 to 8 mm in length. It is notched at the tip and flattened at right angles to the dividing wall. It is held by stalks that are 3 to 7 mm in length.

### Leaves

Leaves form a rosette at the base of the plant and are also located along the stems. Basal leaves are up to 3.5 cm in length. Each leaf has broad, deeply-serrated, rounded lobes that can also appear as almost smooth margins with small, discrete serrations. These stem leaves are not long-lived and are usually withered or absent in older plant specimens. The leaves along the stems and branchlets are generally less than 1 cm in length.

### Distribution and habitat

Distribution: It is known from various locations throughout the wheatbelt, Wongan-Ballidu area,



Northampton and thinly scattered locations throughout the State.

Habitat: It grows in red clay and sand and is known to grow on slopes. It is associated with eucalyptus woodlands, melaleuca and acacia species.

### Associated species

*Eucalyptus longicornis* (red morrell),  
*Eucalyptus gracilis* (yorrell),  
*Melaleuca* sp. and *Acacia acuminata*  
(raspberry jam tree).



Photography: WA Herbarium



# Wongan rhagodia

## *Rhagodia acicularis*

Family: Chenopodiaceae

Conservation status: Declared Rare Flora – Vulnerable

### Habit

This is a densely-branching shrub that is round in shape and grows to about 50 cm in height. It has a close covering of tiny hairs. The species has separate male and female plants.

### Flowers

The few flowers are located along the branchlets and each has a tiny bract. The female flowers are round, filled with woolly hairs and about 1.2 mm in diameter. Male flowers are approximately 1 mm in length and shaped like a spinning top –



Habit



Habit and habitat

broad at the top and becoming narrower towards the end.

Flowering occurs from October to May.

### Fruit

The fruit is a fleshy, depressed, spherical-shaped berry. It is 3 mm in diameter and light red in colour.

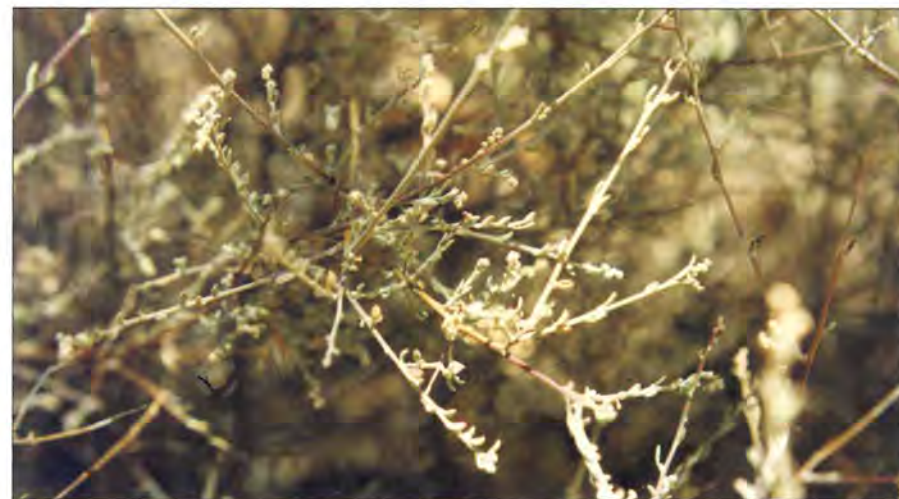
### Leaves

Leaves are arranged alternately, are small, fleshy, narrow and oval-shaped with pointed ends. They are 2.5 mm in length and smooth on the top of the leaf with small, down-like hairs below.

### Distribution and habitat

Distribution: This plant is endemic to and known from six populations in the Shire of Wongan-Ballidu. Two of these populations are located on a nature reserve and the other populations are on private property.

Habitat: It can be found growing in red soil on gravelly, lateritic slopes. The plants occur among 10 to 12 m tall woodlands dominated by gimlet and morrell, with low, mixed shrubland species.



Leaves

### Similar species

*R. ulicina*.

### Associated species

*Eucalyptus salubris* (gimlet),  
*Eucalyptus longicornis* (red morrell),  
*Acacia eminosa*, *Eremophila*  
*ternifolia* (Wongan eremophila) (VU)  
and *Melaleuca* sp.



