

Flora and vegetation of the southern Carnarvon Basin, Western Australia

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Abstract – This paper reports the first detailed study of the vascular flora of the southern Carnarvon Basin, an area of c. 75 000 km². A total flora of 2133 taxa of vascular plants was listed for the area. There are eight major conservation reserves which have 1559 taxa present in them. Most of the 574 unreserved taxa are wetland taxa, taxa of tropical affinities or those only present on the Acacia shrublands of the central basin. Vegetation patterning at a regional scale showed the major floristic boundary in the south west of the study area, which in turn reflected the major climatic gradients of the area. The other major influence on vegetation patterning was soil type.

INTRODUCTION

Despite Shark Bay being the site of very early visitation and study by several European expeditions (Beard, 1990; Keighery, 1990; George, 1999) the area was until recently still poorly known botanically. Beard (1975, 1976a) prepared structural vegetation maps for the whole area at a 1: 1 000 000 scale and Payne *et al.* (1987) have undertaken land system maps (rangeland mapping) for the whole area at a 1: 250 000 scale. More localised areas have been mapped and published for the Kalbarri-Shark Bay area by Beard (1976b, 1976c) at a scale of 1: 250 000.

Limited floristic surveys have been undertaken in the north of the study area around Lake MacLeod by Tyler (1988), Rocky Pool near Carnarvon by Kenneally (1978) and Cape Range by Keighery and Gibson (1993). Other localised studies have involved the Shark Bay World Heritage Area by Trudgen and Keighery (1995), Bernier and Dorre Islands by Royce (1962), Dirk Hartog Island by Burbidge and George (1978), Kennedy Range by Newbey and Newbey (1992) and Toolonga Nature Reserve by Burbidge *et al.* (1980).

The present work is part of a multi-disciplinary study to sample the biodiversity of a 75 000 km² region of Western Australia (the southern Carnarvon Basin) and identify biophysical factors related to the observed patterns of species distribution (Burbidge *et al.*, 2000).

The aim of this paper is to describe the flora and vegetation of the major landforms sampled as biodiversity sites and to discuss the composition, biogeographic patterns and conservation status of the vascular plants of the study area. Related papers in this volume deal with the wetland flora (Gibson, Keighery and Lyons, 2000) and the flora of the

temperate – arid change-over zone (Gibson, Burbidge, Keighery and Lyons, 2000).

METHODS

Study area

The study area covered by the flora survey extended from 23°30'S to 28°00'S and from Dirk Hartog Island and Shark Bay in the west to 115°30'E (Figure 1). The southwest of the study area encompasses the change over from the South West Botanical Province to the Eremaean Province and hence is an area of major vegetation change. Almost the entire study area falls within the Carnarvon and Irwin botanical districts of Beard (1990). These districts largely correspond to two IBRA regions – Geraldton Sandplain and Carnarvon (Thackway and Cresswell, 1995).

Field sampling and analysis

Sixty-three primary sites were sampled across the study area, stratified to cover the geographic range of the major surface types of the Basin. Sites were selected such that three to five different surface-types could be sampled in close proximity to facilitate fauna sampling (Figure 1). Sites 30 m x 30 m were established at each site and all vascular plants occurring in the sites were recorded. Sites were visited twice, in August 1994 and August 1995. Some additional recordings were made when the sites were visited at other times in conjunction with fauna sampling. Sites were classified according to similarities in species composition (presence/absence data) using the Czekanowski coefficient and 'unweighted pair-group mean average' fusion method (UPGMA, Sneath and

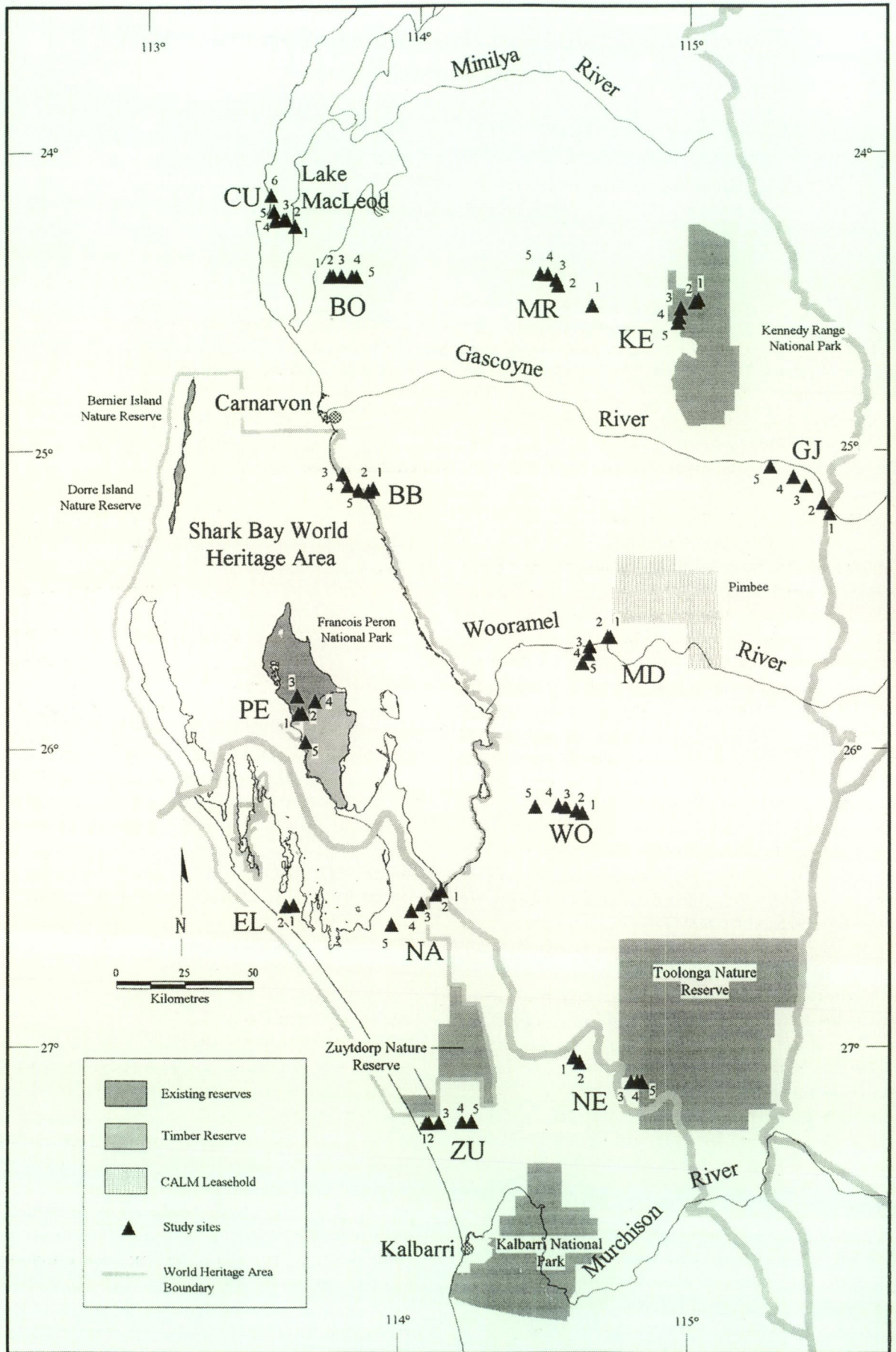


Figure 1 Location of 63 primary sampling sites and major conservation reserves in the study area.

Sokal, 1973), while species were classified using the 'two step' method of Austin and Belbin (1982) and the UPGMA fusion method. Only taxa identified to species level were included in the analysis (>95% records). Annuals and geophytes were included in the analysis because all sites but one (NE2) were considered to have had good rains prior to at least one of the sampling periods.

A bulked soil sample (consisting of 24 regularly spaced subsamples across the site) of the top 10 cm was collected from each site, and soil mechanical analysis and macro nutrient analyses were undertaken on these samples [see McArthur (1991) for details]. Eleven climatic parameters for each site were estimated from the climate modelling program ANUCLIM (McMahon *et al.*, 1995). Statistical relationships between site groups were tested using Kruskal - Wallis non-parametric analysis of variance and Mann Whitney U-tests (Siegel, 1956).

In addition to the 63 primary sites, flora lists were available from 75 extra sites in the southern part of the study area (Gibson, Burbidge, Keighery and Lyons, 2000) and from the wetland survey (Gibson, Keighery and Lyons, 2000). Additional sampling efforts in six mainland reserves were also undertaken to compile comprehensive species lists for the eight major reserves (Figure 1) in the study area. These lists also include previously published surveys and collections held in the Western Australian Herbarium (PERTH). The total known vascular flora of the study area (Appendix 1) was compiled from the current and previous surveys, and from collections held in PERTH.

Nomenclature generally follows Green (1985) and current usage at PERTH. Over 2200 voucher specimens have been lodged in PERTH.

RESULTS

The results are given in two sections. The first deals with the overall vascular flora recorded for the study area, its composition and conservation. It provides a floristic context for the interpretation of the second part, which deals with quantitative patterns in the floristic composition of the biodiversity sites and how this patterning relates to the biophysical attributes of the study area.

Flora

Composition

A total of 2133 taxa of vascular plants from 122 families were recorded from the study area (Appendix 1). These comprised 9 ferns or fern allies, 2 gymnosperms and 2122 flowering plants (of which 88 were naturalised aliens).

The largest families were the Myrtaceae (231 taxa, 10.8% of the flora), Asteraceae (181 taxa, 8.5%), Poaceae (168 taxa, 7.9%), Chenopodiaceae (106,

5.0%), Papilionaceae (105, 4.9%), Mimosaceae (95, 4.5%), Proteaceae (93, 4.4%), Goodeniaceae (71, 3.3%), Cyperaceae (61, 2.9%), Orchidaceae (57, 2.7%), Amaranthaceae (50, 2.3%), Myoporaceae (50, 2.3%) and Malvaceae (48, 2.3%). Together these 13 families comprise 51.7% of the total flora.

Of the remaining 109 families, only 12 contained at least 20 species: Euphorbiaceae (36 taxa), Brassicaceae (32), Solanaceae (32), Anthericaceae (28), Zygophyllaceae (26), Apiaceae (22), Epacridaceae (22), Sterculiaceae (22), Boraginaceae (21), Chloanthaceae (21), Haemodoraceae (20) and Portulacaceae (20). These 12 families combined contributed 14.2% of the total flora.

Several significant collections were made during the survey, including the re-collection of *Rumex crystallinus* (the first record since 1877). Three apparently new taxa were first collected during the survey: *Paracaleana lyonsii* ms (Orchidaceae), *Calandrinia* sp. Coolcalalaya (GK and NG 698) (Portulacaceae) and *Eremophila glabra* subsp. Zuytdorp (GK and NG 518) (Myoporaceae).

The broad composition of the flora reflects the major climatic influences affecting the study area. There is a southern coastal winter rainfall zone and an inland and northern arid zone. The whole study area is still dominated by winter rainfall (Wyrwoll, Courtney and Sandercock, 2000). Immediately north of the study area, summer rainfall begins to dominate. The majority of the study area is arid and forms part of the Eremaean Botanical Province (Beard, 1975, 1976a). This pattern is also clearly seen in the results for the vegetation analysis (see below).

This strong desert influence is clearly demonstrated in the composition of the flora, with arid zone taxa dominating in six of the speciose families (Amaranthaceae, Asteraceae, Goodeniaceae, Malvaceae, Myoporaceae and Poaceae) and in nearly all the smaller families (Euphorbiaceae, Brassicaceae, Solanaceae, Zygophyllaceae, Apiaceae, Sterculiaceae, Boraginaceae, Chloanthaceae, and Portulacaceae). These desert influences are from predominantly temperate or winter rainfall semi-arid or arid areas, rather than a tropical desert flora. This can be illustrated using the Asteraceae, the largest family recorded from the study area.

The family has 492 native taxa present in Western Australia, of which 181 were recorded from the study area. Species richness in the family is greatest in the Avon-Wheatbelt and Coolgardie IBRA regions (areas of Mediterranean and arid-Mediterranean climate) of Western Australia (Figure 2). The family, though spread widely through the arid zone (providing the spectacular wildflower displays of the *Acacia* shrublands) and tropics, is species rich in temperate Western Australia.

The Asteraceae of the study area are a reflection of the above pattern, being comprised mainly of

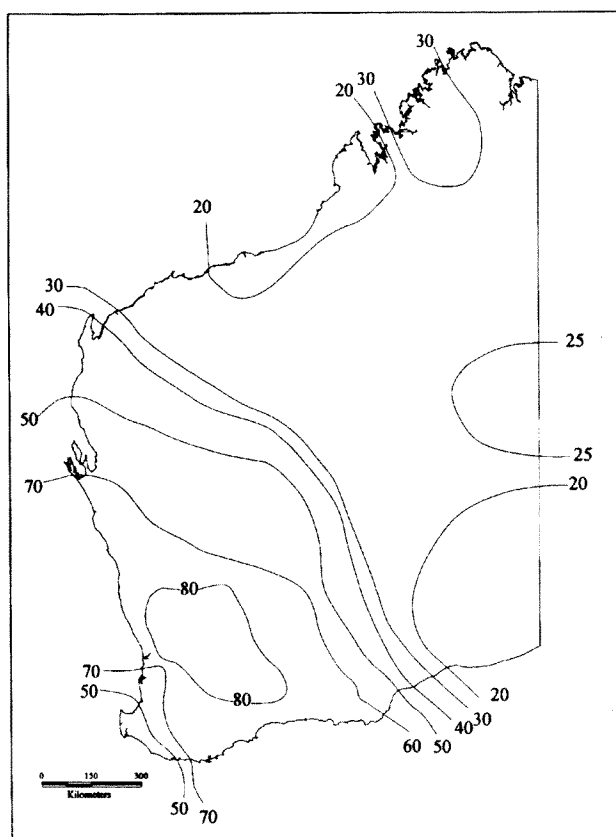


Figure 2 Species richness patterns of the native Asteraceae of Western Australia.

annuals (52 taxa) that are widespread in the winter rainfall areas of the semi-arid and arid zone. There are also 20 taxa of the temperate zone that end their ranges in the Basin (not necessarily in the study area, e.g. *Brachycome iberidifolia*, *Chthonocephalus pseudevax* and *Cratystylis subspinescens*) and 13 tropical taxa that are at their southern limits (e.g. *Blumea tenella*, *Launaea sarmentosa*, *Pluchea rubelliflora* and *Streptoglossa bubakii*). There is also a component of 12 taxa that are either endemics or species centred on the Basin (e.g. *Chthonocephalus oldfieldianus*, *Haptotrichion colwillii*, *Rhodanthe cremea* and *Rhodanthe oppositifolia* subsp. *ornata*). Many of these are recently described or still unnamed.

The pattern shown in the Asteraceae is repeated in the Poaceae (Keighery, 1984), Chenopodiaceae (Wilson, 1984), Amaranthaceae and Goodeniaceae (Carolin *et al.*, 1992). The desert elements of the flora are largely of southern affinities rather than arid tropical, as would be found further north.

The other major influence is that the study area contains a portion of the northern heathlands of the South-West Botanical Province, a large section of desert to the north and east, and the interzone between them (Beard, 1990). The northern heathlands are diverse in members of the Proteaceae, especially *Grevillea* (Gibson *et al.* 1997), and the

ericoid Myrtaceae, especially members of the genera *Scholtzia*, *Baeckea* and *Pileanthus*. There is also a considerable number of eucalypt and orchid taxa, especially on heavy soils in the Kalbarri area. The Haemodoraceae, Epacridaceae (Keighery, 1996) and the genus *Acacia* (Hopper and Maslin, 1978) are also species diverse on the Kalbarri sandplains.

Weeds

In total, 88 species of naturalised vascular plant species (weeds) were recorded for the area. These weeds are nearly all annuals from the families Poaceae (41 taxa), Asteraceae (19), Brassicaceae (12) and Caryophyllaceae (10). This is a low number compared to other areas of Western Australia (Keighery, 1995), where some 1032 taxa are recorded as naturalised (ca. 9% of the total flora). But it is comparable to Cape Range, where 30 weeds were recorded by Keighery and Gibson (1993) and the Kimberley where 184 taxa have been recorded (Hussey *et al.*, 1997). The largely intact nature of the native vegetation of the study area lowers the number of weeds. It is likely that further collecting around the townsites of Kalbarri and Carnarvon will increase the number of naturalised taxa, but it is considered that the major environmental weeds have been documented.

Certain weeds have already had a severe impact on parts of the study area. Foremost are riverine sites, especially along the Gascoyne, Wooramel and Irwin Rivers where the fringing understorey vegetation is often dominated by Buffel Grass (*Cenchrus ciliaris*), Mosman River Grass (*Cenchrus setigerus*) and Castor Oil Plants (*Ricinus communis*). Numerous herbaceous weeds such as Cape Weed (*Arctotheca calendula*) dominate the Murchison River foreshore in Kalbarri National Park, probably due to past grazing. The other major areas of weed invasion are under the *Acacia* shrublands of Zuytdorp and Cooloomia National Park where *Brassica tournefortii* has replaced *Parietaria debilis*, after sheep, rabbit and now goat grazing pressure. There are similar, but more localised problems in the Shark Bay World Heritage Area.

Several other weeds are potentially serious. Patterson's Curse (*Echium plantagineum*) is spreading along road verges through the southern arid zone, including North West Coastal Highway, and has the potential to replace the mass displays of everlasting in these areas. Alford *et al.* (2000) have reported Boxtorn (*Lycium ferocissimum*) on islands in the Shark Bay World Heritage area. This species is already a major pest on other offshore islands. Athel Pine (*Tamarix aphylla*), a serious weed of the Finke River system in the Northern Territory, is spreading along the Gascoyne River at Carnarvon.

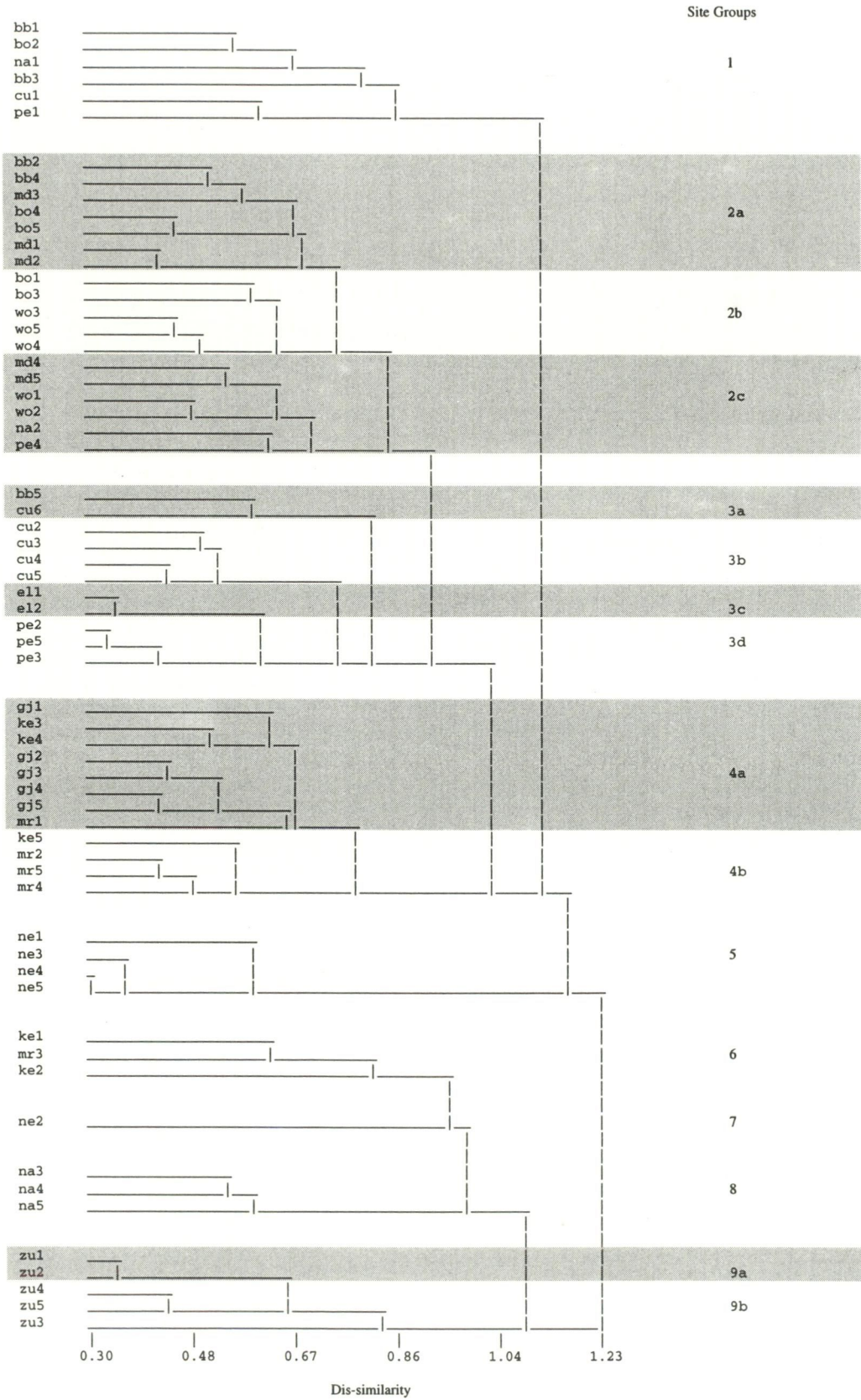


Figure 3 Dendrogram of the nine major site groups defined by the classification of the vascular flora.

Table 1 Number of taxa recorded for the eight major reserves of the study area.

Reserve	Number of taxa
Kalbarri National Park	1071
Tooolonga Nature Reserve	200
Zuytdorp National Park	314
Cooloomia Nature Reserve	226
Francois Peron National Park	279
Bernier Island Nature Reserve	59
Dorre Island Nature Reserve	143
Kennedy Range National Park	314

Reservation status of species

There are eight major conservation reserves in this area (Figure 1). A major aspect of the present study was to attempt to produce an indication of the reservation status of individual plant taxa in the study area. Species lists for all eight major reserves were compiled. The flora of the numerous small island nature reserves in the Shark Bay World Heritage Area have been compiled separately (Alford *et al.*, 2000; A.A. Burbidge pers. comm.). Total numbers of taxa recorded for the eight major reserves are shown in Table 1 with full lists in Appendix 1.

These parks and reserves contained a total of 1559 taxa leaving 574 taxa (37% of the total) that were not recorded for any conservation area (Appendix 1). These unreserved taxa were composed of six distinctive groups. They were:

- Marine angiosperms (*Cymodocea*, *Halophila* and *Posidonia*). These taxa are largely covered by marine reserves proposed for the World Heritage Area.
- Wetland taxa of tropical or arid affinities (e.g. *Peplidium* species, *Potamogeton* species, *Schoenoplectus* species, *Cyperus difformis*). These species occur in the northern sector of the study area, around Lake MacLeod, major rivers and in springs near the Kennedy Range.
- Terrestrial taxa of tropical affinities, especially those occurring on clay or alluvial soils that penetrate the study area in the north, usually along the major rivers or drainage lines (e.g. *Crinum flaccidum*) or on coastal limestones (*Grevillea variifolia*).
- Red sand taxa confined to the *Acacia* shrublands of the central region of the study area.
- Species confined to freshwater claypans (e.g. *Lythrum* sp. Towrana (Cranfield 2183) and *Rumex crystallinus*)
- Endemics of the World Heritage Area. There are 45 endemics of the Shark Bay World Heritage Area that are largely found on Tamala and Nanga Stations. Although these are not yet in a conservation reserve, current proposals

regarding the property (Anonymous, 1997) will see nearly all of these placed in an expanded Zuytdorp Nature Reserve.

Rare and Priority Flora:

There are 11 species of declared rare flora and 144 taxa of priority flora recorded in the study area (Table 2; CALM, 1998). Of these priority taxa 33 are P1, 62 are P2, 39 are P3 and 10 are P4. (See Appendix 1 for definitions of conservation codes). Of the declared rare species, eight are confined to riverine cliffs or heavy soils in the Kalbarri area (*Beyeria lepidopetala*, *Caladenia bryceana* subsp. *cracens*, *Caladenia wanosa*, *Drakaea concolor*, *Eremophila microtheca*, *Hypocalymma longifolium*, *Lechenaultia chlorantha* and *Leucopogon marginatus*).

New records and range ends

Numerous new records and range extensions were noted during the survey. One notable example was the recording of *Eremophila occidentis* ms at Nanga, this species having been previously regarded as endemic to Cape Range. Taxa endemic to all or part of the study area and taxa at their northern or southern limits in the study area are annotated in Appendix 1.

Most notable is the listing of 223 taxa at their northern limit in Kalbarri National Park, being over 20% of the Park's known flora. This is a comparable figure to another conservation area with numerous range ends, the Stirling Range. Another 229 taxa end their range within the World Heritage area to the north of Kalbarri (Trudgen and Keighery, 1995). This is further evidence that the area is a major transition zone for the vascular flora of Western Australia.

Vegetation patterning

A total of 626 taxa were recorded from the 63 sites (over 25% of the known flora of the study area). Of these 626 taxa, 218 (35%) were recorded in only one site and were excluded because preliminary analysis of the total dataset indicated that these 'singletons' added little information. The final dataset included 408 taxa from 63 sites. Species richness varied from nine to 66 taxa per site (with singletons excluded), with individual taxa occurring in between two and 40 sites.

In this analysis site groups are partitioned at the nine group level (Figure 3) and species assemblages at the 20 group level (Table 3). Some site groups showed distinct pattern below this level and these were designated as subgroups. In all, 15 sites groups and subgroups were defined.

The major floristic boundary in the southwest of the study area is clearly evident in the analysis with site groups 1 to 6 representing typical Carnarvon vegetation types and site groups 8 and 9

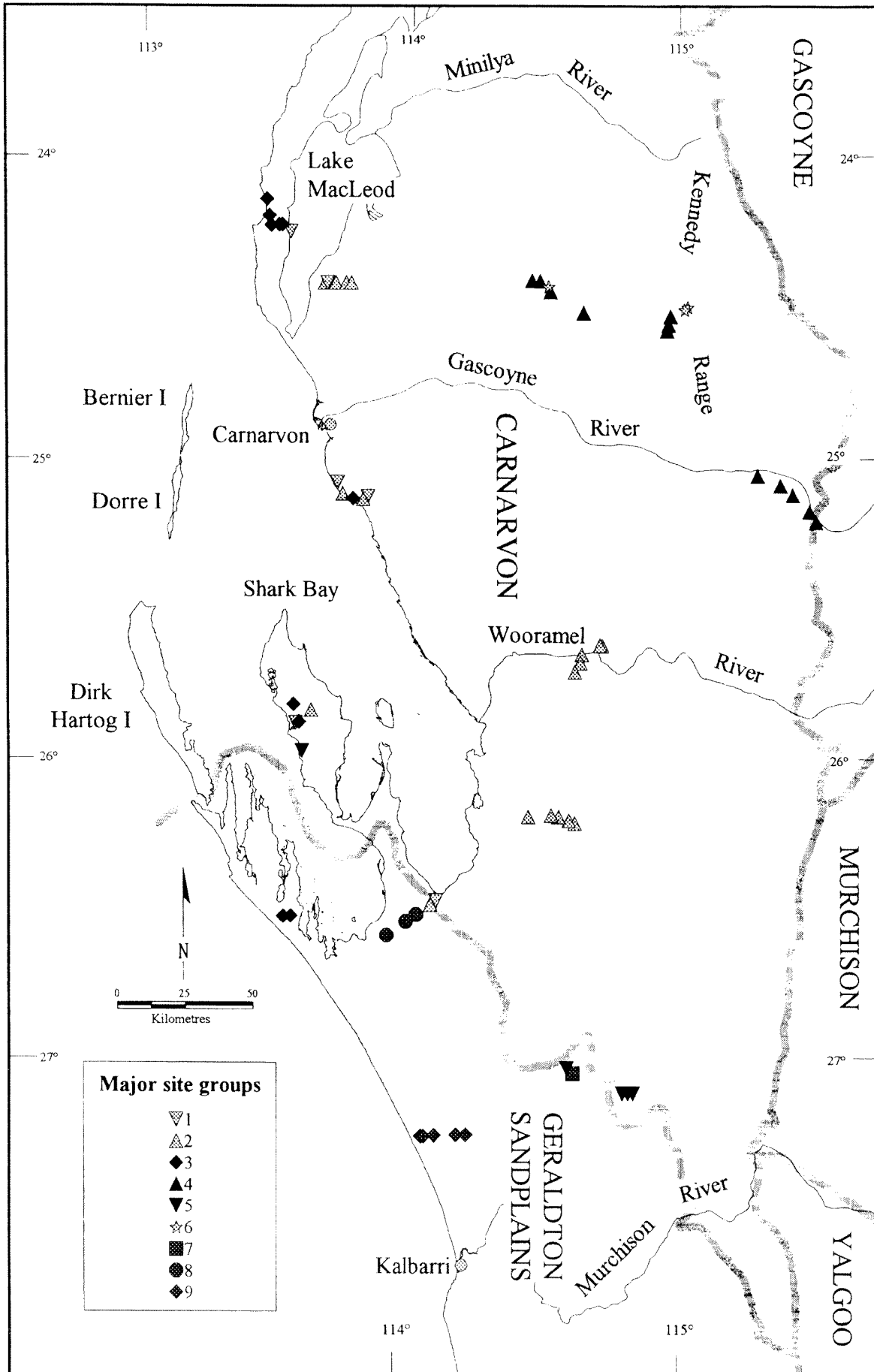


Figure 4 Distribution of the nine major site groups across the study area.

