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**KALBARRI
WILDFLOWER
CENTRE
NATURE TRAIL GUIDE**

\$ 1.50



Kalbarri Wildflower Centre has been created that people may observe and enjoy a wide range of Kalbarri wildflowers while undertaking an easy walk through natural bushland. The centre includes a herbarium containing over 800 species which is available to enthusiasts for reference.

Kalbarri is situated in an arid area, the average annual rainfall being 360mm. The soils of the sandplain are mostly poor sands and gravels lacking trace elements, nitrogen and phosphorus; yet it is on these plains that some of the most diverse development of the flora has occurred. The Kalfora property is of approximately 16 hectares yet initially 139 species and 49 genera were recorded here, most prominent are the Myrtaceae, Proteaceae and the Legumes.

The 12m x 20m billabong was designed to attract wildlife, especially birds and many species are now regular visitors. The area is isolated from the main trail and is an excellent place to sit in the shade and enjoy the bird life, picnic tables and toilets have been provided. Birds resident and breeding include honeyeaters, scrub wrens, scrub robins, babblers, grey thrush, crested pigeons, diamond and peaceful doves.

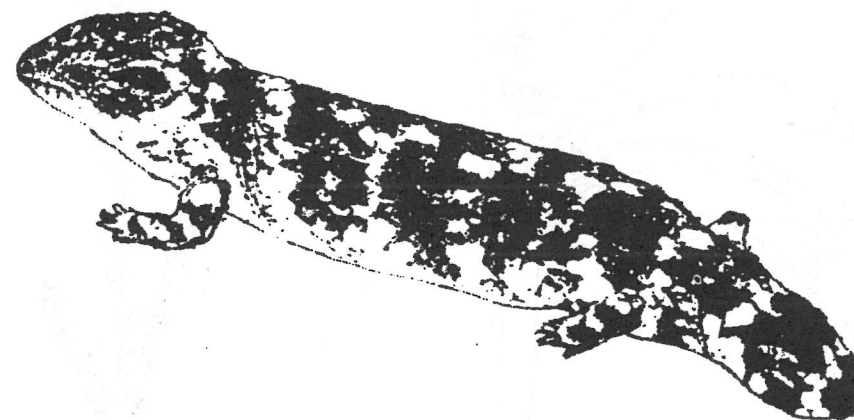
You may see western grey kangaroos or euros on Kalfora, these have been brought here as orphans when the mothers have been shot or hit on the road; when able to fend for themselves they will be released in the National Park. Other animals here include echidnas, hopping mice and dunnarts but like most creatures in the warmer areas they tend to forage at dawn and dusk, so avoiding the heat of the day.

Reptiles, there may be as many as 20 different species here. They range in size from geckoes about 10cm long to Stimsons Python of one metre or so. Of the various species of snake found here only two are potentially dangerous to man, these being the Gwardar (*Pseudonaja nuchalis*) and the Mulga Snake (*Pseudechis australis*). It is very unlikely that you will meet a snake on the nature trail, however if you do please remember that it is more frightened of you than you are of it. Leave it alone and it will leave you alone! All of our lizards are harmless. Most often encountered is the Bobtail or Shingleback (*Trachydosaurus rugosus*), several other species of skinks, dragon lizards and legless lizards are also quite common.

The nature trail is 1.8km long and an average time to complete it is 40 minutes. The trail starts at the Wildflower Centre and the points of interest are lettered in a clockwise direction, you may however proceed in the other direction if you prefer. A number of rest. points are provided on route and drinking water is available at the Gazebo, which is about halfway.

The letters in this guide refer to pegs in the ground and the guide explains to you the items of interest between each peg and the next. In the interest of safety it would be appreciated if you would refrain from smoking while on the trail. Please keep to the trail as this bush area is fragile, do not pick any plants, seeds or flowers.