Leaves and habit



Leaves



Habit

Photography: Ray Cranfield, Nicole Willers



# Wongan Hills triggerplant

*Stylidium coroniforme subsp. coroniforme*

Family: Stylidiaceae

Conservation status: Declared Rare Flora – Endangered

## Habit

This is a perennial, tightly branching plant with a number of loose rosettes of leaves.

## Flowers

Flowers are 1 cm across, with four petals that are initially yellowish in colour. They turn creamy to pale pink with red spots at the throat and dark red lines on their outer surfaces, with small, yellow centres. The flower heads are located terminally along prominent stems; one arises from each leaf rosette. The flowering stems are around



Flower

15 cm in length, are dark in colour and have glandular hairs. At the end of the flower's trigger are two hair-like throat appendages.

Flowering occurs from August to September.

## Fruit

The ovary is around 1.5 cm in length and the fruit – a 2 cm capsule – contains many small seeds.

## Leaves

Leaves are arranged in a distinctive rosette pattern and are a grey-green colour, linear in shape and 3 to 4 cm long. They become wider in the upper third and end with a white point at the leaf tip.

## Distribution and habitat

Distribution: They are known from eight populations; two of these are in the Shire of Perenjori and the



Leaves



Habit

remaining six are located in the Shire of Wongan-Ballidu.

Habitat: It grows in areas of shallow yellow sand over laterite, typically on open land in low scrub and heath.

## Similar species

*S. limbatum*, *S. dichotomum*.

## Associated species

*Hakea scoparia*, *Hakea subsulcata*, *Hakea gilbertii*, *Allocasuarina drummondiana*, *Allocasuarina acutivalvis* (black tamma), *Allocasuarina campestris* (tamma), *Dryandra armata* and *Dryandra comosa* (shaggy Wongan dryandra) (P4).



Habit



Habitat

Photography: Stephen Hopper, Nicole Willers



# Wongan featherflower

*Verticordia staminosa subsp. staminosa*

Family: Myrtaceae

Conservation status: Declared Rare Flora – Critically Endangered

## Habit

This is a small, spreading, shrub. It has numerous branches and branchlets are hairy.

## Flowers

Flowers are around 5 mm in length and crowded at the tips of the branchlets. There are 10 very long bright red stamens that have yellow or black globular-shaped tips. The stamens protrude beyond the flower. Yellow feathery sepals lie below the stamens, and above two bright red bracts.

Flowering occurs from July to October.

## Fruit

The seed is a nut held within the old hypanthium of the flower.



Flower

## Leaves

Mostly stalkless, the mid-green coloured leaves grow up to 1.5 cm long, and are narrow and crowded at the tips of the branchlets.

## Distribution and habitat

Distribution: This plant is endemic to the Shire of Wongan-Ballidu and known from only one population.

Habitat: It grows in sandy loam soils over a granite complex. It is also found in crevices or soil pockets of granite outcrops that are still well vegetated.

## Similar species

*Verticordia staminosa subsp. cylindracea*.



Flower



Flower

## Associated species

*Kunzea pulchella* (granite kunzea), *Wurmbea* sp., *Borya nitida* (pincushion plant), *Hakea petiolaris* (sea urchin hakea), *Cheilanthes* sp., *Drosera* sp., *Gastrolobium callistachys* (rock poison), mosses, liverworts and lichens.



Habit

Photography: Shari Dougall, Stephen Hopper, Sonya Thomas



# Wongan sandplain featherflower

*Verticordia wonganensis*

Family: Myrtaceae

Conservation status: Priority 2

## Habit

This is a small shrub that grows 0.2 to 0.6 m in height.

## Flowers

The pink petals are 5 to 6 mm long, curved towards their tips and have 0.4 mm beard hairs. They are also bordered by 10 to 12 fine, thread-like hairs that are around 0.2 mm in length and resemble miniature feathers. The flower stalks are 1 to 1.5 mm in length and the floral 'cup' is 2.5 mm in length, ribbed with pointed, downwardly-curved appendages that are 1.5 mm long. Sepals are 5 to 6 mm long with seven or eight lobes. Flower heads are arranged in terminal spikes.



Flower and leaf

Flowering occurs from November to December.