Table 2 Rare and Priority Flora recorded for the study area. [ms indicates a manuscript name currently used by Western Australian Herbarium (PERTH); see Appendix 1 for definitions of conservation codes].

Taxon	Conservation Code	Taxon	Conservation Code
<i>Beyeria lepidopetala</i>	R	<i>Calytrix paucicostata</i>	2
<i>Caladenia bryceana</i> subsp. <i>cracens</i> ms	R	<i>Calytrix purpurea</i>	2
<i>Caladenia hoffmanii</i> ms	R	<i>Chamelaucium marchantii</i>	2
<i>Caladenia wanosa</i>	R	<i>Chthonocephalus muellerianus</i>	2
<i>Drakaea concolor</i> ms	R	<i>Chthonocephalus tomentellus</i>	2
<i>Drakonorchis barbarella</i> ms	R	<i>Cryptandra glabriflora</i>	2
<i>Eremophila microtheca</i>	R	<i>Cryptandra scoparia</i> var. <i>microcephala</i>	2
<i>Eucalyptus beardiana</i>	R	<i>Dampiera krauseana</i>	2
<i>Hypocalymma longifolium</i>	R	<i>Eremaea acutifolia</i>	2
<i>Lechenaultia chlorantha</i>	R	<i>Eremophila glabra</i> subsp. <i>psammophora</i> ms	2
<i>Leucopogon marginatus</i>	R	<i>Eremophila occidens</i> ms	2
		<i>Eucalyptus diminuta</i> ms	2
<i>Beyeria gardneri</i>	1	<i>Frankenia confusa</i>	2
<i>Chamelaucium oenanthum</i> ms	1	<i>Grevillea annulifera</i>	2
<i>Chthonocephalus oldfieldianus</i>	1	<i>Grevillea costata</i>	2
<i>Chthonocephalus spathulatus</i>	1	<i>Grevillea rogersoniana</i>	2
<i>Eremophila cuneata</i> ms	1	<i>Grevillea stenomera</i>	2
<i>Eremophila lanata</i> ms	1	<i>Grevillea triloba</i>	2
<i>Eremophila physocalyx</i> ms	1	<i>Hemiandra</i> sp. Kalbarri (D.Bellairs 1505)	2
<i>Labichea eremaea</i>	1	<i>Malleostemon</i> sp. Cooloomia (S.D.Hopper 1353)	2
<i>Lepidium scandens</i>	1	<i>Malleostemon</i> sp. Kalbarri (L.A.Craven 7083)	2
<i>Levenhookia octomaculata</i>	1	<i>Malleostemon</i> sp. Moonyoonooka (R.J.Cranfield 2947)	2
<i>Macarthuria georgeana</i>	1	<i>Melaleuca huegelii</i> subsp. <i>pristicensis</i>	2
<i>Malleostemon</i> sp. Hardabutt Rapids (D.Bellairs 1654A)	1	<i>Microcorys tenuifolia</i>	2
<i>Millotia depauperata</i>	1	<i>Millotia jacksonii</i>	2
<i>Persoonia brachystylis</i>	1	<i>Murchisonia fragrans</i>	2
<i>Persoonia papillosa</i>	1	<i>Olearia occidentissima</i>	2
<i>Pityrodia axillaris</i>	1	<i>Pityrodia glutinosa</i>	2
<i>Ptilotus beardii</i>	1	<i>Platysace</i> sp. Kalbarri (D.& B.Bellairs 1383)	2
<i>Ptilotus stipitatus</i>	1	<i>Platysace</i> sp. Kennedy (P.G.Wilson 8450)	2
<i>Ptilotus stirlingii</i> var. <i>pumilus</i>	1	<i>Ptilotus alexandri</i>	2
<i>Rhodanthe</i> sp. Overlander (P.S.Short 2096)	1	<i>Rhodanthe oppositifolia</i> subsp. <i>ornata</i>	2
<i>Schoenia filifolia</i> subsp. <i>arenicola</i>	1	<i>Rumex crystallinus</i>	2
<i>Scholtzia cordata</i> ms	1	<i>Scaevola chrysopogon</i>	2
<i>Scholtzia</i> sp. Eurardy (J.S.Beard 6886)	1	<i>Schoenus</i> sp. Kalbarri (K.R.Newbey 9352)	2
<i>Scholtzia</i> sp. Folly Hill (M.E.Trudgen 12097)	1	<i>Scholtzia</i> sp. East Yuna (A.C.Burns 6)	2
<i>Scholtzia</i> sp. Murchison River (A.S.George 7098)	1	<i>Scholtzia</i> sp. Galena (W.E.Blackall 4728)	2
<i>Sclerolaena stylosa</i>	1	<i>Scholtzia</i> sp. Ross Graham Lookout (S.Maley 6)	2
<i>Tetragonia coronata</i>	1	<i>Scholtzia</i> sp. Z-Bend (Bellairs-Kalflora 912a)	2
<i>Thryptomene ninghanensis</i> ms	1	<i>Sondottia glabrata</i>	2
<i>Thryptomene</i> sp. Carrarang (M.E.Trudgen 7420)	1	<i>Thryptomene</i> sp. Eagle Gorge (A.G.Gunness 2360)	2
<i>Thryptomene</i> sp. Steep Point (M.E.Trudgen 7421)	1	<i>Thryptomene</i> sp. Eurardy (D.& B.Bellairs)	2
<i>Thryptomene</i> sp. Tamala (M.E.Trudgen 7384)	1	<i>Thryptomene</i> sp. Junga Dam (A.G.Gunness 2383A)	2
<i>Verticordia lepidophylla</i> var. <i>quantula</i>	1	<i>Thryptomene stenophylla</i>	2
<i>Vittadinia cervicularis</i> var. <i>oldfieldii</i>	1	<i>Thysanotus kalbarriensis</i> ms	2
		<i>Verticordia dasystylis</i> subsp. <i>kalbarriensis</i>	2
<i>Abutilon</i> sp. Hamelin (A.M.Ashby 2196)	2	<i>Verticordia galeata</i>	2
<i>Abutilon</i> sp. Quobba (H.Demarz 3858)	2		
<i>Acacia gelasina</i>	2	<i>Acacia didyma</i>	3
<i>Acacia leptospermoides</i> subsp. <i>obovata</i>	2	<i>Acacia drepanophylla</i>	3
<i>Acacia stereophylla</i> var. <i>cylindrata</i>	2	<i>Acacia isoneura</i> subsp. <i>nimia</i> ms	3
<i>Acacia subrigida</i>	2	<i>Acacia plautella</i> ms	3
<i>Acanthocarpus parviflorus</i>	2	<i>Acacia sclerosperma</i> subsp. <i>glaucescens</i>	3
<i>Angianthus microcephalus</i>	2	<i>Anthocercis intricata</i>	3
<i>Anthotroche myoporoides</i>	2	<i>Anthotroche walcottii</i>	3
<i>Baeckea subcuneata</i>	2	<i>Arnocrinum drummondii</i>	3
<i>Bergia auriculata</i>	2	<i>Calocephalus aervoides</i>	3
<i>Beyeria cygnorum</i>	2	<i>Calycopeplus marginatus</i>	3
<i>Calytrix drummondii</i>	2	<i>Centrolepis cephaliformis</i> subsp. <i>murrayi</i>	3
<i>Calytrix formosa</i>	2	<i>Chamelaucium conostigmum</i> ms	3
<i>Calytrix harvestiana</i>	2	<i>Comesperma acerosum</i>	3

Table 2 (cont.)

Taxon	Conservation Code	Taxon	Conservation Code
<i>Cryptandra nudiflora</i>	3	<i>Scaevola oldfieldii</i>	3
<i>Dicrastylis linearifolia</i>	3	<i>Scholtzia</i> sp. Ajana (T.A.Halliday 137)	3
<i>Eucalyptus foecunda</i> subsp. Coolimba (M.I.H.Brooker 9556)	3	<i>Stenanthemum divaricatum</i>	3
<i>Geleznowia verrucosa</i>	3	<i>Verticordia cooloomia</i>	3
<i>Goodenia sericostachya</i>	3	<i>Verticordia densiflora</i> var. <i>roseostella</i>	3
<i>Grevillea candicans</i>	3	<i>Verticordia dichroma</i> var. <i>dichroma</i>	3
<i>Grevillea leptopoda</i>	3	<i>Verticordia dichroma</i> var. <i>syntoma</i>	3
<i>Grevillea stenostachya</i>	3	<i>Villarsia congestiflora</i>	3
<i>Gymnanthera cunninghamii</i>	3	<i>Calothamnus pachystachyus</i>	4
<i>Hemigenia pimelifolia</i>	3	<i>Diuris recurva</i>	4
<i>Lasiopetalum oldfieldii</i> subsp. <i>oldfieldii</i>	3	<i>Goodenia neogoodenia</i>	4
<i>Lasiopetalum oppositifolium</i>	3	<i>Jacksonia velutina</i>	4
<i>Lepidobolus densus</i> ms	3	<i>Lepidium puberulum</i>	4
<i>Macarthuria intricata</i>	3	<i>Lepidosperma rupestre</i>	4
<i>Mirbelia</i> sp. Kalbarri (M.D.Crisp 6261)	3	<i>Plectrachne bromoides</i>	4
<i>Petrophile biternata</i>	3	<i>Verticordia capillaris</i>	4
<i>Physopsis chrysophylla</i>	3	<i>Verticordia polytricha</i>	4
<i>Phlegmatospermum drummondii</i>	3	<i>Wurmbea murchisoniana</i>	4

representing typical Irwin (Geraldton Sandplains) vegetation types (Figures 3 and 4). Site group 7 is represented by only a single site and its affinities are not clear. Site groups 1 to 4 were the most widespread across the study area.

Site group 1 comprised the sites with a major saline influence. Species assemblage O is highly faithful (i.e. largely restricted) to this site group with low to moderate levels of constancy (referring to the degree of occurrence of a species assemblage in the site group). Species in this assemblage include *Halosarcia indica* and *H. halocnemoides* (samphire species), *Frankenia* aff. *pauciflora* (a species generally restricted to saline calcareous substrates) and a series of annual taxa which are restricted to this site group. This group encompasses a range of saline plots ranging from *Halosarcia* and *Sclerostegia* shrublands to an *Atriplex* shrubland upslope from a saline flat. Sites occurred in coastal areas from Nanga to Lake MacLeod (Figure 4) and species richness averaged 23.7 taxa/plot.

Acacia shrublands are one of the most widespread and typical communities of the Carnarvon Bioregion. Site groups 2 and 4 represent the *Acacia* shrublands on red sands. No single *Acacia* species dominated sites in site group 2 but *Acacia sclerosperma* and *A. linophylla* were the most common; sites in site group 4 were generally dominated by *Acacia aneura* (Mulga). Site group 2 was a very widespread group in the centre of the study area, stretching from Nanga to Boolathana and east to Meedo (Figure 4). It had the highest average species richness of 46.6 taxa / plot.

While most sites in site group 2 were dominated by *Acacia* spp., one site along the Wooramel River

(MD3) had an overstorey of *Eucalyptus victrix* while the understorey was typical of the *Acacia* shrublands. Another site (BO1) was dominated by *Atriplex*, it differed from sites in site group 1 in being rich in species belonging to assemblage K (especially in terms of herbs), an assemblage largely lacking in the site group 1. This site was classified most similar to BO3 (a typical *Acacia* shrubland).

Species assemblage A was moderately faithful to both site group 2 and site group 4, while species assemblages D, E, and J differentiated site group 2 from other site groups. Species assemblage G was largely confined to site groups 1, 2a and 2b, species assemblage I was largely restricted to site group 2a and site group 6 and species assemblage L was most faithful to site group 2c and site group 5.

The different subgroups within site group 2 reflected differences in *Acacia* species found on these sites. *Acacia tetragonophylla* was the most widespread *Acacia* occurring in all three subgroups, *A. linophylla* was largely restricted to subgroups 2a and 2b as was *A. victoriae* while *A. grasbyi* was restricted to site group 2b and *A. coolgardiensis* subsp. *effusa* was largely restricted to subgroup 2c and site group 5 (Table 3). Weedy annuals such as **Hypochaeris glabra*, **Bromus arenarius*, **Cenchrus ciliata*, **Sonchus oleraceus* and **Asphodelus fistulosa* are more common in subgroups 2a and 2b compared to 2c.

The coastal *Acacia* and *Melaleuca* shrublands of site group 3 are largely defined by species assemblages Q and R which are highly faithful to site group 3 but with generally only low to moderate consistency. Site group 3 as a whole has a coastal distribution extending from Edel Land to Cuvier; average species richness is high at 45.6 taxa

Table 3 Sorted two way table showing the major site groups and species assemblages. Sites appear as columns, species as rows.

	Site Groups															
	1	2a	2b	2c	3a	3b	3c	3d	4a	4b	5	6	7	8	9a	9b
	bbnbc	bbmbbm	bbwww	mmwwnp	bc	cccc	ee	ppp	gkkgggm	kmm	nnnn	knk	n	nnn	zz	zzz
	boabue	bbdoodd	ooooo	ddooae	bu	uuuu	ll	eee	jeejjjr	errr	eeee	ere	e	aaa	uu	uuu
	121311	2434512	13354	451224	56	2345	12	253	13423451	5254	1345	132	2	345	12	453

Species Assemblage A																
<i>Abutilon otocarpum</i>		****	* *							* *	***					
<i>Phyllanthus maderaspatensis</i>		*****								* * *	***					
<i>Bulbostylis barbata</i>		***	*							*	****					
<i>Calandrinia</i> sp. (GJK/NG 1495)		***	* *	**						* **	***					
<i>Cassia helmsii</i>		**	*							* *****	**	*				
<i>Eremophila subfloccosa</i>		*	*	*						**	*	***				
<i>Maireana planifolia</i>		*								* * *	***					
<i>Asphodelus fistulosus</i>		* *****	* *	**						*	*	***				
<i>Chenopodium cristatum</i>		** *	* *	*						* * *	*					
<i>Chthonocephalus spathulatus</i>		***	***	**						*	*	*		*		
<i>Rhodanthe charsleyae</i>		*	*****	*****						*	*	*				
<i>Stenopetalum pedicellare</i>	*	* *	* **	*				*		** *	*	*				
<i>Acacia linophylla</i>		**	*	**						*	*					
<i>Spartothamnella teucriflora</i>		*		**						** *	*					
<i>Myriocephalus gueriniae</i>	*			***						*	*					
<i>Acacia victoriae</i>		***	**	*						** * *	*					
<i>Tragus australianus</i>		** *	*							** *****	*					
<i>Sclerolaena densiflora</i>	**	**								*** **						
<i>Boerhavia gardneri</i>		*	**							* * **						
<i>Hakea preissii</i>		**								* **						
<i>Corchorus walcottii</i>		*	*	*						***						
<i>Eragrostis dielsii</i>	*****	* **	* *	*				**		*** **	***	*				
<i>Ptilotus villosiflorus</i>		* * **	*	*			*	*		* **	*					
<i>Triraphis mollis</i>	*	* *	* *	**			*			* **						
<i>Eriachne aristidea</i>		*		*						****		**				
<i>Acacia aneura</i>										****		*				
<i>Eriachne pulchella</i>				*						* **	*	*				
<i>Ptilotus helipteroides</i>										***** *	**					
<i>Tribulus astrocarpus</i>										* * **	**					
<i>Tripogon loliiformis</i>										* **	***					
<i>Paspalidium basicladum</i>		* *				*				** * *	*	*				
<i>Goodenia havilandii</i>								*		*****		*				
<i>Enneapogon caeruleus</i>	*									***	*	*				
<i>Haloragis trigonocarpa</i>		*								**	*	*				
<i>Ptilotus aervoides</i>		* *			*					* *	*	*				
<i>Stenopetalum sphaerocarpum</i>	*	*	*							* * *	*	*				
<i>Cleome viscosa</i>										*	*	*				
<i>Lepidium oxytrichum</i>										*	*	*				
<i>Eriachne helmsii</i>										*	*	*				*

Indigofera monophylla
Eriachne dominii
Sida kingii

Species Assemblage B

Eriachne avenacea
Waitzia acuminata
Menkea villosula
Thyridolepis mitchelliana
Eremophila setacea ms
Plectrachne rigidissima
Sida rohlena
Hibiscus coatesii

Species Assemblage C

Acacia xiphophylla
Ptilotus exaltatus
Cassia sturtii
Ptilotus polakii
Streptoglossa liatroides
Panicum effusum
Plectrachne schinzii
Sauropus crassifolius
Sida corrugata
Atriplex lindleyi subsp. *inflata*
Marsdenia viridiflora
Sida aff. *intricata* (GJK/NG 1134)
Yakirra australiensis

Species Assemblage D

Acacia grasbyi
Sarcostemma viminale
Cassia sp.
Zygophyllum ovatum
Atriplex semilunaris
Sisymbrium irio
Thysanotus speckii

Species Assemblage E

Brachyscome ciliaris
Podolepis capillaris
Tetragonia cristata
Enteropogon acicularis
Eremophila latrobei
Maireana carnosa
Eremophila clarkei
Hibiscus burtonii
Eremophila leucophylla
Ptilotus grandiflorus
Gyrostemon ramulosus

		*						*	*	*	*	*	*							
*		*							*	*	*	*	*							
*		*																		

Table 3 (cont.)

	Site Groups															
	1	2a	2b	2c	3a	3b	3c	3d	4a	4b	5	6	7	8	9a	9b
	bbnbcp	bbmbbmm	bbwww	mmwnwp	bc	cccc	ee	ppp	gkkggggm	kmnm	nnnn	kmk	n	nnn	zz	zzz
	boabue	bbdoodd	ooooo	ddooae	bu	uuuu	ll	eee	jeejjjr	errr	eeee	ere	e	aaa	uu	uuu
	121311	2434512	13354	451224	56	2345	12	253	13423451	5254	1345	132	2	345	12	453

Species Assemblage F																
<i>Acanthocarpus verticillatus</i>		*	*													
<i>Glycine canescens</i>		**	*						*							
<i>Gymnema granitica</i> ms		*	*													
<i>Angianthus tomentosus</i>	* *		* *													
<i>Lawrencia spicata</i>	**		*													
<i>Maireana georgei</i>	*		*													
<i>Zygophyllum kochii</i>		*	*													
<i>Chorizema racemosum</i>			*							*			*			
<i>Eriachne benthamii</i>			*							*						
<i>Calandrinia eremaea</i>			**								*					
<i>Calandrinia liniflora</i>			*					*								*
<i>Lepidium linifolium</i>			*					*		*						

Species Assemblage G																
<i>Amaranthus mitchellii</i>		***	**	*												
<i>Commicarpus australis</i>		**	**	*	*	*		*								
<i>Portulaca oleracea</i>		*	*	*						*						
<i>Trianthema triquetra</i>		*	**						*							
<i>Maireana tomentosa</i>	*		*	*				*								
<i>Atriplex vesicaria</i>	****	*	*	*				*								
<i>Swainsona pterostylis</i>	**	*	*	**				*								
<i>Calotis multicaulis</i>	***	**	**	**	**	**				*						
<i>Cephalipterum drummondii</i>	**		**	*****						*						
<i>Sclerolaena recurvicuspis</i>	*		**	**	**					*						
<i>Senecio glossanthus</i>	** *	*	*	*	*											
<i>Maireana trichoptera</i>	**			*				*								
<i>Pogonolepis muelleriana</i>	*	*	*						*							
<i>Convolvulus erubescens</i>		****	**							*						
<i>Heliotropium undulatum</i>		* ** *	**			*										
<i>Hypochaeris glabra</i>		****	* *								*					
<i>Lotus cruentus</i>	**	** *	*		*											
<i>Rhodanthe psammophila</i>	*	** *	*		**											
<i>Rhodanthe chlorocephala</i>		*	*													
<i>Tribulus forrestii</i>	*	*	**	*												
<i>Dactyloctenium radulans</i>			*						*							
<i>Eragrostis basedowii</i>			*						*							
<i>Tribulus terrestris</i>			*						*							
<i>Lawrencia densiflora</i>			*		*				*							
<i>Wahlenbergia tumidifrutca</i>		*	*						*							

Table 3 (cont.)

	Site Groups															
	1	2a	2b	2c	3a	3b	3c	3d	4a	4b	5	6	7	8	9a	9b
	bbnbcp boabue 121311	bbmbbmn bbdoodd 2434512	bbwww ooooo 13354	mmwnp ddooae 451224	bc bu 56	cccc uuuu 2345	ee ll 12	ppp eee 253	gkkggggm jeejjjr 13423451	knmm errr 5254	nnnn eeee 1345	kmk ere 132	n e 2	nnn aaa 345	zz uu 12	zzz uuu 453
<i>Tetragonia diptera</i>	**	** **	*****	* ***		*			**	*				***		
<i>Aristida holathera</i>		****	* ***	** **		**		*	*****	****		* ***				
<i>Ptilotus polystachyus</i>		*****	***	*****		*		*	***	****		**		***		
<i>Euphorbia drummondii</i>	*	** **		* *	** **	** **	** **	*	** **	** **		**				
<i>Solanum lasiophyllum</i>	*	* ***	* **	* *	* **	*	** **	*	*****	****		***	*			
<i>Murchisonia volubilis</i>		** **	*	*		** *		*	*	*		**		*		
<i>Eragrostis lanipes</i>		* **	*			** *		*	*****	****		*				
<i>Brachyscome cheilocarpa</i>	***	* **		*	*	** *			**							
<i>Triglochin calcitrapum</i>	*** *	***	* **	***	*											*
<i>Brachyscome iberidifolia</i>		* *	* **	***	*	** **	** **		****	***						
<i>Calandrinia polyandra</i>	** *	** ****	*****	*****	*	** **	** **	** **	****	***		*		***		*
<i>Erodium cygnorum</i>	**	* **	*****	*****		***	** **	** **	**	****	***					*
<i>Pimelea microcephala</i>		****	* **	**	*	** *	** **	** **	**	**	***					*
<i>Crassula colorata</i>	* **	**	* **	** *	*		** **	** **	*	*	***					*
<i>Ptilotus gaudichaudii</i>	**		*****	* **	*		** **	** **	* **	****	**					*
<i>Ptilotus obovatus</i>	*		*****	*****	*	** **	** **	** **	*****	****						*
<i>Sida calyxhymenia</i>		** *	* **	** *		***	** **	** **	** **	*	*		*	*	*	*
<i>Rhagodia latifolia</i>		*** *		* **		** *	** *	** *	*	*	***			*	*	*
<i>Stylobasium spathulatum</i>		**		***		** *	** *	** *	*	*				***		*
<i>Brachyscome latisquamea</i>	*		**			* *	** **	** **	**							*
<i>Sclerolaena diacantha</i>	* **				*	**	** **	** **	**					*	*	*
<i>Brassica tournefortii</i>	*	***			** **	** **	** **	** **	** **					*	*	*
<i>Threlkeldia diffusa</i>		* **	*		* **	** **	** **	** **	*					*	*	*
<i>Ptilotus divaricatus</i>		*	****	**	**	***	*	***					*			*
<i>Rhagodia preissii</i>		*	****	*	** *	*	***	***								*
<i>Nicotiana occidentalis</i>	**	****	** **	*	*	***	** **	** **	*	*	*					
<i>Rostraria pumila</i>	*****	* **	* **	*	**	** **	** **	** **	*							
<i>Sonchus oleraceus</i>	* **	** *	** *		*	*	** **	** **								
<i>Scaevola spinescens</i>		****	*	*		**	** **	** **	*	*						
<i>Scaevola tomentosa</i>		****	*	*		****	** **	** **			**					
<i>Zygophyllum fruticulosum</i>		* **	*	*	*	*	*	***	*							
<i>Cuscuta epithymum</i>	*		** *	*	*	*	*	*	*	*						
<i>Lepidium rotundum</i>	**		* **				** **	** *	*	*						
<i>Salsola kali</i>		*** **	***		**		** **	** *	*	**						
<i>Dysphania rhadinostachya</i>	**	* **				** **	** **	** **	*	***						
<i>Goodenia berardiana</i>		* **		* **	*	***	*	** **	*	**						
<i>Gnephosis arachnoidea</i>	* *	*	**	*		*	*	*	*	*						
<i>Parietaria debilis</i>		* **	*				**	*	*	*		*				
Species Assemblage L																
<i>Acacia coolgardiensis</i> subsp. <i>effusa</i>			*	* **					*		**					

<i>Schoenia cassiniana</i>	*		**	*	*	*					*	*	*									
<i>Lawrencella davenportii</i>		*		**	*	*					*	*	*	*								
<i>Uldinia ceratocarpa</i>		*		**	*	*					*	*	*	*								
<i>Waitzia nitida</i>	*	*	*	**	*	*		*	*		*	*	*	*								
<i>Chthonocephalus tomentellus</i>		*	*	**	*	*					*	*	*	*							*	
<i>Eremophila maitlandii</i>		*	*	**	*	*					*	*	*	*							*	
<i>Porana sericea</i>		*	*	**	*	*					*	*	*	*							*	
<i>Rhyncharrhena linearis</i>		*	*	**	*	*					*	*	*	*							*	
<i>Podolepis canescens</i>					*	*					*	*	*	*							*	
<i>Actinobole uliginosum</i>					*	*					*	*	*	*							*	
<i>Solanum orbiculatum</i>					*	*					*	*	*	*							*	
<i>Chthonocephalus pseudevax</i>					*	*					*	*	*	*							*	
<i>Marsdenia australis</i>					*	*					*	*	*	*							*	
<i>Dianella revoluta</i>					*	*					*	*	*	*							*	
<i>Stipa elegantissima</i>					*	*					*	*	*	*							*	

Species Assemblage M

<i>Acanthocarpus aff. robustus</i> (Hopper 1367)																					*	*	*	*	**
<i>Thysanotus patersonii</i>																					*	*	*	*	**
<i>Mirbelia ramulosa</i>		*	*		*	*															*	*	*	*	**
<i>Melaleuca sp.</i> (Beard 6768)					*	*															*	*	*	*	**
<i>Plectrachne bromoides</i>					*	*															*	*	*	*	**
<i>Acanthocarpus robustus</i>					*	*															*	*	*	*	**
<i>Loxocarya aspera</i> ms					*	*															*	*	*	*	**

Species Assemblage N

<i>Acacia latipes</i>																						*	*	*	*
<i>Lechenaultia linarioides</i>																					*	*	*	*	*
<i>Acacia subrigida</i>																					*	*	*	*	*
<i>Lasiopetalum oppositifolium</i>																					*	*	*	*	*
<i>Melaleuca aff. quadrifidus</i>																					*	*	*	*	*
<i>Eremophila occidens</i> ms																					*	*	*	*	*
<i>Wurmbea cernua</i>																					*	*	*	*	*
<i>Pityrodia verbascina</i>																					*	*	*	*	*
<i>Acacia longispinea</i>																					*	*	*	*	*
<i>Tricoryne aff. corynothecoides</i> (GJK/NG 1274)																					*	*	*	*	*
<i>Eucalyptus eudesmioides</i>																					*	*	*	*	*
<i>Lamarchea hakeifolia</i> var. <i>brevifolia</i>						*															*	*	*	*	*
<i>Stenanthemum complicatum</i>						*															*	*	*	*	*
<i>Baeckea sp.</i> (A.S.George 11346)						*															*	*	*	*	*
<i>Brachychiton gregorii</i>						*															*	*	*	*	*
<i>Grevillea stenobotrya</i>						*															*	*	*	*	*
<i>Verticordia forrestii</i>						*															*	*	*	*	*
<i>Allocasuarina acutivalvis</i>						*															*	*	*	*	*
<i>Grevillea eriostachya</i>						*															*	*	*	*	*
<i>Acacia rostellifera</i>						*	*	*	*	*											*	*	*	*	*
<i>Acacia spathulifolia</i>						*	*	*	*	*											*	*	*	*	*
<i>Calothamnus borealis</i>						*	*	*	*	*											*	*	*	*	*
<i>Halgania cyanea</i>						*	*	*	*	*											*	*	*	*	*
<i>Alyxia buxifolia</i>						*	*	*	*	*											*	*	*	*	*

Table 3 (cont.)

