

ENTERED ON GIS

Name: Flora and Vegetation of Dardanup Forest Block
Date: 28/04/2006
Capture Author: Thomas Leong / Ian Steward

Comments:

Polygon

Created to match documented study area with high level of accuracy

Accuracy Levels:

- High = Document contained visual and or described spatial references easily copied, resulting in little or no polygon boundary errors
- Acceptable = Document contained visual references with complex boundaries, resulting in minor boundary errors
- Low = Document contained little or no visual references, resulting in polygon boundary errors

Attributes

Report Info – Unable to determine report_date
Custodial/Contact – Captured without problems
Content – Captured without problems

DRAFT

Flora and Vegetation of Dardanup Forest Block

Keighery G.Jl., B.J. Keighery2 and Gibson, N.1

1996

1: Department of Conservation and Land Management
P.O. Box 51, Wanneroo, 6065.

2: Department of Environmental Protection,
Westralia Square, Perth, 6000.

Abstract

Dardanup Forest Block is the only vegetated conservation area known to encompass the Darling and Whicher Scarp and associated foothills. Three principal plant communities are present in the area: Jarrah Woodland, Marri-Jarrah-Mountain Marri woodland and Banksia woodland. Three regional floristic community types are represented in the block, type 1a: *Eucalyptus haematoxylon*-*E. marginata* woodlands of the Whicher Foothills, type 21b: Southern Banksia woodlands and Jarrah forest of the Western Edge of the Darling Plateau. Types 1a and 21 b are at or near their northern limits in Dardanup Block. These are some of the largest known occurrences of these poorly reserved community types. The block contains a vascular flora of 481 taxa; 443 are natives and 38 weeds. Seven of these taxa are non-flowering plants, 177 are monocotyledons (162 natives and 15 weeds) and 297 are dicotyledons (274 natives and 23 weeds). One declared rare taxa, 3 priority taxa and 4 taxa deserving of listing (*Chamelaucium erythrochlora*, *Acacia semitrullata*, *Lambertia multiflora* var *darlingensis*, *Pultenea radiata*, *Logania* sp. nov., *Lomandra* sp. nov., *Nemcia cordata* and *Xanthorrhoea acanthostachya*) are found on the block. Two (*Logania* sp nov and *Lomandra* sp nov) of these taxa were discovered during the survey and are only known from this block.

INTRODUCTION

Dardanup Forest Block, part of State forest 27, is located on the conjunction of the Whicher and Darling Scarp, approximately 5 kilometres east of Dardanup along Ironstone Road (Map 1). The block was designated in the Forest's Department Working Plan No. 87 as the Dardanup Management Priority Area for the conservation of flora, fauna and landscape.

The System Six study (Dept. Conserv. Environ., 1983) endorsed this designation and suggested that Reserve 2029 be added to the MPA. This document suggesting that the MPA "conserves a range of vegetation associated with the northern extension of the Blackwood Plateau (Donnybrook Sunklands). Some of these vegetation associations are unique. Open - forest of Jarrah and Marri and woodland of Banksia and Paperbark are dominant, with some Yarri, Bullich and Swamp Banksia occurring in moister areas. The MPA also contains the only extensive stands of Mountain Gum in System Six."

There was little botanical data available on this area despite potential land use conflicts being present. This block was studied as part of the Swan Coastal Plain survey, since the lower section of the

block contains the foothills of the Darling Scarp. A more complete study was undertaken in 1996. The results are presented here.

SURVEY METHOD

Survey work in Dardanup Forest Block was performed over three flowering seasons from 1993 to 1996 in conjunction with regional survey work on the Swan Coastal Plain (Gibson et al. 1994).

Twelve sites were located in the block (Map 2) to sample the range of plant communities identified using aerial photographs and field interpretation. Four are permanently located 100 m² sites used in the regional floristic study of the Swan Coastal Plain (Gibson et al. 1994). Groups of conservation volunteers established a further eight sites in 1996. All sites were sampled on at least two occasions.

Opportunistic plant collections, that is collections made outside the sites, were made during vehicle and foot traverse at various times of the year, during 1996.

