

Vascular flora of Leeuwin–Naturaliste National Park

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ABSTRACT

A list of the vascular flora of Leeuwin–Naturaliste National Park is provided for the first time. The park contains a vascular flora of at least 1233 taxa (984 natives and 249 weeds). Important features of the Park's flora include a large number of geographically significant flora (range ends and highly disjunct populations), a number of rarely recorded species, Leeuwin–Naturaliste Ridge endemics, a series of widespread species with distinctive forms and a large number of state listed conservation taxa. The Park contains a diverse range of native flora typical of the Leeuwin–Naturaliste Ridge and is of outstanding conservation value.

Keywords: Leeuwin–Naturaliste National Park, vascular flora.

INTRODUCTION

The Busselton–Augusta area contains four major physiographic regions: the Swan and Scott Coastal Plains, the Blackwood Plateau and the Leeuwin–Naturaliste Ridge. These regions are separated and defined by the Darling and Dunsborough series of faults (Lowry 1967). These regions are further subdivided as outlined previously (Fig. 1; Keighery et al. 2010).

The Leeuwin–Naturaliste Ridge occurs west of the Dunsborough fault and is composed of pre-Cambrian crystalline granitic and gneissic rocks of the Leeuwin Block, often overlain with laterite and sand. The ridge is further divided into two major landform units: the Margaret River Plateau, which stretches approximately 90 km from Dunsborough to Augusta; and the Leeuwin–Naturaliste Coast stretching from Cape Naturaliste to islands off Cape Leeuwin (Tille & Lantzke 1990; Tille 1996). The Leeuwin–Naturaliste Coast is a discontinuous ridge of Tamala limestone and sands with underlying and occasionally outcropping Leeuwin block granite. This unit contains the Leeuwin–Naturaliste National Park, which meets the plateau in the south in the Boranup Forest (part of the Leeuwin–Naturaliste National Park) and Reserve 14779 (West Bay Block, Augusta).

Leeuwin–Naturaliste National Park extends from Bunker Bay on the eastern side of Cape Naturaliste, to Cape Leeuwin, south of Augusta, a distance of about 100 km (Fig. 1). The Park includes 28 separate reserves that together have an area of approximately 15,600 ha. While this is a relatively large area the Park is highly fragmented and is often confined to the narrow coastal reserve.

A management plan was prepared for the Leeuwin–Naturaliste National Park in 1989 (Frewer et al. 1989), and has now completed its life span. The Department of Environment and Conservation is preparing a new plan for the Park as part of a series of plans for the near coastal Blackwood District conservation reserves, which also covers the Scott National Park, Gingilup Swamps Nature Reserve (on the Scott Coastal Plain) and Forest Grove, Bramley and Yelverton National Parks.

General check lists of the vascular flora of the areas covered in the new management plan were provided in the paper on the Warren Biogeographic Region (Lyons et al. 2000). A series of other papers have detailed the vascular flora of some of the areas. Robinson and Keighery (1997) and Gibson et al. (2001) described the flora of the Scott National Park; the latter also included the Gingilup Swamps Nature Reserve. Keighery et al. (2010) described the flora of the parks and forest reserves of the Margaret River Plateau. This paper on the Leeuwin–Naturaliste National Park completes the comprehensive listing of the vascular flora and the conservation-significant flora for all areas covered by the forthcoming plan.

METHODS

Data on species distributions for the Park were extracted from the database developed by Lyons et al. (2000). Additional surveys were undertaken on an ad hoc basis between 2000 to 2007 by GJ and BJ Keighery in the various habitats distinguished in the Park (see below). The database of Lyons et al. (2000) was compiled from survey data and herbarium records as detailed in that publication. In all, over 30,000 records were used to compile the flora

lists, of which approximately 35% were derived from collections held in the Western Australian Herbarium and 65% from field surveys. Many of the herbarium records were vouchers from the field surveys. Nomenclature generally follows Paczkowska and Chapman (2000).

The analysis of the conservation status of taxa is based on a consideration of each taxon's known range and occurrence in reserves. This consideration takes into account herbarium records and survey records as outlined above. Smith (2010) was sourced for information on state listed Declared Rare Flora (DRF) and Priority Flora. Priority Flora are given a code from P1–P4 (Smith 2010).

The park contains a very large range of soils, plant communities and habitats (Lowry 1967; Smith 1973; Tille & Lantzke 1990). These range from sandy beaches, coastal limestone and granite cliffs, aeolian dunes, limestone outcrops, granite outcrops, duplex and lateritic soils, fresh and brackish lakes and springs, with several creeks and rivers dissecting these areas. The varied geologies and soils support a corresponding complex of plant communities, including coastal herblands and grasslands, sedgelands, heath, shrublands and woodlands to tall forest. The considerable diversity of soils, climate and vegetation and the geographic extent (>100 km long) meant that it was not practicable to allocate species to particular plant communities, soil type and/or location. Hence the Park is divided into 11 separate sections (Fig. 1) and taxa recorded for each block (Appendix 1).

RESULTS AND DISCUSSION

Total Flora

A total of 1233 vascular plant taxa have been recorded from within the boundaries of the National Park, of which 249 are naturalized aliens or weeds (Table 1, Appendix 1).

The largest families were the Orchidaceae (115 native, 1 weed), Fabaceae (65 native, 17 weeds), Asteraceae (58 native, 30 weeds), Cyperaceae (55 native, 7 weeds), Myrtaceae (54 native, 1 weed), Stylidiaceae (42 native), Apiaceae (39 native, 2 weeds), Ericaceae (37 native), Proteaceae (34 native), Poaceae (31 native, 47 weeds), Restionaceae (29 native), Goodeniaceae (25 native) and Asparagaceae (25 native). The largest genera of native

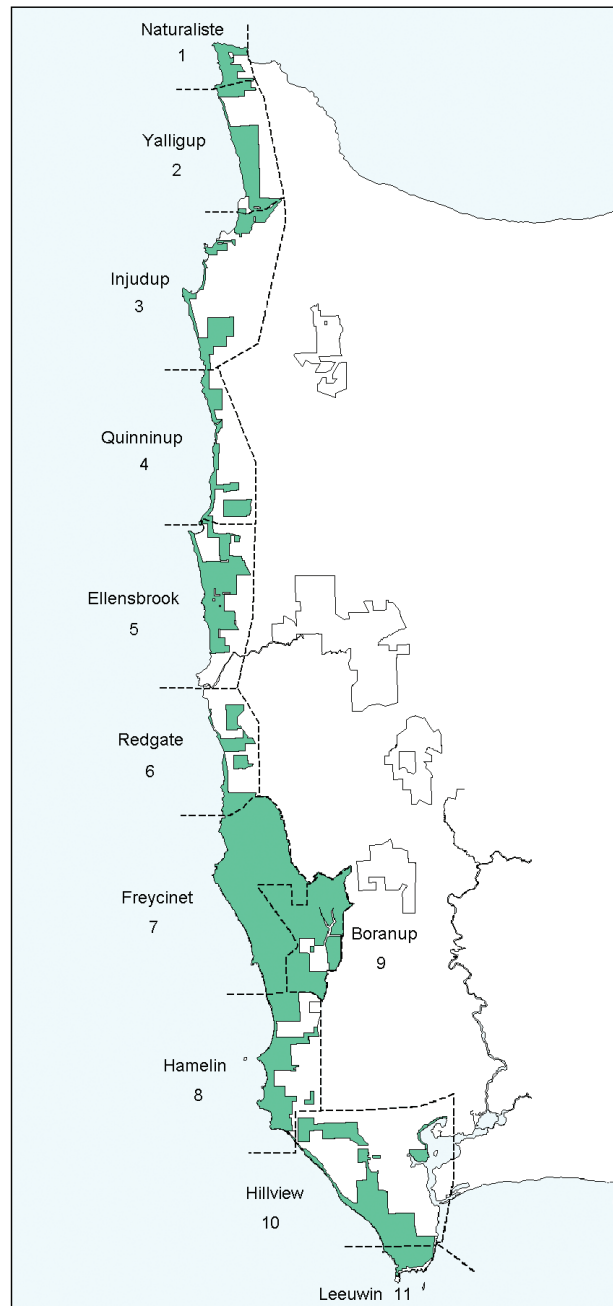


Figure 1. Map of the 11 blocks of the Leeuwin–Naturaliste National Park for which flora lists were compiled.

Table 1

Species richness of major national parks in southern Western Australia

Name	Area (ha)	Number native and weed taxa	Endemics	Reference
Fitzgerald River	329,000	1748 (104 weeds)	75	Chapman & Newbey (1995)
Stirling Range	115,600	1571 (93 weeds)	87	Keighery (1993)
Kalbarri	186,000	1071 (53 weeds)	23	Keighery et al. (2000)
Mount Lesueur	27,500	821 (93 weeds)	9	Hopper & Burbidge (1990)
Leeuwin–Naturaliste	15,600	1232 (249 weeds)	5	This paper

species were *Stylidium* (37), *Caladenia* (36), *Acacia* (28), *Leucopogon* (23), *Drosera* (17), *Hibbertia* (15), *Schoenus* (15), *Lomandra* (13) and *Thysanotus* (11).

The overall composition of the flora is typical of that of the high rainfall zone of south-west Australia (Hopper 1979; Lyons et al. 2000). There is a predominance of herbaceous elements from the Orchidaceae, Asteraceae, Cyperaceae, Stylidiaceae, Asparagaceae and Restionaceae families. As a consequence, the shrub-dominated, species-rich families of the Kwongan—the Proteaceae (34), Ericaceae (37) and Goodeniaceae (25)—although present in the top 12 families for species diversity, do not dominate the flora of Leeuwin-Naturaliste.

Species diversity

The flora of the Park is particularly rich and is comparable to that of the major parks of southern Western Australia (Table 1), despite its relatively small area compared with many of these parks. This illustrates that species richness is relatively widespread in southern Western Australia and is not confined to areas dominated by Kwongan. These features are considered in more detail below.

Geographically Interesting Flora

Range ends

Thirty-seven taxa are recognized at the end of their range within the Park's boundaries. These northern and southern range ends are associated with particular habitats and changes in rainfall.

Northern range ends

Thirteen taxa have their northern-most populations in the Park on Cape Naturaliste: *Acacia triptycha*, *Apium prostratum* var. *filiforme*, *Caladenia applanata* subsp. *applanata*, *Caladenia gardneri*, *Caladenia infundibularis*, *Calytrix acutifolia* subsp. *acutifolia*, *Chorilaena quercifolia*, *Cyanicula gertrudeae*, *Banksia sessilis* var. *cordata* (P4), *Eutaxia myrtifolia*, *Gonocarpus hexandrus* subsp. *serratus*, *Hibbertia grossulariifolia* and *Hyalospermum simplex* subsp. *graniticola*. *Hakea oleifolium*, which was thought to end its range on Cape Naturaliste, has been located on the Swan Coastal Plain at Dunsborough (Webb et al. 2009). Although geographically at a similar latitude it is outside the Park.

Four taxa end their range in the Yallingup/Moses Rock area within the margins of the 1,000 mm isohyet. These are:

- *Caladenia abbreviata* (P3), which occurs in coastal dunes from William Bay to Yallingup;
- *Caladenia pholcoidea* subsp. *pholcoidea*, which has its northern limit near Gracetown;
- *Eucalyptus diversicolor* (Karri) Mount Many Peaks to Porongurups and north to the Cape Clairault area; and
- *Hydrocotyle hirta*, which is found on seeps and granite slopes from the Porongurups to Moses Rock.

A series of clay-based perched wetlands are found on the eastern margin of the park at Boranup. This habitat is similar to some wetland habitats on the Scott River Coastal Plain, and a number of taxa that are more characteristic of the flora of the Scott Coastal Plain (Keighery & Robinson 1992; Robinson & Keighery 1997) were found here. Seven of these taxa are at, or near, their northern range limits, being: *Acacia hastulata*, *Actinotus* sp. Walpole (P3), *Aotus tenuis* ms, *Astartea* sp. Scott River (P4), *Leucopogon paradoxus*, *Lysinema conspicuum* and *Melaleuca basicephala* (P4).