	Site Groups															
	1	2a	2b	2c	3a	3b	3c	3d	4a	4b	5	6	7	8	9a	9b
	bbnbc	bbmbmm	bbww	mmwnp	bc	ccc	ee	ppp	gkkgggm	knmm	nnnn	kmk	n	nnn	zz	zzz
	boabue	bbdood	oooo	ddooae	bu	uuu	ll	eee	jeejjjr	errr	eeee	ere	e	aaa	uu	uuu
	121311	2434512	13354	451224	56	2345	12	253	13423451	5254	1345	132	2	345	12	453

Species Assemblage O																
<i>Carpobrotus</i> sp. (GJK/NG 1707)	*	*														
<i>Rhodanthe stricta</i>	*	*														
<i>Frankenia</i> aff. <i>pauciflora</i>	*	*														
<i>Triglochin centrocarpum</i>	*	*														
<i>Eragrostis pergracilis</i>	*	**														
<i>Gunniopsis septifraga</i>		**														
<i>Lawrenzia viridigrisea</i>		**														
<i>Podolepis gardneri</i>	*	**														
<i>Zygophyllum compressum</i>	*	*														
<i>Halosarcia indica</i>	*	*			*											
<i>Halosarcia halocnemoides</i>		***														
<i>Swainsona kingii</i>		**														
<i>Sondottia glabrata</i>		****														
<i>Didymanthus roei</i>		***														
<i>Sclerolaena eurotioides</i>	**	*														

Species Assemblage P																
<i>Acacia roycei</i>					*						****					
<i>Eucalyptus mannensis</i>					*						****					
<i>Calandrinia corrigioloides</i>					*	*					****			*		*
<i>Bursaria occidentalis</i>					*	*					****			**		*
<i>Thysanotus manglesianus</i>					**	*		*			****					*
<i>Calandrinia lehmannii</i>		*			****	*					****			*		
<i>Leucochrysum fitzgibbonii</i>					*****	*					****					
<i>Wurmbea densiflora</i>		*			*	*					****			*		
<i>Callitris glaucophylla</i>						*					****					
<i>Gilberta tenuifolia</i>						*					****					
<i>Lysiana casuarinae</i>						*					****					
<i>Trachymene ornata</i>					*	*					****					
<i>Grevillea paradoxa</i>					*	*					****			*		
<i>Plantago</i> aff. <i>hispidula</i>					*	*					****					
<i>Centrolepis drummondiana</i>					*	*					****					
<i>Comesperma integerrimum</i>					*	*					****					
<i>Gnephosis eriocephala</i>					*	*					****					
<i>Poranthera microphylla</i>					*	*					****					
<i>Goodenia occidentalis</i>					*	*					****					
<i>Trachymene cyanopetala</i>					*	*				*	****					
<i>Eremophila oldfieldii</i>					*	*					****					
<i>Ptilotus stirlingii</i>					*	*					****					

Brunonia australis
Monachather paradoxus
Velleia hispida
Ptilotus drummondii
Synaptantha tillaeacea
Gnephosis tenuissima

Species Assemblage Q

Acacia chartacea
Diplopeltis intermedia
Goodenia triodiophila
Scaevola thesioides
Acacia coriacea subsp. *coriacea*
Haloragis gossei
Triodia pungens
Daviesia hakeoides
Brachysema macrocarpum
Scaevola sericophylla
Triodia basedowii
Dampiera incana
Hibiscus sturtii
Indigofera brevidens
Zygophyllum eremaeum
Stipa nitida
Olearia dampieri subsp. *dampieri* ms
Stackhousia muricata

Species Assemblage R

Acacia ligulata
Trichanthodium skirrophorum
Beyeria cinerea
Eragrostis barrelieri
Erodium cicutarium
Triodia plurinervata
Urospermum picroides
Eremophila glabra
Wurmbea inframediana
Lepidium puberulum
Olearia aff. *axillaris* (GJK/NG 1025)
Poa drummondiana
Triglochin trichophorum
Podotheca gnaphalioides
Exocarpos aphyllus
Melaleuca cardiophylla
Podotheca angustifolia
Thryptomene baeckeacea
Stipa crinita
Waitzia suaveolens
Olearia axillaris
Trachymene elachocarpa

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							*	*	*			*	*						

Table 3 (cont.)

	Site Groups															
	1	2a	2b	2c	3a	3b	3c	3d	4a	4b	5	6	7	8	9a	9b
	bbnbc	bbmbbmm	bbww	mmwwnp	bc	cccc	ee	ppp	gkkggggm	kmmm	nnnn	kmk	n	nnn	zz	zzz
	boabue	bbdoodd	ooooo	ddooae	bu	uuuu	ll	eee	jeejjjr	errr	eeee	ere	e	aaa	uu	uuu
	121311	2434512	13354	451224	56	2345	12	253	13423451	5254	1345	132	2	345	12	453

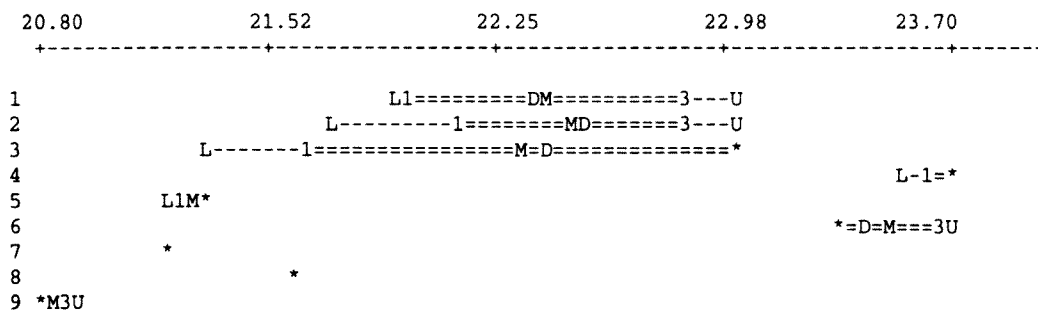
<i>Atriplex cinerea</i>					*				*							
<i>Scaevola crassifolia</i>					**											
<i>Frankenia pauciflora</i>	*				**		**									
<i>Rhodanthe humboldtiana</i>					*		*									
<i>Zygophyllum ammophilum</i>		*			**	*	**									
<i>Atriplex paludosa</i> subsp. <i>moquiniana</i>	*				*	*										
<i>Senecio lautus</i>	*	*	*		**	*										
<i>Cyperus bulbosus</i>	*	*					*									
<i>Millotia myosotidifolia</i>	*						*	*								
<i>Bromus arenarius</i>	*	* *		*	*		*	*								
<i>Daucus glochidiatus</i>	*	*				*		**			*					
<i>Cryptandra leuophracta</i>								*						*		
<i>Danthonia caespitosa</i>								*	*							
<i>Solanum oldfieldii</i>								*	*		*					
<i>Dysphania plantaginella</i>	*					*		*								

Species Assemblage S																
<i>Acacia blakelyi</i>																**
<i>Actinostrobos arenarius</i>																**
<i>Allocasuarina campestris</i>																**
<i>Calytrix strigosa</i>																**
<i>Leucopogon cucullatus</i>																**
<i>Lyperanthus nigricans</i>																**
<i>Tetraria microcarpa</i>																**
<i>Thryptomene denticulata</i>																**
<i>Acacia cavealis</i> ms														*	*	*
<i>Drosera stolonifera</i> subsp. <i>stolonifera</i>														*	*	*
<i>Boronia coerulescens</i>														*	*	*
<i>Brachysema aphyllum</i>														*	*	*
<i>Monotaxis lurida</i>														*	*	*
<i>Petrophile semifurcata</i>														*	*	*
<i>Scaevola canescens</i>														*	*	*
<i>Calothamnus blepharospermus</i>														**	**	**
<i>Eremaea ebracteata</i>														**	**	**
<i>Stylidium macrocarpum</i>														**	**	**
<i>Stylidium repens</i>														**	**	**
<i>Leucopogon cordifolius</i>														**	*	*
<i>Lysinema ciliatum</i>														**	*	*
<i>Neurachne alopecuroidea</i>														**	*	*
<i>Petrophile brevifolia</i>														**	*	*

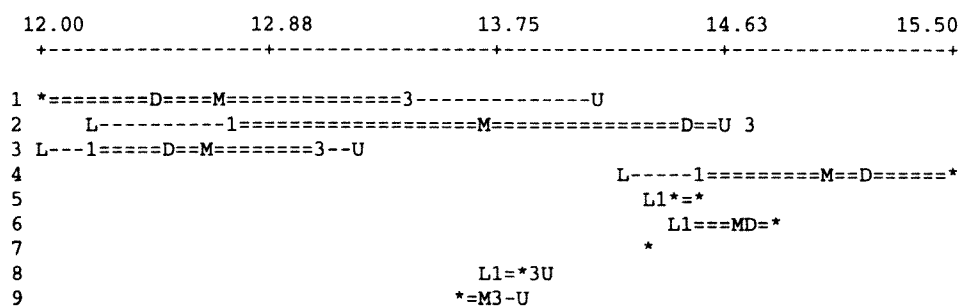
<i>Schoenus clandestinus</i>											*	*
<i>Melaleuca conothamnoides</i>											*	*
<i>Melaleuca scabra</i>											*	*
<i>Mesomelaena preissii</i>											*	*
<i>Opercularia spermacocea</i>											*	*
<i>Conospermum microflorum ms</i>											*	***
<i>Lepidobolus preissianus</i>											*	***
<i>Phymatocarpus porphyrocephalus</i>											*	***
<i>Drosera stolonifera subsp. humilis</i>											*	***
<i>Malleostemon</i> sp Cooloomia (Hopper 1353)											*	**
<i>Mesomelaena pseudostygia</i>											*	**
<i>Hibbertia racemosa</i>											*	*
<i>Hibbertia subvaginata</i>											*	*
<i>Melaleuca acerosa</i>											*	*
<i>Conostylis stylidioides</i>											*	**
<i>Hibbertia pungens</i>											*	**
<i>Melaleuca</i> aff. <i>leiopyxis</i> (GJK/NG 1708)							**				*	**
<i>Ecdeiocola monostachya</i>											*	**
<i>Hibbertia conspicua</i>											*	**
<i>Persoonia acicularis</i>			*								*	**
<i>Banksia ashbyi</i>									*		*	*
<i>Banksia sceptrum</i>									*	*	*	*
<i>Geleznovia verrucosa</i>									*	*	*	*
<i>Calytrix brevifolia</i>									*	*	*	**
<i>Grevillea annulifera</i>									*	*	*	*
<i>Plectrachne danthonioides</i>									*	*	*	*
<i>Scholtzia</i> sp. Folly Hill (ME Trudgen 12097)	*										*	*
<i>Cassytha aurea</i>						*					*	*
Species Assemblage T												
<i>Amphipogon turbinatus</i>												**
<i>Boronia purdieana</i>												**
<i>Cassytha racemosa</i>												**
<i>Conostylis aculeata</i>												**
<i>Dryandra borealis</i> subsp. <i>borealis</i>												**
<i>Gompholobium tomentosum</i>												**
<i>Grevillea preissii</i> ms												**
<i>Hibbertia spicata</i> subsp. <i>spicata</i>												**
<i>Patersonia occidentalis</i>												**
<i>Pimelea leucantha</i>												**
<i>Pityrodia oldfieldii</i>												**
<i>Stylidium elongatum</i>												**

Figure 5 Differences in predicted climatic parameters between the nine site groups defined by the vascular flora. (L = lowest value, U = highest value, I = first quartile, M = mean, D = median).

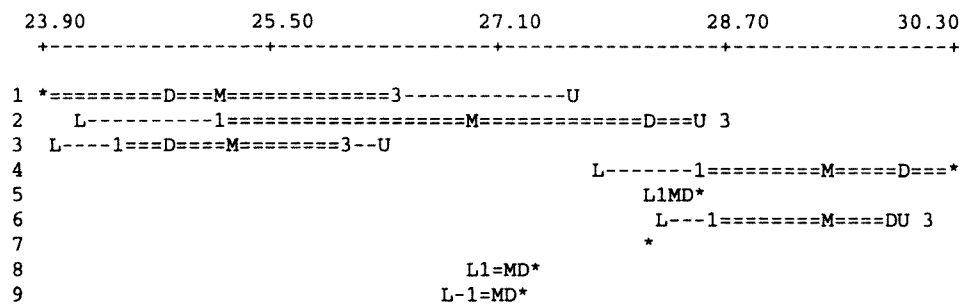
Mean annual temperature (°C): (Kruskal-Wallis = 49.9, df = 8, p < 0.0001)



Diurnal temperature range (°C): (Kruskal-Wallis = 37.5, df = 8, p < 0.0001)



Annual temperature range (°C): (Kruskal-Wallis = 38.3, df = 8, p < 0.0001)



Precipitation wettest quarter (mm): (Kruskal-Wallis = 30.2, df = 8, p = 0.0002)

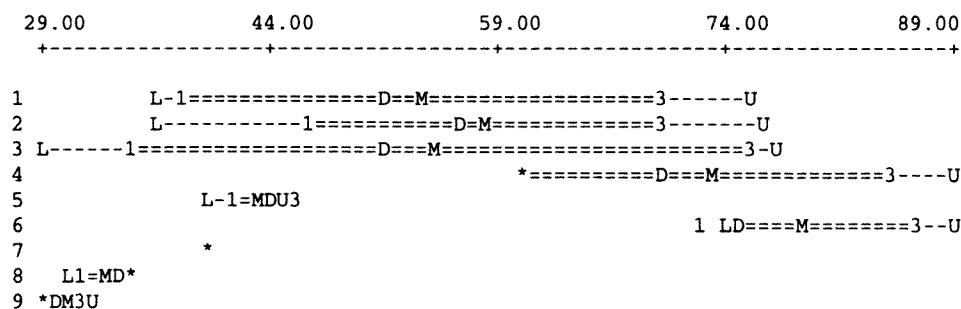
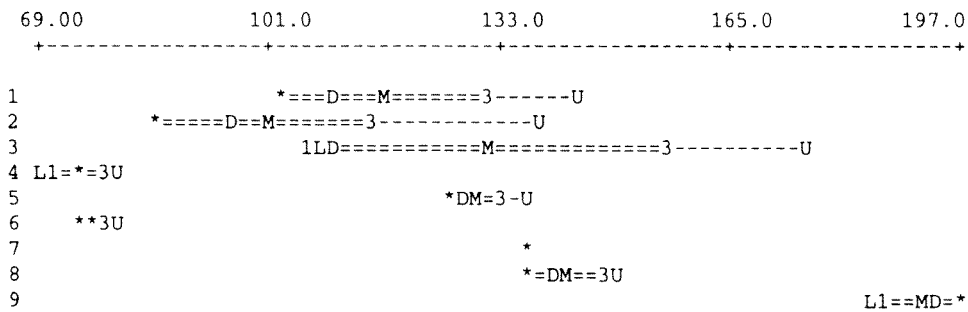
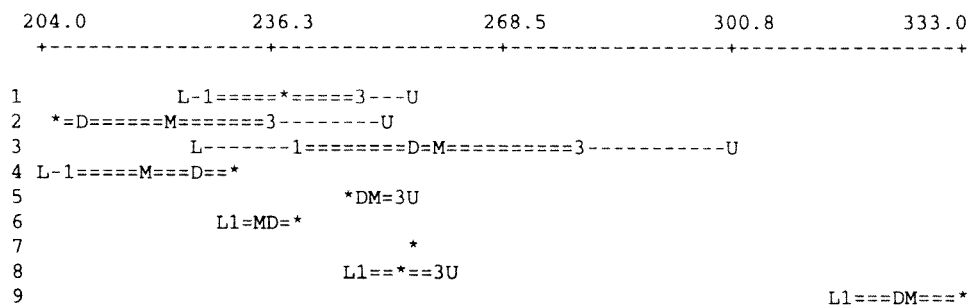


Figure 5 (cont.)

Precipitation coldest quarter (mm): (Kruskal-Wallis = 51.8, df = 8, p < 0.0001)



Annual precipitation (mm): (Kruskal-Wallis = 43.5, df = 8, p < 0.0001)



/ plot. The four subgroups show strong geographical and edaphic separation with subgroup 3a occurring on white dunes at Bush Bay and Cuvier, subgroup 3b occurring on red sands at Cuvier, subgroup 3c occurring on white sands at Edel Land and subgroup 3d occurring on red sands on Peron Peninsular. An separate analysis of sites in site group 3 confirmed highly faithful and constant species assemblages for subgroup 3b (i.e. *Triodia basedowii*, *Triodia pungens*, *Indigofera brevidens*, *Eragrostis lanata*, *Acacia rostellifera*); 3c (i.e. *Acanthocarpus robustus*, *Lepidium puberulum*, *Olearia* sp. Edel, *Poa drummondiana*, *Podolepis gnaphalioides*, *Triglochin trichophorum*); and 3d (i.e. *Acanthocarpus* aff. *robustus*, *Solanum orbiculare*, *Eragrostis dielsii*, *Dianella revoluta*, *Austrostipa elegantissima*) while subgroup 3a lacked species assemblages typical of the other subgroups.

Site group 4 consists of the inland *Acacia* shrublands of the Mardathuna - Kennedy Range footslopes - Gascoyne Junction area (Figure 4). Most sites are dominated by *A. aneura*, two have a eucalypt overstorey while one site (GJ1) is dominated by *Senna artemisioides* ssp *helmsii*. Average species richness is still high (39.6 taxa/ plot) but lower than site groups 2 and 3. Species assemblage A is typical of this site type with a much higher constancy than site type 2 which shares this

assemblage. Assemblages B and C are largely faithful to site group 4 and differentiate between two subgroups, 4a which tends to have shallower stony soils with significant calcrete in the upper layer and 4b on deeper sandy soils (Wyrwoll, Stoneman, Elliott and Sandercock, 2000). Beard (1990) states that Mulga does not normally occur in the Carnarvon region but this community type was widespread in the north east quadrant of the study area.

Site group 5 consists of eucalypt - *Callitris* or eucalypt - *Acacia* woodlands on red sand on the Toolonga plateau and site group 6 are sites of the red dunes on the top of the Kennedy Range (KE1, KE2) and tall dunes at Mardathuna (MR3). Both site group 5 and 6 differ from the other Carnarvon groups (site groups 1 to 4) in lacking most species from species assemblage K, which are generally ubiquitous (although site group 4 is under represented in some species). Species present from this assemblage differ between site groups 5 and 6 (Table 3). Species assemblage P is typical (ie showing both high degrees of constancy and fidelity) of site group 5 and species assemblage L is shared with other Carnarvon groups. Site group 6 is largely defined by the lack of assemblages that delimit the other Carnarvon groups, average species richness is low for site group 6 (21.7 / plot)

while the red sands of the Toolonga plateau (site group 5) are much richer with an average species richness of 38.3 species/plot and similar to site groups 2 to 4.

The affinities of site group 7, which consists of a single site NE2, are not clear. This site is a *Banksia ashbyi*-*B. sceptrum* woodland over heath on yellowish - red sands near the top of a dune. It was an unusual site in that no annuals were recorded on the plot in either year despite a significant annual flora being recorded at NE1 (only some 3 km to the NW) in 1996. It is likely that this site is transitional between the limestone heaths of site group 9 and the eucalypt woodlands of site group 5. With the complete lack of annual taxa and only 12 perennial taxa recorded from this plot, its strongest relationship in the present classification is with the species poor site group 6.

The remaining two site groups are typical of the vegetation types of the Irwin (Geraldton Sandplains) district. Site group 8 are eucalypt woodlands and tree heaths on red dunes immediately south of Shark Bay while site group 9 are limestone heaths or woodlands over limestone heaths between Kalbarri and Shark Bay (Figure 4). Species assemblage N is most typical of site group 8, largely comprising taxa of sandy habitats with a southwestern distribution. Average species richness for site group 8 was 30.0 taxa/plot. Species assemblages S and T are both highly faithful to site group 9. Both these assemblages are largely southwestern taxa common on calcareous sands. This site group can be divided into two subgroups - 9a occurring on massive limestones and 9b occurring on deeper sands over

limestone. Species in species assemblage T are southwestern taxa generally typical of massive limestones. Average species richness for site group 9 was 39.4 taxa/plot.

Environmental correlates

There is a strong correlation between the site groups and most of the major climatic gradients of the study area. The temperature and rainfall parameters derived from ANUCLIM show a very high degree of inter-correlation and it was not possible from the available data to determine to which aspect of these parameters the vascular flora is responding. Most parameters showed significant differences between site groups (Figure 5).

Patterns in mean annual temperature reflected geographical spread of site groups with the highest mean temperatures predicted for site groups 4 and 6 which are found in the north east of the study area and the lowest for site group 9 in the south west of the study area (Figures 4 and 5). The widespread site groups (1, 2 and 3) had the widest range of predicted mean temperatures. The inland site groups had the highest diurnal temperature range and the highest annual temperature range (Figure 5).

Most of the study area had highest rainfall in winter, with the exception of sites from the Kennedy Range (site groups 6 and 4 in part) which showed significant rainfall during the warmest quarter (Figure 5). Annual precipitation was considerably higher in the area between Kalbarri and Shark Bay (site group 9) than in any other part of the study area, with the *Acacia* shrublands (site

Table 4 Mean values of soil parameters of nine groups derived by classifying sites according to their vascular flora. Values were derived from a bulked soil sample taken from 0-10 cm layer. (S.D. indicates level of significance in difference between the means based on Kruskal - Wallis non parametric one way analysis of variance * = $P < 0.05$, ** = $P < 0.01$, *** = $P < 0.001$)

	Site Groups									S.D.
	1	2	3	4	5	6	7	8	9	
EC (mS/m)	651.0	3.7	9.9	12.7	1.3	1.0	1.0	8.0	1.6	***
Cl (%)	0.84	0.0	0.0	0.01	0.0	0.0	0.0	0.0	0.0	***
pH (H ₂ O)	8.68	7.48	9.15	6.88	5.53	6.50	5.80	8.50	6.56	***
Sand (%)	84.8	92.7	93.7	90.2	91.5	95.5	94.0	95.7	95.4	**
Silt (%)	6.3	1.5	1.5	3.0	1.0	0.7	0.5	0.5	0.6	***
Clay (%)	8.9	5.8	4.7	6.8	7.5	3.8	5.5	3.8	4.0	*
C (%)	0.44	0.23	0.45	0.20	0.36	0.13	0.32	0.41	0.45	***
Total N (%)	0.04	0.02	0.04	0.02	0.02	0.01	0.01	0.02	0.02	***
Total P (ppm)	185.0	129.6	222.5	135.4	65.0	60.7	51.0	35.3	34.0	***
P (HCO ₃) (ppm)	15.0	8.3	10.5	6.3	1.8	2.0	1.0	2.0	1.2	***
K (HCO ₃) (ppm)	345.0	135.8	57.5	167.3	20.0	39.3	14.0	29.0	23.4	***
Ca (HCO ₃) (ppm)	15.8	0.6	25.3	0.2	0.0	0.0	0.0	1.0	0.0	***
CEC (me%)	4.3	2.7	3.2	3.0	1.0	1.3	1.0	3.7	2.0	**
ex Ca (me%)	4.08	1.36	2.32	1.31	0.33	0.57	0.28	2.14	1.24	***
ex Na (me%)	5.46	0.06	0.09	0.16	0.02	0.01	0.02	0.04	0.02	***
ex K (me%)	0.59	0.28	0.11	0.34	0.04	0.08	0.03	0.04	0.05	***
ex Mg (me%)	2.49	0.44	0.32	0.82	0.10	0.15	0.07	0.26	0.21	***

groups 2 and 4) having the lowest average rainfall (Figure 5).

The nine site groups differed significantly in terms of soil chemistry and soil mechanical analysis. Soils from site group 1 were the most markedly different soils with very high levels of electrical conductivity, Cl, K, exchangeable Na, and exchangeable Mg (Table 4). Soils of site group 1 were generally loamy sands or gypsum (the two saltbush dominated plots that occurred on sand were the exceptions) while plots in the other site groups all occurred on sands except in site group 4 where two plots occurred on loamy sand.

Most of the soils were acid except for the saline site group (group 1; mean pH 8.7), the red sands south of Shark Bay (site group 8) with average pH of 8.5 and the coastal *Acacia* and *Melaleuca* shrublands (site group 3) which had a mean pH of 9.1. The calcareous nature of these coastal sands can be seen from the high values for Ca and / or high exchangeable Ca. The remaining soils ranged from almost neutral for the *Acacia* shrublands (site group 2) to strongly acidic for the red sands of the eucalypt woodlands of the Toolong plateau (site group 5 - average pH of 5.5). The sand dunes on the top of the Kennedy Range and at Mardathuna (site group 6) were the poorest in terms of organic C and N while site groups 1 to 4 were the most fertile in terms of total P, available P, available K, exchangeable K and exchangeable Mg. The soils of site groups 5 and 6 were more similar to the Irwin (Geraldton Sandplains) vegetation types (site groups 8 and 9) than other Carnarvon vegetation types.

This strong regional patterning in soil types was generally not seen within the geographically segregated subgroups of site group 3 (only exchangeable Ca showed significant differences between the subgroups). The low number of replicates within each subgroup may be influencing these results. Significant differences were found for some soil properties of subgroups of site groups 2 and 4; these subgroups show less well defined but still significant geographical separation (latitude was significantly different between subgroup means at $P < 0.05$ for both groups) (Tables 5 and 6).