## Fruit

The seed is a nut held within the old hypanthium of the flower.

## Leaves

The small leaves are mid-green in colour and grow up to 1 cm long and 2 mm wide.

## Distribution and habitat

Distribution: This species is endemic to the Shire of Wongan-Ballidu. It is found in various locations in the north and north-east of the shire and the Manmanning area. It is known to grow along rail and other reserves.

Habitat: It grows in undulating sand plains with deep yellow or white



Habitat



Flower



Habitat

sands. It occasionally grows in gravel soils. It appears in verticordia heath and melaleuca, dryandra, acacia and calothamnus shrubland.

## Similar species

*V. drummondii* (Drummond's featherflower).

## Associated species

*Grevillea* sp., *Daviesia* sp., *Leptospermum erubescens* (tea tree), *Verticordia monadelph* (pink woolly featherflower), *Verticordia brownii*, *Acacia* sp., *Dryandra* sp., *Melaleuca* sp. and *Calothamnus* sp.

Photography: Shari Dougall, Sonya Thomas



# Painted featherflower

*Verticordia venusta*

Family: Myrtaceae

Conservation status: Priority 3

## Habit

*Verticordia venusta* is an erect, spreading shrub, 0.2 to 2 m high.

## Flowers

Flowers vary in colour from pink and purple to red and brown. The 5 mm style is covered with 0.2 to 0.3 mm hairs.

Flowering occurs from late October to March.

## Fruit

Seed is a nut held within the old hypanthium of the flower.

## Leaves

Leaves are 2 to 4 mm long and 1.5 to 3.5 mm wide. They are oval



Flower



Flower and leaf

shaped and come to a point at the leaf tip.

## Distribution and habitat

Distribution: It is found from Mullewa to Dowerin and east to Bencubbin. Although found in a widespread range, it is not common and populations are small and scattered.

Habitat It grows in yellow sand, sandy gravel and sandplains, and is found in heath and shrubland.

## Similar species

*Verticordia muelleriana*

## Associated species

*Verticordia* sp, *Allocasuarina campestris*, *Hakea erecta*, *Melaleuca cordata* and *Pityrodia axillaris*.



Habitat



Leaf



Flower and leaf

Photography: Shari Dougall, Lyn Phillips, Sonya Thomas



# Welcome to Wongan Hills

## Introduction

Wongan Hills is an 'Island Sanctuary' in the Western Australian wheatbelt. The sanctuary provides a unique collection of plants and animals, many of which are rare and found only in and around the hills.

The following section of this book provides an example of some of the common species of flora that can be more easily located in the Wongan Hills area.

## A wildflower adventure

Wongan Hills flora is extremely diverse with more than 1200 species of flowering plants. Of greater importance is that 24 of these species are unique to the Wongan Hills. The concentration of wildflowers in Wongan Hills is equal to Mount Lesueur National Park, Stirling Range National Park and Fitzgerald National Park. Below are just some of the flora walk and drive trails that can be easily accessed from Wongan Hills.

### Christmas Rock Walk

Walk the 2.5 km trail through natural bushland, commencing in Wandoo Crescent just north of the Caravan Park. Wander along the rock wall used to divert water to the town dam. In spring see the variety of colourful wildflowers and bushes and listen to the many birds.



Christmas Rock Walk

### Mt O'Brien

Drive to the summit and visit the Centenary of Federation Wheatbelt Lookout on Mt O'Brien. From here you will have panoramic views of the countryside including Lake Ninan and Lake Hinds.



Mt O'Brien Lookout

### Mt Matilda Walk Trail

Mt Matilda provides one of WA's top five walk trails. The flora walk takes three hours and the scenic walk five hours to complete. It features rare and endangered flora and outstanding animals and birds, particularly eagles.

### Reynoldson Reserve

Reynoldson Reserve is an outstanding reserve in November when the verticordia (feather flowers) abound with seven different varieties. The one-hour walk trail resembles a massive garden of colours, shapes and sizes with scarcely room to tread.

### Waddington/ Wongan Hills Road

A spectacular display of many and various wildflowers can be seen on the drive to the hills.

Visit the Wongan Hills Tourist Promotion Centre for information on what is flowering and where to find them, and to book a guided tour.