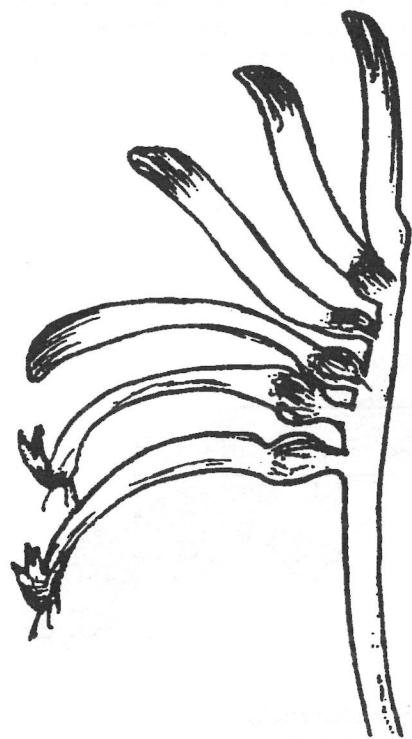
Botanical names. All plants have a botanical name as people have a family name and a given name. The first word of a plants name is the genus which corresponds to your family name, while the second name is the species. These names are internationally recognised, and are in latin or are latinized. Some plants as well as having a genus and species also have a subspecies or variety, this indicates that although the plant is different, the difference is not great enough for it to be recognised as a separate species. All names given are believed to be correct, in most cases they have been confirmed by the W.A. Herbarium; however any additional information or correction will always be welcomed.



TRACHYDOSAURUS RUGOSUS
Bobtail or Shingleback

A. Start of the trail. *Anigozanthos manglesii* is naturally widespread in the area and additional plants have been placed along the trail. This Kangaroo Paw species is the floral emblem of Western Australia. As you walk along you will see the return trail joining on your right. Between here and the creek are many fine specimens of *Verticordia lepidophylla*, these have masses of beautiful yellow flowers in November/December with lesser flowerings at other times of the year. More than twenty species of *verticordia* have been recorded in the Kalbarri area.

Animal burrows. Many animals dig burrows in which to live, these offer protection from extreme temperatures, winds and enemies. The burrow system of the Spinifex Hopping Mouse is often one metre or so below the surface of the soil. It consists of one or more horizontal tunnels at this depth from which several vertical shafts ascend to the surface. At the surface the shafts are usually circular, about 3-6cm in diameter and their openings are characterised by a complete absence of loose soil around the entrance.



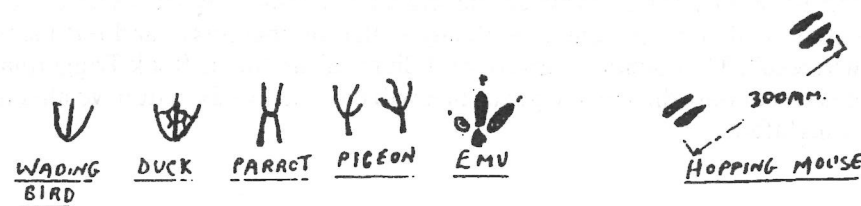
ANIGOZANTHOS MANGLESII
Red and Green Kangaroo Paw



VERTICORDIA LEPIDOPHYLLA

B. Kalflora Creek receives runoff water from Meanarra Hill, usually within a couple of days the water has subsided and the very porous sand begins to dry. You will see many *Melaleuca uncinata* in this area, the famous underground orchid (*Rhizanthella gardneri*) has been collected from under the leaf litter of this species though none have been found this far north as yet. The attractive ground cover along the creek bed, *Conostylis prolifera*, is one of many plants that is able to reproduce by developing root systems on leaves radiating out from the original plant. The pink *Burchardia rosea* is a recently named species. A very similar white flowering plant in the southern part of the state is called *Burchardia umbellata* or Milkmaids. Several eucalypts (gum trees) have been planted along the trail, our most common one is the River Red Gum or *Eucalyptus camaldulensis*. It is so named because the species was first described from a cultivated tree in the garden of the monastery of Camalduli, a religious order near Naples.

Animal tracks. The fine sand on either side of the gravel trail is often rich in animal tracks. A person well versed in the art of reading tracks can identify the track and the activity of the creature at the same time. In this country where wildlife activity is at a maximum during the evening and early morning, the hiker can read stories in the sand of last night's adventures. How many different types of tracks can you discover? The most common bird tracks are probably of Crested Pigeons, while the narrow wiggly lines are made by legless lizards or Bandy Bandys (small burrowing snakes). The fine meandering tracks are made by ant lions, while parallel tracks with a drag mark between may belong to the sand goanna or the bobtail, depending on the shape of the drag mark.



C. You will notice several shrubs covered with a parasitic creeper called Dodder (*Cassytha* sp.). Seeds of this species germinate in the soil but the young plants soon make contact with some host and then sever their connection with the ground, clinging to the host by suckers through which they extract nutrients. By the time that the host plant is dead the parasite will have moved on to another.