Two taxa, *Leucopogon distans* and the recently described *Agrostocrinum scabrum* subsp. *littorale* (Keighery 2004), are at the northern extent of their range on the granites at Cape Leeuwin. The population of *Agrostocrinum* is one of only three known, highly disjunct populations recorded from Mount Manypeaks, Mutton Bird Island and Cape Leeuwin.

Freshwater springs and seepages are a feature of the Leeuwin–Naturaliste Ridge. *Hydrocotyle plebeya*, found in almost permanent fresh water, occurs in scattered populations from the Porongurups north to Turners Spring and Devils Pool.

Southern range ends

Eleven taxa are clustered in the northern part of the ridge either on granites or limestone soils. These taxa are:

- *Alyogyne huegelii* var. *glabrescens* – disjunct southern population near Canal Rocks.
- *Alyogyne huegelii* var. *huegelii* – disjunct southern population near Cape Freycinet.
- *Alyxia buxifolia* – the taxon delineated as the typical Swan Coastal Plain coastal variant of this widespread arid taxon ends south of Yallingup.
- *Caladenia chapmanii* – southern limit Cape Freycinet area.
- *Caladenia huegelii* (DRF) – southern limit near Yallingup.
- *Caladenia longicauda* subsp. *clivicola* – southern limit Cape Naturaliste.
- *Leucopogon tenuis* – southern limit at Moses Rock.
- *Petrophile axillaris* – a disjunct population from Yalgorup of this species is found in the Cosy Corner-Cape Freycinet area.
- *Pittosporum ligustifolium* – southern limit near Canal Rocks.
- *Rhagodia baccata* subsp. *dioica* and *Rhagodia baccata* subsp. *baccata* – Wilson (1983) notes that Cape Naturaliste is the southern margin of the overlap zone between these subspecies which extends north to Guilderton.
- *Trachymene coerulea* subsp. *coerulea* – a disjunct population of this subspecies is found in the Cosy Corner-Cape Freycinet area.

Disjunct populations

Ten taxa, which are all associated with restricted habitats, have significant disjunct populations within the Park:

- *Borya constricta* – a highly disjunct taxon, common on granite in the wheatbelt with scattered populations in the northern Jarrah Forest, southern forests and Leeuwin–Naturaliste ridge.
- *Pteris vittata* – a tropical fern found in permanent wetlands, with a series of highly disjunct populations at Pilbara Gorges, Yanchep and Boojimup (Leeuwin–Naturaliste).
- *Malva preissiana* – the large-leaved, white-flowered, island form of this plant is typically an offshore island guanophile; the only extant mainland record of this taxon is on the granites of the tip of Cape Leeuwin.
- *Lepidium foliosum* – this is another offshore island guanophile, with its only extant mainland record from the granites of the tip of Cape Leeuwin
- *Stylidium affine* – there is a disjunct series of populations found on Cape Naturaliste (Lowrie et al. 1998).
- *Petrophile serruriae* – a series of disjunct populations of this taxon is found in the south-western extent of its range on the Busselton Swan Coastal Plain, Whicher Scarp and Leeuwin–Naturaliste Ridge.
- *Beyeria viscosa* – occurs along the coast from Geraldton to Cape Leeuwin then disjunct to Esperance.
- *Hibbertia spicata* subsp. *spicata* – disjunct from Perth hills area on Cape Naturaliste.
- *Amblyperma minor* (P2) – a disjunct population is located near Gracetown; this taxon is normally found in claypans on the Swan Coastal Plain and Jarrah Forest.
- *Thysanotus arbuscular* – there is a disjunct series of populations found on Cape Naturaliste.

Co-occurring Closely Related Taxa

There is a series of co-occurring closely related taxa, including the previously mentioned *Alyogyne huegelii* varieties (var. *glabrescens* and var. *huegelii*) and *Rhagodia baccata* subspecies (subsp. *dioica* and subsp. *baccata*). A series of *Hyalosperma* species and subspecies—*Hyalosperma cotula*, *Hyalosperma simplex* subsp. *graniticola* and *Hyalosperma simplex* subsp. *simplex*—co-occur at Sugarloaf Rock. These populations could have taxonomic significance.

Rarely Recorded Taxa

While three taxa—*Sium latifolium*, *Samolus valerandi* and *Calystegia soldanella*—could be considered as part of the group of disjunct populations, they are so uncommon that they are best considered as poorly known or rarely recorded taxa. The first two taxa are currently listed as weeds in Western Australia but should be listed as native taxa, as is the third taxon.

Sium latifolium

This soft, perennial herb is a cosmopolitan species that is considered native in eastern Australia, but is still listed as a weed in Western Australia (Florabase 2009). It occurs chiefly in permanent wetlands along the ridge with a disjunct population near Pemberton.

Samolus valerandi

This soft perennial herb is a cosmopolitan species that is considered native to eastern Australia, but is still listed as a weed in Western Australia (Western Australian Herbarium 1998–). It occurs chiefly in permanent wetlands along the ridge with a disjunct population north of Gingin.

Calystegia soldanella

This strand plant is widely distributed along the coasts of southern Australia, however, it has been recorded at only two locations in Western Australia, Ellen Brook in Leeuwin–Naturaliste and near Chatham Island off Walpole.

Taxa Centred on the Park

A number of plant species are endemic to the Busselton to Augusta area, while others are limited to the major physiographic regions such as the Leeuwin–Naturaliste Ridge. A number of these taxa have been considered Park endemics, despite at times having populations that extend beyond the Park. However, the majority of the populations of these taxa are in the Park and the Park is crucial to their conservation. Of the 15 taxa listed below 13 are Leeuwin–Naturaliste Ridge endemics.

- *Acacia subracemosa* (P2) – almost entirely confined to the Leeuwin–Naturaliste ridge, from Augusta to Cape Clairault.
- *Bossiaea disticha* – confined to the Leeuwin–Naturaliste Ridge between Augusta and the Ellen Brook area (Keighery 1996).
- *Caladenia citrina* – a local endemic to the Northern Margaret River Plateau and Leeuwin–Naturaliste Ridge.
- *Caladenia excelsa* (DRF) – distributed between Yallingup and Karridale along the Leeuwin–Naturaliste Ridge; at least four populations are in the Park. Leeuwin–Naturaliste is the only conservation reserve for this species.
- *Caladenia nivalis* – apparently confined to the Park, between Moses Rock and Sugarloaf Rock.
- *Caladenia pholcoidea* subsp. *augustensis* – confined to the Cape Leeuwin area.
- *Caladenia* sp Boranup (M Spencer 71) – confined to the Boranup area.
- *Caladenia viridescens* (DRF) – Cape Naturaliste endemic.
- *Eucalyptus calcicola* subsp. *calcicola* – confined to coastal dunes and limestone hills near Boranup.

- *Hydrocotyle hammelensis* ms – only recorded for the Cape Naturaliste area, with an unconfirmed record for Rottneest island.
- *Kennedia lateritia* (DRF) – confined to granites of Cape Leeuwin.
- *Kunzea ciliata* – confined to the Leeuwin–Naturaliste Ridge from Smiths’ Beach to Yallingup.
- *Stylidium lowricanum* – Leeuwin–Naturaliste Ridge, from Karridale to Cape Naturaliste.
- *Thomasia triloba* – apparently endemic to the Ridge as the only known populations are from Boranup.
- *Wurmbea calcicola* (DRF) – confined to the northern portion of Cape Naturaliste.

Morphological Variants

Another feature of the flora of the Park is the number of unusual forms of normally widespread species that are restricted to the Leeuwin–Naturaliste Ridge. Several of these forms require further investigation to determine if they deserve taxonomic recognition.

Haloragis digyna subsp. nov.

Populations of this species along the Leeuwin–Naturaliste Ridge are disjunct from the other populations that range from Albany to Esperance. The populations differ in leaf and pubescence from those in the main portion of the species’ range. Accurate localities are south coastal survey records from between Cosy Corner to Cape Naturaliste (N Gibson & M Lyons¹, pers. comm.) at Hooley Road, Kilcarnup and Cape Naturaliste.

Brachycome iberidifolia

A prostrate, succulent-leaved form is found on coastal granites at Cape Leeuwin, Cosy Corner and Moses Rock. These breed true from seed (Keighery, pers. obs.).

Eryngium pinnatifidum (Coastal Granite; G Keighery 1885)

A small, hard-leaved form of this taxon is found on the coastal granites at Cape Leeuwin, Cosy Corner and Moses Rock.

Gastrolobium bilobum, *Banksia littoralis*, *Jacksonia horrida*, *Kunzea ciliata* and *Viminaria juncea* all have prostrate forms and together dominate a low, wet heath north of Moses Rock. These species have bred true from seed (Keighery pers. obs.).

Xanthosia atkinsoniana var. limestone (Gibson & Lyons 321)

This widespread species of the Jarrah Forest is normally found on laterites. In the Park it is found in a series of

disjunct populations on coastal limestones. These have very different leaves from the typical form.

Bossiaea disticha

A variety of forms are known in this taxon, a northern yellow flowered form south of the Ellen Brook and a prostrate form at Cape Freycinet (Keighery 1996).

Boronia anceps

The population north of Moses Rock is a low to almost prostrate, leafy shrub with many stems compared with the type form on the Scott River, which is a tall and slender shrub with few branches (Wilson, 1998). This form appears morphologically closer to the *Boronia fastigiata/spathulata* complex than the Scott River populations.

Calothamnus graniticus subsp. *graniticus* (P4)

This subspecies is confined to the Cape Naturaliste area, however, even within this area several forms are known. A hairy-leaved form is found around Sugarloaf Rock and a glabrous form in the Meelup Regional Park.

Eucalyptus marginata x *megacarpa* (GK 5332; P4)

A hybrid stand of several long-lived trees are found near Sugar Loaf Rock on Cape Naturaliste.

Declared Rare and Priority Flora

The Park contains five taxa of Declared Rare Flora (*Kennedia lateritia*, *Caladenia viridescens*, *C. excelsa*, *C. huegeli* and *Wurmbea calcicola*). No taxa are listed as Priority 1, but five species—*Actinotus* sp. Walpole (JR Wheeler 3786), *Acacia subracemosa*, *Agrostocrinum scabrum* subsp. *littorale*, *Hydrocotyle hamelinensis* ms and *Millotia tenuifolia* var. *laevis*—are listed as P2. Eight species are listed as P3 (*Acacia latericola* glabrous variant [BRM 6765], *Amblysperma minor*, *Boronia anceps*, *Bossiaea disticha*, *Galium leptogonium*, *Meeboldina thysanantha*, *Pimelea ciliata* subsp. *longituba*, and *Pultenaea pinifolia*), and nine species as P4 (*Acacia semitrullata*, *Anthotium junciforme*, *Calothamnus graniticus* subsp. *graniticus*, *Dryandra sessilis* var. *cordata*, *Eucalyptus calcicola* subsp. *calcicola*, *Eucalyptus marginata* x *megacarpa*, *Eucalyptus rudis* subsp. *cratyantha*, and *Melaleuca basicephala*). Nine species have been removed from the Priority Flora list since 2008. These are: *Acacia hastulata* (was P3), *Acacia mooreana* (was P2), *Andersonia involucreta* (was P4), *Caladenia longicauda* subsp. *clivicola* (was P4), *Caladenia arrecta* (was P4), *Caladenia plicata* (was P4), *Calothamnus pallidiflorus* (was P4), *Thomasia triloba* (was P3) and *Thysanotus arbuscular* (was P4). Most of these taxa have been discussed under the previous headings, except for the eight below.

- *Acacia latericola* glabrous variant (BRM 6765; P3) – mainly confined to the granites of Cape Naturaliste, with a single record from the Scott Plains.

