

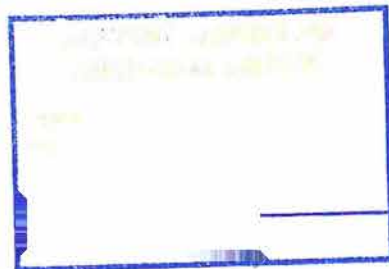
**A Preliminary Vegetation Map and Flora List for
Recommendation C 53 Shire of Waroona**

September, 1994

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Introduction

The study area comprises a narrow strip of land commencing about 2 kilometres north of Waroona, approximately 100 kilometres south of Perth (Figure 1). It is listed in the CTRC review of reserves of System Six as C53 (Annon, 1983).

Vegetation and Flora

Vegetation

The vegetation of the area (Figure 2) contains a small area of Jarrah woodland on sandy soils in the north-east sector. This grades into tall to low Marri woodland on lateritic loams (north-east section only) or sandy clays (southern sector), winter wet sand over clays or sandy clays. Other wetter areas have an open low woodland of *Melaleuca preissiana* over *Kingia australis* or dense stands of *Pericalymma elliptica*. Lateritic clays or clays have a shrubland of *Viminaria* or a mixed heathland of *Verticordia* species. Claypans are either open or a open to dense shrublands of *Melaleuca viminea*.

Flora

A flora list of 435 taxa (including 55 weeds), has been made within the boundaries of the area. These records are listed under the structural vegetation communities listed above in Table one.

Declared Rare Flora

Three species of declared rare flora occur within the site.

Schoenus natans

Previously presumed extinct species. The population is large. (further information is held in the species file)

Aponogeton hexatepalus

The area contains the largest known population of this species, occurring in the same area as *Schoenus natans*.

Centrolepis caespitosa

This species is also present in the same area as the previous species, but has not been surveyed in detail. This is still often listed as presumed extinct, but extends from Perth to the Stirling Range area.

Significant species

Priority Species

The following are listed on CALM's list of priority flora:

Anthotium junciforme
Eleocharis ?orbicis
Schoenus capillifolius
Schoenus sp (GK 12,721)
Tribonanthes uniflora
Eryngium pinnatifidum ssp. *palustris*
Eryngium subdecumbens
Hyalospermum pyrethrum

C53 COOLUP RESERVES

The recommended area is situated adjacent to the South Western Highway, about 12km south of Pinjarra, and comprises Reserves A20585, for Stopping Place, C31437, for Government Requirements, C31438, for Camping, and C31439, for Drainage, all not vested (Figure 39).

The area could be affected by future improvements of South Western Highway which may require additional land.

The area is almost flat, with a few shallow depressions which become wet in winter. It carries low woodland and open-woodland of marri and jarrah. There are several populations of black gin. The depressions carry closed to open-heath dominated by swamp tea-tree and *Hakea ceratophylla*. These Reserves are important because they contain the only uncleared land between Pinjarra and Waroona. They also carry the only vegetation of its type along the South Western Highway, and so are valuable for tourists.

Recommendations:

- C53.1 That the purpose of Reserve A20585 be amended to Conservation of Flora and Fauna and that the Reserve be vested in the W.A. Wildlife Authority.
- C53.2 That Reserves C31437, C31438 and C31439 be cancelled and their respective areas amalgamated to form a single Reserve for Roadside Verge Conservation, and that the Reserve be vested in the Shire of Waroona.
- C53.3 That any management plan for Reserves C31437, C31438 and C31439 be prepared in consultation with the Department of Fisheries and Wildlife.