Patersonia occidentalis is a very widespread species, its range stretches from the Murchison River to Esperance.

Leucopogon cordifolius is called Bearded Heath, look closely and you will see that it is densely hairy inside the corolla (flower tube).

In many cases the botanical names of plants are descriptive of the plants themselves. *Corcifolius* is made up of two words, *cordis* - heart shaped, and *folius* - leaf, the plant has heart shaped leaves. Other examples are *megacephala* which means large head, referring to the flower head. *Calothamnus chrysantherus*, the generic name means beautiful bush or shrub while *chrysantherus* means golden anthers (*chrysos* is Greek for gold), so we are looking for a beautiful shrub with golden anthers.

We are now entering an area of fine silty clay soil which gets very wet and water logged in winter, and it is here that *Verticordia polytricha* dominates; the massed white flower heads bear a resemblance to cauliflowers late in the season. Also in this damp area grows a tiny Trigger Plant (*Stylidium calcaratum*) with pink petals, that flowers in August/September. This plant has four petals arranged in pairs, the filaments and style are united to form a sensitive column with the anthers and stigma at the tip. This column is cocked when it is bent between and below the petals. When an insect lands on the flower to sip the attractive nectar, the trigger is released and hits the insect, showering it with pollen. As the flower gets older the anthers die leaving the female stigma bare, now when the trigger is released by an insect the bare stigma will come in contact with any pollen on that insect and fertilisation will result. The common name of *Stylidium calcaratum* is Book Triggerplant, it is one of only three in the genus that will close its petals in dull weather and at nightfall.

D. This is an area of very dry grey sand and the thicket you are now entering is mainly *Melaleuca megacephala* and *Scholtzia capitata*. In late winter and spring you will hear the Brown Honeyeaters with their distinctive "pretty, pretty, pretty" calls.

Further on you will see that *Calytrix brevifolia* has calyx lobes which terminate in long bristle-like points (awns), these combined with the spindle shaped calyx tube greatly facilitate distribution of the seed by the wind.

The attractive pine-like tree is a native conifer, *Actinostrobus arenarius*, commonly called the Sandplain Cypress. The dense shrubs with the pine-like needles are *Allocasuarina campestris* (*Allocasuarina* means similar to *Casuarina*). It is of interest to note that these plants are dioecious, the flower on the female plant having only the ovary with two red styles while the flower on the male plant is reduced to a single brown stamen. A little further on you will notice a male *Allocasuarina* on the right and a female opposite, note the abundance of fruits on the female plant.

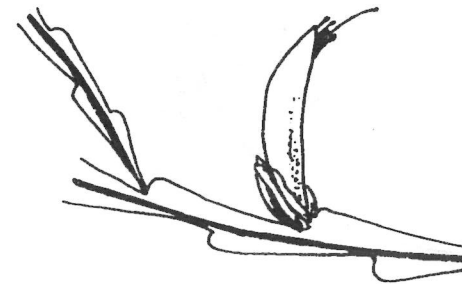
You may have observed that much of our flora has terete (needle shaped) leaves. Plants lose water through the pores in their leaves, this is called transpiration. In order to survive in this dry area, the shrubs around you must cope with the problems of heat and lack of water and they have different ways of doing this.

Jacksonia cupulifera has terete leaves that reduce the surface area exposed to the sun.

Brachysema aphyllum has no leaves, the flattened stems carry out the leaf function.

Thryptomene stronglylophylla has very tiny leaves to reduce transpiration.

Lachnostachys eriobotrya has many tiny hairs on the surface of its leaves and stems, these insulate the plant from intense heat thus reducing water loss.