GEOMORPHOLOGY AND SOILS

Dardanup forest block is located on the Darling fault and spans the broad geomorphic units, the Darling Scarp, Whicher Scarp, their foothills, and a section of the Swan Coastal plain.

The soils comprise lateritic uplands and spurs of the western margin of the Darling plateau and escarpment, with small areas of outcropping Quartzite. Below these areas are colluvial sands and loams at the far west is a small area of Yoganup formation (Anon., 1981) of the Swan Coastal Plain.

Dardanup is the only area of the forest/conservation estate which spans the Darling Scarp, Whicher Scarp and the Swan Coastal Plain where they join, south east of Bunbury.

VEGETATION

The vegetation map (Map 2) shows the distribution of the principal plant communities based on the vegetation descriptions of the 12 sites.

Essentially the plant communities can be classed as woodlands.

Banksia/Jarraah woodlands (Map 2:bw)

Banksia attenuata dominates the lowest slopes, however, there are often scattered Jarraah trees throughout this area which increase in density towards the base of the scarp. Other low trees are *Banksia grandis*, *Xylomelon occidentale* and *Persoonia longifolia* over a dense understorey of shrubs, herbs and sedges. The characteristic shrubs are *Xanthorrhoea preissii*, *Stirlingia latifolia*, *Bossiaea eriocarpa*, *Jacksonia sparsa*, *Daviesia physodes*, *Hibbertia hypericoides* and the herbs *Patersonia umbrosa* var *xanthina*, *Phlebocarya ciliata*, *Dasypogon bromeliifolius*. Two sedges *Hypolaena exsulca* and *Lyginia barbata* dominate the sedge layer.

Jarraah woodland (map 2: jw)

Jarraah woodland to forest mixed with varying amounts of Marri is characteristic of lateritic soils. These trees have a dense

understorey of shrubs such as *Xanthorrhoea preissii*, *Hibbertia hypericoides*, *Acacia latericola*, *Xanthorrhoea gracilis*, *Hakea amplexicaulis*, *Hibbertia amplexicaulis*, *Dryandra lindleyana*, *Lechenaultia biloba*, *Bossiaea eriocarpa*, *Isopogon sphaerocephalus* and *Eriostemon spicatus*, and the herbs *Patersonia umbrosa* var *xanthina*, *Trichocline spathulata*, *Lagenifera huegelii*, *Patersonia babianoides* on the lower slopes Marri mixed becomes dominant

Mountain Marri low woodland (Map 2: MmLW)

Mountain marri woodland to low forest with varying amounts of Jarrah and Marri (Which can become dominant in deeper colluvial soils) and scattered trees of *Banksia grandis* and *Persoonia longifolia* over a dense understory of shrubs such as *Xanthorrhoea preissii*, *Hibbertia hypericoides*, *Adenanthos barbiger*, *Kennedia coccinea*, *Xanthorrhoea gracilis*, *Bossiaea ornata*, *Dryandra lindleyana*, *Isopogon sphaerocephalus*, *Eriostemon spicatus*, *Hakea lissocarpa*, *Hibbertia commutata* and the herbs *Patersonia juncea*, *P. umbrosa* var *xanthina*, *Patersonia babianoides*, *Lagenifera huegelii*, *Lomandra sericea* and *Johnsonia lupulina*. *Tetraria octandra* and *Loxocarya fasciculata* dominate the sedge layer.

A very distinctive form of this community occurs on outcropping quartzite ridges along the Darling Scarp. Here *Eucalyptus marginata* and *E. haematoxylon* open low woodland occurs over tall heath of *Xanthorrhoea acanthostachya*, *Nemcia cordata*, *Lambertia multiflora* var *darlingensis*, *Dryandra armata*, *Hakea cyclocarpa* and *Hibbertia hypericoides* over herbs of *Lomandra* aff. *nutans* and *Patersonia limbata*. It is likely with further studies along the southern Darling Scarp this may prove to be a separate floristic community, that is rare and restricted.

Floristic Community Types

Twelve floristic sites were established

The regional floristic survey of the Swan Coastal Plain identified floristic community types, 1a (*Eucalyptus haematoxylon* - *E. marginata* woodlands on Whicher Foothills and type, 21b (Southern *Banksia* woodlands). The first is at its northern limit and the second very near. Both occurrences in Dardanup block of these vulnerable and poorly reserved communities are large and significant for their conservation.