¹ N Gibson and M Lyons, Department of Environment and Conservation, Kensington, WA.

- *Acacia semitrullata* (P4) – occurs on sandy soils from Yarloop south to Collie, Donnybrook, Whicher Range and Nannup.
- *Anthotium junciforme* (P4) – a wetland species found in scattered populations from Three Springs to the Scott River.
- *Galium leptogonium* (P3) – this inconspicuous herb is found in scattered populations from Cape Leeuwin to Eucla.
- *Meeboldina thysanantha* (P3) – a wetland species found from Walpole to Collie, with many populations on the Blackwood Plateau.
- *Millotia tenuifolia* var. *laevis* (P2) – scattered populations from Dowerin Serpentine and Collie. The southern most known populations are from Cape Naturaliste.
- *Pimelea ciliata* subsp. *longituba* (P3) – a rarely recorded taxon occurring from Busselton to Whichcliffe. The Leeuwin–Naturaliste population is at the southern margins of the known range.
- *Pultenaea pinifolia* (P3) – occurs normally along water-courses from Busselton area to Nannup.

Weeds

The elongated shape of the Park gives it a huge perimeter to area ratio, exposing much of the Park to human disturbance. Disturbance, both in and nearby the Park, includes legal and illegal camping, past grazing, poorly planned rehabilitation, “enrichment” plantings, numerous tracks, eutrophication and altered hydrology of creek-lines originating outside the Park, old farm houses, and past and present settlements. These disturbances have all contributed to the introduction and maintenance of a very large number of weeds in the Park.

The most serious weeds in the Park include Arum Lily (*Zantedeschia aethiopica*), Victorian Tea Tree (*Leptospermum laevigatum*), Wild Pelargonium (*Pelargonium alchemilloides*), Freesias (*Freesia* hybrids), Black Flag (*Ferraria crispa*) and Watsonia (*Watsonia* species). These taxa have the ability to invade and alter many habitats in the Park. Another weed, the aggressive perennial Buffalo Grass (*Stenotaphrum secundatum*), threatens fresh water wetlands. Coastal dunes and beaches have been invaded by *Pelargonium capitatum*, *Euphorbia paralias*, *Ammophila arenaria*, and *Ehrharta villosa*. The latter was often planted for dune stabilization. The unique granite communities of the Park are invaded by thistles (*Carduus pycnocephalus*, *Centaurea melitensis* and *Cirsium vulgare*).

Widespread weeds present throughout the Park include the grasses *Avena barbata*, *Briza maxima*, *Briza minor*, *Bromus diandrus*, *Cynodon dactylon*, *Ehrharta calycina*, *Ehrharta longiflora*, *Lagurus ovatus* and *Lolium* species. These weeds contribute to increased fire hazards and compete with native herbs for space and nutrients. Potentially serious weeds that require monitoring and control to prevent their spread through the park include

Gladiolus caryophyllaceus, *Gazania linearis* and *Hyparrhenia hirta*.

Because of its early association with the port and settlement, the Hamelin Bay area has a number of localized weeds that could be subject to eradication targets: *Ursinia speciosa*, *Mercurialis annua*, and *Pentzia suffruticosa*. The Declared thistle weed, *Berkhya rigida*, is also found in this area south to Cape Leeuwin and is currently subject to control measures.

Comparisons to other Conservation Reserves of the Busselton to Augusta Region

Leeuwin–Naturaliste National Park occurs almost entirely on the western margin of the Leeuwin Ridge Landform unit of Tille and Lantzke (1990). One reserve, the reserve at West Bay Augusta, is on the Margaret River Plateau.

With a large geographic spread and diverse flora, Leeuwin–Naturaliste National Park could be expected to conserve much of the flora of the Busselton to Augusta region. To assess this, a comparison of total native floras of the parks of the area was undertaken. The Park has a total native flora of 984 taxa and Scott National Park has 744 (Gibson et al. 2001), giving a combined total native flora of 1188 taxa for these reserves. The parks share 542 taxa between them, with another 446 taxa being only recorded for Leeuwin–Naturaliste and 186 only for Scott.

A similar comparison with the parks of the Margaret River Plateau (Keighery et al. 2010) showed that these differences relate primarily to several wetland habitats that are found in the Scott National Park but not in the parks of the Margaret River Plateau or Leeuwin–Naturaliste Ridge. These Scott National Park habitats are the:

- diverse fresh-water and brackish wetlands characterised by species such as *Apium prostratum*, *Bolboschoenus caldwellii*, *Ottelia ovalifolia*, *Ruppia megacarpa* and *Villarsia violifolia*; and
- Scott Wet Ironstones characterised by *Loxocarya magna*, *Banksia nivea* subsp. *uliginosa*, *Chordifex isomorphus*, *Hakea tuberculata* and *Grevillea manglesioides* subsp. *ferricola*.

Two other groups of plants are also absent from Leeuwin–Naturaliste Ridge but are found in the Scott National Park, being:

- species that range from the Albany to Augusta area, including *Eremosyne pectinata*, *Banksia occidentalis* and *Leucopogon tenuicaulis*; and
- a number of Scott Coastal Plain endemics including *Adenanthos detmoldii*, *Calothamnus* aff. *crassus* and *Grevillea brachystylis* subsp. *australis*.

The parks of the Margaret River Plateau, which contain 644 native taxa, also differ markedly in composition. The parks have a combined flora of 1172 species, with 441 taxa only recorded for Leeuwin–Naturaliste, 647 shared between these parks and 83 only recorded for the Plateau parks.

The differences between the Margaret River Plateau and Leeuwin–Naturaliste parks relate to the presence of

two habitats on the Margaret River Plateau, not located on the Leeuwin–Naturaliste Ridge, being:

- deep sands characterised by *Conospermum teretifolium*, *Acacia mooreana*, *Phlebocarya filifolia* and *Stirlingia latifolia*; and
- laterised uplands characterised by *Calothamnus sanguineus*, *Melaleuca trichophylla*, *Marianthus candidus* and *Bossiaea aquifolium*.

There are also a set of restricted or rare habitats, found in the Margaret River Plateau parks and reserves.

The majority of the taxa present in the Leeuwin–Naturaliste National Park that are absent from both the Scott National Park and the Margaret River Plateau parks and reserves are associated with the beaches, limestone and granite soils. These three habitats are absent from the Scott National Park and the Margaret River Plateau parks and reserves. It is these habitats that contribute to the unique flora of the Leeuwin–Naturaliste National Park. Each of these habitats supports both widespread and restricted taxa, such as:

- Coast – widespread taxa include *Spinifex hirsutus* and *Scaevola crassifolia*, restricted taxa include *Calystegia soldanella*;
- Limestones – widespread taxa include *Acacia littorea*, restricted taxa include *Banksia sessilis* var. *cordata*; and
- Granites – widespread taxa include *Pelargonium australe*, restricted taxa include *Agrostocrinum scabrum* subsp. *littorale*.

No other area in WA has such an extensive area of limestones associated with granites in a near coastal location. These habitats support a set of restricted taxa and forms of widespread taxa. It is expected that further detailed work will recognise further restricted taxa.

Although 80–90 plots were established in the south coast survey (Gibson & Lyons, pers. comm.), and these formed the basis for the lists in Lyons et al. (2000) and here, there is a need to complete this study and expand the systematic quadrat-based survey of the plant communities of the Leeuwin–Naturaliste Ridge to supplement the existing information on the flora and plant communities of the area. Several granitic heath communities from the northern sections of the park from Sugarloaf Rock to Cape Naturaliste are already listed by DEC as Priority Ecological Communities.

Of the total 1377 native taxa listed from all six parks, only 350 (c. 29%) are recorded from all parks. The parks, each covering different geomorphic areas (Leeuwin–Naturaliste Ridge, Margaret Plateau and Scott Coastal Plain) have complementary floras, each containing a different subset of plants from the geomorphic regions within which they occur, rather than being composed mainly of very widespread elements.

CONCLUSIONS

The Leeuwin–Naturaliste National Park has a diverse flora of over 980 native vascular plant taxa. The major features

of the native vascular flora of the Park are:

- A large number of geographically significant flora, namely range ends and highly disjunct populations, centred on three areas (Cape Leeuwin, Cape Naturaliste to Smiths Beach and Hamelin Bay).
- Several rarely recorded species for Western Australia, usually associated with wetlands.
- A significant component of endemic flora of the Leeuwin–Naturaliste Ridge is centred on, and conserved in the Park.
- A number of widespread species with distinctive forms on the Leeuwin–Naturaliste Ridge.
- A large number of state-listed conservation taxa are protected in the Park.

The Park contains a diverse range of native flora and is of outstanding conservation value.

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REFERENCES

- Chapman A, Newbey KR (1995) A biological survey of the Fitzgerald area. *CALMScience Supplement* **3**, 1–258.
- Frewer P, Raven T, Taylor N, Cockman B, Batchelor M, Orr K (1989) *Leeuwin–Naturaliste National Park Management Plan 1989–1999*. Department of Conservation and Land Management, Perth.
- Gibson N, Keighery GJ, Lyons MN (2001) Vascular flora of Scott National Park, Camping Reserve 12951 and Gingilup Swamps Nature Reserve, Western Australia. *CALMScience* **3**, 411–432.
- Hopper SD (1979) Biogeographical aspects of speciation in the south west Australian flora. *Annual Review of Ecology and Systematics* **10**, 399–422.
- Hopper SD, Burbidge AA (1990) Significance of the Lesueur area. In *Nature Conservation, Landscape and Recreation Values of the Lesueur Area* (eds AA Burbidge, SD Hopper, S van Leeuwin), pp 111–115. Environmental Protection Authority Bulletin 424, Environmental Protection Authority, Perth.
- Keighery GJ (1993) *Mountains of Mystery. Appendix: Flora List and Synopsis of the Flora of the Stirling Range National Park*. Department of Conservation and Land Management, Perth.

- Keighery GJ (1996) Boranup Bossiaca (*Bossiaca disticha*): distribution and biology. *Western Australian Naturalist* **21**, 97–101.
- Keighery GJ (2004) A taxonomic revision of the genus *Agrostocrinum* (Phormiaceae). *Nuytsia* **15**, 245–252.
- Keighery GJ, Gibson N, Lyons MN, Burbidge AH (2000) Flora and vegetation of the southern Carnarvon Basin. *Records of the Western Australian Museum Supplement* **61**, 77–154.
- Keighery G, Lyons M, Gibson N, Keighery B (2010) Vascular flora of the Margaret River Plateau National Parks, State Forest and Conservation Reserves, south-western Western Australia. *Conservation Science Western Australia* **7**, 481–502.
- Keighery GJ, Robinson C (1992) 'A survey of declared rare flora and other plants in need of special protection of the Scott Plains: A report to Australian National Parks and Wildlife Service, Endangered Species Programme'. Department of Conservation and Land Management, Perth.
- Lowrie A, Coates DJ, Kenneally KF (1998) A taxonomic review of the *Stylidium caricifolium* complex (Stylidiaceae) from south-west Western Australia. *Nuytsia* **12**, 43–57.
- Lowry, DC (1967) *1:25,000 Geological Series Explanatory Notes. Busselton and Augusta*. Geological Survey Western Australia, Perth.
- Lyons MN, Keighery GJ, Gibson N, Wardell-Johnson G (2000) The vascular flora of the Warren bioregion, south-west Western Australia: composition, reservation status and endemism. *CALMScience* **3**, 181–250.
- Paczkowska G, Chapman AR (2000) *The Western Australian Flora: A Descriptive Catalogue*. Wildflower Society of Western Australia Inc., Department of Conservation and Land Management and Botanic Gardens & Parks Authority, Perth.
- Robinson CJ, Keighery GJ (1997) Vegetation and flora of Scott National Park and adjacent recreation reserves. *Western Australian Naturalist* **21**, 213–233.
- Smith FG (1973) *Vegetation Map Busselton–Augusta*. Department of Agriculture, South Perth.
- Smith MG (2010) *Declared Rare and Priority Flora List for Western Australia*. Department of Environment and Conservation, Perth.
- Tille PJ (1996) *Wellington–Blackwood Land Resource Survey, Land Capability Study Assessment for the Wellington–Blackwood Survey*. Land Resources Series No. 14, Department of Agriculture, Perth.
- Tille PJ, Lantzke NC (1990) *Busselton, Margaret River, Augusta, Land Capability Study*. Land Resources Series No. 5, Department of Agriculture, Perth.
- Webb A, Keighery B, Keighery G, Longman V, Black A, O'Connor A (2009) *The Flora and Vegetation of the Busselton Plain (Swan Coastal Plain)*. Department of Environment and Conservation, Perth.
- Western Australian Herbarium (1998–) *Florabase—The Western Australian Flora*. Department of Environment and Conservation. <http://florabase.dec.wa.gov.au/> [last accessed 2009].
- Wilson PG (1983) A taxonomic review of the tribe Chenopodieae (Chenopodiaceae) in Australia. *Nuytsia* **4**, 135–262.
- Wilson PG (1998) New names and new taxa in the genus *Boronia* from Western Australia. *Nuytsia* **12**, 119–154.