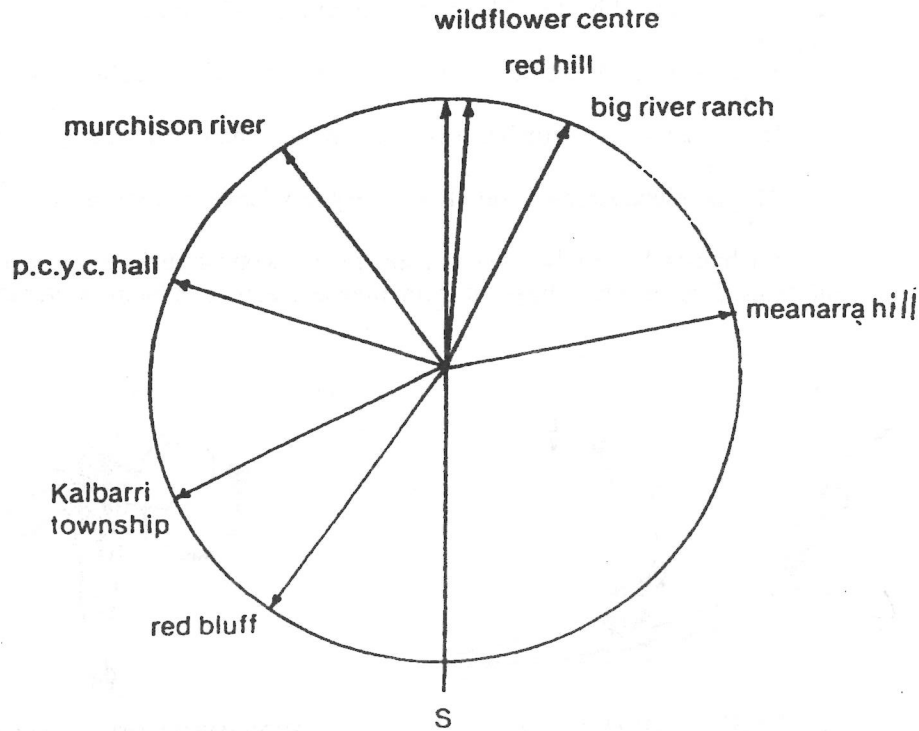
BRACHYSEMA APHYLLUM
Ribbon Pea



STYLIDIUM BRUNONIANUM
Pink Fountain Trigger Plant

GAZEBO. Have a rest and enjoy the view. When you leave the gazebo you will see some specimens of *Persoonia acicularis* either side of the trail. These are called Geebung or Snottygobble and have a succulent fruit, some species of which are believed to have been an Aboriginal food source.

VIEW FROM THE GAZEBO

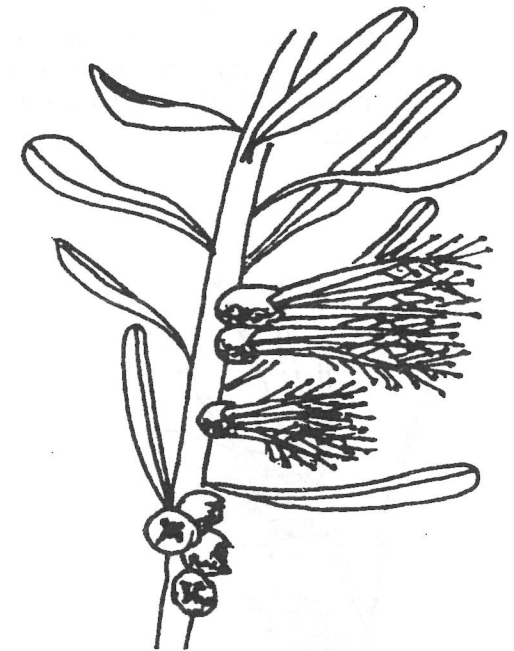


E. *Keraudrenia hermanniaefolia* is called Crinkle leaf Firebush, this common name arises from its rapid appearance after bush fires. Note that the flower has no petals, their place being taken by the enlarged sepals. The wattle along here with the flat, narrow leaves is *Acacia oldfieldii*. It is found only in the Kalbarri area and is named for A.F. Oldfield, an English botanist who collected around the Murchison in the 1850's and 1860's. There are many plants named after this man.

The golden wattle is accepted as the national flower of Australia and our national colours of green and gold are the colours of this floral emblem. There are over 700 named species of acacia in Australia out of a world total of about 1100. They vary from prostrate sub-shrubs to medium sized trees and are found in a great variety of climatic and soil conditions. The flowers are small and arranged in globular heads or cylindrical spikes (2 to 80 flowers in each), usually yellow but some are light cream and one species is pink/mauve. Most acacias lack true leaves, these being replaced by a modified petiole called a phyllode or else the stems act as leaves (cladodes).



ACACIA OLDFIELDII
Oldfields Wattle



CALOTHAMNUS HOMALOPHYLLUS
Murchison Clawflower

F. This clump of *Calytrix purpurea* is typical of the species. The genus has recently been revised and this plant was previously known as *Lhotzkya purpurea*, you will notice that the calyx lobes do not terminate in thin bristle—like awns as with the calytrix further back.