Separation of subgroups in site groups 2 and 4 was also strongly correlated to depth of soil profile (described in Wyrwoll, Stoneman, Elliott and Sandercock, 2000). In site group 2, subgroups a and c occurred on deep sands or gravels while plots in subgroup b had soil profiles either truncated on limestone or calcrete or had soils with significant calcrete or shell deposits in the profiles. Similarly more than half the plots in subgroup 4a showed truncated profiles at depths of 30 - 90 cm underlain by massive calcrete or rock. All plots in subgroup 4b were on deep sands (>100 cm) (Wyrwoll, Stoneman, Elliott and Sandercock, 2000). Site group 9 has a much smaller geographical spread than site

Table 5 Difference in soil chemistry and soil mechanical analysis between the subgroups in site group 2. Values were derived from a bulked soil sample taken from 0-10 cm layer. (S.D. indicates level of significance in difference between the means based on Kruskal - Wallis non parametric one way analysis of variance ns = not significant, * = $P < 0.05$, ** = $P < 0.01$, *** = $P < 0.001$)

	Subgroups			SD
	2a	2b	2c	
EC (mS/m)	2.9	5.6	3.0	ns
Cl (%)	0.0	0.0	0.0	ns
pH (H ₂ O)	7.49	8.26	6.83	ns
Sand (%)	94.0	91.0	92.5	ns
Silt (%)	1.0	2.7	1.1	ns
Clay (%)	5.0	6.3	6.4	ns
C (%)	0.20	0.20	0.30	ns
Total N (%)	0.02	0.02	0.02	ns
Total P (ppm)	145.7	138.0	103.8	*
P (HCO ₃) (ppm)	9.7	10.8	4.7	**
K (HCO ₃) (ppm)	145.1	184.0	84.8	*
Ca (HCO ₃) (ppm)	0.3	1.2	0.3	ns
CEC (me%)	2.7	3.6	1.8	*
ex Ca (me%)	1.44	1.77	0.92	ns
ex Na (me%)	0.04	0.09	0.06	ns
ex K (me%)	0.30	0.40	0.17	*
ex Mg (me%)	0.61	0.47	0.22	*

Table 6 Difference in soil chemistry and soil mechanical analysis between the subgroups in site group 4. Values were derived from a bulked soil sample taken from 0-10 cm layer. (S.D. indicates level of significance in difference between the means based on Kruskal - Wallis non parametric one way analysis of variance ns = not significant, * = $P < 0.05$, ** = $P < 0.01$, *** = $P < 0.001$)

	Subgroups		SD
	4a	4b	
EC (mS/m)	18.3	1.3	*
Cl (%)	0.0	0.0	ns
pH (H ₂ O)	7.18	6.28	*
Sand (%)	89.1	92.3	ns
Silt (%)	3.8	1.6	*
Clay (%)	7.1	6.1	ns
C (%)	0.20	0.20	ns
Total N (%)	0.02	0.02	ns
Total P (ppm)	141.9	122.5	ns
P (HCO ₃) (ppm)	7.5	3.8	*
K (HCO ₃) (ppm)	211.3	79.5	**
Ca (HCO ₃) (ppm)	0.3	0.0	ns
CEC (me%)	3.9	1.3	*
ex Ca (me%)	1.61	0.73	*
ex Na (me%)	0.24	0.02	*
ex K (me%)	0.41	0.18	**
ex Mg (me%)	1.09	0.27	*

groups 2, 3 or 4 and while the subgroups showed no significant difference in soil chemistry or soil mechanical analysis, subgroup 9a occurred on shallow soil over limestone or in soils with significant limestone outcropping while subgroup 9b occurred on deeper sands (Wyrwoll, Stoneman, Elliott and Sandercock, 2000).

DISCUSSION

Flora

Although the flora of the southern Carnarvon Basin is still imperfectly recorded, the current list of 2133 taxa is a marked improvement on the previous list for the entire Carnarvon Basin (an area of 91 046 km²) of 1348 taxa (Keighery and Gibson, 1993). This improvement occurred at all levels; for example Kalbarri National Park had 206 taxa recorded by Burns (1984), 717 taxa for the area by Bellairs and Bellairs (1992) and we recorded 1071 taxa from within the boundaries of the National Park.

The study area has a predominantly arid flora of southern affinities with an overlay of temperate and tropical taxa at their range ends. The area is, however, species rich because it encompasses the change-over zone from the temperate to the arid zone.

Species level conservation of the vascular flora shows that the reserve network in the area is heavily biased towards the southern and coastal margin of the zone. The wetland [40% of the 265 wetland taxa listed by Gibson, Keighery and Lyons (2000) are not known from reserves in the Basin] and red sandplain floras are particularly lacking from the reserve network.

Vegetation patterning

In a regional survey of this type the degree of discrimination within and between site groups is limited by the number of plots established. In our

survey, saltbush communities were only sampled at Bush Bay (BB1) and Boolathana (BO1). In both cases these sites classified most similar to a vegetation unit found nearby based on shared saline species in one case (species assemblage O - BB1) and a suite of annuals (species assemblage G - BO1) in the other. More sampling of this vegetation unit may have increased resolution of the current analysis.

Due to the limited number of sites it was also difficult to separate floristic variation due to regional environmental gradients from that associated with local edaphic factors. This is complicated in the present analysis by the correlation in regional climatic variation with distribution of major soil types. Within some site groups for which it was possible to distinguish subgroups, it was found that geographical segregation (and hence correlation with regional environmental gradients) was still apparent; nonetheless correlations with edaphic factors were clearly demonstrated within at least three site groups.

The climate of this region is unpredictable from year to year in terms of both precipitation and timing of rainfall events. During the two years of the study, at least one good season was experienced at all plots except NE2. For this reason the annual flora was included in the current analysis. However little is known of the patterns of accumulation of annuals at sites over longer time frames or the influence of time of year of rainfall events on the annual accumulation curves. Work of Zahran (1986) and Loneragan *et al.* (1991) provide some evidence of longer term climatic response by the herbaceous flora. Long term regular sampling at permanently located plots is needed quantify these processes in terms of changes in cover, changes in species occurrence and patterns of species accumulation through time. Annuals form a very significant proportion of the total flora of the region and therefore could be expected to be important in

Table 7 Percentage of taxa in each lifeform class by site group. Only taxa present in two or more sites are included. Percentage is based on total flora list recorded for each site group.

Life form	Site Group								
	1	2	3	4	5	6	7	8	9
Annual herbs / geophytes	60	44	40	42	58	18	17	14	16
Annual graminoides	5	5	3	8	1	8	0	0	0
Perennial herbs	9	7	5	4	4	4	0	2	8
Graminoides	6	5	10	10	4	10	8	5	12
Shrub	19	37	42	35	27	55	58	70	60
Trees	0	2	0	1	5	4	17	9	3
Total number of species	78	227	158	153	73	49	12	56	98
Total number of quadrats	6	18	11	12	4	3	1	3	5

defining the major compositional gradients across the region.

The analysis of the 63 primary sites shows an essentially similar result to the pattern discerned from our subjective appraisal of the biogeographic affiliations of the vascular flora. The vegetation patterning is closely correlated to major climatic gradients, as well as the distribution of different soil types across the study area. At a local scale edaphic factors were correlated with vegetation patterning but for the more geographically widespread groups it was not possible to separate effects of regional climatic differences and regional soil differences from local edaphic factors.

The analysis showed the southern part of the

study area to be the most floristically complex with seven of the nine site groups (78%) being recorded from the 17 southern most sites (28%), reflecting the major change-over zone between the southwestern flora and the flora of more arid areas. This difference between the floras of the Geraldton Sandplain [Beard's (1990) Irwin district] and the Carnarvon can also be seen in an analysis of the proportional representation in lifeform class between the major classificatory groups (Table 7). Species rich shrublands are typical of the southwestern flora and site groups 8 and 9 show the expected high percentage of shrubs compared to annual herbs. Most of the Carnarvon groups (site groups 1 to 5) show the opposite trend with

Table 8 Comparison of nine major floristic site types identified in the present study with the land system and Pasture Types defined by Payne *et al.* (1987). Divisions in the table reflect Payne *et al.* (1987) higher vegetation - soil type groupings.

Pasture Type/ Land System	Site Groups								
	1	2	3	4	5	6	7	8	9
Acacia and eucalypt short grass forb									
Nerren		1			4				
Heath									
Nanga							1	3	3
Zuytdorp									2
Acacia sandplain									
Brown		4							
Lyons		3				1			
Peron			3						
Sandplain		5							
Yalbalgo				3					
Yaringa		1							
Coastal dune shrub									
Coast			1						
Edel			2						
Lyell			1						
Hard spinifex									
Kennedy						2			
Soft spinifex									
Cardabia			4						
Acacia mixed shrub									
Mary				1					
Toolonga		2							
Acacia short grass forb									
Windalia				2					
Stony short grass forb									
Billy				1					
Mixed saltbush and bluebush									
Delta	1								
Sable	1								
Wrarroora	1	2							
Samphire									
Birrida	1								
McLeod	2								
Not mapped				5					

moderate to low percentage of shrubs and high percentage of herbs. Site group 6, the species poor dune vegetation of the top of the Kennedy Range and Mardathuna, do not follow this trend with a much higher than expected representation of shrubs. Further sampling following good rains would be needed to confirm this finding.

Site group 7 consisted of only a single site (NE2) from which only 12 perennial taxa were recorded over the two major sampling periods. At site NE1 only 3 km distant large numbers of annuals were recorded in 1996 as with the other Nerren Nerren sites located some distance to the east. The soil chemistry, soil mechanical analysis and soil profile data (Wyrwoll, Stoneman, Elliott and Sandercock, 2000) were very similar between all Nerren Nerren sites. It is not clear if NE2 represents a local vegetation type that is naturally poor in annual species or had not received the same degree of rainfall as nearby sites.

The floristic classification shows broad general agreement with the biogeographical boundaries of Beard (1990) with the tree heath on red sandplain south of Shark Bay and the coastal limestone woodlands and heaths (site groups 8 and 9) falling within the Irwin district and the saline group, the *Acacia* shrublands, the coastal *Acacia* and *Melaleuca* shrublands, the Mulga shrublands, and the red sand dune vegetation groups of the Toolonga Plateau and the Kennedy Range falling in the Carnarvon district. The present classification does not support the inclusion of Edel Land as part of the Irwin district (renamed Geraldton Sandplain) as recently suggested by Thackway and Cresswell (1995).

Our analysis clearly shows the relationships between Edel Land and Peron Peninsular with the rest of the coastal belt of the Carnarvon district in site group 3. The Edel Land sites are separated as a subgroup, with this subgroup being most similar to the Peron subgroup. Our present data are not detailed enough to assess if Beard's phytogeographic boundaries are optimally placed (but see Gibson, Burbidge, Keighery and Lyons, 2000).

We found no strong correlation between vegetation patterning and the broadly mapped surficial geology (Hocking, 1985). All sites occurred on Pliocene to Holocene aged alluvial or colluvial deposits or aeolian sands except the lower slopes of the Kennedy Range (KE3-5 which occurred on early Permian to early Cretaceous sediments) and one site on lower slopes of the Pell Range (GJ1 which occurred on Permian sediments).

The only consistent land system mapping that has been undertaken across the study area is that produced by the Department of Agriculture rangelands survey group (Payne *et al.*, 1987). This classification was based on 669 inventory sites sampled for perennial taxa and soil parameters in conjunction with aerial photograph interpretation.

The resulting mapping recognised 89 land systems in 17 vegetation alliances termed Pasture Types. Emphasis was given to perennial taxa important to stock production in the definition of Pasture Types (Payne *et al.*, 1987). These Pasture Types were classified into five broad groupings based on affinity of species present (Southwestern vs. Eremaean) and broad soil type. Our plots covered 23 of these land systems in 11 Pasture Types in four of the broad vegetation - soil groupings (Table 8).

At the land system level there was only moderate correlation between the 23 land systems and the nine major floristic site groups. The nine site groups were represented by between one and seven land systems. Better correlation was evident between the floristic site groups and the major Pasture Types, with the nine site groups represented by between one and four Pasture Types. The correlation did not improve at the broadest vegetation - soil groupings (Table 8). This lack of correlation between the two studies relates to different aims and methodology used. The rangelands study used perennial taxa to help define mapped land units, while the present study used analysis of all taxa to define major floristic units across the study area. A reanalysis of the 63 sites using only perennial taxa could be expected to be more closely correlated with the rangeland classification.

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APPENDIX 1

Vascular plants recorded for study area, their CALM conservation codes and occurrence in major conservation reserves.

Explanation of codes:

Conservation code [as defined by the Western Australian Department of Conservation and Land Management (1998)].

R. Declared Rare Flora - Extant taxa (= Threatened Flora = Endangered + Vulnerable)

Taxa which have been adequately searched for, and are deemed to be in the wild either rare, in danger of extinction, or otherwise in need of special protection, and have been gazetted as such, following approval by the Minister for the Environment, after recommendation by the State's Endangered Flora Consultative Committee.

1. Priority 1 - Poorly Known Taxa

Taxa which are known from one or a few (generally < 5) populations which are under threat, either due to small population size, or being on lands under immediate threat, eg. road verges, urban areas, farmland, active mineral leases, etc., or the plants are under threat from disease, grazing by feral animals etc. May include taxa with threatened populations on protected lands. Such taxa are under consideration for declaration as 'rare flora', but are in urgent need for further survey.

2. Priority Two - Poorly Known Taxa

Taxa which are currently known from one or a few (generally < 5) populations, at least some of which are believed to be under immediate threat (ie. not currently endangered). Such taxa are under consideration for declaration as 'rare flora', but are in urgent need of further survey.

3. Priority Three - Poorly Known Taxa

Taxa which are known from several populations, at least some of which are not believed to be under immediate threat (ie. not currently endangered). Such taxa are under consideration for declaration as 'rare flora', but are in need of further survey.

4. Priority Four - Poorly Known Taxa

Taxa which are considered to have been adequately surveyed and which, whilst being rare (in Australia), are not currently threatened by identifiable factors. These taxa require monitoring every 5 -10 years.

Distribution

Distributions refer to named places, pastoral leases, and conservation reserves (see below and Figure 1). Range limits refer to populations occurring at the limit of their known geographic range at or within the named place, pastoral lease or conservation reserve.

VCL	Vacant Crown Land
WHA	Shark Bay World Heritage Area

Conservation Reserve Codes

BINR	Bernier Island Nature Reserve
DINR	Dorre Island Nature Reserve
CNR	Cooloomia Nature Reserve
FPPN	Francois Peron National Park
KNP	Kalbarri National Park
KRNP	Kennedy Range National Park
TNR	Toolonga Nature Reserve
ZNP	Zuytdorp National Park

Family/Taxon	Conservation Code	Distribution	Conservation Reserve						
			KNP	TNR	ZNP	CNR	FPNP	BINR	DINR
Acanthaceae									
<i>Dipteracanthus australasicus</i> subsp. <i>australasicus</i>									
<i>Harnieria kempeana</i>									
<i>Hypoestes floribunda</i>									
Adiantaceae									
<i>Anogramma leptophylla</i>									
<i>Cheilanthes austrotenuifolia</i>			1						1
<i>Cheilanthes lasiophylla</i>									1
<i>Cheilanthes sieberi</i>			1						1
Agavaceae									
* <i>Agave americana</i>						1			
Aizoaceae									
* <i>Carpobrotus aequilaterus</i>									
<i>Carpobrotus</i> sp. (GJK & NG 1707)			1		1			1	
<i>Carpobrotus virescens</i>			1		1				
<i>Disphyma crassifolium</i> subsp. <i>clavellatum</i>			1						
<i>Gunniopsis rodwayi</i>									
<i>Gunniopsis septifraga</i>						1			
* <i>Mesembryanthemum crystallinum</i>			1		1				
<i>Sesuvium portulacastrum</i>						1	1	1	
<i>Tetragonia coronata</i>	1	S limit FPNP Endemic WHA							
<i>Tetragonia cristata</i>									
* <i>Tetragonia decumbens</i>			1						
<i>Tetragonia diptera</i>				1	1	1			
<i>Tetragonia implexicoma</i>			1		1				
<i>Tetragonia tetragonoides</i>					1				
<i>Trianthema oxycalyptra</i> var. <i>oxycalyptra</i>		S limit Nerren Nerren Stn.							
<i>Trianthema pilosa</i>									
<i>Trianthema triquetra</i>									
<i>Trianthema turgidifolia</i>									
<i>Zaleya galericulata</i>									
Amaranthaceae									
<i>Alternanthera nodiflora</i>			1						
* <i>Alternanthera pungens</i>									
<i>Amaranthus clementii</i>									
<i>Amaranthus mitchellii</i>									1
<i>Amaranthus pallidiflorus</i>						1		1	1
<i>Gomphrena canescens</i>									
<i>Gomphrena cunninghamii</i>									
<i>Hemichroa diandra</i>						1			
<i>Ptilotus aervoides</i>		N limit ZNP	1		1				1
<i>Ptilotus</i> aff. <i>chamaecladus</i>			1						
<i>Ptilotus</i> aff. <i>grandiflorus</i>			1						

Family/Taxon	Conservation Code	Distribution	Conservation Reserve							
			KNP	TNR	ZNP	CNR	FPNP	BINR	DINR	KRNP
<i>Corynotheca micrantha</i> var. <i>micrantha</i>			1		1					
<i>Corynotheca pungens</i>		S limit Tamala Stn.					1			
<i>Dichopogon preissii</i>		N limit KNP	1							
<i>Dichopogon tyleri</i>		Endemic to Study Area	1				1			
<i>Laxmannia sessiliflora</i> subsp. <i>sessiliflora</i>		N limit CNR	1		1	1				
<i>Murchisonia fragrans</i>	2	N range limit KNP/TNR	1	1						
<i>Murchisonia volubilis</i>			1	1			1			1
<i>Sowerbaea laxiflora</i>			1							
<i>Thysanotus arenarius</i>		N limit Tamala Stn.	1							1
<i>Thysanotus brittanii</i> ms		Endemic KNP	1							
<i>Thysanotus kalbarriensis</i> ms	2		1							
<i>Thysanotus manglesianus</i>		N limit Nanga Stn.	1	1	1		1			
<i>Thysanotus patersonii</i>					1	1	1		1	1
<i>Thysanotus ramulosus</i>			1							
<i>Thysanotus sparteus</i>		N limit Carrang Stn.	1			1				
<i>Thysanotus speckii</i>			1	1					1	
<i>Thysanotus teretifolius</i>		N limit KNP	1							
<i>Thysanotus thyrsoides</i>			1							
<i>Tricoryne</i> aff. <i>corynothecoides</i> (GJK & NG 1274)										
<i>Tricoryne arenicola</i> ms							1			
<i>Tricoryne corynothecoides</i>			1				1			
<i>Tricoryne elatior</i>		N limit Tamala Stn.	1		1					
Apiaceae										
<i>Actinotus leucocephalus</i>										
<i>Apium annuum</i>		N limit KNP	1							
<i>Apium prostratum</i>										
* <i>Cyclospermum leptophyllum</i>			1							
<i>Daucus glochidiatus</i>			1	1	1		1		1	
<i>Hydrocotyle pilifera</i> var. <i>glabrata</i>										
<i>Hydrocotyle rugulosa</i>					1					
<i>Hydrocotyle scutellifera</i>										
<i>Neosciadium glochidiatum</i>		N limit FPNP					1			
<i>Platysace commutata</i>			1							
<i>Platysace juncea</i>		N limit KNP	1							
<i>Platysace</i> sp. Kalbarri (D.& B.Bellairs 1383)	2	Endemic KNP	1							
<i>Platysace</i> sp. Kennedy (P.G.Wilson 8450)	2	Endemic KRNP								1
<i>Platysace xerophila</i>		N limit KNP	1							
<i>Trachymene</i> aff. <i>oleracea</i> (GJK & NG 719)		Confined KRNP								1
<i>Trachymene coerulea</i> var. <i>leucopetala</i>		N limit KNP	1							
<i>Trachymene cyanopetala</i>			1	1						
<i>Trachymene elachocarpa</i>					1	1	1		1	
<i>Trachymene glaucifolia</i>										1
<i>Trachymene ornata</i>		N limit Coburn Stn.	1	1						1
<i>Trachymene pilosa</i>		N limit WHA	1	1	1					
<i>Uldinia ceratocarpa</i>		N limit FPNP	1	1	1		1			1

Apocynaceae									
	<i>Alyxia buxifolia</i>	N limit Nanga Stn.		1		1			
	* <i>Catharanthus roseus</i>			1					
Arecaceae									
	* <i>Phoenix dactylifera</i>								
Asclepiadaceae									
	<i>Cynanchum aff. floribundum</i> (KRN 11847)								1
	<i>Cynanchum floribundum</i>					1			
	<i>Gymnanthera cunninghamii</i>	3	S limit from (Cape Range)						
	<i>Gymnema granitica</i> ms		N limit FPNP			1	1		
	<i>Marsdenia australis</i>				1		1		1
	<i>Marsdenia graniticola</i>					1	1		
	<i>Marsdenia viridiflora</i>								
	<i>Rhyncharrhena linearis</i>				1		1		
	<i>Sarcostemma viminale</i> subsp. <i>australe</i>			1			1		
Asphodelaceae									
	* <i>Asphodelus fistulosus</i>						1		
	<i>Bulbine semibarbata</i>			1		1	1		
Aspleniaceae									
	<i>Pleurosorus rutifolius</i>			1					
Asteraceae									
	<i>Actinobole condensatum</i>		N limit DHI/FPNP	1			1		
	<i>Actinobole drummondiana</i>		S limit Hamelin Stn.						1
	<i>Actinobole uliginosum</i>			1	1				1
	<i>Angianthus acrohyalinus</i>		S limit Hamelin Stn.				1		1
	<i>Angianthus cunninghamii</i>			1		1	1	1	1
	<i>Angianthus microcephalus</i>	2					1		1
	<i>Angianthus milnei</i>						1		1
	<i>Angianthus preissianus</i>				1				
	<i>Angianthus pusillus</i>				1				
	<i>Angianthus</i> sp. (A.S.George 11362)		Endemic WHA						
	<i>Angianthus</i> sp. (A.S.George 11471)		Endemic WHA						
	<i>Angianthus tomentosus</i>		N limit DHI		1	1			
	* <i>Arctotheca calendula</i>			1					
	* <i>Arctotheca populifolia</i>			1					
	* <i>Aster subulatus</i>			1					
	<i>Asteridea asteroides</i>		N limit KNP	1					
	<i>Bellida graminea</i>			1	1				
	* <i>Bidens bipinnata</i>			1				1	1
	<i>Blennospora drummondii</i>			1					
	<i>Brachyscome cheilocarpa</i>			1	1		1	1	
	<i>Brachyscome ciliaris</i>			1	1	1	1	1	1
	<i>Brachyscome ciliocarpa</i>			1					
	<i>Brachyscome halophila</i>						1		
	<i>Brachyscome iberidifolia</i>		S limit ZNP	1	1	1	1	1	1

Family/Taxon	Conservation Code	Distribution	Conservation Reserve							
			KNP	TNR	ZNP	CNR	FPNP	BINR	DINR	KRNP
<i>Brachyscome latisquamea</i>					1		1		1	
<i>Brachyscome lineariloba</i>			1							
<i>Brachyscome perpusilla</i>			1							
<i>Calocephalus aevroides</i>	3								1	
<i>Calocephalus francisii</i>			1			1	1		1	1
<i>Calocephalus knappii</i>										1
<i>Calocephalus multiflorus</i>			1							1
<i>Calocephalus</i> sp. Pilbara (MET 11454)										
<i>Calocephalus</i> sp. Wittenoom (A.S.George 1082)										
<i>Calotis hispidula</i>										1
<i>Calotis multicaulis</i>			1	1						1
* <i>Centaurea melitensis</i>			1		1					
<i>Centipeda cunninghamii</i>			1							
<i>Centipeda minima</i>			1							
<i>Centipeda thespidioides</i>										
<i>Cephalipterum drummondii</i>			1	1						
<i>Ceratogyne obionoides</i>			1	1						
<i>Chondropyxis halophila</i>										
<i>Chrysocephalum apiculatum</i>										
<i>Chrysocephalum semicalvum</i>										1
<i>Chthonocephalus muellerianus</i>	2			1						
<i>Chthonocephalus oldfieldianus</i>	1	Endemic Carnarvon to Shark Bay					1			
<i>Chthonocephalus pseudevax</i>			1	1			1			
<i>Chthonocephalus spathulatus</i>	1			1	1	1				
<i>Chthonocephalus tomentellus</i>	2		1				1			
* <i>Cotula bipinnata</i>			1							
<i>Cotula coronopifolia</i>		N limit KNP	1							
<i>Cotula cotuloides</i>		N limit DHI	1							
<i>Cotula</i> sp. Kalbarri (GJK & NG 2044)			1							
<i>Cratystylis subspinescens</i>							1			
<i>Decazesia hecatocephala</i>										
<i>Erymophyllum compactum</i>										1
<i>Erymophyllum ramosum</i>										1
<i>Erymophyllum ramosum</i> subsp. <i>involutratum</i>										
<i>Erymophyllum ramosum</i> subsp. <i>ramosum</i>										
<i>Erymophyllum tenellum</i>			1							
<i>Gilberta tenuifolia</i>		N limit Coburn Stn.	1	1						
<i>Gilruthia osbornei</i>										
* <i>Gnaphalium polycaulon</i>		S limit DINR							1	
<i>Gnephosis acicularis</i>										
<i>Gnephosis angianthoides</i>										
<i>Gnephosis arachnoidea</i>							1			
<i>Gnephosis brevifolia</i>			1							
<i>Gnephosis eriocephala</i>				1						
<i>Gnephosis gynotricha</i>										
<i>Gnephosis macrocephala</i>										1
<i>Gnephosis</i> sp. Billabong (Nordenstam/Anderberg 203)		Endemic study area								

<i>Gnephosis tenuissima</i>			1	1		1	1			1
<i>Haptotrichion colwillii</i>		Endemic southern Carnarvon Basin								
<i>Haptotrichion conicum</i>										
* <i>Hedypnois rhagadioloides</i>			1							
* <i>Helianthus annuus</i>										
<i>Helipterum craspedioides</i>			1							1
<i>Hyalosperma cotula</i>			1							
<i>Hyalosperma demissum</i>			1							
<i>Hyalosperma glutinosum</i> subsp. <i>glutinosum</i>										
<i>Hyalosperma glutinosum</i> subsp. <i>venustum</i>		N limit Tamala Stn.	1							
* <i>Hypochaeris glabra</i>			1	1	1	1	1			
<i>Isoetopsis graminifolia</i>										
* <i>Lactuca serriola</i>			1							
<i>Lagenifera huegelii</i>										
<i>Lawrencella davenportii</i>		N limit Hamelin Stn.	1	1		1				1
<i>Lawrencella rosea</i>		N limit Tamala Stn.	1	1						1
<i>Leucochrysum fitzgiibbonii</i>				1						
<i>Leucophyta brownii</i>			1							
<i>Millotia depauperata</i>	1									
<i>Millotia jacksonii</i>	2		1							
<i>Millotia myosotidifolia</i>			1	1	1		1	1		
<i>Minuria integerrima</i>										
<i>Minuria leptophylla</i>								1		
<i>Myriocephalus gascoynensis</i> ms		Endemic Carnarvon Basin								
<i>Myriocephalus gueriniae</i>				1						1
<i>Myriocephalus nudus</i>			1							
<i>Myriocephalus pygmaeus</i>										1
<i>Myriocephalus</i> sp. (Demarz 12152)		Endemic Carnarvon Basin								
<i>Myriocephalus</i> sp. (Nordenstam & Anderberg 188)		Endemic WHA								
<i>Olearia adenolasia</i>			1							
<i>Olearia</i> aff. <i>axillaris</i> (GJK/NG 1025)		Endemic WHA								
<i>Olearia axillaris</i>			1	1		1	1	1	1	1
<i>Olearia dampieri</i> subsp. <i>dampieri</i> ms			1		1	1	1			1
<i>Olearia dampieri</i> subsp. <i>eremicola</i> ms										
<i>Olearia humilis</i>				1						
<i>Olearia imbricata</i>										
<i>Olearia muelleri</i>			1							
<i>Olearia occidentissima</i>	2	Endemic WHA								
<i>Olearia pimeleoides</i>										
<i>Olearia plucheacea</i>										1
<i>Olearia revoluta</i>			1							
<i>Olearia rudis</i>										
<i>Olearia stuartii</i>										1
* <i>Osteospermum calendulaceum</i>			1							
<i>Pluchea rubelliflora</i>										1
<i>Pluchea squarrosa</i>										1
<i>Pluchea tetranthera</i>		S limit Wooramel R.								
<i>Podolepis auriculata</i>		S limit Wooramel R.								
<i>Podolepis canescens</i>		N limit Giralda	1	1				1		1
<i>Podolepis capillaris</i>			1					1		