APPENDIX 1

Vascular flora of Leeuwin–Naturaliste National Park by 11 geographic areas (see Figure 1 for location of areas). Conservation codes follow Smith (2010).

*Naturalised/ Name	1	2	3	4	5	6	7	8	9	10	11	con
Adiantaceae												
Adiantum aethiopicum				+	+					+	+	
Anogramma leptophylla					+							
Cheilanthes austrotenuifolia	+	+	+	+	+							+
Cheilanthes sieberi subsp. sieberi									+			
Aizoaceae												
* Aptenia cordifolia			+									
* Carpobrotus edulis	+		+					+				+
Carpobrotus modestus	+	+				+	+	+				+
Carpobrotus virescens	+	+	+	+	+		+	+		+		+
Disphyma crassifolium subsp. clavellatum				+								
* Droseranthum candens							+	+				
* Mesembryanthemum crystallinum		+					+					+
* Tetragonia decumbens	+	+	+	+	+	+	+	+				+
Tetragonia implexicoma	+	+	+	+	+	+	+	+				+
Tetragonia tetragonoides	+											+
Alliaceae												
* Allium triquetrum				+					+			
Amaranthaceae												
Alternanthera denticulata				+				+				+
Alternanthera nodiflora												+
Ptilotus drummondii var drummondii	+	+		+			+	+	+	+		
Ptilotus manglesii	+			+	+	+						
Ptilotus sericostachyus subsp. roseus	+											
Ptilotus sericostachyus subsp. sericostachyus	+	+						+				+
Ptilotus stirlingii			+	+			+	+	+	+	+	+
Amaryllidaceae												
* Amaryllis belladonna					+				+			
* Narcissus tazetta	+				+				+			
Asparagaceae												
Agrostocrinum hirsutum	+	+	+	+	+	+	+	+	+	+	+	+
Agrostocrinum scabrum subsp. littorale												+
Arthropodium capillipes	+	+										
* Asparagus asparagoides	+	+	+		+	+			+	+	+	+
Caesia micrantha	+	+	+	+	+	+		+	+	+	+	+
Caesia occidentalis							+		+	+	+	+
Chamaescilla corymbosa var. corymbosa	+	+	+	+	+	+	+	+	+	+	+	+
Corynotheca micrantha	+	+	+				+		+	+	+	+
Hodgsoniola junciformis		+							+			
Johnsonia acaulis	+	+	+	+	+				+			
Johnsonia lupulina			+	+	+		+		+	+	+	+
Laxmannia sessiliflora subsp. australis				+								
Sowerbaea laxiflora	+	+	+	+	+	+		+	+	+	+	+
Thysanotus arbuscular	+											
Thysanotus arenarius	+	+		+		+	+	+		+	+	+
Thysanotus dichotomus	+			+						+	+	+
Thysanotus gracilis		+										
Thysanotus manglesianus	+	+		+	+	+				+	+	+
Thysanotus multiflorus	+	+							+		+	+
Thysanotus patersonii	+	+						+	+	+	+	+
Thysanotus sparteus				+					+	+	+	+
Thysanotus tenellus			+	+								
Thysanotus thyrsoides		+										
Thysanotus triandrus									+	+	+	+
Tricoryne elatior	+	+		+		+		+	+	+	+	+
Tricoryne humilis		+		+		+	+	+	+	+	+	+

P2

*Naturalised/ Name	1	2	3	4	5	6	7	8	9	10	11	con
Apiaceae												
Actinotus glomeratus								+	+	+	+	
Actinotus omnifertilis									+			
Actinotus sp. Walpole (J.R. Wheeler 3786)									+			P3
* Ammi majus		+										
Apium annum	+	+		+	+	+		+		+	+	
Apium prostratum var prostratum			+	+	+	+				+	+	
Apium prostratum var filiforme	+	+		+	+	+		+		+	+	
Berula erecta				+	+					+	+	
Centella asiatica	+			+	+	+				+	+	
Daucus glochidiatus	+	+	+	+	+	+		+	+	+	+	
Eryngium pinnatifidum var pinnatifidum	+	+	+		+	+	+		+			
Eryngium pinnatifidum var Coastal Granite (Keighery 1885)					+				+		+	+
* Foeniculum vulgare		+						+			+	
Homalosciadium homalocarpum	+	+	+	+			+	+	+	+	+	
Hydrocotyle alata	+			+				+		+	+	
Hydrocotyle blepharocarpa		+	+			+		+		+	+	
Hydrocotyle callicarpa	+	+	+	+				+	+	+	+	
Hydrocotyle diantha	+	+	+	+				+		+	+	
Hydrocotyle hamelinensis ms	+	+								+		P2
Hydrocotyle hirta					+				+		+	
Hydrocotyle hispidula	+	+	+					+		+	+	
Hydrocotyle pilifera var. glabrata								+			+	
Hydrocotyle pilifera var. pilifera								+				
Hydrocotyle plebeya						+				+	+	
Hydrocotyle scutellifera					+	+						
Hydrocotyle tetragonocarpa						+	+	+			+	
Pentapeltis peltigera	+	+		+		+						
Pentapeltis silvatica										+		
Platysace compressa		+						+				
Platysace filiformis	+			+	+				+	+	+	
Platysace haplosciadia				+						+		
Platysace pendula		+		+					+	+	+	
Platysace tenuissima					+	+	+		+	+	+	
Trachymene coerulea var coerulea							+	+				
Trachymene pilosa	+	+	+	+	+	+	+	+	+	+	+	
Xanthosia atkinsoniana							+			+		
Xanthosia candida	+	+	+	+		+	+		+		+	
Xanthosia ciliata					+							
Xanthosia huegelii	+	+	+	+	+	+			+			
Xanthosia singuliflora									+			
Xanthosia tasmanica								+	+	+	+	
Apocynaceae												
Alyxia buxifolia	+		+									
* Vinca major		+			+				+			
Araceae												
* Zantedeschia aethiopica	+	+	+	+	+	+		+	+	+	+	
Asphodelaceae												
Bulbine semibarbata	+	+		+	+		+	+				+
* Trachyandra divaricata	+	+	+	+	+			+		+	+	
Aspleniaceae												
Asplenium aethiopicum					+				+		+	
Asplenium trichomanes							+		+	+	+	
Asteraceae												
Actites megalocarpa	+	+	+	+	+	+	+	+		+	+	
Amblyosperma minor			+	+								P2
Amblyosperma scapigera	+	+							+		+	
Amblyosperma spathulata									+		+	
Angianthus preissianus			+	+					+		+	
* Arctotheca calendula	+	+	+	+	+		+	+	+	+	+	
* Arctotheca populifolia	+	+	+	+	+	+	+	+		+	+	
* Arctotheca calendula x populifolia	+	+	+				+	+			+	

*Naturalised/ Name	1	2	3	4	5	6	7	8	9	10	11	con
Asteridea pulverulenta	+	+		+	+		+	+		+	+	
* Berkhya rigida						+		+				+
Brachyscome iberidifolia	+	+	+	+	+	+	+	+				+
* Carduus pycnocephalus	+	+	+	+		+		+	+			+
* Centaurea melitensis	+	+					+	+				
* Cesium vulgare	+								+	+	+	
* Conyza bonariensis	+							+	+	+	+	
* Conyza parva					+			+	+	+	+	
* Conyza sumatrensis	+	+		+	+			+	+	+	+	
Cotula australis	+											
Cotula coronopifolia	+			+	+			+				+
Cotula cotuloides	+	+		+				+				+
* Cotula turbinata	+	+	+									
Craspedia variabilis		+		+			+	+				
* Crepis capillaris												+
* Dittrichia graveolens	+		+					+				
Euchiton sphaericus	+	+			+			+	+			+
* Filago gallica					+					+		
* Gazania linearis	+								+			
Gnaphalium indutum				+				+				
* Hedynois rhagadioloides	+							+				+
Helichrysum luteo-album	+	+		+	+			+		+	+	
Helichrysum macranthum		+	+	+								
Hyalospermum cotula	+	+		+			+	+	+	+	+	
Hyalospermum simplex subsp. graniticola	+											
Hyalospermum simplex subsp. simplex	+							+				
* Hypochaeris glabra	+	+	+	+	+	+		+	+	+	+	
* Hypochaeris radicata										+	+	
Ixiolaena viscosa	+	+		+	+			+	+	+	+	
Lagenophora huegelii	+	+	+	+	+	+	+	+		+	+	
* Leontodon saxatilis	+			+				+	+	+	+	
Leptorhynchus scaber				+			+	+		+	+	
Leucophyta brownii	+	+	+	+	+	+	+	+				+
Millotia myosotidifolia	+						+	+		+	+	
Millotia tenuifolia var laevis	+											P2
Millotia tenuifolia var tenuifolia		+	+	+	+							
Myriocephalus helichrysoides	+											
Olearia axillaris	+	+	+	+	+	+	+	+	+			+
Olearia cassiniae										+		
Olearia ciliata	+											
Olearia elaeophila										+	+	
Olearia paucidentata	+				+			+	+	+	+	
Olearia rudis			+						+	+	+	
Ozothamnus cordatus	+	+	+		+			+	+	+	+	
Ozothamnus ramosus							+	+	+	+		
* Pentzia suffruticosa								+				
Picris angustifolia subsp. angustifolia								+		+	+	
Picris squarrosa												+
Pithocarpa pulchella var. melanostigma	+							+				
Podolepis gracilis	+	+		+			+		+	+	+	
Podolepis lessonii			+	+	+		+					
Podolepis rugata var rugata									+	+		
Podotheca angustifolia	+	+		+		+	+	+	+		+	
Podotheca chrysantha								+				
Podotheca gnaphaloides	+											
Pterochaeta paniculata	+	+	+							+		
Quinetia urvillei	+	+		+	+	+	+	+				
Rhodanthe citrina	+	+	+			+	+	+	+			+
Rhodanthe corymbosa	+	+										
* Senecio diaschides				+		+						
* Senecio elegans	+	+	+	+	+	+		+		+	+	
Senecio hispidulus var hispidulus								+	+	+	+	
Senecio multicaulis subsp. multicaulis								+	+	+		
Senecio pinnatifolius	+	+	+		+	+	+	+		+	+	
Senecio quadridentatus								+				+
Senecio ramosissimus			+			+	+	+	+	+	+	
* Sigesbeckia orientalis									+		+	