Hakea orthorrhyncha carries its bright red flowers along the old wood, appearing as if the bush is on fire. Its common name is Birdbeak Hakea due to the distinctive shape of the seed pods.

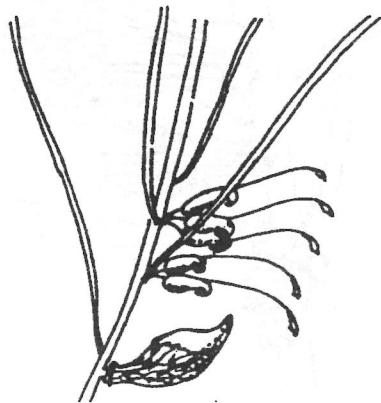
In September you will find a tiny sundew with pink flowers by the trail here. This is *Drosera glanduligera*, one of our few carnivorous plants. The upper leaf surfaces are covered with hair-like tentacles tipped with sticky glands. When a small insect comes into contact with one of the sticky hairs, its struggles will bring it into contact with others and they will all bend through about 100° to enfold the unfortunate victim and hold it close to the leaf. Here smaller glands secrete digestive juices which over a few days reduce the soluble matter of the insect to a fluid, which is absorbed by the plant. In a few days the tentacles open out, releasing the dried remains of the previous meal and re-setting for the next victim. One reason suggested for this unusual behaviour is the poverty of the soils in which they live.

Further along you will enter an area dominated by a very common wattle called *Acacia scirpifolia*, it has needle shaped leaves and yellow globular flowers. It grows quickly and will spread out to make a good windbreak.

Hibbertia hypericoides is interesting in its ability to recover after fire. It was found in Kings Park that some hibbertias were burnt several times over a period of thirty years but each time re-sprouted and regained their former size.

G. In this area are several samples of *Chamalaucium marchantii*, you will notice the similarity to Geraldton Wax (*Chamalaucium uncinatum*); this one has a profusion of small green/yellow flowers. Another Cone Flower also appears call *Conostylis acculeata*; notice the prominent rigid cilia (hairs) along the lead edges. *Melaleuca calothamnoides* grows along the banks of the creek, with its soft foliage, neat habit and pink/green bottlebrush flowers it would be an asset to any garden. Melaleucas are called Paperbarks or Honeymyrtles. The trail will now return you to the starting point, how many plants are you able to name on the way back? We hope that you enjoyed your walk and would like you to sign the Visitors Book in the Wildflower Centre before you depart.

—NOTES—



HAKEA ORTHORRHYNCHA
Bird Beak Hakea



GUICHENOTIA MACRANTHA
Murchison Bell

LIST OF PLANTS GROWING ON KALFLORA

ACACIA adnata	Wattle
ACACIA ericitolia	Wattle
ACACIA idiomorpha	Wattle
ACACIA microbotrya	Gum Wattle
ACACIA oldfiekii	Oldfieds Wattle
ACACIA oxyclada	Wattle
ACACIA quadrisulcata	Wattle
ACACIA ramulosa	Horse Mulga
ACACIA restiaceaG.	Wattle
ACACIA rostelifera	Beaked Wattle
ACACIA salegna	Orange Wattle
ACACIA scirpifolia	Wattle
ACACIA signata	Wattle
ACANTHOCARPUS parviflorus	
ACANTHOCARPUS priessii	
ACTINOSTROBUS arenarius	Sandplain Cyprus
ALLOCASUARINA campestris	Scrub Sheoak
ALYOGYNE hakeifolia	Wild Hibiscus
ANAGALLIS arvensis var. foemina	Blue Pimpernel
AMGOZANTHOS humilis	Catspaw
ANGOZANTHOS kalbarriensis	Kalbarri Catspaw
ANIGOZANTHOS manglesii	Kangaroo Paw
ANTHOCERCIS littorea	Coastal Rayflower
ANTHOCERCIS racemosa	Rayflower
ASTROLOMA serratifolium	
BAECKEA pentogonantha	
BAECKEA robusta	
BEALJFORTIA squarrosa	Sand Bottlebrush
BANKSIA ashbyi	Ashbys Banksia
BANKSIA attenuata	Slender Banksia
BANKSIA sceptrum	Sceptre Banksia
BANKSIA prionotes	Acorn Banksia
BANKSIA victoriae	Woolly Orange Banksia
BEYERIA aft. gardneri	
BILLARDIERA bicolor	Painted Marianthus
BORONIA coerulescens	Twiggy Boronia
BORONIA cymosa	Pink Boronia
BORONIA ramosa	Tall Boronia
BRACHYSEMA aphyllum	Ribbon Pea
BRACHYSEMA tomentosum	Hairy Brachysema
BURCHARDIA rosea	Milkmaids
CALADENIA varians	Red Spider Orchid
CALADENIA flava	Cowslip Orchid
CALADENIA latifolia	Pink Fairy Orchid
CALADENIA longicauda	White Spider Orchid
CALANDRINIA corrigioloides	
CALANDRINIA liniflora	Parakeelya
CALANDRINIA polyandra	Parakeelya
CALUSTEMON phoeniceus	Northern Bottlebrush
CALUTRIS canescens	Cypress Pine
CALOTHAMNUS chrysantherus	Common Netbush
CALOTHAMNUS homalophyllus	Murchison Clawtlower