Family/Taxon	Conservation Code	Distribution	Conservation Reserve							
			KNP	TNR	ZNP	CNR	FPNP	BINR	DINR	KRNP
<i>Podolepis gardneri</i>								1		1
<i>Podolepis lessonii</i>			1							
<i>Podolepis microcephala</i>		S limit Tamala Stn.								1
<i>Podotheca angustifolia</i>		N limit DHI	1		1			1		
<i>Podotheca gnaphalioides</i>		N limit Woodleigh Stn.	1		1	1		1		
<i>Podotheca pollackii</i>										1
<i>Podotheca pygmaea</i>										
<i>Pogonolepis muelleriana</i>			1							1
<i>Pogonolepis stricta</i>			1							1
* <i>Pseudognaphalium luteoalbum</i>			1							
<i>Pterocaulon sphacelatum</i>										1
<i>Pterochaeta paniculata</i>			1							
* <i>Reichardia tingitana</i>			1							
<i>Rhodanthe charsleyae</i>				1						1
<i>Rhodanthe chlorocephala</i> subsp. <i>splendida</i>			1							1
<i>Rhodanthe citrina</i>			1	1		1	1			1
<i>Rhodanthe condensata</i>		N limit KRNP	1			1			1	
<i>Rhodanthe corymbosa</i>										
<i>Rhodanthe cremea</i>		Endemic WHA								
<i>Rhodanthe humboldtiana</i>			1	1			1			
<i>Rhodanthe laevis</i>										
<i>Rhodanthe manglesii</i>			1	1						
<i>Rhodanthe margarethae</i>										
<i>Rhodanthe maryonii</i>				1						1
<i>Rhodanthe oppositifolia</i> subsp. <i>oppositifolia</i>		N limit DHI	1							
<i>Rhodanthe oppositifolia</i> subsp. <i>ornata</i>	2	Endemic WHA								
<i>Rhodanthe polycephala</i>							1			1
<i>Rhodanthe psammophila</i>										1
<i>Rhodanthe rubella</i>										
<i>Rhodanthe</i> sp. Overlander (P.S.Short 2096)	1	Endemic WHA								
<i>Rhodanthe spicata</i>			1							
<i>Rhodanthe sterileascens</i>										
<i>Rhodanthe stricta</i>			1	1						
<i>Schoenia ayersii</i>										1
<i>Schoenia cassiniana</i>			1	1			1			
<i>Schoenia filifolia</i> subsp. <i>arenicola</i>	1									
<i>Senecio glossanthus</i>			1	1	1				1	1
<i>Senecio gregorii</i>			1	1						1
<i>Senecio lautus</i> subsp. <i>dissectifolius</i>					1	1	1		1	
<i>Senecio lautus</i> subsp. <i>maritimus</i>			1		1					
* <i>Sonchus oleraceus</i>			1		1	1	1		1	1
* <i>Sonchus tenerrimus</i>							1			
<i>Sondottia glabrata</i>	2	Endemic WHA					1			
<i>Streptoglossa cylindriceps</i>										
<i>Streptoglossa liatroides</i>										1
<i>Streptoglossa tenuiflora</i>										
<i>Trichanthodium scarlettianum</i>										

<i>Trichanthodium skirrophorum</i>					1				1
* <i>Urospermum picroides</i>			1		1				
* <i>Ursinia anthemoides</i>			1						
* <i>Vellereophyton dealbatum</i>			1						
<i>Vittadinia cervicularis</i> var. <i>cervicularis</i>		N limit DHI	1						
<i>Vittadinia cervicularis</i> var. <i>oldfieldii</i>	1	N limit Kalbarri area							
<i>Vittadinia eremaea</i>									1
<i>Waitzia acuminata</i> var. <i>acuminata</i>			1						
<i>Waitzia acuminata</i> var. <i>albicans</i>		N limit Hamelin Stn.	1		1				
<i>Waitzia corymbosa</i>			1						1
<i>Waitzia nitida</i>		N limit ZNP	1	1	1			1	
<i>Waitzia podolepis</i>			1						
<i>Waitzia suaveolens</i>			1	1		1			
Avicenniaceae									
<i>Avicennia marina</i>									1
Boraginaceae									
<i>Cynoglossum australe</i>			1						
* <i>Echium plantagineum</i>			1						
<i>Halgania</i> aff. <i>argyrophylla</i>			1						
<i>Halgania</i> aff. <i>littoralis</i>									
<i>Halgania anagalloides</i> var. <i>anagalloides</i> ms		N limit KNP	1						
<i>Halgania anagalloides</i> var. <i>preissiana</i> ms									
<i>Halgania argyrophylla</i>			1						
<i>Halgania bebrana</i>		N limit Tamala Stn.	1		1				
<i>Halgania cyanea</i>			1						
<i>Halgania cyanea</i> var. <i>latisepala</i> ms		S limit FPNP							
<i>Halgania gustafsenii</i> var. <i>compactus</i> ms			1						
<i>Halgania littoralis</i>			1		1			1	
<i>Halgania sericiflora</i>			1			1			
<i>Halgania viscosa</i>					1				
<i>Heliotropium curassavicum</i>			1					1	
<i>Heliotropium heteranthum</i>									
<i>Heliotropium paniculatum</i>									1
<i>Heliotropium undulatum</i>									
<i>Omphalolappula concava</i>									
<i>Plagiobothrys plurisepalus</i>									
<i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i>		Disjunct from Mt Jackson	1				1	1	1
Brassicaceae									
* <i>Brassica juncea</i>									
* <i>Brassica tournefortii</i>			1		1	1	1		
* <i>Cakile maritima</i>			1				1		1
* <i>Coronopus didymus</i>									
* <i>Diplotaxis muralis</i>									
* <i>Diplotaxis tenuifolia</i>									
* <i>Hymenolobus procumbens</i>		N limit DINR							1
<i>Lepidium biphlicatum</i>			1						
<i>Lepidium foliosum</i>									

Family/Taxon	Conservation Code	Distribution	Conservation Reserve							
			KNP	TNR	ZNP	CNR	FPNP	BINR	DINR	KRNP
<i>Lepidium linifolium</i>			1		1		1			
<i>Lepidium lyratogynum</i>										
<i>Lepidium oxytrichum</i>				1	1					1
<i>Lepidium phlebopetalum</i>						1				1
<i>Lepidium platypetalum</i>										
<i>Lepidium pseudoruderale</i>										
<i>Lepidium puberulum</i>	4	N limit DINR							1	
<i>Lepidium rotundum</i>			1							
<i>Lepidium scandens</i>	1									1
<i>Menkea australis</i>										
<i>Menkea villosula</i>										1
<i>Phlegmatospermum drummondii</i>	3	Range extension from Wongan Hills								
* <i>Raphanus raphanistrum</i>								1		
* <i>Raphanus sativus</i>										
* <i>Sisymbrium erysimoides</i>								1		
* <i>Sisymbrium irio</i>										
* <i>Sisymbrium orientale</i>			1							
<i>Stenopetalum anfractum</i>										1
<i>Stenopetalum filifolium</i>		N limit Coburn Stn.	1	1						
<i>Stenopetalum lineare</i>										
<i>Stenopetalum pedicellare</i>			1				1			
<i>Stenopetalum robustum</i>				1						
<i>Stenopetalum sphaerocarpum</i>		N limit DHI								1
Caesalpiaceae										
<i>Labichea cassioides</i>			1		1	1	1			1
<i>Labichea eremaea</i>	1									
<i>Labichea lanceolata</i> subsp. <i>lanceolata</i>			1							
<i>Labichea teretifolia</i> subsp. <i>teretifolia</i>		N limit Coburn Stn.	1	1						
<i>Petalostylis cassioides</i>			1							1
<i>Petalostylis labicheoides</i>										
<i>Senna artemisioides</i> subsp. <i>filifolia</i>				1						1
<i>Senna artemisioides</i> subsp. <i>helmsii</i>										1
<i>Senna artemisioides</i> subsp. <i>x sturtii</i>										1
<i>Senna glutinosa</i> subsp. <i>charlesiana</i>			1				1			1
<i>Senna glutinosa</i> subsp. <i>chatelainiana</i>			1	1	1		1			1
<i>Senna glutinosa</i> subsp. <i>x luerssenii</i>										1
<i>Senna notabilis</i>										1
<i>Senna pleurocarpa</i> var. <i>pleurocarpa</i>			1							1
<i>Senna</i> sp. Austin (A.Strid 20210)			1	1						
<i>Senna</i> sp. Billabong (J.D.Alonzo 721)			1							
<i>Senna</i> sp. Meekatharra (E.Bailey 1-26)				1						
<i>Senna</i> sp. Tamala (M.E.Trudgen 7334A)		Endemic WHA					1			

Callitrichaceae

* *Callitriche stagnalis*

Campanulaceae

* <i>Wahlenbergia capensis</i>			1			
<i>Wahlenbergia communis</i>			1			
<i>Wahlenbergia gracilenta</i>	N limit DHI		1	1		1
<i>Wahlenbergia gracilis</i>						
<i>Wahlenbergia multicaulis</i>			1			
<i>Wahlenbergia preissii</i>					1	
<i>Wahlenbergia tumidifructa</i>						1

Capparaceae

<i>Capparis lasiantha</i>						
<i>Capparis spinosa</i> var. <i>nummularia</i>			1			
<i>Cleome uncifera</i>						
<i>Cleome viscosa</i>						

Caryophyllaceae

* <i>Cerastium glomeratum</i>			1			1
* <i>Corrigiola litoralis</i>			1			
<i>Gypsophila australis</i>						
* <i>Petrorhagia velutina</i>			1			
<i>Polycarpaea corymbosa</i>						
* <i>Polycarpon tetraphyllum</i>			1	1		1
* <i>Sagina apetala</i>						
<i>Silene gallica</i> var. <i>gallica</i>			1	1		
* <i>Silene nocturna</i>						
* <i>Spergula arvensis</i>			1			
* <i>Spergularia diandra</i>				1		
* <i>Spergularia rubra</i>						
<i>Stellaria filiformis</i>						
* <i>Stellaria media</i>			1			

Casuarinaceae

<i>Allocasuarina acutivalvis</i> subsp. <i>acutivalvis</i>	N limit ZNP		1	1	1		1
<i>Allocasuarina campestris</i>			1			1	
<i>Allocasuarina corniculata</i>	N limit Nerren Nerren Stn.						
<i>Allocasuarina dielsiana</i>			1				
<i>Allocasuarina helmsii</i>	N limit DHI				1		
<i>Allocasuarina huegeliana</i>			1				
<i>Allocasuarina humilis</i>			1		1	1	
<i>Allocasuarina lehmanniana</i>	N limit Tamala Stn.						
<i>Casuarina obesa</i>			1				

Celastraceae

<i>Psammomoya choretroides</i>	N limit KNP		1				
<i>Psammomoya ephedroides</i>					1		

Centrolepidaceae

<i>Aphelia nutans</i>	N limit KNP		1				
<i>Centrolepis aristata</i>	N limit KNP		1				
<i>Centrolepis cephaliformis</i> subsp. <i>murrayi</i>	N limit Kalbarri Area	3					

Family/Taxon	Conservation Code	Distribution	Conservation Reserve							
			KNP	TNR	ZNP	CNR	FPNP	BINR	DINR	KRNP
<i>Centrolepis drummondiana</i>			1	1	1					
<i>Centrolepis eremica</i>										
<i>Centrolepis glabra</i>		N limit KNP	1							
<i>Centrolepis humillima</i>		N limit DHI	1							
<i>Centrolepis polygyna</i>			1							
Chenopodiaceae										
<i>Atriplex amnicola</i>			1							
<i>Atriplex bunburyana</i>								1	1	
<i>Atriplex cinerea</i>			1						1	
<i>Atriplex codonocarpa</i>										1
<i>Atriplex holocarpa</i>							1			
<i>Atriplex isatidea</i>					1		1			
<i>Atriplex lindleyi</i> subsp. <i>inflata</i>										1
<i>Atriplex nummularia</i> subsp. <i>spathulata</i>										
<i>Atriplex paludosa</i> subsp. <i>baudinii</i>										
<i>Atriplex paludosa</i> subsp. <i>moquiniana</i>							1		1	
<i>Atriplex semilunaris</i>							1			1
<i>Atriplex spongiosa</i>										
<i>Atriplex vesicaria</i> subsp. <i>incompta</i>							1			
<i>Atriplex vesicaria</i> subsp. <i>variabilis</i>				1	1		1	1	1	
* <i>Chenopodium ambrosioides</i>										
<i>Chenopodium auricomum</i>										
<i>Chenopodium cristatum</i>			1							1
<i>Chenopodium curvispicatum</i>										
<i>Chenopodium desertorum</i>										
<i>Chenopodium gaudichaudianum</i>				1	1		1			1
<i>Chenopodium melanocarpum</i> forma <i>leucocarpum</i>								1		
<i>Chenopodium melanocarpum</i> forma <i>melanocarpum</i>							1	1	1	1
* <i>Chenopodium murale</i>							1			
<i>Chenopodium pumilio</i>										
<i>Didymanthus roei</i>		N limit FPNP					1			
<i>Dissocarpus paradoxus</i>										
<i>Dysphania glandulosa</i>										
<i>Dysphania glomulifera</i> subsp. <i>eremaea</i>										
<i>Dysphania kalpari</i>										1
<i>Dysphania plantaginella</i>					1		1		1	
<i>Dysphania platycarpa</i>										
<i>Dysphania rhadinostachya</i> subsp. <i>inflata</i>										1
<i>Dysphania rhadinostachya</i> subsp. <i>rhadinostachya</i>										
<i>Dysphania sphaerosperma</i>		S limit Tamala Stn.						1		
<i>Einadia nutans</i>										
<i>Enchylaena tomentosa</i> var. <i>tomentosa</i>			1	1	1	1	1	1	1	1
<i>Eremophea aggregata</i>							1			
<i>Eriochiton sclerolaenoides</i>					1		1			
<i>Halosarcia auriculata</i>										
<i>Halosarcia doleiformis</i>										

<i>Halosarcia halocnemoides</i> subsp. <i>halocnemoides</i>									1
<i>Halosarcia halocnemoides</i> subsp. <i>tenuis</i>	S limit Nanga Stn.								1
<i>Halosarcia indica</i> subsp. <i>bidens</i>				1					1
<i>Halosarcia indica</i> subsp. <i>leiostachya</i>				1					1
<i>Halosarcia leptoclada</i>									1
<i>Halosarcia peltata</i>									1
<i>Halosarcia pergranulata</i> subsp. <i>pergranulata</i>									1
<i>Halosarcia pruinosa</i>									1
<i>Halosarcia pterygosperma</i> subsp. <i>denticulata</i>	S limit Nanga Stn.								1
<i>Halosarcia pterygosperma</i> subsp. <i>pterygosperma</i>	N limit Nanga Stn.								1
<i>Maireana amoena</i>									1
<i>Maireana aphylla</i>									1
<i>Maireana appressa</i>									1
<i>Maireana atkinsiana</i>									1
<i>Maireana carnosia</i>									1
<i>Maireana convexa</i>									1
<i>Maireana georgei</i>									1
<i>Maireana integra</i>									1
<i>Maireana lanosa</i>									1
<i>Maireana lobiflora</i>									1
<i>Maireana melanocoma</i>									1
<i>Maireana oppositifolia</i>									1
<i>Maireana pentagona</i>									1
<i>Maireana planifolia</i>				1	1				1
<i>Maireana platycarpa</i>									1
<i>Maireana polypterygia</i>									1
<i>Maireana scleroptera</i>									1
<i>Maireana stipitata</i>	S limit Tamala Stn.								1
<i>Maireana thesioides</i>									1
<i>Maireana tomentosa</i>									1
<i>Maireana trichoptera</i>					1				1
<i>Maireana triptera</i>									1
<i>Maireana villosa</i>									1
<i>Neobassia astrocarpa</i>	S limit BINR						1	1	1
<i>Osteocarpum acropterum</i> var. <i>acropterum</i>									1
<i>Rhagodia baccata</i>									1
<i>Rhagodia crassifolia</i>									1
<i>Rhagodia drummondii</i>							1		1
<i>Rhagodia eremaea</i>									1
<i>Rhagodia latifolia</i> subsp. <i>latifolia</i>				1			1	1	1
<i>Rhagodia latifolia</i> subsp. <i>recta</i>									1
<i>Rhagodia preissii</i> subsp. <i>obovata</i>				1	1	1	1	1	1
<i>Salsola kali</i>				1	1	1	1	1	1
<i>Sarcocornia blackiana</i>								1	1
<i>Sarcocornia quinqueflora</i>				1	1				1
<i>Sclerolaena bicuspis</i>	Disjunct from South Australia								1
<i>Sclerolaena costata</i>									1
<i>Sclerolaena cuneata</i>									1
<i>Sclerolaena densiflora</i>									1
<i>Sclerolaena deserticola</i>									1

Family/Taxon	Conservation Code	Distribution	Conservation Reserve								
			KNP	TNR	ZNP	CNR	FPNP	BINR	DINR	KRNP	
<i>Sclerolaena diacantha</i>					1		1			1	
<i>Sclerolaena eriacantha</i>										1	
<i>Sclerolaena eurotioides</i>					1		1				
<i>Sclerolaena forrestiana</i>											
<i>Sclerolaena limbata</i>											
<i>Sclerolaena medicaginoides</i>											
<i>Sclerolaena obliquicuspis</i>					1						
<i>Sclerolaena recurvicuspis</i>											
<i>Sclerolaena stylosa</i>	1										
<i>Sclerolaena tridens</i>											
<i>Sclerolaena uniflora</i>							1		1		
<i>Sclerostegia disarticulata</i>											
<i>Suaeda australis</i>											
<i>Tecticornia arborea</i>											
<i>Tecticornia verrucosa</i>											
<i>Threlkeldia diffusa</i>			1		1	1	1	1	1	1	
Chloanthaceae											
<i>Cyanostegia angustifolia</i>											
<i>Dicrastylis fulva</i>		N limit Nerren Nerren Stn.	1								
<i>Dicrastylis linearifolia</i>	3	N limit Meadow Stn.		1							
<i>Dicrastylis micrantha</i>		N limit Nanga Stn.	1	1	1						
<i>Dicrastylis</i> sp. Peron Peninsula (M.E.Trudgen 7373)		Endemic WHA					1				
<i>Dicrastylis</i> sp. Shark Bay (J.J.Alford 1318)									1		
<i>Lachnostachys eriobotrya</i>			1								
<i>Lachnostachys ferruginea</i>			1								
<i>Physopsis chrysophylla</i>	3	Endemic WHA & S to Murchison R.			1	1					
<i>Pityrodia atriplicina</i>		N limit DHI	1		1	1					
<i>Pityrodia axillaris</i>	1										
<i>Pityrodia cuneata</i>		N limit Peron Peninsular / DHI								1	
<i>Pityrodia glabra</i>		Endemic WHA	1		1						
<i>Pityrodia glutinosa</i>	2	Endemic Nerren Nerren Stn. area									
<i>Pityrodia hemigenioides</i>		N limit Eurardy Stn.	1								
<i>Pityrodia loxocarpa</i>			1			1				1	
<i>Pityrodia oldfieldii</i>		N limit Tamala Stn.	1			1					
<i>Pityrodia paniculata</i>		S limit Coburn Stn.									
<i>Pityrodia teckiana</i>			1			1					
<i>Pityrodia verbascina</i>				1							
<i>Spartothamnella teucriflora</i>				1						1	
Clusiaceae											
<i>Hypericum gramineum</i>											
<i>Hypericum japonicum</i>											
Colchicaceae											
<i>Burchardia multiflora</i>			1								
<i>Burchardia rosea</i>		Endemic Kalbarri Area	1								

<i>Wurmbea cernua</i>									
<i>Wurmbea densiflora</i>		N limit KNP	1	1					1
<i>Wurmbea deserticola</i>									
<i>Wurmbea dilatata</i>		N limit CNR	1			1			
<i>Wurmbea inframediana</i>						1			1
<i>Wurmbea monantha</i>		N limit DINR	1		1	1		1	
<i>Wurmbea murchisoniana</i>	4		1						1
<i>Wurmbea odorata</i>								1	
<i>Wurmbea pygmaea</i>									
<i>Wurmbea</i> sp. (KRN 11582)									1
<i>Wurmbea tenella</i>		N limit Tamala Stn.	1	1	1				
Commelinaceae									
<i>Cartonema philydroides</i>		N limit KNP	1						
Convolvulaceae									
<i>Bonamia rosea</i>			1						1
<i>Convolvulus erubescens</i>			1		1	1		1	1
<i>Convolvulus remotus</i>			1						
<i>Evolvulus alsinoides</i>									
<i>Ipomoea costata</i>									1
<i>Ipomoea muelleri</i>									
<i>Ipomoea pes-caprae</i> subsp. <i>brasiliensis</i>		S limit FPNP				1			
<i>Polymeria</i> sp. (R.J. Cranfield 2563)							1	1	
<i>Porana sericea</i>			1			1	1	1	1
<i>Wilsonia backhousei</i>		N limit Carrang Stn.							
<i>Wilsonia humilis</i>		N limit Salutation Isl.							
Crassulaceae									
<i>Crassula colorata</i> var. <i>acuminata</i>		N limit FPNP		1	1		1		
<i>Crassula colorata</i> var. <i>colorata</i>						1	1	1	1
<i>Crassula decumbens</i> var. <i>decumbens</i>									
<i>Crassula exserta</i>									
* <i>Crassula natans</i>									
<i>Crassula pedicellosa</i>									
<i>Crassula peduncularis</i>									
Cucurbitaceae									
<i>Mukia maderaspatana</i>		S limit Wooramel R.							
Cunoniaceae									
<i>Aphanopetalum clematideum</i>		N limit DHI	1		1	1			
Cupressaceae									
<i>Actinostrobus arenarius</i>		N limit CNR	1		1	1			
<i>Callitris glaucophylla</i>				1					
Cuscutaceae									
* <i>Cuscuta epithymum</i>			1	1	1		1		
* <i>Cuscuta planiflora</i>							1		
<i>Cuscuta victoriana</i>									

Family/Taxon	Conservation Code	Distribution	Conservation Reserve						
			KNP	TNR	ZNP	CNR	FPNP	BINR	DINR
Cymodoceaceae									
<i>Amphibolis antarctica</i>								1	
<i>Amphibolis griffithii</i>									
<i>Cymodocea angustata</i>									
<i>Cymodocea serrulata</i>									
<i>Halodule uninervis</i>									
<i>Syringodium isoetifolium</i>									
Cyperaceae									
<i>Baumea acuta</i>		N limit KNP	1						
<i>Baumea articulata</i>			1						
<i>Baumea juncea</i>		N limit KNP	1						
<i>Bulbostylis barbata</i>			1			1			1
<i>Caustis dioica</i>		N limit KNP	1						
<i>Chrysitrix distigmata</i>		N limit CNR	1		1				
<i>Cyperus</i> aff. <i>cunninghamii</i> (GJK & NG 592)									
<i>Cyperus alterniflorus</i>									
<i>Cyperus bifax</i>									
<i>Cyperus blakeanus</i>									
<i>Cyperus bulbosus</i>									
<i>Cyperus castaneus</i>									
<i>Cyperus difformis</i>		S limit Gascoyne R.							
<i>Cyperus gymnocaulos</i>			1						
* <i>Cyperus hamulosus</i>									
<i>Cyperus ixiocarpus</i>									
<i>Cyperus rigidellus</i>									
<i>Cyperus squarrosus</i>									
<i>Cyperus vaginatus</i>			1						
<i>Eleocharis acuta</i>									
<i>Eleocharis geniculata</i>								1	
<i>Eleocharis pallens</i>									
<i>Gahnia lanigera</i>		N limit DHI							
<i>Gahnia trifida</i>		N limit KNP	1						
<i>Isolepis cernua</i>		N limit DHI	1		1				
<i>Isolepis congrua</i>			1			1			1
<i>Isolepis cyperoides</i>									
<i>Isolepis marginata</i>			1						
<i>Isolepis nodosa</i>		N limit Carrang Stn.	1		1				
<i>Isolepis setiformis</i>									
<i>Lepidosperma angustatum</i>		N limit ZNP	1		1				
<i>Lepidosperma rupestre</i>	4	Endemic KNP	1						
<i>Lepidosperma scabrum</i>		N limit KNP	1						
<i>Lepidosperma tenue</i>		N limit KNP	1						
<i>Lipocarpha microcephala</i>									
<i>Mesomelaena preissii</i>		N limit KNP	1						
<i>Mesomelaena pseudostygia</i>		N limit Carrang Stn.	1		1	1			

<i>Schoenoplectus dissachanthus</i>								
<i>Schoenoplectus lateriflorus</i>		S limit Coolcalalaya Stn. (from Hamersley Rg.)	1					
<i>Schoenoplectus litoralis</i>			1					
<i>Schoenoplectus subulatus</i>								
<i>Schoenus andrewsii</i>		N limit KNP	1					
<i>Schoenus armeria</i>		N limit KNP	1					
<i>Schoenus clandestinus</i>		N limit ZNP		1				
<i>Schoenus curvifolius</i>		N limit KNP	1					
<i>Schoenus elegans</i>								
<i>Schoenus globifer</i>		N limit KNP	1					
<i>Schoenus grandiflorus</i>		N limit CNR	1	1		1		
<i>Schoenus griffinianus</i>		N limit Murchison House Stn.						
<i>Schoenus hexandrus</i>								
<i>Schoenus humilis</i>								
<i>Schoenus latitans</i>		N limit CNR	1				1	
<i>Schoenus nanus</i>		N limit KNP	1					
<i>Schoenus odontocarpus</i>								
<i>Schoenus pleiostemoneus</i>		N limit KNP	1					
<i>Schoenus</i> sp. (Keighery & Alford 1966)		N limit Tamala Stn.						
<i>Schoenus</i> sp. G Broad Sheath (K.L.Wilson 2633)		N limit Carrang Stn.	1	1				
<i>Schoenus</i> sp. Kalbarri (K.R.Newbey 9352)	2	Endemic Kalbarri area	1					
<i>Schoenus</i> sp. Murchison (K.L.Wilson 2647)		Endemic KNP to TNR	1	1				
<i>Schoenus variicellae</i>		N limit KNP	1					
<i>Tetraria microcarpa</i>		N limit CNR	1				1	
Dasypogonaceae								
<i>Acanthocarpus</i> aff. <i>robustus</i> (Hopper 1367)		N limit FPNP				1	1	
<i>Acanthocarpus humilis</i>		S limit Quobba Stn.		1		1		
<i>Acanthocarpus parviflorus</i>	2	Endemic to KNP	1					
<i>Acanthocarpus preissii</i>			1		1	1	1	1
<i>Acanthocarpus robustus</i>		S limit ZNP			1			1
<i>Acanthocarpus verticillatus</i>		S limit Tamala Stn.						
<i>Calectasia cyanea</i>		N limit KNP	1					
<i>Calectasia grandiflora</i>		N limit KNP	1					
<i>Chamaexeros serra</i>		N limit KNP	1					
<i>Lomandra hastilis</i>		N limit KNP	1					
<i>Lomandra maritima</i>		N limit Carrang Stn.	1		1			
<i>Xerolirion divaricata</i>								
Dilleniaceae								
<i>Hibbertia acerosa</i>		N limit ZNP	1		1			
<i>Hibbertia conspicua</i>		N limit Nanga Stn.	1		1	1		
<i>Hibbertia desmophylla</i>		N limit KNP	1					
<i>Hibbertia exasperata</i>		N limit KNP	1					
<i>Hibbertia glomerosa</i>		N limit KNP						
<i>Hibbertia huegelii</i>		N limit KNP	1					
<i>Hibbertia hypericoides</i>		N limit KNP	1					
<i>Hibbertia potentilliflora</i>		N limit KNP	1					
<i>Hibbertia racemosa</i>		N limit Tamala Stn.	1		1	1		
<i>Hibbertia</i> sp. Red Bluff (J.R.Wheeler 2376)		N limit CNR					1	