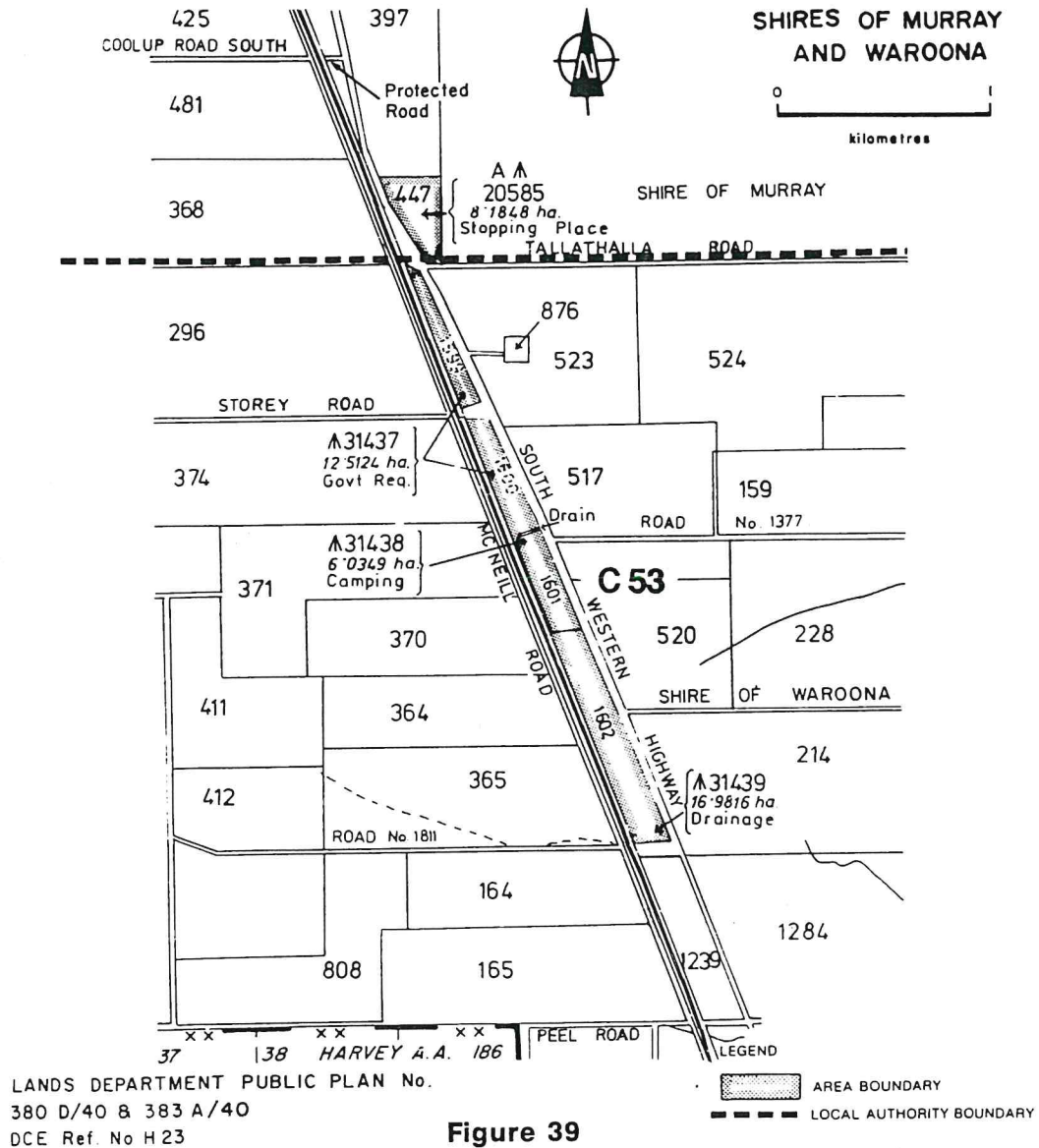


Figure 39

FIGURE I : LOCATION OF C53; CTCRC Report

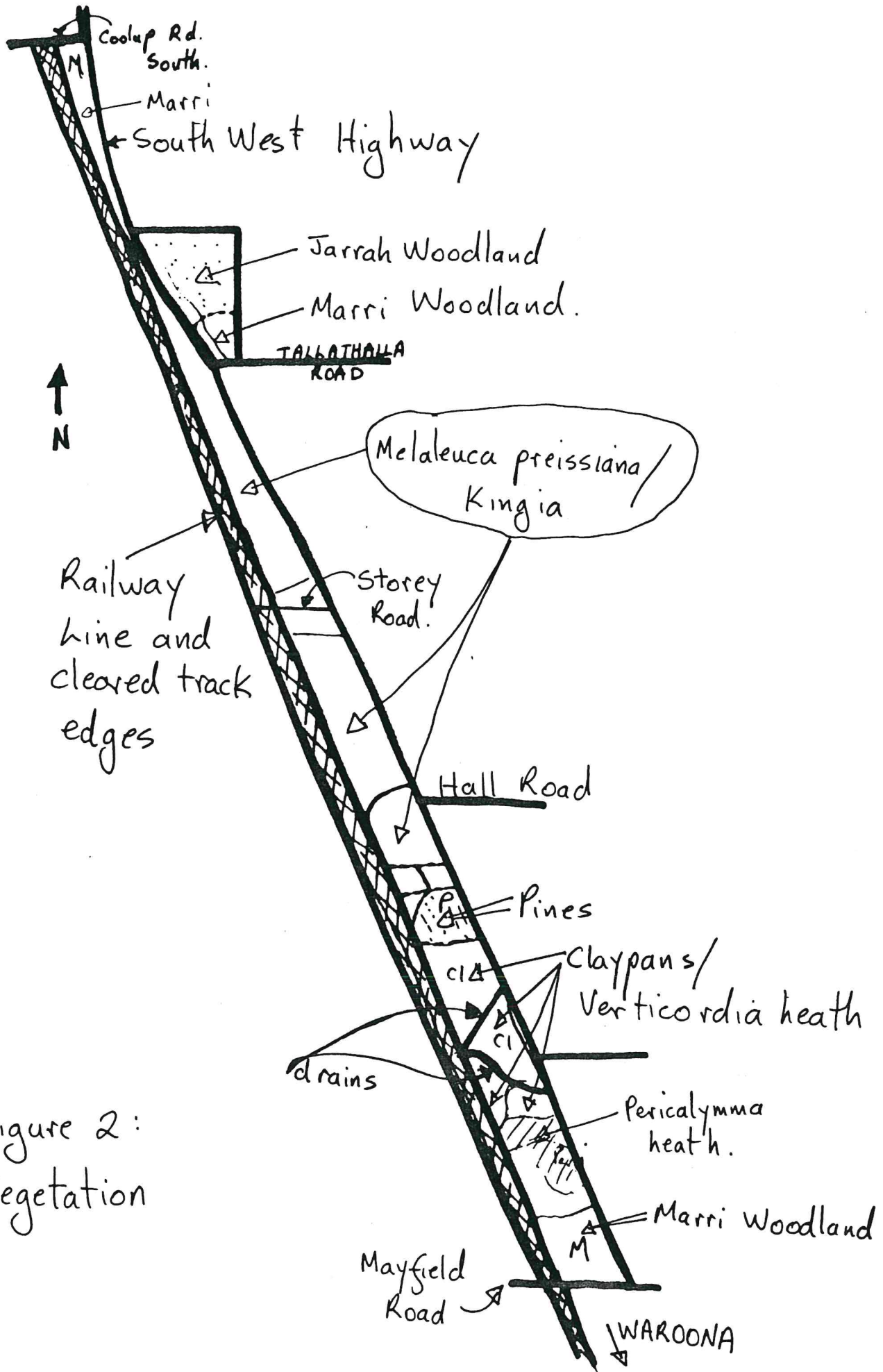


Figure 2:
Vegetation

Anthotium junciforme
Myriophyllum echinatum
Villarsia submersa
Petrophile media var junciforme

Poorly Known Species and Geographically Significant Species, abound in the area.

1) Poorly Known Species

The population of *Mitrasacme paradoxa* is the first record on the coastal plain since the type collection in 1905. One other population is known from the Beaufort River area.