### Wongan Hills Tourist Promotion Centre

Railway Station, Wongan Road  
PO Box 195, Wongan Hills WA 6603  
Ph/Fax: 08 96711973

wongantourism@westnet.com.au  
Web: [www.wongan.wa.gov.au](http://www.wongan.wa.gov.au)

Wongan-Ballidu Bush Care Group  
Wongan Hills, WA 6603



Mt Matilda Walk Trail



Reynoldson Reserve



# Acorn banksia

## *Banksia prionotes*

Family: Proteaceae

Conservation status: Common

Flowering period:

**February to August**

### Description

This is a shrub or small tree growing up to 10 m high. Leaves are 15 to 27 cm long and 1 to 2 cm wide. Flowers spikes are white/cream and orange, 10 to 15 cm long and 8 cm wide.

### Distribution

It is found mainly in coastal areas from Shark Bay to Perth but also in a few scattered inland localities between York, Katanning and Lake Grace. It is found at the Wongan Hills Cemetery.

### Habitat requirements

Soils: Deep yellow or white sand.

Vegetation: Tall shrubland and low woodland.



Flower and leaves



Habit



Flower

Photography: Sonya Thomas

# Fringed mantis orchid

## *Caladenia falcata*

Family: Orchidaceae

Conservation status: Common

Flowering period:

**September to October**

### Description

This tuberous, perennial herb grows up to 40cm high. It has one to two flowers which are green and red, about 9 cm across. The leaf is 15 to 18 cm long, and hairy above and below. The upward sweeping lateral sepals are very distinct.

### Distribution

It is found from Wongan Hills to Albany and Esperance. It grows on the side of Foulkes Road.

### Habitat requirements

Soils: A variety of soils.



Flower

Vegetation: Open forest and woodlands.



Flower

Photography: Sonya Thomas



## Drummond's wax

### *Chamelaucium drummondii*

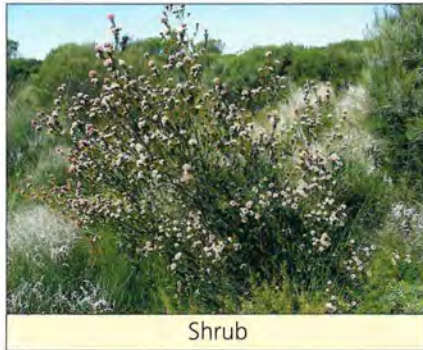
Family: Myrtaceae

Conservation status: Common

Flowering period:  
**August to January**

#### Description

This is an erect shrub growing up to 2 m high. Flowers are white to pink or dark pink as they mature, and grow in clusters. This is a first cousin to the Geraldton wax and the only wax flower native to the Shire of Wongan-Ballidu.



Shrub



Flower



Flower and leaves



Buds

#### Distribution

It grows from north of Geraldton to Avon, and is found at Elphin Reserve.

#### Habitat requirements

Soils: White-yellow to red sand, clay sand, gravel and laterite.

Vegetation: Shrubland and kwongan.

Photography: Sonya Thomas

## *Conospermum inilaterale*

### *Conospermum inilaterale*

Family: Proteaceae

Conservation status: Common

Flowering period:  
**August to October**

#### Description

This is an open shrub 0.45 to 1 m high. The leaf length is 22 to 55 mm. Flowers are white with a lavender tip.

#### Distribution

It grows between Geraldton and Wongan Hills and is found at Elphin Reserve.