Family/Taxon	Conservation Code	Distribution	Conservation Reserve							
			KNP	TNR	ZNP	CNR	FPNP	BINR	DINR	KRNP
<i>Hibbertia spicata</i> subsp. <i>spicata</i>			1		1					
<i>Hibbertia stellaris</i>		N limit KNP	1							
<i>Hibbertia subvaginata</i>		N limit CNR	1			1				
Dioscoreaceae										
<i>Dioscorea hastifolia</i>		N limit Salutation Isl.	1		1					
Droseraceae										
<i>Drosera bulbosa</i>		N limit KNP	1							
<i>Drosera coolamon</i> ms		N limit KNP	1							
<i>Drosera ericksoniae</i>		N limit KNP	1							
<i>Drosera glanduligera</i>		N limit KNP	1							
<i>Drosera indica</i>										
<i>Drosera macrantha</i> subsp. <i>macrantha</i>		N limit KNP	1							
<i>Drosera menziesii</i> subsp. <i>thysanosepala</i>		N limit ZNP	1		1					
<i>Drosera neesii</i> subsp. <i>borealis</i>		N limit ZNP	1		1					
<i>Drosera radicans</i>		N limit KNP	1							
<i>Drosera ramellosa</i>		N limit KNP	1							
<i>Drosera stolonifera</i> subsp. <i>humilis</i>		N limit Nanga Stn.	1		1	1				
<i>Drosera stolonifera</i> subsp. <i>prostrata</i>		S limit KNP-Nanga Stn.	1		1					
Elatinaceae										
<i>Bergia auriculata</i>	2									
<i>Bergia perennis</i> subsp. <i>obtusifolia</i>										
<i>Elatine gratiolooides</i>										
Emblingiaceae										
<i>Emblingia calceoliflora</i>			1			1				
Epacridaceae										
<i>Astroloma glaucescens</i>		N limit KNP	1							
<i>Astroloma microdonta</i>		N limit KNP	1							
<i>Astroloma serratifolium</i>		N limit KNP	1							
<i>Astroloma xerophyllum</i>		N limit KNP	1							
<i>Brachyloma</i> sp. Kalbarri (A.H. Burbridge 4504)			1							
<i>Conostephium preissii</i>		N limit CNR	1			1				
<i>Leucopogon</i> aff. <i>cordifolius</i>			1							
<i>Leucopogon</i> aff. <i>strongylophyllus</i>			1							
<i>Leucopogon allittii</i>		N limit KNP	1							
<i>Leucopogon conostephioides</i>		N limit KNP	1							
<i>Leucopogon cordifolius</i>		N limit Carrang Stn.	1		1	1				
<i>Leucopogon crassiflorus</i>		N limit KNP	1							
<i>Leucopogon hamulosus</i>		N limit KNP	1							
<i>Leucopogon hispidus</i>		N limit KNP	1							
<i>Leucopogon leptanthus</i>		N limit Kalbarri Area	1							
<i>Leucopogon marginatus</i>	R	Presumed extinct Ajana area								
<i>Leucopogon parviflorus</i>								1		

<i>Leucopogon plantifolius</i>		N limit KNP	1						
<i>Leucopogon polymorphus</i>			1						
<i>Leucopogon strongylophyllus</i>		N limit KNP	1						
<i>Leucopogon tamminensis</i>		N limit KNP	1						
<i>Lysinema ciliatum</i>			1		1	1			
Euphorbiaceae									
<i>Adriana tomentosa</i>			1		1		1		1
<i>Beyeria cinerea</i>		N limit BINR	1				1	1	1
<i>Beyeria cyanescens</i>								1	1
<i>Beyeria cygnorum</i>			1						
<i>Beyeria gardneri</i>	4								
<i>Beyeria lepidopetala</i>	R		1						
<i>Beyeria similis</i>									
<i>Calycoplepus marginatus</i>	3		1						
<i>Euphorbia</i> aff. <i>alsiniflora</i> (ASW 10547)									1
<i>Euphorbia alsiniflora</i>		S limit DINR							1
<i>Euphorbia atoto</i>									
<i>Euphorbia australis</i> subsp. <i>australis</i>					1		1		1
<i>Euphorbia boophthona</i>			1		1		1		1
<i>Euphorbia coghlanii</i>									
<i>Euphorbia drummondii</i>			1		1	1	1		1
* <i>Euphorbia hirta</i>									
<i>Euphorbia kimberleyensis</i>									
<i>Euphorbia myrtoidea</i>									1
<i>Euphorbia sharkoensis</i>		S limit DHI							1
<i>Euphorbia tannensis</i> subsp. <i>eremophila</i>			1				1		1
<i>Monotaxis gracilis</i>			1						
<i>Monotaxis grandiflora</i>			1						
<i>Monotaxis lurida</i>		N limit ZNP	1		1	1			
<i>Phyllanthus calycinus</i>		N limit Tamala Stn.	1		1				1
<i>Phyllanthus fuernrohrii</i>		S limit DHI							1
<i>Phyllanthus lacunellus</i>					1				
<i>Phyllanthus maderaspatensis</i>			1						1
<i>Phyllanthus maitlandianus</i>		N limit Nanga Stn.							
<i>Phyllanthus</i> sp. (ME Trudgen 7563)		Endemic WHA							
<i>Poranthera microphylla</i>			1	1	1	1			
<i>Pseudanthus intricatus</i> ms				1					
<i>Ricinocarpos glaucus</i>									
<i>Ricinocarpos muricatus</i>		N limit ZNP			1				
* <i>Ricinus communis</i>			1						
<i>Sauropus crassifolius</i>		S limit KNP	1						1
<i>Stachystemon</i> sp. (S. Van Leeuwen 210)			1						
Frankeniaceae									
<i>Frankenia ambita</i>							1		
<i>Frankenia cinerea</i>									
<i>Frankenia confusa</i>	2	N limit KNP	1						
<i>Frankenia laxiflora</i>									1
<i>Frankenia magnifica</i>									1

Family/Taxon	Conservation Code	Distribution	Conservation Reserve							
			KNP	TNR	ZNP	CNR	FPNP	BINR	DINR	KRNP
<i>Frankenia pauciflora</i>			1		1		1		1	
<i>Frankenia setosa</i>							1			
Gentianaceae										
* <i>Centaurium erythraea</i>			1							
<i>Centaurium spicatum</i>			1		1		1		1	
* <i>Centaurium tenuiflorum</i>										1
Geraniaceae										
<i>Erodium angustilobum</i>										
* <i>Erodium aureum</i>										
* <i>Erodium cicutarium</i>			1		1	1	1			
<i>Erodium crinitum</i>										1
<i>Erodium cygnorum</i> subsp. <i>cygnorum</i>			1	1	1	1	1			1
<i>Pelargonium littorale</i>		N limit ZNP	1		1					
Goodeniaceae										
<i>Brunonia australis</i>			1	1						1
<i>Dampiera altissima</i>		N limit Meadow Stn.	1							
<i>Dampiera haematotricha</i> subsp. <i>dura</i>									1	
<i>Dampiera incana</i> var. <i>fuscescens</i>			1	1					1	
<i>Dampiera incana</i> var. <i>incana</i>			1		1		1		1	
<i>Dampiera krauseana</i>	2	N limit KNP	1							
<i>Dampiera lindleyi</i>		N limit Meadow Stn.	1							
<i>Dampiera oligophylla</i>		N limit Murchison House Stn.	1							
<i>Dampiera spicigera</i>		N limit Tamala Stn.	1		1	1				
<i>Dampiera stenostachya</i>		N limit KNP	1							
<i>Dampiera wellsiana</i>		N limit KNP	1							
<i>Goodenia</i> aff. <i>havilandii</i> (GJK & NG 1505)										
<i>Goodenia berardiana</i>			1	1	1		1		1	1
<i>Goodenia caerulea</i>			1							
<i>Goodenia corynocarpa</i>		S limit Murchison R.	1							
<i>Goodenia drummondii</i>		N limit KNP	1							
<i>Goodenia hassallii</i>			1							
<i>Goodenia havilandii</i>				1			1			1
<i>Goodenia maideniana</i>										
<i>Goodenia micrantha</i>			1							
<i>Goodenia microptera</i>										1
<i>Goodenia mimuloides</i>			1							
<i>Goodenia neogoodenia</i>	4									
<i>Goodenia occidentalis</i>		N limit KRNP	1	1						1
<i>Goodenia ochracea</i>		S limit DHI								
<i>Goodenia pinnatifida</i>			1							
<i>Goodenia pulchella</i>		N limit KNP	1							
<i>Goodenia salmoniana</i>		Type only Gascoyne R.								
<i>Goodenia sericostachya</i>	3	N limit Coburn Stn.	1							
<i>Goodenia tenuiloba</i>										1

<i>Goodenia triodiophila</i>								
<i>Goodenia xanthosperma</i>								
<i>Lechenaultia chlorantha</i>	R	Endemic Kalbarri Area	1					
<i>Lechenaultia floribunda</i>		N limit Eurardy Stn.	1					
<i>Lechenaultia hirsuta</i>		N limit CNR	1	1	1			
<i>Lechenaultia linarioides</i>		N limit DHI/FPNP	1	1	1	1	1	
<i>Lechenaultia macrantha</i>		N limit Meadow Stn.	1					
<i>Lechenaultia subcymosa</i>		S limit Carrang Stn.						1
<i>Pentaptilon careyi</i>		N limit Coburn Stn.	1					
<i>Scaevola acacioides</i>								1
<i>Scaevola anchusifolia</i>		N limit KNP	1		1			
<i>Scaevola canescens</i>			1			1		
<i>Scaevola chrysopogon</i>	2	N limit WHA	1					
<i>Scaevola crassifolia</i>		N limit Coral Bay	1		1		1	1
<i>Scaevola cunninghamii</i>		S limit Tamala Stn.						
<i>Scaevola dielsii</i>		N limit S of WHA	1					
<i>Scaevola glandulifera</i>								
<i>Scaevola globulifera</i>		N limit KNP	1					
<i>Scaevola hamiltonii</i>		N limit KNP	1					
<i>Scaevola kallophylla</i>		Endemic KNP	1					
<i>Scaevola lanceolata</i>			1					
<i>Scaevola nitida</i>								
<i>Scaevola oldfieldii</i>	3	Type only Murchison R.						
<i>Scaevola oxyclona</i>								
<i>Scaevola parvifolia</i> subsp. <i>pilbarae</i>								1
<i>Scaevola phlebopetala</i>		N limit KNP	1					
<i>Scaevola porocarya</i>		N limit VCL S of Tamala Stn.	1					
<i>Scaevola pulchella</i>		S limit near Carnarvon						
<i>Scaevola repens</i> var. <i>erecta</i> ms			1		1			1
<i>Scaevola restiacea</i>								
<i>Scaevola sericophylla</i>		S limit Nerren Nerren Stn.				1		1
<i>Scaevola spinescens</i>			1	1	1		1	1
<i>Scaevola thesioides</i> subsp. <i>thesioides</i>		N limit Wooramel R.	1					
<i>Scaevola tomentosa</i>			1		1		1	1
<i>Scaevola virgata</i>		N limit KNP	1					
<i>Symphyobasis macroplectra</i>								1
<i>Velleia cynopotamica</i>		N limit KNP	1	1				
<i>Velleia discophora</i>			1					
<i>Velleia glabrata</i>				1				
<i>Velleia hispida</i>				1				1
<i>Verreauxia reinwardtii</i>		N limit KNP	1			1		
Gyrostemonaceae								
<i>Codonocarpus cotinifolius</i>			1		1			
<i>Gyrostemon racemiger</i>		N limit Coburn Stn.	1					
<i>Gyrostemon ramulosus</i>			1	1	1	1	1	1
<i>Gyrostemon subnudus</i>		N limit Murchison House Stn.	1					
<i>Tersonia cyathiflora</i>		N limit KNP	1					

* <i>Juncus bufonius</i>								1	
<i>Juncus kraussii</i>								1	
<i>Juncus planifolius</i>									
Juncaginaceae									
<i>Triglochin</i> aff. <i>calcitrapa</i> (GJK 10430)								1	
<i>Triglochin calcitrapum</i>							1		1
<i>Triglochin centrocarpum</i>							1		
<i>Triglochin minutissimum</i>									
<i>Triglochin mucronatum</i>								1	
<i>Triglochin trichophorum</i>									
Lamiaceae									
<i>Hemiandra pungens</i>		N limit KNP						1	
<i>Hemiandra</i> sp. (Beard 7059)		Endemic WHA							
<i>Hemiandra</i> sp. (Trudgen sn)		Endemic WHA							
<i>Hemiandra</i> sp. Kalbarri (D. Bellairs 1505)	2	Endemic KNP						1	
<i>Hemigenia diplanthera</i>		N limit KNP							
<i>Hemigenia macrantha</i>		N limit Tamala Stn.					1		
<i>Hemigenia pimelifolia</i>	3								
<i>Hemigenia scabra</i>							1		
<i>Microcorys loganiacea</i>									
<i>Microcorys tenuifolia</i>	2								
<i>Prostanthera albiflora</i>									1
<i>Prostanthera campbellii</i>									
<i>Prostanthera wilkieana</i>							1		
* <i>Salvia verbenaca</i>									
<i>Westringia</i> aff. <i>dampieri</i> (GJK & NG 798)									
<i>Westringia dampieri</i>		N limit DINR					1		1
<i>Westringia rigida</i>									
Lauraceae									
<i>Cassytha aurea</i> var. <i>aurea</i>							1	1	1
<i>Cassytha aurea</i> var. <i>hirta</i>		N limit Shark Bay					1	1	
<i>Cassytha filiformis</i>									
<i>Cassytha flava</i>									
<i>Cassytha glabella</i>									
<i>Cassytha nodiflora</i>		N limit FPNP						1	
<i>Cassytha pomiformis</i>		N limit FPNP					1	1	
<i>Cassytha racemosa</i> forma <i>pilosa</i>									
<i>Cassytha racemosa</i> forma <i>racemosa</i>								1	
Lentibulariaceae									
<i>Utricularia tenella</i>		N limit KNP						1	
Lobeliaceae									
<i>Isotoma hypocrateriformis</i>		N limit KNP						1	
<i>Lobelia alata</i>		N limit KNP							
<i>Lobelia gibbosa</i>		N limit KNP					1		
<i>Lobelia heterophylla</i>							1	1	1

<i>Abutilon</i> sp. aff. <i>oxycarpum</i> (Morat 8145)									1
<i>Abutilon</i> sp. Hamelin (A.M.Ashby 2196)	2								1
<i>Abutilon</i> sp. Quobba (H.Demarz 3858)	2	Endemic Carnarvon Basin							1
<i>Alyogyne cuneiformis</i>			1		1		1		1
<i>Alyogyne hakeifolia</i>			1						
<i>Alyogyne huegelii</i> var. <i>glossulariaefolius</i> ms									
<i>Alyogyne huegelii</i> var. <i>huegelii</i> ms		N limit Carrang Stn.	1						
<i>Alyogyne huegelii</i> var. <i>wrayae</i> ms			1						
<i>Alyogyne pinoniana</i> var. <i>leptochlamys</i>		N limit Tamala Stn.	1			1			
<i>Alyogyne pinoniana</i> var. <i>pinoniana</i>				1			1	1	1
<i>Gossypium australe</i>									1
<i>Hibiscus brachychlaenus</i>									
<i>Hibiscus brachysiphonius</i>									
<i>Hibiscus burtonii</i>									
<i>Hibiscus coatesii</i>									
<i>Hibiscus drummondii</i>			1						
<i>Hibiscus gardnerii</i> ms									1
<i>Hibiscus leptocladus</i>									1
<i>Hibiscus sturtii</i> var. <i>grandiflorus</i>									1
<i>Hibiscus sturtii</i> var. <i>truncatus</i>									1
* <i>Lavatera cretica</i>									
<i>Lavatera plebeia</i> var. <i>tomentosa</i>		N limit DHI							
<i>Lawrenzia densiflora</i>			1		1		1		1
<i>Lawrenzia glomerata</i>									
<i>Lawrenzia</i> sp. Mulein Station (Setter 317)									
<i>Lawrenzia spicata</i>									
<i>Lawrenzia viridigrisea</i>							1		
* <i>Malva parviflora</i>							1		
* <i>Malvastrum americanum</i>									
<i>Sida</i> aff. <i>intricata</i> (GJK & NG 1134)									
<i>Sida calyxhymenia</i>			1	1	1		1		1
<i>Sida corrugata</i>									1
<i>Sida fibulifera</i>		S limit DINR						1	
<i>Sida filiformis</i>									1
<i>Sida intricata</i>									1
<i>Sida kingii</i>			1						1
<i>Sida platycalyx</i>									1
<i>Sida rohlenae</i>									1
<i>Sida</i> sp. Carnarvon (P.S.Short 2492)									1
<i>Sida</i> sp. Pindar (A.Mitchell 3585)									1
<i>Sida</i> sp. unisexual (N.H.Speck 574)									1
Marsileaceae									
<i>Marsilea angustifolia</i>									1
<i>Marsilea drummondii</i>									1
<i>Marsilea exarata</i>			1						
<i>Marsilea hirsuta</i>									
Menyanthaceae									
<i>Villarsia congestiflora</i>	3	N limit KNP	1						

Family/Taxon	Conservation Code	Distribution	Conservation Reserve						
			KNP	TNR	ZNP	CNR	FPNP	BINR	DINR
Mimosaceae									
<i>Acacia aciphylla</i>		N limit KNP	1						
<i>Acacia acuaria</i>		N limit TNR	1	1					
<i>Acacia acuminata</i>			1						
<i>Acacia amblyophylla</i>		Endemic WHA							
<i>Acacia ampliceps</i>									
<i>Acacia anastema</i>									
<i>Acacia ancistrocarpa</i>									
<i>Acacia andrewsii</i>		N limit ZNP	1		1				
<i>Acacia aneura</i>				1					1
<i>Acacia ashbyae</i>		N limit KNP	1						
<i>Acacia aulacophylla</i>			1						
<i>Acacia bidentata</i>		N limit KNP	1						
<i>Acacia bivenosa</i>								1	
<i>Acacia blakelyi</i>		N limit Tamala Stn.	1			1			
<i>Acacia cavealis</i> ms		N limit Murchison House Stn.	1						
<i>Acacia chartacea</i>			1			1			
<i>Acacia citrinoviridis</i>									1
<i>Acacia cochlearis</i>			1						
<i>Acacia colletioides</i>		N limit KNP							
<i>Acacia comans</i>									
<i>Acacia coolgardiensis</i> subsp. <i>coolgardiensis</i>			1	1					
<i>Acacia coolgardiensis</i> subsp. <i>effusa</i>				1		1			1
<i>Acacia coriacea</i> subsp. <i>coriacea</i>							1	1	1
<i>Acacia coriacea</i> subsp. <i>pendens</i>									1
<i>Acacia cuspidifolia</i>									1
<i>Acacia cuthbertsonii</i> subsp. <i>cuthbertsonii</i>		S limit Wooramel R.							1
<i>Acacia didyma</i>	3	Endemic Shark Bay & DHI							
<i>Acacia dielsii</i>									
<i>Acacia drepanophylla</i>	3	Endemic Carbla Stn. area							
<i>Acacia ericifolia</i>		N limit Murchison House Stn.	1						
<i>Acacia erinacea</i>		N limit Nerren Nerren Stn.	1						
<i>Acacia farnesiana</i>									
<i>Acacia guleata</i>					1	1		1	
<i>Acacia gelasina</i>	2		1						
<i>Acacia grasbyi</i>				1					
<i>Acacia gregorii</i>									1
<i>Acacia idiomorpha</i>			1		1	1			
<i>Acacia inaequilatera</i>									
<i>Acacia isoneura</i> subsp. <i>nimia</i> ms	3	N limit Nerren Nerren Stn.							
<i>Acacia kempeana</i>									
<i>Acacia lasiocarpa</i> var. <i>lasiocarpa</i>		N limit ZNP	1		1				
<i>Acacia latipes</i> subsp. <i>latipes</i> ms			1			1			
<i>Acacia leptospermoides</i> subsp. <i>leptospermoides</i>		N limit DHI	1						
<i>Acacia leptospermoides</i> subsp. <i>obovata</i>	2	N limit ZNP	1		1	1			
<i>Acacia ligulata</i>					1		1		1
<i>Acacia ligustrina</i>					1				

<i>Acacia lineolata</i> subsp. <i>lineolata</i>											1	
<i>Acacia linophylla</i>		N limit Eurardy Stn.										1
<i>Acacia longispinea</i>												1
<i>Acacia microbotrya</i>												
<i>Acacia microcalyx</i>												
<i>Acacia morrisonii</i>												
<i>Acacia multispicata</i>												
<i>Acacia murrayana</i>												1
<i>Acacia neurophylla</i> subsp. <i>erugata</i>		N limit CNR										1
<i>Acacia oldfieldii</i>		N limit KNP										
<i>Acacia oxyclada</i>		N limit KNP										
<i>Acacia palustris</i>												
<i>Acacia paraneura</i>												1
<i>Acacia plautella</i> ms	3											
<i>Acacia pruinocarpa</i>												1
<i>Acacia puncticulata</i> ms		N limit KNP										
<i>Acacia pyrifolia</i>												
<i>Acacia quadrimarginea</i>												
<i>Acacia quadrisulcata</i>		N limit ZNP										
<i>Acacia ramulosa</i>												
<i>Acacia restiacea</i>		N limit KNP										
<i>Acacia rhodophloia</i>												
<i>Acacia rostellifera</i>												
<i>Acacia roycei</i>		N limit Hamelin Stn.										
<i>Acacia sabulosa</i> ms												
<i>Acacia saligna</i>												
<i>Acacia saxatilis</i>		N limit KNP										
<i>Acacia scirpifolia</i>		N limit KNP										
<i>Acacia sclerosperma</i> subsp. <i>glaucescens</i>	3											
<i>Acacia sclerosperma</i> subsp. <i>sclerosperma</i>		N limit Yaringa Stn.										1
<i>Acacia sessilis</i>		N limit KNP										
<i>Acacia signata</i>		N limit Eurardy Stn.										
<i>Acacia</i> sp. (KRN 11816)												1
<i>Acacia spathulifolia</i>												
<i>Acacia sphenophylla</i> ms		N limit CNR										
<i>Acacia stereophylla</i> var. <i>cylindrata</i>	2	N limit CNR										
<i>Acacia stereophylla</i> var. <i>stereophylla</i>		N limit Nerren Nerren Stn.										
<i>Acacia subrigida</i>	2	N limit Tamala Stn.										
<i>Acacia subtessarogona</i>												1
<i>Acacia synchronicia</i>												1
<i>Acacia tetragonophylla</i>												1
<i>Acacia ulicina</i>		N limit KNP										
<i>Acacia victoriae</i>												1
<i>Acacia wanyu</i>												
<i>Acacia wiseana</i>												
<i>Acacia xanthina</i>		N limit Tamala Stn.										
<i>Acacia xiphophylla</i>												1
<i>Neptunia dimorphantha</i>												
* <i>Prosopis pallida</i>												

Family/Taxon	Conservation Code	Distribution	Conservation Reserve							
			KNP	TNR	ZNP	CNR	FPNP	BINR	DINR	KRNP
Molluginaceae										
<i>Glinus lotoides</i>										
<i>Macarthuria australis</i>			1			1				
<i>Macarthuria georgeana</i>	1	N limit Tamala Stn.								
<i>Macarthuria intricata</i>	3	N limit Nanga Stn.	1							
Moraceae										
<i>Ficus platypoda</i> var. <i>lachnocaulos</i>		S limit DINR							1	
<i>Ficus platypoda</i> var. <i>minor</i>								1	1	
Myoporaceae										
<i>Eremophila clarkei</i>				1			1			1
<i>Eremophila compacta</i> subsp. <i>compacta</i>										1
<i>Eremophila crenulata</i> ms										
<i>Eremophila cuneata</i> ms	1	Endemic WHA								1
<i>Eremophila cuneifolia</i>										
<i>Eremophila decipiens</i> subsp. <i>decipiens</i> ms			1		1					
<i>Eremophila deserti</i>			1		1				1	
<i>Eremophila exilifolia</i>										1
<i>Eremophila flaccida</i> ms										1
<i>Eremophila forrestii</i>				1						1
<i>Eremophila fraseri</i> subsp. <i>fraseri</i> ms										
<i>Eremophila fraseri</i> subsp. <i>parva</i> ms										1
<i>Eremophila freelingii</i>										
<i>Eremophila gibsonii</i>										
<i>Eremophila glabra</i>			1	1			1			
<i>Eremophila glabra</i> subsp. <i>Zuytdorp</i> (GJK & NG 518)										
<i>Eremophila glabra</i> subsp. <i>albicans</i>			1		1		1			
<i>Eremophila glabra</i> subsp. <i>carnosa</i> ms							1			
<i>Eremophila glabra</i> subsp. <i>psammophora</i> ms	2	S limit DINR							1	
<i>Eremophila glabra</i> subsp. <i>tomentosa</i> ms			1		1				1	
<i>Eremophila glutinosa</i>										
<i>Eremophila granitica</i>				1						1
<i>Eremophila lanata</i> ms	1			1						
<i>Eremophila latrobei</i> subsp. <i>latrobei</i> ms			1	1			1			
<i>Eremophila leucophylla</i>				1						1
<i>Eremophila longifolia</i>			1							
<i>Eremophila mackinlayi</i> subsp. <i>mackinlayi</i> ms										1
<i>Eremophila mackinlayi</i> subsp. <i>spathulata</i> ms										
<i>Eremophila maculata</i> subsp. <i>brevifolia</i> ms										
<i>Eremophila maitlandii</i>				1			1			
<i>Eremophila mackinlayi</i> subsp. <i>mackinlayi</i> ms										
<i>Eremophila microtheca</i>	R		1							
<i>Eremophila occidens</i> ms	2	S limit Nanga Stn.								
<i>Eremophila oldfieldii</i> subsp. <i>oldfieldii</i>			1				1			
<i>Eremophila oppositifolia</i>							1			
<i>Eremophila pantonii</i>		N limit Wooramel R.								