The Jarrah woodlands of the western edge of the Darling Plateau form a new group, but placement of this and the quartzite ridges await completion of the Darling Scarp survey.

FLORA

Dardanup Forest Block contains a vascular flora of 481 taxa (Table 1). Of these 443 are natives and 38 weeds. Seven of these are non flowering vascular plants, 177 are monocotyledons (162 natives and 15 weeds) and 297 are dicotyledons (274 natives and 23 weeds).

The Papilionaceae (35 natives, 5 weeds), Proteaceae (32 natives), Myrtaceae (26 natives), Cyperaceae (23 natives, 1 weed), Asteraceae (21 natives, 7 weeds), Anthericaceae (20 natives), Poaceae (13 natives, 6 weeds), Dasygongonaceae (17 species), Haemodoraceae (17

natives, Mimosaceae (16 natives) and Stylidiaceae (16 natives). The largest genera are *Acacia* (16 species), *Lomandra* (14 species), *Drosera* (14 species), *Stylidium* (13 species) and *Caladenia* (11 species).

SIGNIFICANT FLORA

One species of declared rare flora (Atkins, 1996), *Chamelaucium erythrochlora* is recorded at the northern limit of its' range from Dardanup Block. Three priority taxa (*Acacia semitrullata*, *Lambertia multiflora* var *darlingensis* and *Pultenea radiata*) are also recorded from Dardanup Block.

Significant flora of particular interest

Thysanotus pseudojunceus (Anthericaceae)

A rhizomatous herb, found from Albany to Alexandra Bridge in low *Eucalyptus marginata* woodland. The population in Dardanup Block is disjunct from Nannup and the northern limit of the species' range.

Actinostrobus acuminatus (Cupressaceae)

A prostrate conifer from an underground stem which occurs from Three Springs to Boyanup. Rarely recorded south of Perth there are three known populations, one at Pinjarra, one in Dardanup and one near Boyanup (in a sand mining lease). The largest and only secure population is in Dardanup Block.

Lomandra aff *nutans* (GK 15,307) (Dasypogonaceae)

There are 14 species of *Lomandra* recorded from the block, one of the highest diversity of co-occurring and closely allopatric species known for this genus, normally 3-5 species are found in a block. One of these is a new species allied to *Lomandra nutans*, a species ranging from the Stirling Ranges to York. This species was discovered during the Swan Coastal Plain survey and is currently only known from this block. It should be added to CALM's priority flora list.

Patersonia limbata (Iridaceae)

A tufted rhizomatous herb found from Cape Arid to the Stirling Ranges with disjunct scattered populations north-west of this area. Five species of *Patersonia* are recorded from the block, also a very high number for this genus.

Logania sp nov (GJK 15,234) (Loganiaceae)

This undescribed species of *Logania* is currently only known from Dardanup block where it is found in the Jarrah woodland on colluvial surfaces. It should be added to CALM's priority flora list.

Acacia mooreana (Mimosaceae)

A low shrub to 60 cm tall, occurs from Boyanup to Karridale. The population in Dardanup Block is at the northern limit of the species range.

Acacia semitrullata (Mimosaceae)

A low shrub to 60 cm tall, occurs from Yarloop to Donnybrook and Yallingup on sandy soils.

Calothamnus schaueri (Myrtaceae)

A low spreading shrub found between Pingelly and the Stirling Range. The species is present as a series of disjunct populations in the forest and is rarely recorded this far west.

Chamelaucium erythrochlora (Myrtaceae)

A declared rare species, largely confined to the Blackwood plateau and Whicher Scarp with one population on the Swan Coastal Plain near Busselton. The population in Dardanup Block is the northern most.

Nemcia cordata ms (Papillionaceae)

This newly recognised species was previously only recorded from the Yoongarrillup area. The Dardanup population is currently the only known extant population. It should be added to Calm's priority flora list.

Pultenea radiata (Papillionaceae)

Largely confined to the western edge of the Blackwood Plateau along the Whicher Scarp, at the northern limit of the species range.