The record of *Aristida racemosa* is the only record on the plain. There is a 30 year old record (the only other) from Serpentine.

Chaemascilla spiralis ssp. nov (-also known from Brixton St., and Ellen Brook), *Schoenus* sp (GK 13,721-also known from Mundijong Rd. and Brixton St.) and *Pogonolepis* sp (Also from Mundijong Rd.) appear to be previously unrecognised taxa confined to the Eastern Swan Coastal Plain, now confined to small bushland remnants.

2) Geographically Significant Species

The following are normally associated with the Darling Scarp and/or Jarrah forest, and are uncommon on the Swan Coastal Plain, being found only on the eastern side of the plain.

Acanthocarpus cannaliculatus	Acacia dentifera
Lomandra brittanii	Acacia latericola
Lomandra purpurea	Acacia urophylla
Lomandra sonderi	Darwinia citriodora
Tribonanthes brachypetala	Verticordia huegelii
Caladenia filamentosa	Verticordia pennigera
Thelymitra antennifera	Bossiaea aff. eriocarpa
Agrostocrinum scabrum	Daviesia longifolia
	Kennedia coccinea
Pentapeltis peltigera	Grevillea bipinnatifida
Trichocline scapigera	Grevillea pilulifera
Wahlenbergia multicaulis	Isopogon asper
Astroloma ciliatum	Persoonia elliptica
Stachystemon vermicularis	Thomasia grandiflora
Lechenaultia biloba	Stylidium amoemum
	Stylidium cannaliculatum

The records of *Caladenia filamentosa*, *Acacia latericola* and *Daviesia longifolia* appear to be the only extant records of these species on the Swan Coastal Plain. The records of *Wahlenbergia multicaulis* and *Bossiaea aff. eriocarpa* are rarely recorded on the coastal plain in public lands.

Occurrences of the following species on the Swan Coastal Plain are confined to the heavy soils of the eastern side of the plain. Generally these species are confined to very small remnants of native vegetation.

Wurmbaea dioica ssp. *alba*
Schoenus benthamii
Schoenus bifidus
Stipa tenuifolia
Lomandra odora
Haemodorum sparsiflorum
Tribonanthes uniflora

Opercularia apiciflora
Stylidium carnosum
Stylidium ecorne

References

Annon (1983) Conservation Reserves for Western Australia. The Darling System-System Six. Part 2: Recommendations for Specific Localities.

Acknowledgements

This area was surveyed as part of the Swan Coastal Plain Survey, partially funded by a grant from the Australian Heritage Commission.

CENTROLEPIDACEAE

<i>Aphelia cyperoides</i>	3
<i>Brizula drummondii</i>	1
<i>Brizula nutans</i>	1
<i>Centrolepis alepyroides</i>	1
<i>Centrolepis caespitosa</i>	1
<i>Centrolepis aristata</i>	1,2,3
<i>Centrolepis drummondii</i>	3
<i>Centrolepis glabra</i>	1
<i>Centrolepis mutica</i>	1
<i>Trithuria bibracteata</i>	1
<i>Trithuria submersa</i>	1

COLCHICACEAE

<i>Burchardia umbellata</i>	2,3
<i>Burchardia multiflora</i>	1
<u><i>Wurmbea dioica</i> ssp.</u>	
<u>alba</u>	1