<i>Eremophila phyllopora</i>	ms				1						
<i>Eremophila physocalyx</i>	ms	1	N limit Meadow Stn.				1		1		
<i>Eremophila platycalyx</i>							1		1		
<i>Eremophila pterocarpa</i>											
<i>Eremophila serrulata</i>			N limit Hamelin Stn.				1				
<i>Eremophila setacea</i>	ms									1	
<i>Eremophila splendens</i>	ms		Endemic WHA								
<i>Eremophila spuria</i>	ms								1		
<i>Eremophila strongylophylla</i>										1	
<i>Eremophila subfloccosa</i>											
<i>Eremophila youngii</i> subsp. <i>youngii</i>	ms										
<i>Myoporum acuminatum</i>											
<i>Myoporum insulare</i>							1		1	1	
<i>Myoporum montanum</i>											
Myrtaceae											
<i>Baeckea blackallii</i>	ms									1	
<i>Baeckea margarethae</i>	ms										
<i>Baeckea megaflorea</i>	ms										
<i>Baeckea pentagonantha</i>			N limit Coburn Stn.							1	
<i>Baeckea robusta</i>										1	
<i>Baeckea</i> sp. 38 (M.E.Trudgen 7180)			N limit Tamala Stn.						1		
<i>Baeckea</i> sp. Murchison River (S.D.Hopper 1428)			N limit CNR						1		
<i>Baeckea</i> sp. Mingenew (M.E.Trudgen 12029)											
<i>Baeckea</i> sp. Nanga (A.S.George 11346)			N limit WHA Stn.								
<i>Baeckea subcuneata</i>		2								1	
<i>Beaufortia dampieri</i>			N limit DINR				1		1	1	
<i>Beaufortia elegans</i>			N limit KNP								
<i>Beaufortia squarrosa</i>			N limit KNP								
<i>Callistemon phoeniceus</i>											
<i>Calothamnus blepharospermus</i>			N limit Tamala Stn.				1		1		
<i>Calothamnus borealis</i>										1	
<i>Calothamnus chrysanthrus</i>							1			1	
<i>Calothamnus formosus</i> subsp. <i>formosus</i>			Endemic WHA						1		
<i>Calothamnus glaber</i>	ms		N limit Nanga Stn.						1		
<i>Calothamnus homalophyllus</i>											
<i>Calothamnus kalbarriensis</i>			N limit Tamala Stn.						1		
<i>Calothamnus oldfieldii</i>			N limit Eurardy Stn.								
<i>Calothamnus pachystachyus</i>		4	N limit KNP								
<i>Calothamnus quadrifidus</i>			N limit Nanga Stn.				1		1		
<i>Calothamnus sanguineus</i>											
<i>Calytrix brevifolia</i>			N limit Tamala Stn.				1		1		
<i>Calytrix depressa</i>											
<i>Calytrix desolata</i>										1	
<i>Calytrix drummondii</i>		2	N limit KNP								
<i>Calytrix ecalycata</i>											
<i>Calytrix formosa</i>		2									
<i>Calytrix fraseri</i>			N limit KNP								
<i>Calytrix glutinosa</i>			N limit KNP							1	
<i>Calytrix gracilis</i>			N limit KNP							1	

Family/Taxon	Conservation Code	Distribution	Conservation Reserve							
			KNP	TNR	ZNP	CNR	FPNP	BINR	DINR	KRNP
<i>Calytrix harvestiana</i>	2		1							
<i>Calytrix leschenaultii</i>			1							
<i>Calytrix oldfieldii</i>		N limit CNR	1			1				
<i>Calytrix paucicostata</i>	2	Endemic Kalbarri Area	1							
<i>Calytrix purpurea</i>	2	Endemic Kalbarri Area	1							
<i>Calytrix sapphirina</i>		N limit KNP	1							
<i>Calytrix strigosa</i>		N limit DHI	1	1	1	1				
<i>Calytrix truncatifolia</i>							1			1
<i>Chamelaucium brevifolium</i>		N limit KNP	1							
<i>Chamelaucium conostigmum</i> ms	3									
<i>Chamelaucium marchantii</i>	2	Endemic Kalbarri Area	1							
<i>Chamelaucium micranthum</i>			1							
<i>Chamelaucium oenanthum</i> ms	1	N limit ZNP			1	1				
<i>Chamelaucium pauciflorum</i> subsp. <i>pauciflorum</i> ms		N limit KNP	1							
<i>Chamelaucium</i> sp. Coolcalalaya (A.H.Burbidge 4233)										
<i>Chamelaucium uncinatum</i>		N limit Murchison House Stn.	1							
<i>Chamelaucium vinosum</i> ms			1							
<i>Conothamnus trinervis</i>		N limit Tamala Stn.			1					
<i>Darwinia capitellata</i>		N limit KNP	1							
<i>Darwinia oldfieldii</i>		Endemic Kalbarri Area	1							
<i>Darwinia pauciflora</i>		N limit KNP	1							
<i>Darwinia virescens</i>		N limit KNP	1							
<i>Eremaea acutifolia</i>	2		1							
<i>Eremaea dendroidea</i>		N limit Nanga Stn.			1	1				
<i>Eremaea ebracteata</i>										
<i>Eremaea ebracteata</i> var. <i>ebracteata</i>			1							
<i>Eucalyptus</i> aff. <i>prominens</i> (MIH Brooker 4569)		S limit Tamala Stn.								
<i>Eucalyptus</i> aff. <i>socialis</i>										
<i>Eucalyptus beardiana</i>	R			1						
<i>Eucalyptus camaldulensis</i> var. <i>obtusata</i>			1							1
<i>Eucalyptus decipiens</i>										1
<i>Eucalyptus dichromophloia</i>										
<i>Eucalyptus diminuta</i> ms	2		1							
<i>Eucalyptus dolichocera</i> ms			1							
<i>Eucalyptus drummondii</i>			1							
<i>Eucalyptus erythrocorys</i>		N limit ZNP	1		1					
<i>Eucalyptus eudesmioides</i> subsp. <i>eudesmioides</i>			1	1	1					
<i>Eucalyptus eudesmioides</i> subsp. <i>pallida</i> ms		N limit Towarana Stn.								
<i>Eucalyptus eudesmioides</i> subsp. <i>sellachiana</i> ms		Endemic WHA		1		1				
<i>Eucalyptus flocktoniae</i>										
<i>Eucalyptus foecunda</i> subsp. Coolimba (M.I.H.Brooker 9556)3		N limit KNP	1							
<i>Eucalyptus fruticosa</i>		S limit KNP	1	1	1		1			
<i>Eucalyptus gittinsii</i>		N limit Nanga Stn.	1							
<i>Eucalyptus hypochlamydea</i> subsp. <i>hypochlamydea</i> ms				1						
<i>Eucalyptus jucunda</i>		N limit CNR/Coburn Stn.	1	1		1				
<i>Eucalyptus kochii</i>				1						
<i>Eucalyptus lenziana</i>										1

<i>Eucalyptus leptopoda</i>		1						
<i>Eucalyptus loxophleba</i> subsp. <i>supralaevis</i>		1						
<i>Eucalyptus mannensis</i> subsp. <i>vespertina</i>			1			1		
<i>Eucalyptus obtusiflora</i>		1	1	1			1	1
<i>Eucalyptus oldfieldii</i>	N limit Nerren Nerren Stn.	1	1					
<i>Eucalyptus oraria</i>	N limit BINR	1		1	1		1	1
<i>Eucalyptus prominens</i>						1		
<i>Eucalyptus pyriformis</i>	N limit KNP	1						
<i>Eucalyptus rigidula</i>	N limit WHA	1				1		
<i>Eucalyptus roycei</i>	Endemic WHA				1			
<i>Eucalyptus sheathiana</i>			1					
<i>Eucalyptus striaticalyx</i>								1
<i>Eucalyptus subangusta</i> subsp. <i>pusilla</i>		1						
<i>Eucalyptus transcontinentalis</i>			1					
<i>Eucalyptus victrix</i>		1						
<i>Homalocalyx</i> aff. <i>aurea</i>								
<i>Homalocalyx aureus</i>	N limit KNP	1						
<i>Hypocalymma longifolium</i>	R N limit KNP	1						
<i>Lamarchea hakeifolia</i> var. <i>brevifolia</i>	N limit Nerren Nerren Stn.	1	1					
<i>Lamarchea hakeifolia</i> var. <i>hakeifolia</i>	Endemic WHA			1	1	1		
<i>Malleostemon hursthousei</i>	N limit Coburn Stn.	1						
<i>Malleostemon minilyaensis</i>								1
<i>Malleostemon pedunculatus</i>	N limit Carrang Stn.	1						
<i>Malleostemon peltiger</i>	N limit Coburn Stn.	1	1					
<i>Malleostemon roseus</i>		1	1					
<i>Malleostemon</i> sp. Nerren Nerren (Payne 360)	Endemic Nerren Nerren Stn.							
<i>Malleostemon</i> sp. Meadow Station (A.H.Burbidge site 69)								
<i>Malleostemon</i> sp. Rabbit Proof Fence (A.H.Burbidge site 59)								
<i>Malleostemon</i> sp. Cooloomia (S.D.Hopper 1353)	2 Endemic WHA					1		
<i>Malleostemon</i> sp. Hardabutt Rapids (D.Bellairs 1654A)	1	1						
<i>Malleostemon</i> sp. Kalbarri (L.A.Craven 7083)	2	1						
<i>Malleostemon</i> sp. Moonyoonooka (R.J.Cranfield 2947)	2 N limit KNP	1						
<i>Malleostemon tuberculatus</i>								
<i>Melaleuca acerosa</i>	N limit Tamala Stn.			1	1			
<i>Melaleuca adnata</i>		1						
<i>Melaleuca</i> aff. <i>leiopyxis</i> (GJK & NG 1708)		1			1			
<i>Melaleuca</i> aff. <i>eremaea</i> (GJK & NG 1332)								
<i>Melaleuca</i> aff. <i>holosericea</i>								
<i>Melaleuca</i> aff. <i>nesophila</i> (AHB 4520)								
<i>Melaleuca</i> aff. <i>oldfieldii/nesophylla</i> (Beard 6768)	Endemic WHA							
<i>Melaleuca</i> aff. <i>oldfieldii</i> (C. Gardner 13412)	Endemic WHA							
<i>Melaleuca calothamnoides</i>	Endemic Kalbarri - Murchison House Stn.	1						
<i>Melaleuca cardiophylla</i>		1		1	1	1		1
<i>Melaleuca ciliosa</i>	N limit KNP	1						
<i>Melaleuca concreta</i>	Endemic Kalbarri Area	1						
<i>Melaleuca conothamnoides</i>		1						
<i>Melaleuca cordata</i>		1	1					
<i>Melaleuca depressa</i>	N limit KNP	1						
<i>Melaleuca eleuterostachya</i>		1						
<i>Melaleuca eremaea</i>		1						

Family/Taxon	Conservation Code	Distribution	Conservation Reserve								
			KNP	TNR	ZNP	CNR	FPNP	BINR	DINR	KRNP	
<i>Melaleuca fulgens</i>			1								
<i>Melaleuca glomerata</i>											
<i>Melaleuca holosericea</i>		N limit DHI	1								
<i>Melaleuca huegelii</i> subsp. <i>pristicensis</i>	2	Endemic WHA									
<i>Melaleuca lanceolata</i> subsp. <i>occidentalis</i>		N limit DHI			1						
<i>Melaleuca lasiandra</i>			1								
<i>Melaleuca lateriflora</i> subsp. <i>acutifolia</i> ms			1								
<i>Melaleuca lateritia</i>		N limit KNP	1								
<i>Melaleuca laxiflora</i>											
<i>Melaleuca leiopyxis</i>		N limit Nanga Stn.	1		1						
<i>Melaleuca leucadendra</i>											
<i>Melaleuca linophylla</i>											
<i>Melaleuca longistaminea</i> subsp. <i>longistaminea</i> ms		N limit KNP	1								
<i>Melaleuca megacephala</i>			1			1					
<i>Melaleuca nematophylla</i>			1								
<i>Melaleuca oldfieldii</i>			1								
<i>Melaleuca psammophila</i>			1								
<i>Melaleuca radula</i>			1								
<i>Melaleuca rhapsiophylla</i>		N limit KNP	1								
<i>Melaleuca scabra</i> sen. lat.			1			1					
<i>Melaleuca</i> sp. (Trudgen sn)		Endemic WHA									
<i>Melaleuca subtrigona</i>			1								
<i>Melaleuca trichophylla</i>			1								
<i>Melaleuca uncinata</i>			1			1					
<i>Melaleuca undulata</i>			1								
<i>Melaleuca urceolaris</i>			1								
<i>Melaleuca viminea</i> subsp. <i>viminea</i>		N limit Carrang Stn.	1								
<i>Micromyrtus racemosa</i>			1								
<i>Micromyrtus sulphurea</i>											
<i>Phymatocarpus porphyrocephalus</i>			1								
<i>Pileanthus</i> aff. <i>filifolius</i> (Bellairs 1684)			1								
<i>Pileanthus</i> aff. <i>peduncularis</i> (Hopper 1385)							1				
<i>Pileanthus auranticus</i> ms		Endemic Murchison House Stn.									
<i>Pileanthus bellus</i> ms		N limit ZNP	1		1						
<i>Pileanthus limacis</i>		S limit Hamelin Stn.	1					1	1		
<i>Pileanthus peduncularis</i>			1	1	1	1				1	
<i>Pileanthus septentrionalis</i> (ML 2492)										1	
<i>Pileanthus vernicosus</i>		N limit Coburn Stn.	1			1					
<i>Scholtzia cordata</i> ms	1		1								
<i>Scholtzia leptantha</i>			1		1		1				
<i>Scholtzia</i> sp. Coolcalalaya (A.H.Burbidge sn)			1								
<i>Scholtzia</i> sp. Ajana (T.A.Halliday 137)	3		1								
<i>Scholtzia</i> sp. East Yuna (A.C.Burns 6)	2										
<i>Scholtzia</i> sp. Eurardy (J.S.Beard 6886)	1		1								
<i>Scholtzia</i> sp. Folly Hill (M.E.Trudgen 12097)	1					1					
<i>Scholtzia</i> sp. Galena (W.E.Blackall 4728)	2		1								
<i>Scholtzia</i> sp. Kalbarri (N.Hoyle 623)		Endemic Kalbarri Area									

<i>Scholtzia</i> sp. Murchison River (A.S.George 7098)	1								1
<i>Scholtzia</i> sp. Northampton (A.Strid 20714)									
<i>Scholtzia</i> sp. Red Bluff (A.Gunness 2373)									
<i>Scholtzia</i> sp. Ross Graham Lookout (S.Maley 6)	2								
<i>Scholtzia</i> sp. Shark Bay (MET 7429)		N limit Nanga Stn.							
<i>Scholtzia</i> sp. Z-Bend (Bellairs-Kalflora 912a)	2								
<i>Scholtzia spatulata</i>									
<i>Scholtzia uberiflora</i>									
<i>Scholtzia umbellifera</i>									
<i>Thryptomene aspera</i> ssp. <i>glabra</i> MS									
<i>Thryptomene baeckeacea</i>									
<i>Thryptomene decussata</i>		N limit Coburn Stn.							
<i>Thryptomene denticulata</i>									
<i>Thryptomene mucronulata</i>									
<i>Thryptomene ninghanensis</i> ms	1								
<i>Thryptomene prolifera</i>		N limit CNR							
<i>Thryptomene racemulosa</i>		N limit Coburn Stn.							
<i>Thryptomene</i> sp. Kalbarri (A. Guinness 2378)									
<i>Thryptomene</i> sp. Wandana (A.H.Burbidge site 13)									
<i>Thryptomene</i> sp. Carrarang(M.E.Trudgen 7420)	1	Endemic WHA							
<i>Thryptomene</i> sp. Eagle Gorge(A.G.Gunness 2360)	2	Endemic KNP to ZNP							
<i>Thryptomene</i> sp. Eurardy(D.& B.Bellairs)	2								
<i>Thryptomene</i> sp. Junga Dam(A.G.Gunness 2383A)	2								
<i>Thryptomene</i> sp. Steep Point(M.E.Trudgen 7421)	1	Endemic WHA							
<i>Thryptomene</i> sp. Tamala(M.E.Trudgen 7384)	1								
<i>Thryptomene stenophylla</i>	2								
<i>Thryptomene stronglyophylla</i>		N limit CNR							
<i>Thryptomene stronglyophylla</i> subsp. Tamala (M.E.Trudgen 7384)		Endemic WHA							
<i>Verticordia capillaris</i>	4								
<i>Verticordia chrysantha</i>									
<i>Verticordia chrysostachys</i> var. <i>chrysostachys</i>									
<i>Verticordia cooloomia</i>	3	Endemic WHA							
<i>Verticordia dasystylis</i> subsp. <i>kalbarriensis</i>	2								
<i>Verticordia densiflora</i> var. <i>roseostella</i>	3								
<i>Verticordia densiflora</i> var. <i>stelluligera</i>									
<i>Verticordia dichroma</i> var. <i>dichroma</i>	3	N limit Coburn/Meadow Stn.							
<i>Verticordia dichroma</i> var. <i>syntoma</i>	3	N limit CNR							
<i>Verticordia eriocephala</i>									
<i>Verticordia etheliana</i> var. <i>etheliana</i>		N limit VCL S of Tamala Stn.							
<i>Verticordia etheliana</i> var. <i>formosa</i>									
<i>Verticordia forrestii</i>									
<i>Verticordia galeata</i>	2								
<i>Verticordia interioris</i>									
<i>Verticordia lepidophylla</i> var. <i>lepidophylla</i>									
<i>Verticordia lepidophylla</i> var. <i>quantula</i>	1								
<i>Verticordia monadelphina</i> var. <i>callitricha</i>		N limit Kalbarri Area							
<i>Verticordia nobilis</i>									
<i>Verticordia oculata</i>									
<i>Verticordia pennigera</i>									
<i>Verticordia pholidophylla</i>									

Family/Taxon	Conservation Code	Distribution	Conservation Reserve							
			KNP	TNR	ZNP	CNR	FPNP	BINR	DINR	KRNP
<i>Verticordia picta</i>			1							
<i>Verticordia polytricha</i>	4		1							
<i>Verticordia spicata</i> subsp. <i>spicata</i>		N limit CNR	1							
Najadaceae										
<i>Najas marina</i>										
Nyctaginaceae										
<i>Boerhavia burbridgeana</i>		S limit Carnarvon								
<i>Boerhavia coccinea</i>										1
<i>Boerhavia gardneri</i>										1
<i>Boerhavia repanda</i>			1							
<i>Boerhavia schomburgkiana</i>										
<i>Commicarpus australis</i>			1				1		1	
Olacaceae										
<i>Olax aurantia</i>			1		1					
Oleaceae										
<i>Jasminum calcarium</i>		S limit KNP	1				1		1	1
<i>Jasminum</i> sp. (B. Turner 1)		S limit Carrang Stn.								
Ophioglossaceae										
<i>Ophioglossum gramineum</i>							1			
<i>Ophioglossum lusitanicum</i>			1		1				1	
Orchidaceae										
<i>Caladenia bicallata</i>		N limit KNP	1							
<i>Caladenia bryceana</i> subsp. <i>cracens</i> ms	R		1							
<i>Caladenia discoidea</i>		N limit KNP	1							
<i>Caladenia drummondii</i>			1							
<i>Caladenia flava</i> subsp. <i>maculata</i> ms			1		1					
<i>Caladenia hirta</i> subsp. <i>rosea</i> ms		N limit KNP	1							
<i>Caladenia hoffmanii</i> ms	R		1							
<i>Caladenia incensa</i> ms			1							
<i>Caladenia latifolia</i>		N limit KNP	1							
<i>Caladenia longicauda</i> subsp. <i>borealis</i> ms		N limit KNP	1							
<i>Caladenia pachychila</i> ms			1							
<i>Caladenia reptans</i> subsp. <i>impensa</i> ms		Endemic KNP	1							
<i>Caladenia reptans</i> subsp. <i>reptans</i> ms		N limit KNP	1							
<i>Caladenia roei</i>										
<i>Caladenia varians</i> ms							1			
<i>Caladenia varians</i> subsp. <i>nobilis</i> ms		N limit KNP	1							
<i>Caladenia varians</i> subsp. <i>variens</i> ms			1							
<i>Caladenia wanosa</i>	R		1							
<i>Cyanicula amplexans</i> ms		N limit Kalbarri Area								
<i>Cyanicula deformis</i> ms			1							

<i>Cyanicula gemmata</i>	ms				1
<i>Cyrtostylis huegelii</i>			N limit KNP		1
<i>Diuris</i> aff. <i>laxiflora</i>	(A.P. Brown 32)		N limit Kalbarri Area		1
<i>Diuris laxiflora</i>			N limit KNP		1
<i>Diuris magnifica</i>			N limit ZNP		1
<i>Diuris recurva</i>		4	N limit KNP		1
<i>Drakaea concolor</i>	ms	R			1
<i>Drakonorchis barbarella</i>	ms	R			1
<i>Elythranthera brunonis</i>			N limit KNP		1
<i>Elythranthera emarginata</i>			N limit KNP		1
<i>Eriochilus dilatatus</i> subsp. <i>dilatatus</i>	ms		N limit Tamala Stn.		1
<i>Eriochilus dilatatus</i> subsp. <i>undulatus</i>	ms		N limit KNP		1
<i>Leporella fimbriata</i>					1
<i>Microtis media</i> subsp. <i>media</i>					1
<i>Paracaleana lyonsii</i>	ms		Endemic TNR - Nerren Nerren Stn.		1
<i>Paracaleana terminalis</i>	ms				1
<i>Prasophyllum calcicola</i>	ms		N limit KNP		1
<i>Prasophyllum cyphochilum</i>			N limit KNP		1
<i>Prasophyllum elatum</i>				1	1
<i>Prasophyllum giganteum</i>					1
<i>Prasophyllum gracile</i>					1
<i>Prasophyllum ringens</i>					1
<i>Prasophyllum sargentii</i>					1
<i>Pterostylis</i> aff. <i>nana</i>	(GJK & NG 1867)				1
<i>Pterostylis aspera</i>			N limit KNP		1
<i>Pterostylis barbata</i>			N limit KNP		1
<i>Pterostylis nana</i>					1
<i>Pterostylis picta</i>			N limit KNP		1
<i>Pterostylis sanguinea</i>					1
<i>Pterostylis scabra</i>					1
<i>Pyrorchis nigricans</i>			N limit Tamala Stn.	1	1
<i>Spiculaea ciliata</i>			N limit KNP		1
<i>Thelymitra antennifera</i>			N limit KNP		1
<i>Thelymitra campanulata</i>			N limit KNP		1
<i>Thelymitra flexuosa</i>			N limit KNP		1
<i>Thelymitra sargentii</i>					1
<i>Thelymitra spiralis</i>			N limit KNP		1
Orobanchaceae					
<i>Orobanche minor</i> var. <i>australiana</i>					
Oxalidaceae					
<i>Oxalis perennans</i>					
* <i>Oxalis pes-caprae</i>					
Papaveraceae					
* <i>Argemone ochroleuca</i>					
Papilionaceae					
<i>Aotus phyllicoides</i>					
			N limit ZNP	1	1

Family/Taxon	Conservation Code	Distribution	Conservation Reserve							
			KNP	TNR	ZNP	CNR	FPNP	BINR	DINR	KRNP
<i>Bossiaea eriocarpa</i>		N limit ZNP	1		1					
<i>Bossiaea spinescens</i>		N limit KNP	1		1					
<i>Bossiaea walkeri</i>									1	
<i>Brachysema aphyllum</i>		N limit ZNP	1		1					
<i>Brachysema macrocarpum</i>					1			1		
<i>Chorizema ericifolium</i>										1
<i>Chorizema racemosum</i>			1		1		1			1
<i>Clianthus formosus</i>										1
<i>Crotalaria cunninghamii</i>										1
<i>Cullen cinereum</i>			1							
<i>Cullen leucanthum</i> ms										
<i>Cullen patens</i>										
<i>Daviesia divaricata</i>		N limit Murchison House Stn.	1							
<i>Daviesia hakeoides</i> subsp. <i>hakeoides</i>			1							
<i>Daviesia intricata</i>						1				
<i>Daviesia nudiflora</i> subsp. <i>nudiflora</i>			1							
<i>Daviesia pedunculata</i>		N limit KNP	1							
<i>Daviesia podophylla</i>		N limit Murchison House Stn.	1							
<i>Daviesia ramosissima</i>			1			1				
<i>Gastrolobium bennettsianum</i>		N limit KNP	1							
<i>Gastrolobium oxylobioides</i>		N limit KNP	1							
<i>Glycine canescens</i>			1					1		
<i>Glycine clandestina</i>										
<i>Glycine tabacina</i>					1					
<i>Glycyrrhiza acanthocarpa</i>										
<i>Gompholobium</i> sp. Kalbarri (M.D. Crisp 6300)		Endemic Kalbarri Area	1							
<i>Gompholobium tomentosum</i>		N limit Tamala Stn.	1		1					
<i>Indigofera australis</i>			1							
<i>Indigofera boviperda</i>							1			
<i>Indigofera brevidens</i>			1							
<i>Indigofera colutea</i>										
<i>Indigofera georgei</i>										
<i>Indigofera limifolia</i>			1							
<i>Indigofera linnaei</i>										
<i>Indigofera monophylla</i>										1
<i>Indigofera occidentalis</i> ms										1
<i>Indigofera</i> sp. (KRN 11615)										1
<i>Isotropis cuneifolia</i>		N limit Nanga Stn.	1		1	1				
<i>Jacksonia</i> aff. <i>spinosa</i> (R.J. Cranfield 2576)		Endemic Carnarvon Area								
<i>Jacksonia angulata</i>		N limit TNR	1	1						
<i>Jacksonia arenicola</i> ms		N limit Nerren Nerren Stn.	1							
<i>Jacksonia arida</i> ms			1							
<i>Jacksonia calcicola</i> ms			1							
<i>Jacksonia cupulifera</i>		N limit KNP	1							
<i>Jacksonia foliosa</i>		N limit KNP	1							
<i>Jacksonia hakeoides</i>										
<i>Jacksonia rigida</i> ms		N limit KNP	1							

<i>Jacksonia sternbergiana</i>		N limit KNP	1						
<i>Jacksonia velutina</i>	4	N limit Hamelin Stn.	1		1				
<i>Kennedia prostrata</i>		N limit WHA	1						
<i>Leptosema aphyllum</i> ms		N limit Eurardy Stn.	1						
<i>Leptosema daviesioides</i>		N limit Kalbarri Area							
<i>Leptosema macrocarpum</i> ms		Endemic NW Cape to Shark Bay	1					1	
<i>Leptosema tomentosa</i> ms		N limit CNR	1		1				
<i>Lotus australis</i>			1			1			
<i>Lotus cruentus</i>							1	1	1
* <i>Lupinus cosentinii</i>			1						
* <i>Medicago polymorpha</i>					1				
* <i>Medicago truncatula</i>									
* <i>Melilotus indicus</i>			1						
<i>Mirbelia</i> aff. <i>ramulosa</i> (GJK & NG 2059)				1					
<i>Mirbelia</i> aff. <i>viminalis</i> (AHB sn)									
<i>Mirbelia depressa</i>		N limit TNR	1	1					
<i>Mirbelia ramulosa</i>			1	1	1	1		1	1
<i>Mirbelia</i> sp. (Blackall 556)		N limit WHA	1		1	1			
<i>Mirbelia</i> sp. Zuytdorp (GJK & NG 1688)									
<i>Mirbelia</i> sp. Denham (W.E.Blackall 556)					1				
<i>Mirbelia</i> sp. Kalbarri (M.D.Crisp 6261)	3	Endemic Kalbarri Area	1						
<i>Mirbelia spinosa</i>		N limit Murchison House Stn.	1						
<i>Mirbelia trichocalyx</i>		N limit Murchison House Stn.	1						
<i>Muelleranthus trifoliolatus</i>									
<i>Nemcia reticulata</i>		N limit ZNP	1		1				
<i>Oxylobium lineare</i>		N limit KNP	1						
<i>Pultenaea dasyphylla</i>		N limit KNP	1						
<i>Rhynchosia minima</i>									
<i>Sesbania cannabina</i>									
<i>Sphaerolobium gracile</i>		N limit KNP	1						
<i>Sphaerolobium macranthum</i>		N limit KNP	1						
* <i>Stylosanthes humilis</i>									
<i>Swainsona beasleyana</i>		S limit KNP	1						
<i>Swainsona calcicola</i>						1		1	
<i>Swainsona canescens</i>			1		1				
<i>Swainsona complanata</i>									
<i>Swainsona cornuta</i>									
<i>Swainsona ecallosa</i>									
<i>Swainsona elegantoides</i>									
<i>Swainsona flavicarinata</i>									
<i>Swainsona gracilis</i>									
<i>Swainsona kingii</i>			1						
<i>Swainsona leeana</i>									
<i>Swainsona longicarinata</i>		Endemic WHA							
<i>Swainsona pedunculata</i>									1
<i>Swainsona pterostylis</i>			1						1
<i>Swainsona rostellata</i>			1						
<i>Templetonia biloba</i>		N limit KNP	1						
<i>Templetonia retusa</i>		N limit FPNP	1		1		1		
<i>Tephrosia bidwillii</i>									