CALOTHAMNUS quadrifidus	Common Netbush
CALYTRIX brevifolia	Starflower
CALYTRIX paucicostata	Tall Starflower
CALYTRIX purpurea	Purple Starflower
CALOCEPHALUS francisii	Button Daisy
CARTONEMA philydroides	
CASSIA chatelainiana	
CASSYTHA sp.	Dodder
CASUARINA obesa	Swamp Oak
CARPOBROTUS so.	Pigface
CHAMALAUICIUM marchantii	Kalbarri Wax
CHAMALAUICIUM uncinatum	Geraldton Wax
CHAMALAUICIUM oenanthum	Eurardy Wax
CHTHONOCEPHALUS pseudevax	Woolly Groundheads
CLEMATICISSUS angustissima	Wild Grapes
COMESPERMA scoparium	Broom Milkwort
COMESPERMA Integerrimum	Climbing Milkwort
CONOSPERMUM stoechadis	Smokebush
CONOSTYUS aculeata	Cottonheads
CONOSTYUS candicans	Grey Cottonheads
CONOSTYUS prolifera	
CONOSTYUS stylioides	Malt Cottonheads
DAMPIERA spicigera	Spiked Dampiera
DAMPIERA sp.	
DARWINIA oldfieldii	
DARWINIA virescens	
DAVIESIA Incrassata	
DIOSCOREA hastifolia	Warrine or Native Yam
DIPLOPELTIS petiolaris	Pepperflower
DIURIS longifolia	Donkey Orchid
DROSER A glanduligera	Scarlet Sundew
DROSER A microphylla	Purple Rainbow
DROSER A stolonifera	Leafy Sundew
ECDEIOCOLEA monostachya	
EREMAEA ebracteata	
EREMOPHILA decipiens	Slender Fuchsia
EREMOPHILA tomentosa	Hairy Fuchsia
EUCALYPTUS camaldulensis	River Redgum
EUCALYPTUS erythrocorys	Illyarrie
EUCALYPTUS eudesmoides	Mallalie
EUCALYPTUS loxophleba	Yorkgum
EUCALYPTUS microtheca	Coolibah
EUCALYPTUS obtusifolia	Dongara Mallee
EUCALYPTUS oldfieldii	Oldfields Wattle
EUCALYPTUS oraria	Ooragmandee
GELEZNOWIA verrucosa	
GLISCHROCARYON aurea	Milfoil
GLISCHROCARYON flavescens	Milfoil
GOMPHOLOBIUM aristatum	Grannybonnets
GREVILLEA annulifera	Prickly Plume Grevillea
GREVILLEA dieisiana	Diels Grevillea
GREVILLEA eriostachya	Flame Grevillea
GREVILLEA leucopterya	White Plume Grevillea
GREVILLEA pinaster	Pine Grevillea