CYPERACEAE

<i>Baumea acuta</i>	1
<i>Baumea juncea</i>	4
<i>Baumea preissii</i>	1,4
<i>Chorizandra enodis</i>	1
<i>Cyathochaeta avenaceae</i>	2,3
□ <i>Cyperus alterniflorus</i>	1
<i>Cyperus tenellus</i>	1,4
<i>Eleocharis ?orbicis</i>	1
<i>Isolepis cernua</i>	1
<i>Isolepis marginata</i>	2
<i>Isolepis oldfieldiana</i>	1,2
<i>Lepidosperma angustatum</i>	3
<i>Lepidosperma longitudinale</i>	1,4
<i>Mesomaelaena graciliceps</i>	2,3
<i>Mesomelaena ?stygia</i>	2
<i>Mesomelaena tetragona</i>	2
<u><i>Schoenus benthamii</i></u>	4
<u><i>Schoenus bifidus</i></u>	1
<i>Schoenus capillifolius</i>	1
<i>Schoenus curviflorus</i>	2,3
<i>Schoenus humilis</i>	1
<i>Schoenus natans</i>	1
<i>Schoenus odontocarpus</i>	1
<i>Schoenus rigens</i>	4
<i>Schoenus tenellus</i>	1
<i>Schoenus unispiculatus</i>	2,3
<i>Schoenus</i> sp(GK 13,721)	1
<i>Tetraria octandra</i>	2,3
<i>Tetraria capillaris</i>	1
<i>Trichostularia neesii</i>	4

DASYPOGONACEAE

<u><i>Acanthocarpus canaliculatus</i></u>	2
<i>Calectasia cyanea</i>	3
<i>Dasyogon bromeliifolius</i>	2
<i>Kingia australis</i>	2,3,4
<u><i>Lomandra brittaniai</i></u>	2
<i>Lomandra caespitosa</i>	2,3
<i>Lomandra hermaphrodita</i>	3
<i>Lomandra micrantha</i>	2,4

<u>Lomandra odora</u>	2
Lomandra preissii	2
<u>Lomandra purpurea</u>	2
Lomandra sericea	2
<u>Lomandra sonderi</u>	2
Lomandra suaveolens	3
HAEMODORACEAE	
Anigozanthos manglesii	3
Anigozanthos manglesiix viridis	2
Anigozanthos viridis	2
Conostylis aculeata	
ssp. aculeata	2,3,4
Conostylis juncea	2,3
Conostylis setigera	2,4
Haemodorum laxum	2,3
<u>Haemodorum sparsiflorum</u>	1,2
Haemodorum spicatum	2,3
Haemodorum paniculatum	3
Haemodorum simplex	1
Phelbocarya ciliata	2,3
Tribonanthes australis	1
<u>Tribonanthes brachypetala</u>	4
<u>Tribonanthes uniflora</u>	1
HYPOXIDACEAE	
Hypoxis occidentalis	1
Hypoxis glabella	1,2
IRIDACEAE	
*Babiana stricta	1,5
*Chasmanthe floribunda	5
Patersonia juncea	2
Patersonia occidentalis	3,4
*Romulea rosea var rosea	2,3,4,5
*Romulea rosea	
var australis	1
*Sparaxis bulbifera	1,5
*Watsonia bulbillifera	2
*Watsonia marginata	1,5
JUNCACEAE	
Juncus articulatus	1
Juncus bufonius	1
*Juncus capitatus	2,3
Juncus holoschoenus	1,2
JUNCAGINACEAE	
Triglochin calcitrapa	1,2
Triglochin centrocarpa	2
Triglochin procera	1,2
ORCHIDACEAE	
Acianthus reniformis var.	
huegelii	2
<u>Caladenia filamentosa</u>	2
Caladenia flava	3
Caladenia longicauda	2,3
Lyperanthus nigricans	2,3
Lyperanthus serratus	2
Diuris carinata	1
Diuris longifolia	2