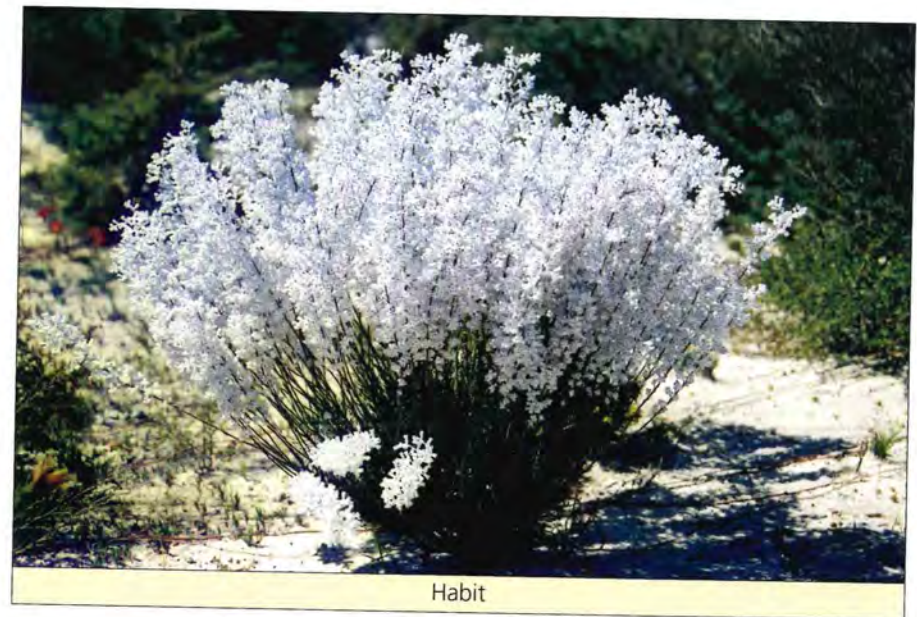
#### Habitat requirements

Soils: White or yellow sand over laterite, gravel.

Vegetation: Kwongan.



Shrubs



Habit

Photography: Shari Dougall, Sonya Thomas



# Tinsel flower

*Cyanostegia angustifolia*

Family: Lamiaceae

Conservation status: Common

Flowering period:  
**July to November**

## Description

This erect shrub grows between 1 and 2 m high. The leaves are narrow and usually folded, 2 to 4 cm long and 1 to 4 mm wide. The flowers are 1.5 cm across, have a large calyx and are papery. They are paler than the deep blue/purple corolla.

## Distribution

It grows in the wheatbelt region from Geraldton to Kalgoorlie and

Lake King. It is found along the roadside at the west end of Elphin Reserve.

## Habitat requirements

Soils: Sandy soil, gravel, laterite.

Vegetation: Shrubland and kwongan.



Shrub



Flower



Flower and leaves

# Purple enamel orchid

*Elythranthera brunonis*

Family: Orchidaceae

Conservation status: Common

Flowering period:  
**August to October**

## Description

This tuberous, perennial herb grows 15 to 40 cm high and has up to four deep purple, glossy flowers. It is one of the most common and widespread orchids in WA.

## Distribution

It is found in the South-west to the eastern wheatbelt and located at Elphin Reserve.

## Habitat requirements

Soils: Sand, gravel and laterite.

Vegetation: Shrubland and kwongan.



Flower



Orchid



Habitat



## Pear-fruited mallee, Dowerin rose

*Eucalyptus pyriformis*

Family: Myrtaceae

Conservation status: Common

Flowering period:

**May to October**

### Description

This mallee grows 1.5 to 5 m high and has smooth grey to light brown bark. Leaves are 6 to 8 cm long. There are distinctive corrugated buds

up to 7 cm long including the cap. Flowers are up to 10 cm across and red, pink, cream or yellow.

### Distribution

It grows from Dowerin, northwards to Kalbarri and is found at Elphin Reserve.

### Habitat requirements

Soils: Sandy soils (white, grey or yellow) and laterite.

Vegetation: Shrubland and kwongan.



Flower



Flower and habitat

Photography: Sonya Thomas

## Common popflower

*Glischrocaryon aureum*

Family: Haloragaceae

Conservation status: Common

Flowering period:

**July to September**  
and **March to April**

### Description

A perennial herb with woody rootstock, grows 0.15 to 1 m high. The small flowers (10 mm across) are yellow, and bunched at the end of thick stems, to form a yellow umbrella-shaped head. Long after the flowers wither, an ovary enlarges and remains colourful. The leaves are straight, 0.5 to 6 cm long and 0.5 to 4 mm wide.

### Distribution

It grows in most of the south-west, from Shark Bay to Caiguna. It is found on road verges, where the soil is recently disturbed.

### Habitat requirements

Soils: Diverse including grey, yellow or red sand, loam or clay soils, and laterite.

Vegetation: Woodland and heath.