*Naturalised/ Name	1	2	3	4	5	6	7	8	9	10	11	con
<i>Siloxerus filifolius</i>									+			
<i>Siloxerus humifusus</i>	+	+		+	+				+			+
<i>Siloxerus multiflorus</i>	+	+	+			+						
* <i>Sonchus asper</i>	+		+	+	+	+	+	+	+			+
<i>Sonchus hydrophilus</i>	+	+		+	+	+			+			+
* <i>Sonchus oleraceus</i>	+	+	+	+	+	+	+		+			+
* <i>Symphotrichum subulatum</i>				+	+	+		+	+	+	+	+
* <i>Urospermum picroides</i>	+											
* <i>Ursinia anthemoides</i>	+	+	+			+	+	+				
* <i>Ursinia speciosa</i>								+				
* <i>Vellerophyton dealbatum</i>	+							+	+	+	+	+
<i>Waitzia nitida</i>	+							+				+
<i>Waitzia suaveolens</i>		+						+				+
Boraginaceae												
* <i>Echium plantagineum</i>			+									
<i>Myosotis australis</i>	+											+
Boryaceae												
<i>Borya constricta</i>				+	+							
<i>Borya scirpoidea</i>		+										
<i>Borya sphaerocephala</i>												+
Brassicaceae												
* <i>Brassica napus</i>	+											
* <i>Brassica tournefortii</i>	+	+		+			+		+			
* <i>Cakile maritima</i>	+	+	+	+		+	+	+		+	+	+
* <i>Cardamine hirsuta</i>									+			
<i>Cardamine paucijuga</i>												+
* <i>Diplotaxis muralis</i>					+			+	+	+	+	+
* <i>Heliophila pusilla</i>	+	+	+		+		+	+	+	+	+	+
* <i>Hornungia procumbens</i>								+				
* <i>Lepidium africanum</i>								+				
* <i>Lepidium didymum</i>												+
<i>Lepidium foliosum</i>												+
<i>Lepidium rotundum</i>	+						+	+	+			
* <i>Lobularia maritima</i>	+						+					
* <i>Matthiola incana</i>		+										
* <i>Rhaphanus raphanistrum</i>					+							
* <i>Rorippa nasturtium-aquaticum</i>								+	+			+
* <i>Sisymbrium irio</i>									+	+		+
* <i>Sisymbrium officinale</i>												+
<i>Stenopetalum robustum</i>	+	+	+		+		+	+	+	+		
Caesalpiniaceae												
<i>Labichea punctata</i>	+					+						
Campanulaceae												
* <i>Wahlenbergia capensis</i>	+											
<i>Wahlenbergia gracilentia</i>										+	+	
<i>Wahlenbergia multicaulis</i>					+			+				
<i>Wahlenbergia preissii</i>	+	+		+		+	+	+		+	+	
Caryophyllaceae												
* <i>Cerastium glomeratum</i>	+	+	+			+	+	+	+	+	+	+
* <i>Cerastium pumillum</i>	+											+
* <i>Illecebrum verticillatum</i>	+											
* <i>Petrohagia velutina</i>	+	+		+	+	+	+			+	+	
* <i>Sagina maritima</i>			+	+			+	+				+
* <i>Silene gallica</i> var <i>gallica</i>	+	+		+	+			+	+			
* <i>Silene gallica</i> var <i>quinqvunerula</i>	+	+			+		+	+		+	+	
* <i>Silene nocturna</i>	+							+				
* <i>Spargularia arvensis</i>								+		+		
* <i>Spargularia diandra</i>	+						+	+				+
* <i>Stellaria media</i>	+	+					+					

*Naturalised/ Name	1	2	3	4	5	6	7	8	9	10	11	con
Casuarinaceae												
Allocauarina fraseriana	+	+	+		+			+				+
Allocauarina humilis	+	+		+	+					+		+
Centrolepidaceae												
Aphelia cyperoides	+	+		+	+	+			+	+	+	
Centrolepis alepyroides								+				
Centrolepis aristata	+			+	+	+	+	+	+			
Centrolepis drummondiana	+	+	+	+	+			+	+			
Centrolepis fascicularis									+			
Centrolepis pilosa					+							
Centrolepis polygyna			+	+	+	+		+				+
Chenopodiaceae												
Atriplex cinerea	+		+	+		+						+
Atriplex hypoleuca					+							+
Atriplex isatidea	+	+		+	+	+						
* Atriplex prostrata				+	+	+						+
* Chenopodium album								+				+
* Chenopodium glaucum												+
* Chenopodium murale	+	+	+			+	+	+				
Chenopodium pumilio	+											
Dysphania glomulifera subsp. glomulifera	+											
Enchylaena tomentosa	+	+	+									
Halosarcia halocnemoides subsp. halocnemoides											+	
Halosarcia pergranulata subsp. pergranulata											+	
Maireana brevifolia	+							+				+
Rhagodia baccata subsp. baccata	+	+	+	+	+	+		+	+	+	+	+
Rhagodia baccata subsp. dioica	+											
Sarcocornia blackiana				+		+		+				
Sarcocornia quinqueflora subsp. quinqueflora	+		+	+	+	+						+
Suaeda australis					+	+						+
Threlkeldia diffusa	+	+	+	+	+	+	+	+				
Clusiaceae												
* Hypericum perforatum var. angustifolium									+	+		+
Colchicaceae												
Burchardia congesta	+	+	+	+	+		+	+	+			+
Burchardia multiflora	+			+					+			+
Wurmbea calcicola	+											
Wurmbea dioica subsp. alba			+		+						+	
Wurmbea monantha			+				+	+		+		
Convolvulaceae												
Calystegia soldanella					+							
Dichondra repens	+	+	+		+			+	+			+
* Ipomaea indica												+
Wilsonia backhousei				+								
Wilsonia humilis				+								
Crassulaceae												
Crassula closiana									+			
Crassula colorata var. colorata	+	+	+	+		+	+	+				
Crassula colorata var. acuminata							+			+		
Crassula decumbens	+											
Crassula exserta									+			
Crassula extrorsa												+
* Crassula glomerata	+	+	+	+	+	+	+	+		+	+	+
* Crassula natans var. minus	+		+	+					+			+
Crassula tetramera												+
* Crassula thunbergiana subsp. thunbergiana						+		+				+
Cuscutaceae												
* Cuscuta epithymum	+			+	+	+		+				+

DRF

*Naturalised/ Name	1	2	3	4	5	6	7	8	9	10	11	con
<i>Calectasia narragara</i>		+			+							+
<i>Dasyogon bromeliifolius</i>		+		+	+	+			+			
<i>Dasyogon hookeri</i>		+			+	+						
<i>Kingia australis</i>		+		+	+							
<i>Lomandra caespitosa</i>	+	+							+			+
<i>Lomandra drummondii</i>	+											
<i>Lomandra hermaphrodita</i>		+										
<i>Lomandra integra</i>		+	+				+	+	+			
<i>Lomandra micrantha</i> subsp. <i>micrantha</i>	+	+										+
<i>Lomandra nigricans</i>			+	+	+				+			
<i>Lomandra odora</i>	+											
<i>Lomandra pauciflora</i>	+		+		+		+	+	+	+	+	+
<i>Lomandra preissii</i>	+											
<i>Lomandra purpurea</i>									+			+
<i>Lomandra sericea</i>		+							+			+
<i>Lomandra sonderi</i>	+	+										+
<i>Lomandra suaveolens</i>	+	+		+	+							+
Dennstaedtiaceae												
* <i>Histiopteris incisa</i>					+							
<i>Pteridium esculentum</i>	+	+	+	+	+			+	+			+
Dilleniaceae												
<i>Hibbertia amplexicaulis</i>		+	+				+	+	+			+
<i>Hibbertia commutata</i>	+	+	+	+	+			+	+			
<i>Hibbertia cueniformis</i>	+	+	+	+	+	+	+	+	+	+	+	+
<i>Hibbertia cunninghamii</i>	+	+	+	+	+							+
<i>Hibbertia furfuracea</i>			+	+	+	+	+	+	+			+
<i>Hibbertia grossulariifolia</i>			+	+	+	+	+	+	+			+
<i>Hibbertia hypericoides</i>	+	+	+	+	+		+	+	+			+
<i>Hibbertia inconspicua</i>				+								+
<i>Hibbertia notibractea</i>				+	+	+	+					
<i>Hibbertia perfoliata</i>									+			+
<i>Hibbertia pilosa</i>									+	+		+
<i>Hibbertia racemosa</i>	+	+	+	+		+	+	+		+		+
<i>Hibbertia rhadinopoda</i>	+	+							+			
<i>Hibbertia serrata</i>	+	+	+	+			+	+	+			
<i>Hibbertia spicata</i> subsp. <i>spicata</i>	+											
Droseraceae												
<i>Drosera dichrosepala</i>				+								
<i>Drosera erythrorhiza</i> subsp. <i>erythrorhiza</i>	+	+	+	+			+	+	+	+	+	+
<i>Drosera fimbriata</i>				+								
<i>Drosera gigantea</i> subsp. <i>gigantea</i>				+								
<i>Drosera glanduligera</i>	+	+	+					+	+	+	+	+
<i>Drosera huegelii</i>				+								
<i>Drosera leucoblasta</i>				+								
<i>Drosera macrantha</i> subsp. <i>macrantha</i>	+							+		+		
<i>Drosera menziesii</i> subsp. <i>menziesii</i>	+			+			+					
<i>Drosera menziesii</i> subsp. <i>penicillaris</i>	+								+			
<i>Drosera pallida</i>	+						+	+	+	+	+	+
<i>Drosera platystigma</i>		+										
<i>Drosera pulchella</i>									+			
<i>Drosera stelliflora</i>				+								+
<i>Drosera stolonifera</i>	+	+	+				+			+	+	+
<i>Drosera sulphurea</i>									+			
<i>Drosera tubaestylis</i>	+	+					+					+
Ericaceae												
<i>Acrotriche cordata</i>							+	+				+
<i>Andersonia caerulea</i>	+				+		+	+	+			+
<i>Astroloma ciliatum</i>	+	+		+	+	+	+	+	+			+
<i>Astroloma drummondii</i>	+								+			
<i>Andersonia involucrata</i>	+											
<i>Andersonia micrantha</i>				+								
<i>Astroloma pallidum</i>	+		+	+						+	+	+
<i>Brachyloma preissii</i>		+							+			

*Naturalised/ Name	1	2	3	4	5	6	7	8	9	10	11	con
Conostephium pendulum						+						
Leucopogon assimilis				+	+					+	+	
Leucopogon australis	+						+					
Leucopogon capitellatus	+			+					+		+	
Leucopogon carinatus				+								
Leucopogon conostephioides	+	+			+							
Leucopogon cordatus				+		+	+	+	+			
Leucopogon distans							+					
Leucopogon elatior			+	+		+						
Leucopogon elegans			+			+		+	+	+	+	
Leucopogon glabellus			+									+
Leucopogon hirsutus		+			+					+	+	
Leucopogon obovatus							+	+	+			+
Leucopogon oxycedrus	+		+									
Leucopogon parviflorus	+	+	+	+	+	+	+	+	+			+
Leucopogon pendulus								+	+	+	+	+
Leucopogon propinquus	+	+	+	+	+	+	+	+	+	+	+	+
Leucopogon pulchellus	+			+								
Leucopogon racemulosus									+			
Leucopogon revolutus					+	+						
Leucopogon paradoxus									+			
Leucopogon tenuis	+		+									
Leucopogon unilateralis			+									
Leucopogon verticillatus		+			+		+		+	+	+	
Lysinema ciliatum	+	+			+	+						
Lysinema conspicuum									+			
Sphenotoma capitatum								+	+			+
Sphenotoma gracile							+		+			
Styphelia tenuiflora	+											
Euphorbiaceae												
Adriana quadripartita	+	+		+								
Ampera ericoides									+	+	+	
Ampera volubilis									+			
Beyeria viscosa	+	+	+	+	+							
* Euphorbia helioscopia								+				
* Euphorbia paralias	+	+		+	+			+	+			+
* Euphorbia peplus	+	+	+		+			+	+	+	+	+
* Mercurialis annua								+				
Monotaxis grandiflora	+											
Monotaxis occidentalis							+					+
Phyllanthus calycinus	+	+	+	+	+	+	+	+	+	+	+	+
Poranthera huegelii								+	+	+	+	+
Poranthera microphylla	+	+		+	+			+	+	+	+	+
Pseudanthus virgatus				+								
Fabaceae												
Aotus cordifolia					+							
Aotus gracillima			+		+				+			
Aotus sp. Scott River (Kenneally 2371)									+			
Bossiaea aquifolium subsp. aquifolium		+		+	+							
Bossiaea disticha					+			+	+	+	+	
Bossiaea eriocarpa	+	+		+	+	+	+	+	+	+	+	
Bossiaea linophylla		+		+	+	+	+	+	+	+	+	
Bossiaea ornata	+	+			+		+	+				
Bossiaea praetermissa					+				+			
Bossiaea rufa					+		+	+	+			+
Callistachys lanceolata		+		+	+		+		+			+
* Chaemactyctissus palmensis					+							
Chorizema aciculare subsp. aciculare	+	+										
Chorizema cordatum		+							+			
Chorizema diversifolium	+	+	+		+		+					+
Chorizema ilicifolium								+				
Chorizema nanum	+	+		+		+			+			
Chorizema rhombeum	+	+			+	+			+			
Daviesia angulata	+											