Eriochilus heleomos	1
Leporella fimbriata	2,3
Microtis atrata	1
Microtis media	3
Microtis orbicularis	1
Prasophyllum cyphochilum	1
Prasophyllum drummondii	1
Prasophyllum ?hians	3
Prasophyllum parviflorum	3
Prasophyllum macrostachyum	2,3
Pterostylis nana	3
Pterostylis vittata	3
<u>Thelymitra antennifera</u>	1
Thelymitra crinita	3
Thelymitra flexuosa	1
Thelymitra pauciflora	2
PHORMIACEAE	
<u>Agrostocrinum scabrum</u>	2,3
Dianella divaricata	3
PHILYDRACEAE	
Philydrella drummondii	1
Philydrella pygmaea	1,4
POACEAE	
Agrostis avenacea	1
Agrostis preissii	1
Agrostis ?pleibea	1
*Aira caryophyllea	1,2,3,4
Amphibromus neesii	1
Amphipogon amphipogonoides	1
Amphipogon debilis	1
Amphipogon turbinatus	3
*Anthoxanthum odoratum	1
Aristida racemosa	2,4
*Avena fatua	1
*Briza maxima	3
*Briza minor	1,2,3
Bromus maderitensis	1
*Bromus ?diandrus	1
*Cynodon dactylon	1,5
Danthonia setacea	2,3,4
*Ehrharta calycina	3
*Ehrharta longiflora	3
*Lolium multiflora	1
Microlaena stipoides	2,3
Neurachne alopecuroidea	1,2,3
Polypogon tenellus	1
*Poa annua	1,2
Poa drummondiana	3
Stipa compressa	2,3
Stipa semibarbata	2,3
<u>Stipa tenuifolia</u>	1
Tetrarrhena laevis	2
*Vulpia membranacea	1
*Vulpia myuros	1,2
RESTIONACEAE	
Hypolaena exsulca	2,3
Leptocarpus canus	1
Leptocarpus co-angustatus	1
Leptocarpus royceii	4

Lepyrodia macra	4
Lepyrodia muirii	1
Loxocarya cinerea	3
Loxocarya fascicularis	3
Lyginia barbarta	2,3
TYPHACEAE	
Typha domingensis	1
XANTHORRHOEACEAE	
Xanthorrhoea brunonis	2,3
Xanthorrhoea preissii	3,4
<u>DICOTYLEDONS</u>	
AMARANTHACEAE	
Ptilotus drummondii	2
Ptilotus polystachyus	3
Ptilotus sp	3
APIACEAE	
Eringium pinnatifidum	
ssp. pinnatifidum	2,3
Eryngium pinnatifidum	
ssp palustris	1
Eryngium subdecumbens	1
Homalosciadum homalocarpum	2
Hydrocotyle callicarpa	1,2
Hydrocotyle diantha	4
Hydrocotyle callicarpa	2
<u>Pentapeltis peltigera</u>	2,3
Schoenolaena juncea	1,4
Trachymene pilosa	3
Xanthosia huegelii	2,3
ASTERACEAE	
Brachycome bellidioides	1
Cotula coronopifolia	1
Cotula cotuloides	1
*Dittrichia graveolens	5
Gnaphalium sp	3
Gnaphalium sphaericum	3
Hyalospermum cotula	1,2,4
Hyalospermum pyrethrum	1
*Hypochoeris glabra	2,3,4,5
Lagenifera hugelii	3
Millotia tenuifolia	3
Myriocephalus	
helichrysioides	1
Myriocephalus isoetes	1
Olearia paucidentata	3,4
Podolepis gracilis	2,3
Podolepis gracilis (Swamp)	1
Pogonolepis stricta (green)	1
Pogonolepis sp (GK13,741)	1
Quinetia urvillei	3
Senecio minimus	3,4
Siloxerus humifusus	2,3
*Sonchus oleraceus	2
<u>Trichocline scapigera</u>	4
Trichocline sp	1
*Ursinia anthemoides	3