Family/Taxon	Conservation Code	Distribution	Conservation Reserve							
			KNP	TNR	ZNP	CNR	FPNP	BINR	DINR	KRNP
<i>Tephrosia flammea</i>										1
<i>Tephrosia gardneri</i>										
<i>Tephrosia rosea</i>										
<i>Tephrosia</i> sp. (K.R. Newbey 11636)										1
* <i>Trifolium campestre</i>			1							
<i>Trigonella suavissima</i>										
<i>Viminaria juncea</i>		N limit KNP	1							
Phormiaceae										
<i>Dianella revoluta</i>			1	1	1	1	1			1
<i>Stypandra glauca</i>		N limit KNP	1							
Pittosporaceae										
<i>Billardiera bicolor</i> var. <i>lineata</i>		N limit Tamala Stn.	1		1	1				
<i>Billardiera erubescens</i>			1							
<i>Billardiera ringens</i>			1							
<i>Bursaria occidentalis</i>		N limit Nanga Stn.	1	1						
<i>Cheiranthra filifolia</i>			1							
<i>Cheiranthra preissiana</i> var. <i>preissiana</i>			1							
<i>Pittosporum phylliraeoides</i> var. <i>phylliraeoides</i>			1		1	1	1		1	
Plantaginaceae										
<i>Plantago</i> aff. <i>hispidula</i> (A.H.Burbidge 4517)				1						
* <i>Plantago coronopus</i>			1							
<i>Plantago debilis</i>			1							
<i>Plantago drummondii</i>				1	1					
<i>Plantago</i> sp. Mt. Magnet (A.S. George 6793)										
Plumbaginaceae										
<i>Muellerolimon salicorniaceum</i>							1			
Poaceae										
* <i>Aira caryophyllea</i>										
<i>Amphipogon caricinus</i>						1				
<i>Amphipogon strictus</i>		N limit TNR	1	1						
<i>Amphipogon turbinatus</i>		N limit ZNP	1		1					
<i>Aristida anthoxanthoides</i>										
<i>Aristida contorta</i>			1				1		1	1
<i>Aristida holathera</i> var. <i>holathera</i>			1	1			1			1
<i>Astrebla elymoides</i>										
<i>Astrebla pectinata</i>										
<i>Austrostipa compressa</i>			1							
<i>Austrostipa crinita</i>									1	
<i>Austrostipa elegantissima</i>			1	1	1	1	1		1	
<i>Austrostipa macalpinei</i>			1							
<i>Austrostipa nitida</i>			1		1	1	1			
<i>Austrostipa tenuifolia</i>										

<i>Austrostipa trichophylla</i>				1		
<i>Austrostipa tuckeri</i>		1		1		
* <i>Avellinia michelii</i>						
* <i>Avena barbata</i>		1			1	
* <i>Avena fatua</i>		1				
* <i>Avena sterilis</i>						
<i>Bothriochloa ewartiana</i>						
<i>Brachyachne prostrata</i>						1
* <i>Briza maxima</i>		1				
* <i>Briza minor</i>						
<i>Bromus arenarius</i>			1	1		1
* <i>Bromus diandrus</i>						1
* <i>Bromus hordeaceus</i>						
* <i>Bromus japonicus</i>						
* <i>Bromus madritensis</i>						
* <i>Bromus rigidus</i>						
* <i>Cenchrus ciliaris</i>		1			1	1
* <i>Cenchrus echinatus</i>		1				
* <i>Cenchrus setigerus</i>					1	
<i>Chloris lobata</i>		1				
<i>Chloris pectinata</i>						
<i>Chloris pumilio</i>						
* <i>Chloris virgata</i>		1				
<i>Chrysopogon fallax</i>						1
<i>Chrysopogon pallidus</i>						
<i>Chrysopogon</i> sp. Zuytdorp (GJK & NG 906)	Endemic to ZNP					
<i>Cymbopogon ambiguus</i>		1			1	1
<i>Cymbopogon bombycinus</i>		1				
<i>Cymbopogon obtectus</i>						1
<i>Cynodon dactylon</i>		1			1	
* <i>Dactyloctenium australe</i>						
<i>Dactyloctenium radulans</i>						1
<i>Danthonia caespitosa</i>		1			1	
<i>Danthonia racemosa</i>	N limit FPNP					
<i>Dichanthium sericeum</i> subsp. <i>humilius</i>						
<i>Digitaria brownii</i>		1				1
<i>Digitaria ctenantha</i>						
<i>Diplachne fusca</i>						
<i>Diplachne muelleri</i>						
<i>Diplachne parviflora</i>						
* <i>Ehrharta brevifolia</i>					1	
* <i>Ehrharta calycina</i>						
* <i>Ehrharta longiflora</i>					1	1
* <i>Eleusine indica</i>						
<i>Enneapogon caeruleus</i>						1
<i>Enneapogon polyphyllus</i>						
<i>Enteropogon acicularis</i>						1
<i>Eragrostis australasica</i>						
* <i>Eragrostis barrelieri</i>				1		
<i>Eragrostis basedowii</i>						

Family/Taxon

Conservation
Code

Distribution

Conservation Reserve

KNP TNR ZNP CNR FPNP BINR DINR KRNP

Family/Taxon	Conservation Code	Distribution	KNP	TNR	ZNP	CNR	FPNP	BINR	DINR	KRNP
<i>Eragrostis brownii</i>										
<i>Eragrostis cumingii</i>										
* <i>Eragrostis curvula</i>			1							1
<i>Eragrostis dielsii</i>			1		1	1	1		1	1
<i>Eragrostis elongata</i>										1
<i>Eragrostis eriopoda</i>				1						
<i>Eragrostis falcata</i>								1		
<i>Eragrostis lanipes</i>										1
<i>Eragrostis leptocarpa</i>										
<i>Eragrostis pergracilis</i>					1		1			
<i>Eragrostis setifolia</i>										
<i>Eragrostis tenellula</i>										1
<i>Eragrostis xerophila</i>										
<i>Eriachne aristidea</i>			1							1
<i>Eriachne avenacea</i>										
<i>Eriachne benthamii</i>										
<i>Eriachne flaccida</i>										
<i>Eriachne gardneri</i>										1
<i>Eriachne helmsii</i>										1
<i>Eriachne lanata</i>										
<i>Eriachne mucronata</i>										
<i>Eriachne obtusa</i>										
<i>Eriachne ovata</i>										
<i>Eriachne pulchella</i> subsp. <i>dominii</i>										
<i>Eriachne pulchella</i> subsp. <i>pulchella</i>			1							1
<i>Eriochloa australiensis</i>										
<i>Eriochloa procera</i>										
<i>Eriochloa pseudoacrotricha</i>			1							
<i>Eulalia aurea</i>								1	1	
<i>Eulalia fulva</i>							1	1	1	
* <i>Hordeum geniculatum</i>			1							
* <i>Hordeum leporinum</i>			1		1		1			
<i>Iseilema eremaeum</i>										1
<i>Iseilema membranaceum</i>										
<i>Iseilema vaginiflorum</i>										
* <i>Lamarckia aurea</i>			1							
<i>Leptochloa digitata</i>										
* <i>Lolium perenne</i>										
* <i>Lolium rigidum</i>							1			
* <i>Lophochloa pumila</i>					1					
<i>Monachather paradoxus</i>			1	1						1
<i>Neurachne alopecuroidea</i>			1		1					
<i>Panicum australiense</i>										1
<i>Panicum decompositum</i>										
<i>Panicum effusum</i>										
<i>Panicum laevinode</i>										
<i>Paractaenum novae-hollandiae</i>			1	1	1	1	1		1	1

<i>Paraneurachne muelleri</i>								
* <i>Parapholis incurva</i>				1		1		
<i>Paspalidium basicladum</i>								1
<i>Paspalidium clementii</i>							1	
<i>Paspalidium constrictum</i>								
<i>Paspalidium gracile</i>								1
<i>Paspalidium jubiflorum</i>				1				
<i>Paspalidium reflexum</i>								
* <i>Pentaschistis airoides</i>					1			
<i>Perotis rara</i>								
* <i>Phalaris minor</i>								
<i>Plagiosetum refractum</i>								
<i>Plectrachne bromoides</i>	4	N limit Tamala Stn.		1		1		
<i>Plectrachne danthonioides</i>		N limit FPNP		1	1	1	1	
<i>Plectrachne dielsii</i>				1				
<i>Plectrachne drummondii</i>		N limit Nanga Stn.		1		1		
<i>Plectrachne melvillei</i>								1
<i>Plectrachne rigidissima</i>								
<i>Plectrachne schinzii</i>								1
* <i>Poa annua</i>				1				
<i>Poa drummondiana</i>		N limit Nanga Stn.			1			
* <i>Polypogon monspeliensis</i>				1				
<i>Psammagrostis wiseana</i>								
* <i>Rostraria cristata</i>								
* <i>Rostraria pumila</i>				1	1	1	1	1
* <i>Schismus arabicus</i>								
* <i>Schismus barbatus</i>				1			1	
<i>Setaria dielsii</i>							1	1
<i>Setaria surgens</i>								
* <i>Setaria verticillata</i>								1
<i>Sorghum plumosum</i>								
<i>Spinifex longifolius</i>				1			1	
<i>Sporobolus actinocladius</i>								
<i>Sporobolus blakei</i>								
<i>Sporobolus caroli</i>								
<i>Sporobolus mitchellii</i>								
<i>Sporobolus virginicus</i>				1	1		1	1
<i>Themeda triandra</i>								
<i>Thyridolepis mitchelliana</i>								1
<i>Tragus australianus</i>								1
<i>Triodia aff. basedowii</i>								1
<i>Triodia basedowii</i>								1
<i>Triodia epactia</i>								
<i>Triodia irritans</i>								1
<i>Triodia lanigera</i>								
<i>Triodia plurinervata</i>							1	1
<i>Triodia pungens</i>								
<i>Triodia scariosa</i>								
<i>Triodia triticoides</i>				1				
<i>Tripogon loliformis</i>								1

<i>Posidonia coriacea</i>							
<i>Posidonia sinuosa</i>							
Potamogetonaceae							
<i>Potamogeton pectinatus</i>							
<i>Potamogeton tricarinatus</i>							
<i>Ruppia megacarpa</i>						1	
<i>Ruppia polycarpa</i>							
<i>Ruppia tuberosa</i>							
Primulaceae							
* <i>Anagallis arvensis</i> var. <i>arvensis</i>							1
* <i>Anagallis arvensis</i> var. <i>caerulea</i>					1		1
<i>Samolus junceus</i>					1		
<i>Samolus repens</i> var. <i>floribundus</i>					1		
<i>Samolus repens</i> var. <i>paucifolius</i>				N limit FPNP	1		1
<i>Samolus</i> sp. Shark Bay (M.E.Trudgen 7410)				S limit Hamelin Stn.			
Proteaceae							
<i>Adenanthos acanthophyllus</i>				Endemic to WHA			1
<i>Adenanthos cygnorum</i>				N limit KNP	1		
<i>Banksia ashbyi</i>					1	1	1
<i>Banksia attenuata</i>				N limit ZNP	1	1	
<i>Banksia leptophylla</i> var. <i>mellitica</i>				N limit KNP	1		
<i>Banksia lindleyana</i>				N limit Tamala Stn.	1	1	1
<i>Banksia menziesii</i>				N limit KNP	1		
<i>Banksia prionotes</i>				N limit Tamala Stn.	1	1	1
<i>Banksia sceptrum</i>				N limit Nanga Stn.	1	1	1
<i>Banksia victoriae</i>				N limit ZNP	1		
<i>Conospermum acerosum</i> subsp. <i>hirsutum</i>				N limit KNP	1		
<i>Conospermum boreale</i> subsp. <i>boreale</i>				Endemic Kalbarri Area	1		
<i>Conospermum microflorum</i>				N limit Nanga Stn.	1	1	
<i>Conospermum stoechadis</i> subsp. <i>stoechadis</i>				N limit Tamala Stn.	1	1	1
<i>Dryandra</i> aff. <i>ashbyi</i> (GJK & NG 1571)				Endemic Murchison House Stn. to Zuytdorp			
<i>Dryandra borealis</i> subsp. <i>borealis</i>					1		
<i>Dryandra fraseri</i>					1	1	
<i>Dryandra sessilis</i>					1		
<i>Grevillea</i> aff. <i>stenobotrya</i> (MET 7554)				S limit Tamala Stn.			
<i>Grevillea annulifera</i>	2			N limit WHA	1	1	1
<i>Grevillea argyrophylla</i>				N limit Tamala Stn.	1	1	
<i>Grevillea biformis</i> subsp. <i>biformis</i>				N limit KNP	1		
<i>Grevillea brachystachya</i>				N limit ZNP	1	1	1
<i>Grevillea candelabroides</i>				N limit FPNP	1	1	1
<i>Grevillea candicans</i>	3			N limit KNP	1		
<i>Grevillea commutata</i>				N limit Nerren Nerren Stn.	1		
<i>Grevillea costata</i>	2			Endemic lower Murchison R.	1		
<i>Grevillea didymobotrya</i> subsp. <i>didymobotrya</i>				N limit Nerren Nerren Stn.	1		
<i>Grevillea dielsiana</i>				N limit CNR	1		1
<i>Grevillea eriostachya</i>					1	1	1
<i>Grevillea gordoniana</i>					1	1	1

Family/Taxon	Conservation Code	Distribution	Conservation Reserve							
			KNP	TNR	ZNP	CNR	FPNP	BINR	DINR	KRNP
<i>Grevillea hakeoides</i> subsp. <i>stenophylla</i>		N limit DHI	1							
<i>Grevillea intricata</i>		N limit KNP	1							
<i>Grevillea leptopoda</i>	3	N limit KNP	1							
<i>Grevillea leucoclada</i>		N limit TNR	1	1						
<i>Grevillea leucopteris</i>		N limit ZNP	1		1					
<i>Grevillea levis</i>		N limit KNP	1							
<i>Grevillea obliquistigma</i> subsp. <i>obliquistigma</i>		N limit KNP	1							
<i>Grevillea paradoxa</i>										
<i>Grevillea petrophiloides</i>		N limit KNP	1							
<i>Grevillea pinaster</i>		N limit ZNP	1		1					
<i>Grevillea preissii</i>		N limit ZNP			1					
<i>Grevillea pterosperma</i>										
<i>Grevillea rogersoniana</i>	2	Endemic Shark Bay - Tamala Stn.				1				
<i>Grevillea</i> sp. Shark Bay (MET 7553)		Endemic to WHA								
<i>Grevillea stenobotrya</i>			1							1
<i>Grevillea stenomera</i>	2	Endemic KNP to Tamala	1							
<i>Grevillea stenostachya</i>	3	N limit Coburn Stn.	1	1						
<i>Grevillea trachytheca</i>		Endemic Kalbarri Area	1							
<i>Grevillea triloba</i>	2	N limit KNP	1							
<i>Grevillea variifolia</i> subsp. <i>bunderra</i> ms		S limit Lake McLeod								
<i>Grevillea vestita</i> subsp. <i>isopogoides</i>		N limit KNP	1							
<i>Hakea arida</i>			1	1						
<i>Hakea bucculenta</i>		N limit CNR/TNR	1	1	1	1				
<i>Hakea candolleana</i>		N limit KNP	1							
<i>Hakea circumalata</i>		N limit Tamala Stn.	1	1	1					
<i>Hakea coriacea</i>			1							
<i>Hakea costata</i>		N limit KNP	1							
<i>Hakea incrassata</i>										
<i>Hakea kippistiana</i>				1						
<i>Hakea lissocarpa</i>		N limit Murchison House Stn.	1							
<i>Hakea orthorrhyncha</i>			1							
<i>Hakea preissii</i>										1
<i>Hakea pycnoneura</i>		N limit KNP	1							
<i>Hakea recurva</i>			1	1						
<i>Hakea stenocarpa</i>					1					
<i>Hakea stenophylla</i>			1		1	1				
<i>Hakea suberea</i>										
<i>Hakea trifurcata</i>		N limit ZNP	1		1					
<i>Isopogon divergens</i>			1							
<i>Persoonia acicularis</i>		N limit Nanga Stn.	1		1	1				
<i>Persoonia angustiflora</i>			1							
<i>Persoonia biglandulosa</i>		N limit CNR	1			1				
<i>Persoonia bowgada</i>		N limit Nanga Stn.		1						
<i>Persoonia brachystylis</i>	1		1							
<i>Persoonia hexagona</i>		N limit CNR	1			1				
<i>Persoonia papillosa</i>	1	N limit KNP	1							
<i>Persoonia rufiflora</i>		N limit KNP	1							

<i>Persoonia saundersiana</i>		N limit Nanga Stn.						
<i>Persoonia</i> sp. (Craven 7112)		N limit Nanga Stn.			1			
<i>Persoonia stricta</i>		N limit KNP						
<i>Petrophile biternata</i>	3	N limit KNP	1					
<i>Petrophile brevifolia</i>		N limit Tamala Stn.	1		1			
<i>Petrophile conifera</i>		N limit KNP	1					
<i>Petrophile macrostachya</i>		N limit Murchison House Stn.	1					
<i>Petrophile scabriuscula</i>		N limit KNP	1					
<i>Petrophile semifurcata</i>		N limit ZNP	1		1		1	
<i>Petrophile seminuda</i>		N limit KNP	1					
<i>Petrophile shuttleworthiana</i>		N limit KNP	1					
<i>Stirlingia latifolia</i>		N limit KNP	1					
<i>Synaphea recurva</i>		N limit KNP	1					
<i>Synaphea spinulosa</i> subsp. <i>borealis</i>		N limit Eurardy Stn./CNR	1					
<i>Xylomelum angustifolium</i>		N limit CNR	1		1		1	
Psilotaceae								
<i>Psilotum nudum</i>		S limit KNP	1					
Ranunculaceae								
<i>Clematis linearifolia</i>		N limit DHI	1		1		1	
<i>Ranunculus pumilio</i>			1					
<i>Ranunculus sessiliflorus</i>								
Restionaceae								
<i>Desmocladus asper</i> ms		N limit DHI	1		1		1	
<i>Desmocladus biformis</i> ms		N limit KNP	1					
<i>Ecdeiocolea monostachya</i>		N limit Tamala Stn.	1	1	1		1	
<i>Lepidobolus chaetocephalus</i>		N limit CNR	1				1	
<i>Lepidobolus densus</i> ms	3	N limit DHI			1			
<i>Lepidobolus preissianus</i>		N limit KNP	1					
<i>Leptocarpus aristatus</i>			1					
<i>Loxocarya parthenica</i> ms		N limit KNP	1					
<i>Lyginia barbata</i>		N limit KNP	1					
Rhamnaceae								
<i>Cryptandra arbutiflora</i> var. <i>borealis</i>			1					
<i>Cryptandra connata</i>				1				
<i>Cryptandra glabriflora</i>	2		1					
<i>Cryptandra leuophracta</i>							1	
<i>Cryptandra mutila</i>		N limit DINR	1		1			1
<i>Cryptandra myriantha</i>			1					
<i>Cryptandra nudiflora</i>	3	N limit DHI	1					
<i>Cryptandra nutans</i>			1					
<i>Cryptandra pungens</i>			1					
<i>Cryptandra scoparia</i> var. <i>microcephala</i>	2		1				1	
<i>Cryptandra spyridioides</i>			1				1	
<i>Stenanthemum complicatum</i>		N limit DHI	1		1		1	
<i>Stenanthemum divaricatum</i>	3	S limit DHI	1					1
<i>Stenanthemum intricatum</i>		N limit KNP	1					

Family/Taxon	Conservation Code	Distribution	Conservation Reserve							
			KNP	TNR	ZNP	CNR	FPNP	BINR	DINR	KRNP
<i>Stenanthemum notiale</i>		N limit ZNP	1							
<i>Stenanthemum pomaderroides</i>		N limit KNP	1							
Rubiaceae										
<i>Canthium attenuatum</i>										1
<i>Canthium latifolium</i>			1	1						1
<i>Canthium lineare</i>										
<i>Oldenlandia galioides</i>										
<i>Opercularia</i> aff. <i>spermacocea</i> (A.H.Burbidge 4502)										
<i>Opercularia spermacocea</i>			1		1	1			1	
<i>Opercularia vaginata</i>		N limit CNR	1		1	1			1	
<i>Synaptantha tillaeacea</i> var. <i>tillaeacea</i>				1				1		1
Rutaceae										
<i>Boronia coerulescens</i> subsp. <i>spinescens</i>		N limit ZNP	1		1					
<i>Boronia crenulata</i> var. <i>gracilis</i>		N limit Carrang Stn.								
<i>Boronia cymosa</i>		N limit Hamelin Stn.	1							
<i>Boronia purdieana</i>		N limit Tamala Stn.	1		1					
<i>Boronia ramosa</i> subsp. <i>anethifolia</i>		N limit KNP	1							
<i>Diplolaena geraldtonensis</i> ms										
<i>Diplolaena grandiflora</i>			1		1			1	1	
<i>Diplolaena mollis</i> ms		N limit DHI	1		1	1				
<i>Eriostemon brucei</i>										
<i>Eriostemon deserti</i>										
<i>Eriostemon sericeus</i>			1							
<i>Eriostemon</i> sp. Kalbarri (GJK & NG 2034)			1							
<i>Eriostemon tomentellus</i>										
<i>Geleznovia verrucosa</i>	3	N limit DHI	1		1	1				
<i>Phebalium tuberculosum</i>										
Santalaceae										
<i>Anthobolus foveolatus</i>		N limit FPNP	1	1	1		1			
<i>Choretrum pritzelii</i>		N limit KNP	1							
<i>Exocarpos aphyllus</i>			1		1		1	1	1	
<i>Exocarpos sparteus</i>			1		1	1	1			
<i>Leptomeria preissiana</i>		N limit Coburn Stn.	1		1					
<i>Leptomeria spinosa</i>			1							
<i>Santalum acuminatum</i>			1		1	1	1			
<i>Santalum lanceolatum</i>										1
<i>Santalum spicatum</i>			1	1			1	1		
<i>Santalum spicatum</i> subsp. nov.		Endemic Study area					1	1	1	
Sapindaceae										
<i>Alectryon oleifolius</i> subsp. <i>oleifolius</i>			1	1			1	1	1	1
<i>Diplopeltis eriocarpa</i>										1
<i>Diplopeltis huegelii</i> var. <i>subintegra</i>		N limit Nanga Stn.	1							
<i>Diplopeltis intermedia</i> var. <i>incana</i>		S limit KNP	1							1

<i>Diplopeltis intermedia</i> var. <i>intermedia</i>			1							
<i>Diplopeltis petiolaris</i>		N limit ZNP	1		1					
<i>Dodonaea amblyophylla</i>										
<i>Dodonaea aptera</i>		N limit DHI			1					
<i>Dodonaea bursariifolia</i>							1		1	
<i>Dodonaea caespitosa</i>			1							
<i>Dodonaea inaequifolia</i>		N limit FPNP	1				1			
<i>Dodonaea larreoides</i>		N limit KNP	1							
<i>Dodonaea lobulata</i>										
<i>Dodonaea petiolaris</i>										
<i>Dodonaea piniifolia</i>			1							
<i>Dodonaea ptarmicaefolia</i>										
<i>Dodonaea viscosa</i> subsp. <i>angustissima</i>		N limit FPNP	1				1			
<i>Dodonaea viscosa</i> subsp. <i>spatulata</i>										1
Scrophulariaceae										
* <i>Dischisma arenarium</i>			1							
<i>Elacholoma hornii</i>										
<i>Glossostigma diandrum</i>										1
<i>Glossostigma drummondii</i>										
<i>Mimulus gracilis</i>										
<i>Mimulus repens</i>			1							
<i>Peplidium aithocheilum</i>										
<i>Peplidium muelleri</i>										
<i>Peplidium</i> sp. (N.T. Burbidge & A. Kain 8152)										
<i>Stemodia florulenta</i>			1							
<i>Stemodia grossa</i>			1							
<i>Stemodia viscosa</i>			1							1
<i>Striga curviflora</i>										
Solanaceae										
<i>Anthocercis genistoides</i>			1							
<i>Anthocercis ilicifolia</i> subsp. <i>caldariola</i>		N limit CNR	1				1			
<i>Anthocercis ilicifolia</i> subsp. <i>ilicifolia</i>		N limit KNP	1							
<i>Anthocercis intricata</i>	3	N limit WHA	1				1			
<i>Anthocercis littorea</i>			1				1			
<i>Anthocercis</i> sp. Shark Bay (T.E.H. Aplin 3335)		Endemic Cape Cuvier - Tamala Stn.							1	
<i>Anthotroche myoporoides</i>	2	N limit Meadow Stn.	1				1			
<i>Anthotroche walcottii</i>	3		1							
<i>Cyphanthera racemosa</i>			1							
* <i>Datura leichhardtii</i>										
<i>Duboisia hopwoodii</i>							1			
<i>Lycium australe</i>									1	
* <i>Lycium ferocissimum</i>										
<i>Nicotiana cavicola</i>										1
* <i>Nicotiana glauca</i>										
<i>Nicotiana occidentalis</i> subsp. <i>hesperis</i>							1	1	1	1
<i>Nicotiana occidentalis</i> subsp. <i>obliqua</i>										1
<i>Nicotiana rotundifolia</i>			1							
<i>Nicotiana simulans</i>										

Stylidiaceae

<i>Levenhookia leptantha</i>										1
<i>Levenhookia octomaculata</i>	1	N limit KNP								1
<i>Stylidium brunonianum</i> subsp. <i>brunonianum</i>		N limit KNP								1
<i>Stylidium calcaratum</i>		N limit KNP								1
<i>Stylidium crassifolium</i>		N limit Tamala Stn.				1				1
<i>Stylidium dichotomum</i>		N limit KNP								1
<i>Stylidium dispernum</i>		N limit Nerren Nerren Stn./CNR								1
<i>Stylidium ecorne</i>		N limit KNP								1
<i>Stylidium leptophyllum</i>		N limit KNP								1
<i>Stylidium limbatum</i>		N limit CNR								1
<i>Stylidium macrocarpum</i>		N limit Tamala Stn.								1
<i>Stylidium piliferum</i>		N limit KNP								1
<i>Stylidium pubigerum</i>		N limit KNP								1
<i>Stylidium repens</i>		N limit Tamala Stn.				1				1
<i>Stylidium</i> sp. Kalbarri (A.Carr 145)										1
<i>Stylidium wilroyense</i>										1

Surianaceae

<i>Stylobasium australe</i>		N limit Murchison House Stn.								1
<i>Stylobasium spathulatum</i>						1		1		1

Tamaricaceae

* *Tamarix aphylla*

Thelypteridaceae

<i>Cyclosorus interruptus</i>										1
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Thymelaeaceae

<i>Pimelea ammocharis</i>										1
<i>Pimelea angustifolia</i>		N limit KNP								1
<i>Pimelea floribunda</i>										1
<i>Pimelea gilgiana</i>		N limit DHI				1				1
<i>Pimelea leucantha</i>		N limit Tamala Stn.						1		1
<i>Pimelea microcephala</i> subsp. <i>microcephala</i>						1	1	1	1	1
<i>Pimelea sessilis</i>		N limit Tamala Stn.				1		1		1
<i>Pimelea trichostachya</i>										1

Tiliaceae

<i>Corchorus crozophorifolius</i>										1
<i>Corchorus elachocarpus</i>										1
<i>Corchorus</i> sp. Carnarvon (A.M.Ashby 2321)										1
<i>Corchorus walcottii</i>										1
<i>Triumfetta</i> sp. T Kimberley Flora										1

Tremandraceae

Tetrathea hirsuta

Typhaceae

Typha domingensis