GREVILLEA trachythea
 GUICHENOTIA macrantha
 GYROSTEMON ramulosus
 HAKEA bucculenta
 HAKEA condolleana
 HAKEA orthorrhyncha
 HAKEA pycnoneura
 HAKEA recurva
 HALGANIA sericiflora
 HELIPTERUM roseum
 HEMIANDRA leiantha
 HIBBERTIA aff. hypericoides
 HIBBERTIA potentilliflora
 HIBISCUS drummondii
 ISOPOGON divergens
 ISOTOMA hypocrateriformis
 JACKSONIA cupulifera
 JACKSONIA hakeoides
 KERAUDRENIA hermanniaefolia
 LACHNOSTACHYS eriobotrya
 LABICHEA lanceolata
 LAMARCHEA hakeifolia
 LEPIDOBOLUS chaetocephalus
 LEPIDOBOLUS sp.
 LECHENAULTIA linarioides
 LEUCOPOGON cordifolius
 LEUCOPOGON strengylophyllus
 LOBELIA rhytidosperra
 LOGANIA spermocoea
 LOGANIA sp.
 MACARTHURIA australis
 MACARTHURIA sp.
 MELALEUCA calothamneides
 MELALEUCA cardiophylla
 MELALEUCA cordata
 MELALEUCA filifolia
 MELALEUCA leiopyxis
 MELALEUCA megacephala
 MELALEUCA oldfieldii
 MELALEUCA radula
 MELALEUCA raphiophylla
 MELALEUCA seriata
 MELALEUCA uncinata
 MELALEUCA viminea
 MESEMBRYANTHEMUM crystallinum
 MIRBELIA spinosa
 MONOTAXIS lurida
 MUEHLENBECKIA adpressa
 NICOTIANA hespenis
 OLAX auriantica
 OLEARIA axillaris
 OPERCULARIA vaginata
 PATERSONIA occidentalis

Vanilla bush
 Murchison Bell

Red Pokers

Birdbeak Hakea

Everlastings

Buttercups
 Buttercups
 Ground Hibiscus
 Drumsticks

Crinkleleaf Firebush
 Lambtails

Yellow Lechenaultia
 Bearded Heath
 Bearded Heath

Pretty Honeymyrtle

Heatleaf Honeymyrtle
 Fineleaf Honeymyrtle

Largehead Honeymyrtle

Graceful Honeymyrtle

Broom Honeymyrtle

Ice Plant

Climbing Lignum
 Wild Tobacco

Coastal Daisybush

Purple Flags

PERSOONIA acicularis
 PERSOONIA brachystylis
 PETROPHILE conifera
 PHYLLANTHUS calycinus
 PIMELEA leucantha
 PIMELEA sessilis
 PILEANTHUS peduncularis
 PITTOSPORUM phylliraeoides
 PITYRODIA loxocarpa
 PLECTRACHNE drummondii
 PODOLEPIS canescens
 PODOTHECA gnaphaloides
 PORANA sericea
 PTEROSTYLIS nana
 PTEROSTYLIS vittata
 PTILOTUS divaricatus
 PTILOTUS humilis
 RHAGODIA sp.
 RULINGIA densiflora
 SCAEVOLA canescens
 SCAEVOLA phlebopetala
 SCAEVOLA porocarya
 SCHOLTZIA capitata
 SCHOLTZIA uberiflora
 SOLANUM oldfieldii
 STACKHOUSIA brunonis
 STYLIDIUM calcaratum
 STYLIDIUM dispernum
 STYLIDIUM elongatum
 STYLOBASium australe
 TEMPLETONIA retusa
 THELYMITRA antennifera
 THRYPTOMENE baeckeacea
 THRYPTOMENE strongylophyllia
 THYSANOTUS sparteus
 THYSANOTUS patersonii
 TRACHYMENE coerulea
 TRACHYMENE omata
 TRACHYMENE pilosa
 VERREAUXIA reinwardtii
 VERTICORDIA galeata
 VERTICORDIA "coolamia"
 VERTICORDIA lepidophylla
 VERTICORDIA monadelpha
 VERTICORDIA nobilis
 VERTICORDIA occulata
 VERTICORDIA polytricha
 VELLEREOPHYTON dealbatum
 VIMINARIA juncea
 WAHLEBERGIA capensis
 XYLOMELUM angustifolium

Snottygobble

Banjine
 Banjine
 Coppercups
 Wild Apricots

Bright Podolepis
 Golden Longheads

Dwarf Greenwood
 Banded Greenwood
 Mulla Mulla
 Mulla Mulla
 Berry Saltbush

Felty Scaevola
 Velvet Fanflower
 Striate Fruit Scaevola

Wild Tomato
 Winged Stackhousia
 Book Triggerplant

Tail Triggerplant

Common Templetonia
 Lemon Orchid

Purple Myrtle
 Fringed Lily
 Climbing Fringed Lily
 Rottnest Daisy

Felted Verreauxia
 Featherflowers

Pink Morrison
 Golden Morrison

Northern Cauliflower

Golden Spray
 Cape Bluebell
 Woody Pear