Waitzia suaveolens	3	
BRASSICACEAE		
*Brassica tournefortii	5	
CAMPANULACEAE		
*Wahlenbergia capensis	3	
Wahlenbergia preissii	2,3	
<u>Wahlenbergia multicaulis</u>	2	
CALLITRICHACEAE		
Callitriche stagnalis	1	
Callitriche hamata *	1	* New record Perth Region.
CARYOPHYLLACEAE		
*Cerastium glomeratum	5	
*Petrohagia velutina	5	
*Silene nocturna	5	
*Stellaria media	5	
CASUARINACEAE		
Allocasuarina humilis	2,3	
CONVOLVULACEAE		
*Cuscuta epithymum	1	
CRASSULACEAE		
Crassula colorata	2,3,4	
Crassula exserta	3	
*Crassula natans	1	
Crassula pedicellosa	1	
DILLENIACEAE		
Hibbertia acerosa	2,3	
Hibbertia hypericoides	2,3	
Hibbertia stellaris	4	
Hibbertia subvaginata	3	
Hibbertia vaginata	2	
DROSERACEAE		
Drosera bulbigena	1,2	
Drosera erythorrhiza	2,3	
Drosera gigantea	1,2,4	
Drosera glanduligera	3	
Drosera macrantha	3	
Drosera marchantii	1,2	
Drosera menziesii	2,3	
Drosera nitidula	1	
Drosera pulchella	1	
Drosera rostulata	1	
Drosera stolonifera	2,3	
Drosera tubaestylis	1,2,3	
Drosera zonaria	3	
ELATINACEAE		
Elatine gratio loides *	1	* New Record Perth Area - Prev. Boyanup.
EPACRIDACEAE		
<u>Astroloma ciliatum</u>	3	
Astroloma pallidum	2,3,4	
Leucopogon propinquus	2,3	
Lysinema ciliatum	3	

EUPHORBIACEAE	
*Euphorbia peplus	5
Phyllanthus calycinus	3
Poranthera microphylla	2,3
<u>Stachystemon vermicularis</u>	4
GENTIANACEAE	
*Centaurium erythraea	1,2,3
*Cicendea filiformis	1
GERANIACEAE	
*Erodium cicutarium	2,3
Geranium solanderi	2
*Pelargonium capitatum	5
Pelargonium littorale	3
GOODENIACEAE	
Anthotium junciforme	1
Dampiera alata	2,3
Dampiera linearis	2,3,4
Goodenia caerulea	3
Goodenia micrantha	1
Goodenia pulchella	2,3
Lechenaultia biloba	3
Scaevola lanceolata	3
Scaevola phlebopetala	3
Vellea trinervis	1
HALORAGACEAE	
Gonocarpus pithyoides	3
Myriophyllum echinatum	1
LAMIACEAE	
Hemiandra pungens	4
LAURACEAE	
Cassytha flava	4
Cassytha glabella	4
Cassytha pomiformis	1
Cassytha racemosa	3
LENTIBULARIACEAE	
Polypomphylx multifida	1,4
Polypomphylx tenella	1,4
LOBELIACEAE	
Isotoma hypocratiformis	2,3
Isotoma pusilla	1
Isotoma scapigera	1
Lobelia tenuior	2,3
LOGANIACEAE	
Mitrasacme paradoxa	3
Mitrasacme palustris	1
LORANTHACEAE	
Nuytsia floribunda	2,3
MALVACEAE	
MENYANTHACEAE	
Villarsia submersa	1

MIMOSACEAE	
Acacia applanata	3
Acacia barbinervis	2
Acacia dentifera	2
Acacia extensa	4
Acacia huegelii	2,3
<u>Acacia latericola</u>	2
Acacia lasiocarpa	2
Acacia nervosa	2,3
Acacia pulchella	
var. glaberrima	2,3
Acacia incurva	2
Acacia saligna	2,3
Acacia stenoptera	3
<u>Acacia urophylla</u>	2
MYOPORACEAE	
Eremophila glabra	4
MYRTACEAE	
Astartea fascicularis	1,4
Baeckea camphorosmae	3
Calytrix angulata	3
<u>Darwinia citriodora</u>	2
Eucalyptus calophylla	2,3
Eucalyptus marginata	2,3
Hypocalymma angustifolium	4
Hypocalymma robustum	3
Kunzea micrantha	2,3,4
Kunzea recurva	3
*Leptospermum laevigatum	5
Melaleuca lateritia	1
Melaleuca leptoclada	1
Melaleuca preissiana	4
Melaleuca viminea	1
Melaleuca thymoides	1
Pericalymma elliptica	1,4
Verticordia densiflora	1,4
<u>Verticordia huegelii</u>	1
<u>Verticordia pennigera</u>	1
Verticordia serrata	1
ONAGRACEAE	
*Oenothera glaznowiana	5
OROBANCHACEAE	
*Orobanche minor	2,3
OXALIDACEAE	
Oxalis perennans	4
*Oxalis polyphylla	2
*Oxalis purpurea	2,5
PAPILIONACEAE	
Bossiaea eriocarpa	2,3
<u>Bossiaea aff. eriocarpa</u>	2,3
Burtonia conferta	3
Daviesia angulata	2,3