Flowers



Shrub



Shrub



Ovaries

Photography: Shari Dougall, Lyn Phillips, Sonya Thomas



# Prickly toothbrush/black toothbrush

*Grevillea armigera*

Family: Proteaceae

Conservation status: Common

Flowering period:

**January to February**

**June to December**

## Description

This is a prickly, erect to spreading shrub growing 1 to 3 m high. Flowers are green, yellow, black and red, and between 3 and 8 cm long.

## Distribution

It grows between Wubin, Koorda and Northam, and is found on roadsides and at Elphin Reserve.

## Habitat requirements

Soils: Yellow or white sand, gravelly soils, sandy clay.

Vegetation: Shrubland and kwongan.



Shrub and habitat



Flower and leaves



Flower

# Flame grevillea

*Grevillea excelsior*

Family: Proteaceae

Conservation status: Common

Flowering period:

**January to April/May**

**August to December**

## Description

This small pine like tree grows up to 8 m high. Its leaves are 5 to 25 cm long. Flowers are yellow-orange, have spikes that open together and are 7 to 25 cm long.

## Distribution

It grows in the wheatbelt region down to Esperance and is found near the Wongan Hills airfield.

## Habitat requirements:

Soils: Sandy loam and kwongan.

Vegetation: Mallee scrub and tall shrubland.



Habit



Flower and leaves



Seed pods



Tree



## Pink pokers

*Grevillea petrophiloides*

Family: Proteaceae

Conservation status: Common

Flowering period:

**January to December**

### Description

This upright, sparsely-branched shrub grows 2 to 4 m high. Leaves are erect and divided into long linear pungent segments. Flowers are red, pink, white and cream, and 7 to 20 cm long.

### Distribution

It grows from Geraldton through the wheatbelt region to Lake King. It is commonly found along roadsides throughout the Shire of Wongan-Ballidu.

### Habitat requirements

Soils: Sand, gravel, often over laterite, granite and ironstone. It is found around outcrops and in crevices, sandplains, hills and road verges.

Vegetation: Shrubland.



Shrub



Flower and leaves



Flower

Photography: Shari Dougall, Lyn Phillips, Sonya Thomas

## Grass leaf hakea

*Hakea multilineata*

Family: Proteaceae

Conservation status: Common

Flowering period:

**May to September**

### Description

This erect shrub or small tree grows between 2 and 5 m high. The flowers are pink, formed in a spike 2 to 7 cm long and 2 to 4 cm wide, on older wood. The bright green leaves grow to 18 cm long and exhibit distinctive lines (about 15 veins). It has an oval woody nut, with a small beak at the end and a groove down the centre.

### Distribution

It grows in most of the south-west and is especially common in remnant roadside vegetation in the wheatbelt. It is found at Mt Matilda.

### Habitat requirements

Soils: White or yellow sands, gravel and laterite.

Vegetation: Woodland and heath.



Flower and leaves

Photography: Sonya Thomas



# Sea urchin hakea

## *Hakea petiolaris*

Family: Proteaceae

Conservation status: Common

Flowering period:

**March to July**

### Description

This is an erect tree growing up to 9 m high. Flowers are pink to cream.

### Distribution

It grows from Perth to Wongan Hills, Koorda and south of Southern Cross. It is found along the edge of Christmas Rock water catchment area.



Flower

### Habitat requirements

Soils: Loam and granite.

Vegetation: Tall shrubland and low woodland.



Flower and seeds



Flower and leaves

Photography: Sonya Thomas

# Spreading coneflower

## *Isopogon divergens*

Family: Proteaceae

Conservation status: Common

Flowering period:

**August to October**

### Description

This is a spreading shrub, 0.3 to 2 m high, with thin needle-like leaves 5 to 15 cm long. The leaves branch into segments, with showy flower heads 5 cm across. The colour of the flowers varies from pale pink to deep carmen. The fruit is a small, silky nut enclosed in bracts that fall away when the fruit is ripe.



Bud

### Distribution

It extends as far south as Hyden and Narrogin and north to Kalbarri. It is found at Mt Matilda, Mt O'Brien and Elphin Reserve.

### Habitat requirements

Soils: Gravel or granite soils.

Vegetation: Shrubland and kwongan.