*Naturalised/ Name	1	2	3	4	5	6	7	8	9	10	11	con
Daviesia cordata	+											
Daviesia decurrens					+							
Daviesia divaricata	+	+		+								
Daviesia horrida	+	+										
Daviesia inflata		+										
Daviesia physodes	+	+										
Daviesia preissii	+	+										
Dillwynia sp A (R. Coveny 8036)	+											
* Dipogon lignosus									+			
Euchilopsis linearis			+									
Eutaxia epacridoides	+											
Eutaxia myrtifolia		+	+	+				+				+
Eutaxia virgata			+	+					+	+		
Gastrolobium bilobum				+	+		+					+
Gastrolobium praemorsum									+			
Gastrolobium spinosum		+										
* Genista linifolia									+			
Gompholobium capitatum		+		+								
Gompholobium confertum	+											
Gompholobium knightianum		+					+	+	+	+		
Gompholobium marginatum		+					+	+	+	+	+	
Gompholobium ovatum		+										
Gompholobium polymorphum		+					+	+	+	+	+	
Gompholobium preissii	+	+	+				+	+	+	+		
Gompholobium tomentosum	+	+		+		+	+	+	+	+		
Hardenbergia comptoniana	+	+	+	+	+	+	+	+	+	+	+	
Hovea chorizemifolia	+	+	+	+		+	+	+	+	+	+	
Hovea elliptica		+			+			+	+			+
Hovea pungens						+						
Hovea trisperma	+	+	+									
Isotropis cuneifolia	+	+			+		+	+	+			+
Jacksonia furcellata	+	+										
Jacksonia horrida	+	+	+	+	+	+	+	+	+	+	+	
Jacksonia sternbergiana	+	+										
Kennedia carinata									+			+
Kennedia coccinea	+	+		+	+		+	+	+	+	+	
Kennedia lateritia												+
Kennedia prostrata	+	+			+		+	+	+			+
Latrobea tenella									+			
* Lathyrus tingitanus								+	+			
* Lotus angustissimus	+	+	+	+	+	+	+	+	+	+	+	
* Lotus suaveolens			+	+			+	+	+			
* Lupinus luteus		+										
* Medicago polymorpha		+					+					
* Melilotus indicus	+	+	+		+		+	+		+		
Mirbelia dilatata	+	+	+	+	+				+			
Nemcia capitata	+											
* Ornithopus compressus		+	+		+				+	+	+	
* Ornithopus pinnatus					+							
Pultenaea brachytrypis		+										+
Pultenaea pinifolia									+			
Pultenaea reticulata	+			+		+			+			
Sphaerolobium drummondii	+								+			
Sphaerolobium medium	+	+										
Sphaerolobium nudiflorum									+			
Sphaerolobium vimineum				+	+							
Templetonia retusa	+	+	+	+	+		+	+	+	+	+	
* Trifolium arvense	+	+										
* Trifolium campestre var. campstre	+		+	+	+			+				
* Trifolium cernuum var. cernuum								+	+	+	+	
* Trifolium glomeratum	+	+	+									
* Vicia sativa subsp. sativa												+
Viminaria juncea	+	+	+	+	+				+	+		
Frankeniaceae												
Frankenia pauciflora	+		+	+				+		+	+	

DRF

P3

*Naturalised/ Name	1	2	3	4	5	6	7	8	9	10	11	con
Fumariaceae												
* <i>Fumaria bastardii</i>		+										
* <i>Fumaria capreolata</i>	+		+				+		+		+	
* <i>Fumaria muralis</i>	+		+									+
Gentianaceae												
* <i>Centaurium erythraea</i>	+	+	+	+	+	+	+	+	+	+	+	+
<i>Centaurium spicatum</i>				+						+		
* <i>Centaurium tenuiflorum</i>	+			+		+						
* <i>Cicendea filiformis</i>					+							+
Geraniaceae												
* <i>Erodium botrys</i>	+											
* <i>Erodium cicutarium</i>	+	+	+			+	+	+				+
* <i>Geranium molle</i>	+	+	+			+						+
<i>Geranium solanderi</i>	+	+		+	+	+		+	+			+
* <i>Pelargonium alchemilloides</i>								+				
<i>Pelargonium australe</i>								+				
* <i>Pelargonium capitatum</i>	+	+	+	+	+	+		+				+
<i>Pelargonium littorale</i> subsp. <i>littorale</i>	+	+	+				+	+	+			
Goodeniaceae												
<i>Anthotium junciforme</i>			+	+								P4
<i>Dampiera alata</i>			+									
<i>Dampiera coronata</i>				+								
<i>Dampiera hederacea</i>					+				+	+	+	
<i>Dampiera leptoclada</i>			+									
<i>Dampiera linearis</i>	+	+	+		+		+	+	+	+	+	+
<i>Dampiera trigona</i>	+		+		+				+			
<i>Diaspasis filifolia</i>										+		
<i>Goodenia caerulea</i>				+				+				+
<i>Goodenia etoniana</i>								+				+
<i>Goodenia micrantha</i>			+	+				+				
<i>Goodenia pulchella</i>			+						+			
<i>Goodenia pusilla</i>									+			
<i>Lechenaultia biloba</i>	+			+								
<i>Lechenaultia expansa</i>	+											
<i>Scaevola anchusifolia</i>	+											
<i>Scaevola calliptera</i>	+		+		+		+	+	+			
<i>Scaevola crassifolia</i>	+	+	+	+				+	+			
<i>Scaevola globulifera</i>								+	+	+	+	
<i>Scaevola lanceolata</i>			+		+							
<i>Scaevola nitida</i>	+	+	+					+	+	+	+	
<i>Scaevola striata</i> var. <i>striata</i>									+			
<i>Scaevola thesoides</i>									+			
<i>Velleia macrophylla</i>									+			
<i>Velleia trinervis</i>			+						+	+	+	
Haemodoraceae												
<i>Anigozanthos flavidus</i>		+	+		+		+	+	+			
<i>Anigozanthos humilis</i>	+	+					+					
<i>Anigozanthos manglesii</i> subsp. <i>manglesii</i>		+		+	+	+	+		+			
<i>Anigozanthos viridis</i> subsp. <i>viridis</i>			+									
<i>Conostylis aculeata</i> subsp. <i>aculeata</i>	+	+	+	+	+	+	+	+	+	+	+	+
<i>Conostylis aculeata</i> subsp. <i>gracilis</i>	+											
<i>Conostylis aculeata</i> subsp. <i>preissii</i>	+											+
<i>Conostylis candicans</i> subsp. <i>calciola</i>		+			+							
<i>Conostylis laxiflora</i>		+	+							+	+	
<i>Conostylis serrulata</i>							+					
<i>Conostylis setigera</i> subsp. <i>setigera</i>		+		+		+		+	+			
<i>Haemodorum discolor</i>		+										
<i>Haemodorum laxum</i>		+		+			+	+	+	+		
<i>Haemodorum simplex</i>			+									
<i>Haemodorum sparsiflorum</i>		+	+									
<i>Haemodorum spicatum</i>		+						+	+	+	+	
<i>Phellobocarya ciliatum</i>	+	+	+	+		+	+		+			
<i>Tribonanthes australis</i>			+	+								+
<i>Tribonanthes violacea</i>			+	+	+							+

*Naturalised/ Name	1	2	3	4	5	6	7	8	9	10	11	con
Haloragaceae												
Gliscrocaryon aureum		+	+									
Gonocarpus benthamii subsp. benthamii			+									+
Gonocarpus diffusus												+
Gonocarpus hexandrus subsp. integrifolius												+
Gonocarpus hexandrus subsp. serratus					+							+
Gonocarpus paniculatus				+								
Halorhagis digyna	+				+	+	+					
Meionectes brownii	+			+		+				+		+
Myriophyllum salsugineum								+				
Hypoxidaceae												
Hypoxis glabella var. glabella		+						+	+			+
Hypoxis occidentalis var. occidentalis				+				+				
Hypoxis vaginatus var. vaginatus							+					
Iridaceae												
* Chasmanthe floribunda						+			+			
* Ferraria crispa subsp. crispa									+			
* Freesia hybrid	+	+							+			+
* Gladiolus angustus	+											
* Gladiolus cardinalis									+			
* Gladiolus caryophyllaceus	+											
* Gladiolus undulatus								+	+			+
* Moraea flaccida	+		+									
Orthrosanthus laxus var. laxus	+	+						+	+			+
Orthrosanthus polystachyus									+	+		+
Patersonia occidentalis var. angustifolium					+				+			+
Patersonia occidentalis var. occidentalis	+	+	+	+	+	+	+	+	+	+	+	+
Patersonia pygmaea												+
Patersonia umbrosa var. umbrosa											+	+
Patersonia umbrosa var. xanthina		+	+	+	+		+	+	+	+	+	+
* Romulea rosea	+	+	+	+	+	+	+	+	+	+	+	+
* Sparaxis bulbilifera	+	+		+	+				+			+
* Watsonia marginata					+							
* Watsonia meriana var. bulbilifera		+			+							
* Watsonia verschfieldii				+					+			
Isoetaceae												
Isoetes drummondii				+								
Juncaceae												
Juncus amabilis				+	+				+			
* Juncus articulatus				+	+							+
* Juncus bufonius	+			+	+	+		+	+	+	+	+
Juncus caespiticius	+				+			+		+	+	+
* Juncus capitatus	+				+	+		+	+	+	+	+
Juncus holoschoenus			+		+	+				+		
Juncus kraussii subsp. australiensis			+	+	+	+		+				+
* Juncus microcephalus		+	+		+	+			+			+
Juncus oxycarpus												+
Juncus pallidus				+								+
Juncus pauciflorus				+	+				+			
Juncus planifolius			+	+	+				+			
Luzula meridionalis	+		+	+		+		+		+		+
Juncaginaceae												
Triglochin calcitrapum	+	+	+	+	+		+			+		
Triglochin centrocarpum	+			+	+			+	+			
Triglochin huegelii					+							+
Triglochin lineare									+	+	+	
Triglochin minutissima			+	+				+				+
Triglochin mucronata			+					+				+
Triglochin striatum			+	+	+			+				+
Triglochin trichophorum							+	+		+		