Daviesia inflata	2
<u>Daviesia longifolia</u>	2
Daviesia physodes	2
Daviesia preissii	2,3
Eutaxia virgata	1
Gompholobium aristatum	3
Gompholobium marginatum	3
Gompholobium polymorphum	3
Hardenbergia comptoniana	3
Hovea trisperma	3
Isotropis cuneifolia	3
Jacksonia angulata	2
Jacksonia sternbergiana	3
<u>Kennedia coccinea</u>	3
Kennedia prostrata	3
*Lotus angustissimus	1,2,3
*Medicago polymorpha	5
Nemcia capitatum	3
*Ornithopus compressus	1,2
Sphaerolobium ?medium	3
Templetonia biloba	3
*Trifolium campestre	1,2,3
*Trifolium arvense	2
Viminaria juncea	1,4
PITTOSPORACEAE	
Pronaya fraseri	2,3
POLYGALACEAE	
Comesperma calymega	4
Comesperma ?polygalioides	1
Comesperma virgatum	3
PORTULACACEAE	
Calandrinia brevipedata	3
Calandrinia corrigioloides	3
Calandrinia granulifera	3
PRIMULACEAE	
*Anagallis arvensis	1,2,4
PROTEACEAE	
Adenanthos meisneri	2,3
Banksia grandis	2,3
Conospermum capitatum	3
Conospermum stoechadis	3
Dryandra nivea	3
<u>Grevillea bipinnatifida</u>	2,4
<u>Grevillea pilulifera</u>	3
Hakea ceratophylla	1,4
Hakea incrassata	4
Hakea lissocarpha	3
Hakea prostrata	3
Hakea sulcata	4
Hakea varia	4
<u>Isopogon asper</u>	2
<u>Persoonia elliptica</u>	3
Persoonia saccata	3
Petrophile linearis	3
Petrophile media	3
var juncifolia	2

Stirlingia latifolia	2,3,4
Synaphea petiolaris	2,3
Xylomelon occidentale	3
RUBIACEAE	
*Galium murale	3
<u>Opercularia apiciflora</u>	2,3
Opercularia vaginata	3
RUTACEAE	
Boronia crenulata	3
Boronia spathulata	2,4
Eriostemon spicatus	2,3
SANTALACEAE	
Leptomeria empetriflora	2
SCROPHULARIACEAE	
Glossostigma drummondii	1
Grattiola peruviana	1
*Bellardia trixago	1,5
*Parentucellia latifolia	4,5
SOLANACEAE	
*Solanum nigrum	2,5
STACKHOUSIACEAE	
Stackhousia pubescens	3
Triterococcus brunonis	2
STERCULIACEAE	
<u>Thomasia grandiflora</u>	3
STYLIDIACEAE	
Levenhookia pusilla	1
Levenhookia stipitata	3
<u>Stylidium amoenum</u>	2
Stylidium brunonianum	2,3
Stylidium calcaratum	2,3
<u>Stylidium cannaliculatum</u>	1
<u>Stylidium carnosum</u>	2
<u>Stylidium crassifolium</u>	1
Stylidium dichotomum	1
Stylidium divaricatum	1
<u>Stylidium ecorne</u>	1
Stylidium junceum	2
Stylidium mimeticum	1
Stylidium piliferum	2,3
Stylidium repens	3
Stylidium roseo-nanum	1
Stylidium utricularioides	1
THYMELAEACEAE	
Pimelea imbricata var major	1
VIOLACEAE	
Hybanthus calycinus	3