Flower



Flower



Shrub

Photography: Lyn Phillips, Sonya Thomas



# Granite kunzea

## *Kunzea pulchella*

Family: Myrtaceae

Conservation status: Common

Flowering period:

**June to November**

### Description

This is a spreading shrub that grows between 0.5 and 3 m high and up to 5 m wide. The flowers are located at the end of branches and are 25 to 45 mm wide. They are red in the wheatbelt but further east are white or cream. The leaves are pale olive green and oval-shaped (5 to 15 mm long and 2 to 7 mm wide).

### Distribution

Extending from Wubin to Bremer Bay, they cover much of the south-west and grow as far east as Kalgoorlie. They are found at Christmas Rock Walk Trail.

### Habitat requirements

Soils: Skeletal sandy and clay soils, granite outcrops.

Vegetation: Shrubland and kwongan.



Flower and leaves



Shrub



Flower

Photography: Lyn Phillip, Sonya Thomas

# Short-leaved petrophile

## *Petrophile brevifolia*

Family: Proteaceae

Conservation status: Common

Flowering period:

**May to December**

### Description

*Petrophile brevifolia* is an erect, spreading shrub that grows 0.2 to 2 m high. It has 6 cm needle-like leaves. Flower heads are 3 to 4 cm across and yellow, cream or white. The flowers are similar to those of the isopogon, but the ripe nuts are retained in bracts that look like a small cone.

### Distribution

These plants grow in a wide band across the wheatbelt, from Shark Bay to Perth, south to Ravensthorpe. They are found at Elphin Reserve.

### Habitat requirements

Soils: Grey, yellow, or brown sand found over laterite or limestone.



Flowers and leaves



Flower



Shrub

Photography: Shari Dougall, Sonya Thomas



# Native foxglove

*Pityrodia terminalis*

Family: Chloanthaceae

Conservation status: Common

Flowering period:

**July to January**

## Description

This is a compact, erect shrub growing between 0.3 and 1.5 m high. It has grey, woolly, felted leaves 1.5 to 3 cm long. Flowers are purple, pink, red and white. The flowers are pink in this area.

## Distribution

It is common on road verges between Mullewa and Lake King. It is found along roadsides on Airport Road.

## Habitat requirements

Soils: Sandy, gravelly and lateritic soils.

Vegetation: Kwongan.



Shrub



Shrub



Flowers

Photography: Shari Dougall, Lyn Phillips, Sonya Thomas

# Yellow feather flower

*Verticordia chrysantha*

Family: Myrtaceae

Conservation status: Common

Flowering period:

**August to January**

## Description

This shrub is between 0.3 and 1 m high. Its round, yellow flowers are 10 to 15 mm across with feather-like petals. These are often densely arranged at the end of branches to give a wonderful mass display of bright yellow. Leaves are blunt, dark green and needle-like, 3 to 5 mm long and 1 mm wide.

## Distribution

*Verticordia chrysantha* is found between Shark Bay, Esperance and Kalgoorlie. It grows at Reynoldson Reserve and Elphin Reserve.

## Habitat requirements

Soils: Sand or gravel.

Vegetation: Heath on undulating plains.



Flowers



Shrub

Photography: Sonya Thomas



# Painted featherflower

*Verticordia picta*

Family: Myrtaceae

Conservation status: Common

Flowering period:  
**July to November**

## Description

This is a small, open shrub with few stems, growing 0.5 to 1.5 m high. It has pink and white flowers, 1 cm across.

## Distribution

It extends from Kalbarri to Esperance and is found at Reynoldson Reserve and Elphin Reserve.

## Habitat requirements

Soils: Sandy or clayey soils.

Vegetation: Kwongan.



Flower



Flowers



Flower and leaves



Shrub

# Sandplain woody pear

*Xylomelum angustifolium*

Family: Proteaceae

Conservation status: Common

Flowering period:  
**September-December to February**

## Description

This is a large shrub or small tree growing up to 7 m high, with smooth grey bark. Leaves are 7 to 14 cm wide and 5 to 10 cm long. Flowers are cream or white racemes 5 to 8 cm long.

## Distribution

*Xylomelum angustifolium* extends from Kalbarri through the wheatbelt region, to Hyden. It is found at Wongan Hills Cemetery and Reynoldson Reserve.