*Naturalised/ Name	1	2	3	4	5	6	7	8	9	10	11	con
Lamiaceae												
Hemiandra glabra subsp. glabra	+											
Hemiandra pungens var. pungens	+	+	+		+							
Hemigenia podalyrina	+	+										+
Hemigenia rigida								+		+		
Hemigenia sericea	+											
* Mentha pulegium					+			+	+			
* Mentha spicata					+							+
* Stachys arvensis	+	+	+						+	+	+	+
Westringia dampieri		+				+						
Lauraceae												
Cassytha flava	+	+		+	+	+	+	+				
Cassytha glabella								+	+	+	+	
Cassytha micrantha									+			+
Cassytha racemosa forma racemosa	+	+	+	+	+	+	+	+	+	+	+	+
Cassytha racemosa forma pilosa								+	+			
Lentibulariaceae												
Utricularia inaequalis								+				
Utricularia menziesii									+			+
Utricularia multifida			+	+				+				+
Utricularia tenella			+					+	+			
Utricularia violacea					+			+	+			+
Linaceae												
Linum marginale								+		+	+	
* Linum trigynum	+	+										
Lindsaeaceae												
Lindsaea linearis	+	+	+		+	+	+		+	+		
Lobeliaceae												
Grammatotheca bergiana					+	+			+			
Isotoma hypocrateriformis	+	+	+	+	+			+	+	+	+	
Isotoma scapigera			+		+		+	+				
Lobelia alata	+		+	+	+	+		+				+
Lobelia heterophylla								+				
Lobelia rarifolia							+	+				+
Lobelia rhombifolia	+								+			+
Lobelia rhytidosperra		+		+								+
Lobelia tenuior	+	+	+	+		+	+	+	+			+
* Monopsis debilis		+		+								
Loganiaceae												
Logania campanulata				+	+							
Logania serpyllifolia subsp. angustifolia	+	+				+	+	+	+	+	+	+
Logania serpyllifolia subsp. serpyllifolia	+		+					+	+	+		
Logania vaginalis	+		+	+				+	+	+	+	
Phyllangium divergens												+
Phyllangium paradoxum	+	+		+			+	+	+			
Loranthaceae												
Nuytsia floribunda	+	+	+	+	+	+			+	+	+	
Lycopodiaceae												
Phylloglossum drummondii	+	+	+									+
Lythraceae												
* Lythrum hyssopifolia				+	+				+			+
Malvaceae												
Alogyne huegelii var. glabrescens			+									
Alogyne huegelii var. huegelii							+	+				
Malva preissiana												+
Myoporum caparoides												+
Myoporum insulare			+	+		+						

*Naturalised/ Name	1	2	3	4	5	6	7	8	9	10	11	con
<i>Caladenia longicauda</i> subsp. <i>merrittii</i>									+			
<i>Caladenia longiclavata</i>	+											
<i>Caladenia macrostylis</i>	+		+				+		+	+	+	
<i>Caladenia marginata</i>		+						+	+	+	+	
<i>Caladenia nana</i> subsp. <i>unita</i>	+	+		+	+			+	+			+
<i>Caladenia nivalis</i>	+	+	+	+								
<i>Caladenia paludosa</i>										+	+	
<i>Caladenia pholocoidea</i> subsp. <i>pholocoidea</i>	+	+			+							+
<i>Caladenia pholocoidea</i> subsp. <i>augustensis</i>	+											
<i>Caladenia plicata</i>					+							
<i>Caladenia reptans</i> subsp. <i>reptans</i>	+			+	+				+			+
<i>Caladenia rhomboidiformis</i>	+		+	+	+				+			+
<i>Caladenia thinicola</i>		+										
<i>Caladenia</i> sp. Boranup (M. Spencer 71)									+			
<i>Caladenia viridescens</i>	+											DRF
<i>Corybas despectans</i>									+			
<i>Corybas recurvus</i>									+		+	
<i>Cryptostylis ovata</i>									+	+		
<i>Cyanicula deformis</i>	+	+								+	+	
<i>Cyanicula gemmata</i>								+	+	+	+	
<i>Cyanicula gertrudiae</i>		+										
<i>Cyanicula sericea</i>								+	+	+	+	
<i>Cyrtostylis huegelii</i>		+			+				+	+	+	
<i>Cyrtostylis robusta</i>				+								
* <i>Disa bracteata</i>		+				+		+	+	+	+	
<i>Diuris amplissima</i>	+	+	+	+								
<i>Diuris corymbosa</i>		+		+								
<i>Diuris laevis</i>					+			+	+			
<i>Diuris laxiflora</i>	+			+								
<i>Diuris longifolia</i>		+		+					+			
<i>Drakaea glyptodon</i>									+		+	
<i>Drakaea livida</i>				+			+					
<i>Drakaea thynniphila</i>				+								
<i>Elythranthera brunonis</i>	+			+	+		+		+	+	+	
<i>Elythranthera emarginata</i>	+				+							
<i>Eriochilus dilatatus</i> subsp. <i>dilatatus</i>										+	+	
<i>Eriochilus dilatatus</i> subsp. <i>multiflorus</i>	+				+	+			+			
<i>Eriochilus heleonomos</i>			+									
<i>Eriochilus scaber</i> subsp. <i>scaber</i>	+		+				+		+			
<i>Leporella fimbriata</i>		+							+		+	
<i>Leptoceras menziesii</i>							+	+	+	+	+	
<i>Lyperanthus serratus</i>							+	+	+		+	
<i>Microtis alba</i>					+				+			
<i>Microtis atrata</i>				+					+			
<i>Microtis media</i> subsp. <i>densiflora</i>	+											
<i>Microtis media</i> subsp. <i>media</i>								+	+	+	+	
<i>Paracaleana nigrita</i>					+							
<i>Praecoxanthus aphyllus</i>	+	+		+		+						
<i>Prasophyllum brownii</i>							+					
<i>Prasophyllum calcicola</i>		+		+			+	+				
<i>Prasophyllum elatum</i>		+		+				+			+	
<i>Prasophyllum fimbria</i>	+	+										
<i>Prasophyllum gracile</i>		+		+			+					
<i>Prasophyllum hians</i>								+				
<i>Prasophyllum parvifolium</i>		+		+		+						
<i>Pterostylis aspera</i>		+										
<i>Pterostylis barbata</i>									+			
<i>Pterostylis brevisepala</i>		+		+				+				
<i>Pterostylis</i> sp. <i>Cauline Leaves</i> (Gibson & Lyons 1490)							+		+	+	+	
<i>Pterostylis pyramidalis</i>					+							
<i>Pterostylis recurva</i>		+	+		+			+	+	+		
<i>Pterostylis rogersii</i>		+										
<i>Pterostylis</i> sp. <i>Crinkle Leaves</i> (G. Keighery 13426)				+	+							
<i>Pterostylis turfosa</i>		+		+								
<i>Pterostylis vittata</i>		+		+	+			+	+	+	+	
<i>Pyrorchis nigricans</i>					+		+	+	+	+		
<i>Thelymitra cornicina</i>								+			+	

*Naturalised/ Name	1	2	3	4	5	6	7	8	9	10	11	con
Austrodanthonia pilosa								+				
Austrodanthonia setacea	+	+	+	+	+		+	+				+
Austrostipa compressa	+	+			+	+	+	+	+			+
Austrostipa elegantissima	+											
Austrostipa flavescens	+	+			+	+	+	+		+		
Austrostipa mollis		+										
Austrostipa semibarbata	+	+		+	+			+	+			
* Avellina michelii	+	+	+			+		+		+	+	
* Avena barbata	+	+	+	+	+			+	+	+	+	
* Briza maxima	+	+	+	+	+	+	+	+	+	+	+	
* Briza minor	+	+	+	+	+							
Bromus arenarius	+	+		+								
* Bromus catharticus							+	+	+	+	+	
* Bromus diandrus	+	+	+	+	+	+		+				+
* Bromus hordeaceus	+	+										
* Bromus madritense	+	+		+								
* Cynodon dactylon		+	+									
* Cynosurus echinatus					+			+				
* Desmazeria rigida	+		+				+	+				
Deyeuxia quadriseta		+			+			+				+
Dichelachne crinita	+						+	+	+	+	+	
* Digitaria sanguinalis			+	+				+	+			+
Echinopogon ovatus			+		+							
* Ehrharta calycina	+	+	+	+	+							
* Ehrharta erecta	+							+				+
* Ehrharta longifolia	+	+	+	+	+	+		+	+			
* Ehrharta villosa					+	+						+
Elymus scaber	+	+										+
* Glyceria declinata				+	+							
Hemarthria uncinata var uncinata								+				
* Holcus lanatus		+	+	+	+				+	+	+	
* Hordeum geniculatum							+					
* Hordeum leporinum	+	+		+								
* Hyparrhena hirta				+								
Lachnagrostis filiformis	+				+							
* Lagurus ovatus	+	+	+	+	+				+	+	+	
* Lolium perenne	+	+										
* Lolium rigidum	+	+	+	+	+	+		+	+	+	+	
* Lolium temulentum								+				+
Microlaena stipoides var stipoides	+	+	+	+	+		+	+	+	+	+	
Neurachne alopecuroidea	+	+		+	+	+						
* Panicum capillare var capillare	+							+				
* Paraphlois incurva	+	+		+	+							
* Paspalum dilatatum				+								+
* Paspalum distichum			+	+	+							
* Paspalum urvillei				+								
* Paspalum vaginatum	+			+	+	+						+
* Pennisetum clandestinum		+		+					+			+
* Pennisetum purpureum			+									
* Pentaschistis airoides	+		+		+				+	+	+	
* Phleum arenarium		+	+									
* Phleum pratense					+							
* Poa annua												+
Poa drummondiana	+	+		+			+	+	+			
Poa poiformis		+	+	+	+	+	+	+				+
Poa porphyroclados	+			+	+			+	+			
* Polypogon monspeliensis				+	+			+	+			+
Polypogon tenellus								+				
Spinifex hirsutus	+	+	+	+	+	+	+	+		+	+	
Spinifex longifolius	+	+	+		+	+	+	+		+		
* Sporobolus indicus var capensis		+		+				+	+			+
Sporobolus virginicus				+	+	+	+	+				+
* Stenotaphum secundatum				+	+		+	+	+	+	+	
Tetrarrhena laevis		+	+		+	+	+	+	+			+
* Vulpia fasciculata								+				
* Vulpia myuros	+	+		+	+	+		+		+		

*Naturalised/ Name	1	2	3	4	5	6	7	8	9	10	11	con
Podocarpaceae												
Podocarpus drouynianus					+	+	+	+	+	+	+	
Polygalaceae												
Comesperma calymega	+	+						+	+			
Comesperma confertum	+	+	+		+	+	+		+			
Comesperma flavum									+			
Comesperma nudiusculum									+			
Comesperma virgatum				+			+	+	+		+	
										+		
Polygonaceae												
* Acetosella vulgaris				+								
* Emex australis	+	+										
Muehlenbeckia adpressa	+		+		+	+	+	+	+	+	+	
Persicaria decipiens			+	+								+
Persicaria prostrata		+		+								
* Rumex crispus				+	+							
Portulacaceae												
Calandrinia brevipedata	+	+					+			+		
Calandrinia composita				+								
Calandrinia corrigioloides	+											
Calandrinia granulifera	+	+										
Calandrinia liniflora	+		+	+	+							
Calandrinia sp. SW Coastal (J. Dodd 753)	+	+										
Potamogetonaceae												
Potamogeton drummondii						+						
Potamogeton pectinatus				+			+					
Primulaceae												
* Anagallis arvensis var. arvensis	+	+		+	+	+			+			
* Anagallis arvensis var. caerulea	+	+	+	+	+			+	+	+	+	
Samolus junceus				+								
Samolus repens var repens				+	+	+	+	+				+
* Samolus valerandi			+	+	+							+
Proteaceae												
Adenanthos barbiger subsp. barbiger		+	+	+								
Adenanthos meisneri	+	+	+	+		+	+					
Adenanthos obovatus	+			+					+			
Banksia attenuata	+	+	+	+	+	+	+					
Banksia dellyeana var lindleyana	+	+	+	+	+	+	+					
Banksia delleyana var sylvestris									+			
Banksia grandis	+	+		+			+		+		+	
Banksia illicifolia		+	+	+	+	+			+			
Banksia littoralis		+	+	+					+			
Banksia nivea var nivea				+			+					
Banksia seminuda								+				
Banksia sessilis var cordata	+	+		+	+	+	+	+	+	+	+	P4
Conospermum caeruleum subsp. debile	+			+								
Conospermum capitatum subsp. glabratum	+	+		+			+		+			
Grevillea quercifolia		+			+	+						
Grevillea vestita subsp. vestita	+				+						+	
Hakea amplexicaulis					+				+			
Hakea ceratophylla			+		+							
Hakea linearis							+	+	+	+		
Hakea lissocarpha	+				+	+	+					+
Hakea oleifolia	+	+		+		+	+	+	+	+	+	
Hakea prostrata	+	+	+	+	+	+	+	+	+	+	+	
Hakea ruscifolia	+			+	+	+	+	+	+	+	+	
Hakea sulcata									+			
Hakea trifurcata	+	+	+	+								
Hakea varia			+	+	+	+						
Isopogon sphaerocephalus		+										
Persoonia elliptica	+	+		+			+	+	+			

*Naturalised/ Name	1	2	3	4	5	6	7	8	9	10	11	con
<i>Persoonia longifolia</i>		+	+	+		+	+		+			
<i>Petrophile axillaris</i>						+	+	+				
<i>Petrophile linearis</i>	+	+	+	+	+	+						
<i>Petrophile serruriae</i>				+	+							
<i>Synaphea floribunda</i>		+										
<i>Synaphea gracillima</i>				+								
<i>Synaphea petiolaris</i>	+	+		+	+							
<i>Xylomelon occidentale</i>		+			+				+			
Pteridaceae												
<i>Pteris vittata</i>					+	+		+				
Ranunculaceae												
<i>Clematis linearifolia</i>	+	+										
<i>Clematis pubescens</i>	+			+	+		+	+	+			+
<i>Ranunculus colonorum</i>		+	+		+		+	+	+	+		+
* <i>Ranunculus muricatus</i>		+						+				+
<i>Ranunculus pumilio</i>		+										
<i>Ranunculus sessiliflorus</i> subsp. <i>sessiliflorus</i>								+				
Restionaceae												
<i>Anarthria gracilis</i>				+	+	+						
<i>Anarthria laevis</i>	+				+							
<i>Anarthria prolifera</i>				+	+	+			+			
<i>Anarthria scabra</i>	+	+	+		+		+	+	+	+	+	+
<i>Chaetanthus aristatus</i>									+			+
<i>Chaetanthus leptocarpoides</i>									+			
<i>Desmocladius asper</i>	+	+		+	+			+	+			
<i>Desmocladius fasciculatus</i>	+	+		+					+			
<i>Desmocladius flexuosus</i>	+	+	+	+	+	+	+	+	+			+
<i>Empodisma gracillimum</i>									+			
<i>Hypolaena exsulca</i>		+	+	+	+	+	+		+			
<i>Hypolaena macrotepala</i>				+								
<i>Hypolaena pubescens</i>				+								+
<i>Hypolaena viridis</i>							+	+				
<i>Leptocarpus laxus</i>									+			
<i>Lepyrodia muirii</i>									+			
<i>Loxocarya cinerea</i>	+	+	+	+	+	+	+	+	+	+		
<i>Lyginia barbata</i>	+		+	+	+	+		+	+	+		
<i>Meeboldina cana</i>									+			
<i>Meeboldina coangustata</i>									+			
<i>Meeboldina crebriculmis</i>									+			
<i>Meeboldina denmarkica</i>							+					
<i>Meeboldina scariosa</i>				+	+		+		+			
<i>Meeboldina tephрина</i>				+					+			
<i>Meeboldina thysanantha</i>									+			
<i>Melanostachya ustulata</i>									+			+
<i>Sporodanthus strictus</i>									+			
<i>Stenotalis ramosissima</i>				+	+							+
<i>Stenotalis ramosissima</i>				+	+							+
Rhamnaceae												
<i>Cryptandra arbutiflora</i> var. <i>tubulosa</i>	+	+	+	+		+						
<i>Spyridium globulosum</i>	+	+	+	+	+	+	+	+	+	+	+	+
<i>Trymalium floribundum</i> subsp. <i>trifidum</i>		+			+		+	+	+			+
<i>Trymalium ledifolium</i> var. <i>rosmarinifolium</i>	+	+	+				+					
Rosaceae												
* <i>Acaena echinata</i>	+							+	+			+
* <i>Rubus bellobatus</i>								+	+			
* <i>Rubus discolor</i>				+								
* <i>Rubus ulmifolius</i>										+	+	
Rubiaceae												
* <i>Galium divaricatum</i>			+									+
<i>Galium leptogonium</i>									+	+		P3

*Naturalised/ Name	1	2	3	4	5	6	7	8	9	10	11	con
* Galium murale	+	+		+				+		+	+	
Opercularia apiciflora		+			+		+	+	+	+		
Opercularia echinocephala				+								
Opercularia hispidula			+		+		+	+	+			+
Opercularia vaginata	+	+		+	+	+	+	+				
Opercularia volubilis					+				+			
* Sherardia arvensis	+		+		+		+	+	+	+		
Ruppiaceae												
Ruppia megacarpa							+	+				
Rutaceae												
Boronia alata	+	+	+	+	+	+	+	+	+			+
Boronia anceps				+								
Boronia crenulata subsp. crenulata						+	+	+	+			
Boronia crenulata subsp. pubescens	+			+								
Boronia dichotoma	+											
Boronia gracilipes					+				+	+	+	
Boronia molloyae		+			+							
Boronia ramosa subsp. anethifolia		+										
Boronia stricta						+						
Chorilaena quercifolia			+	+			+		+			+
Diplolaena dampieri	+	+	+	+			+	+				+
Diplolaena microcephala									+			+
Philotheca spicata	+	+	+	+	+		+	+	+	+		
Rhabdinothermus anceps			+	+	+		+		+			+
Santalaceae												
Exocarpus odoratus								+				+
Exocarpus sparteus	+		+		+		+	+	+			
Leptomeria scrobiculata										+		
Leptomeria squarrolosa							+		+	+	+	
Santalum acuminatum	+	+		+	+	+	+	+	+			
Sapindaceae												
Dodonaea aptera	+	+	+	+		+						
Dodonaea ceratocarpa		+	+	+								+
Schizaeaceae												
Schizaea fistulosa												+
Scrophulariaceae												
* Bartsia trixago	+	+	+	+	+			+	+			
* Dischisma arenarium	+	+	+	+	+			+		+		
Gratiola pubescens				+	+	+		+	+	+	+	
* Parentucellia latifolia	+			+	+	+	+	+	+	+	+	
* Parentucellia viscosa	+			+				+		+		
* Verbascum virgatum	+				+				+			
* Veronica arvensis					+							
Veronica distans	+	+	+		+		+	+	+			
Veronica plebeia				+							+	
Selaginellaceae												
Selaginella gracillima			+	+	+			+	+			+
Solanaceae												
Anthocercis littorea		+		+			+	+	+			+
* Physalis peruviana					+				+			
* Solanum americanum					+							+
* Solanum linnaeanum												+
* Solanum nigrum					+				+			+
Solanum symonii					+		+	+	+	+	+	+
Stackhousiaceae												
Stackhousia pubescens	+	+		+	+		+	+	+	+		
Tripterococcus brunonis	+	+	+			+	+	+	+	+		

P3

*Naturalised/ Name	1	2	3	4	5	6	7	8	9	10	11	con
Sterculiaceae												
Guichenotia ledifolia	+		+									
Lasiopetalum floribundum					+				+			
Rulingia corylifolia												+
Rulingia cygnorum	+											
Rulingia grandiflora										+		
Thomasia cognata	+	+		+								
Thomasia heterophylla									+			
Thomasia purpurea			+									
Thomasia triloba									+			
Thomasia triphylla	+	+	+	+	+		+	+				+
Stylidiaceae												
Levenhookia dubia		+		+				+				
Levenhookia pauciflora							+	+	+	+	+	
Levenhookia preissii		+										
Levenhookia pusilla	+	+	+	+	+	+	+		+			
Levenhookia stipitata	+	+	+	+	+							
Stylidium adnatum var adnatum	+	+	+				+	+	+			
Stylidium affine	+											+
Stylidium amoenum		+	+		+		+		+			+
Stylidium brevis	+	+		+	+		+		+			
Stylidium breviscapum		+										
Stylidium bulbiferum				+								
Stylidium caespitosum									+			
Stylidium calcaratum	+	+			+	+			+	+		
Stylidium carnosum									+			
Stylidium ciliatum					+				+			
Stylidium crassifolium			+									+
Stylidium despectum									+			
Stylidium diversifolium	+								+			
Stylidium ecorne	+			+	+		+					
Stylidium emarginatum								+	+			
Stylidium fasciculatum				+		+	+	+	+	+	+	
Stylidium glaucum				+								
Stylidium guttatum			+						+			
Stylidium hesperium				+	+			+				
Stylidium innundatum				+								+
Stylidium junceum	+								+			
Stylidium laciniatum							+		+			
Stylidium lowrieianum		+	+		+	+	+	+				
Stylidium luteum				+								
Stylidium mimeticum									+			
Stylidium neurophyllum	+	+	+									
Stylidium perpusillum					+	+						
Stylidium petiolare	+			+					+			
Stylidium piliferum	+			+	+							
Stylidium pygmaeum									+			
Stylidium repens var. repens				+	+	+						
Stylidium rhynchocarpum			+		+		+	+	+			+
Stylidium scandens									+			+
Stylidium schoenoides	+	+	+									
Stylidium spathulatum	+											
Stylidium squamotuberosum									+			
Stylidium violaceum					+	+						
Thymelaeaceae												
Pimelea angustifolia			+	+					+			+
Pimelea argentea								+	+	+		
Pimelea ciliata subsp. longituba										+		P3
Pimelea clavata								+	+			+
Pimelea ferruginea	+	+	+	+	+	+	+	+	+	+	+	+
Pimelea hispida									+			+
Pimelea imbricata var piligera					+							
Pimelea lanata			+									
Pimelea longiflora subsp. longiflora			+				+					

*Naturalised/ Name	1	2	3	4	5	6	7	8	9	10	11	con
<i>Pimelea preissii</i>	+	+						+	+			+
<i>Pimelea rosea</i> subsp. <i>rosea</i>	+	+			+	+		+	+	+		+
<i>Pimelea spectabilis</i>	+	+			+							+
<i>Pimelea suaveolens</i> subsp. <i>suaveolens</i>		+										
<i>Pimelea sylvestris</i>					+		+	+	+	+		+
Tremandraceae												
<i>Tetradlea affinis</i>	+		+	+								
<i>Tetradlea filiformis</i>							+		+			
<i>Tetradlea hirsuta</i>	+	+				+	+					
<i>Tetradlea setigera</i>	+		+	+	+	+			+			
<i>Tremandra diffusa</i>		+			+		+		+	+		+
<i>Tremandra stelligera</i>					+				+			+
Typhaceae												
* <i>Typha orientalis</i>				+	+	+						+
Urticaceae												
<i>Parietaria debilis</i>	+	+	+	+			+	+	+	+	+	+
* <i>Soleirolia soleirolii</i>											+	+
Violaceae												
<i>Hybanthus calycinus</i>	+	+		+	+	+						
<i>Hybanthus debilissimus</i>								+	+			+
* <i>Viola odorata</i>									+			
Xanthorrhoeaceae												
<i>Xanthorrhoea gracilis</i>	+	+		+	+		+					
<i>Xanthorrhoea preissii</i>	+	+	+	+	+	+	+	+	+	+	+	+
Xyridaceae												
<i>Xyris gracillima</i>									+			
<i>Xyris lacera</i>									+			
<i>Xyris roycei</i>									+			
Zamiaceae												
<i>Macrozamia fraseri</i>	+	+	+	+	+	+	+	+	+	+	+	+
Zygophyllaceae												
<i>Nitraria billardierei</i>	+	+				+		+		+		