## Habitat requirements

Soils: Sandy soil.

Vegetation: Shrubland.



Flower



Fruit



Tree



Fruit



## **Alternate**

Of leaves or other lateral organs, borne singly at different heights on the axis; of floral parts, on a different radius, e.g. describing the position of stamens with respect to petals.

## **Aril**

Appendage growing at or near the hilum of a seed, sometimes completely surrounding seed.

## **Axil**

The area (of the smaller angle) formed by the junction of structures (i.e. of a leaf stalk and a branch).

## **Bilobed**

Having two lobes (i.e. a petal or a leaf).

## **Bracteole**

A modified leaf or leaf-like part just below and protecting an inflorescence. There are usually two opposite each other.

## **Calli**

Glandular appendages.

## **Calyx**

The sepals of one flower collectively.

## **Dehiscent**

Opening at maturity or when ripe to release contents.

## **Endemism**

Native to or confined to a certain region.

## **Globular**

Being round in shape.

## **Granites**

A common, coarse-grained, light-coloured, hard igneous rock consisting chiefly of quartz, orthoclase or microcline, and mica.

## **Gneiss**

A banded or foliated metamorphic rock, usually of the same composition as granite.

## **Hypanthium**

A bowl-shaped part of a flower consisting of the bottoms of the sepals, petals, and stamens stuck together.

## **Indehiscent**

Not opening at maturity.

## **Inflorescence**

A group or arrangement where flowers are borne on a plant.

## **IBRA Regions**

The Interim Biogeographic Regions for Australia (IBRA) divides the Australian continent into 85 bioregions and are the reporting unit for assessing the status of Australia's native ecosystems.

## **Involucral (bracts)**

In a whorl of bracts surrounding the head of a flower, and rising from its base. They are usually green, narrow, and leafy.

## **Kwongan**

Low heath-like vegetation where the rainfall is 250 to 400 mm.

## **Labellum**

A modified petal forming the lip or tongue of an orchid.

## **Lanceolate**

A drop-shaped leaf that has a pointed tip, linear sides and a rounded base by the stalk/petiole.

## **Legume**

A simple dry fruit which develops from a simple carpel and usually dehisces (opens along a seam) on two sides. A common

name for this type of fruit is a 'pod', although pod is also applied to a few other fruit types.

## **Lobe**

Part of a lamina; an incomplete division that forms from a structure margin to the structure centre (i.e. petals or leaves).

## **Locule**

Segment within an ovary that contains ovules.

## **Mesas**

A broad, flat-topped elevation with one or more clifflike sides.

## **Midvein**

The most prominent, central vein that forms along leaves, or leaf-like organs.

## **Ovule**

A structure found in a seed-bearing plant, which contains the reproductive cycle of the female.

## **Perianth**

The collective term for the sepals and petals which make up a flower.

## **Petiole**

Leaf stalk.

## **Phyllode**

Modified leaf that is an extension of a petiole; often a feature of Acacia species.

## **Pinna (plural pinnae)**

Part of a pinnate leaf, a primary leaflet.

## **Pinnules**

Secondary leaflets of a bipinnate leaf.

## **Raceme**

An imprecise inflorescence where a main axis produces a series of flowers on

lateral stalks, the oldest at the base and the youngest at the top.

## **Scree**

Loose rock debris covering a slope or at the base of a steep incline or cliff.

## **Sepal**

A part of the outer whorl (usually green in colour), of non-fertile parts that surround the fertile organs of a flower.

## **Sessile**

Without a stalk/petiole.

## **Spikelet**

A part of the inflorescence commonly associated with grasses, sedges and some other monocotyledons; consisting of one to many flowers and associated glumes (bracts that subtend the spikelet).

## **Stipule**

One of a pair of appendages located at the base of leaves in many dicotyledons.

## **Style**

The long, narrow section of the female reproductive part of a flower that connects the stigma to the ovary.

## **Tepals**

Tepal is a term used to describe petals and sepals together.

## **Testa**

The often thick or hard outer coat of a seed.

## **Whorl**

An arrangement of three or more leaves, petals, or other organs radiating from a single node and arranged in a circle around the axis.



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