Lambertia multiflora var *darlingensis* (Proteaceae)

A tall shrub, occurring in scattered populations along the Darling scarp from Gingin to Busselton area. The population in Dardanup block is the southernmost extant (there are old records from the base of the Whicher Range) and disjunct from Pinjarra.

Xanthorrhoea acanthostachya (Xanthorrhoeaceae)

A species confined to the Darling Scarp. Previously recorded from Walyunga National Park to Harvey, it is at the southern margin of its range.

Acknowledgments

A weekend field session was held in the study area in 1996 when the survey was supported by the enthusiastic and effective participation of Anne B, Anne T, Bernhard, Brian, Diane, Gary, Harry, Logan, Margaret, Nicky, Peter, Rosemary and Shirley.

Aspects of this study were funded by the National Estates program, administered by the Australian Heritage Commission in 1992/93 and 1993/94. In 1996 funding for the volunteer survey was provided by Ecoplan, a DEP community participation program.

REFERENCES

- Anon. (1981) Bunbury - Burekup Sheet 2035 111 and part Sheet 1935, Urban geology Series. Department of Minerals and Energy, Perth.
- Atkins, K.J. 21/10/1996 Declared Rare and Priority List for Western Australia. Department of Conservation and Land Management, W.A.
- Churchward, H.M. and McArthur, W.M. 1980 Landforms and Soils of the Darling System. In "Atlas of Natural Resources, Darling System, Western Australia." Department of Conservation and Environment, Western Australia.
- Department of Conservation and Environment (1983) Conservation reserves for Western Australia. The Darling System - System Six. parts 1 and 2. report 13.

Gibson, N.G., Keighery, B.J., Keighery, G.J., Burbidge, A.H. and Lyons, M.N. (1994) A Floristic Survey of the Swan Coastal Plain. Report for the Australian Heritage Commission prepared by the Department of Conservation and land management and the Conservation Council of Western Australia (Inc.).

Heddle, E.M., Loneragan, O.W. and Havel, J.J. (1980) Vegetation of the Darling System. In: atlas of natural resources, Darling System, Western Australia. Department of Conservation and Environment, Western Australia,

Smith, F.G. (1973) Vegetation Map of Collie. Western Australian Department of Agriculture, Perth.

Table 1 Dardanup Forest Block Flora List

(Habitat Code: Q - Quartzite, D - Disturbed, B - Banksia , SW - Swamps or creeklines, J - Jarrah, M - Jarrah, Haematoxylon)

Naturalised Name	Q	D	B	S	J	H
Adiantaceae						
<i>Cheilanthes austrotenuifolia</i>				+		+
AMARANTHACEAE						
<i>Ptilotus manglesii</i>					+	
<i>Ptilotus stirlingii</i>			+		+	
Amaryllidaceae						
* <i>Amaryllis belladonna</i>		+				
Anthericaceae						
<i>Agrostocrinum scabrum</i>					+	+
<i>Arthropodium capillipes</i>				+		
<i>Borya sphaerocephala</i>	+					
<i>Caesia micrantha</i>					+	+
<i>Caesia occidentalis</i>					+	
<i>Chamaescilla corymbosa</i> var. <i>corymbosa</i>			+		+	+
<i>Johnsonia acaulis</i>				+		
<i>Johnsonia lupulina</i>					+	+
<i>Laxmannia sessiliflora</i> subsp. <i>australis</i>	+		+		+	+
<i>Sowerbaea laxiflora</i>			+	+	+	+
<i>Thysanotus arbuscular</i>			+			
<i>Thysanotus arenarius</i>	+		+			
<i>Thysanotus manglesianus</i>					+	+
<i>Thysanotus multiflorus</i>					+	+
<i>Thysanotus patersonii</i>					+	+
<i>Thysanotus pseudojunceus</i>					+	+
<i>Thysanotus sparteus</i>					+	+
<i>Thysanotus thyrsoideus</i>					+	+
<i>Tricoryne elatior</i>					+	+
<i>Tricoryne humilis</i>					+	+
<i>Tricoryne tenella</i>	+		+			
Apiaceae						
<i>Actinotus glomeratus</i>			+	+	+	+
<i>Daucus glochidiatus</i>	+		+		+	+
<i>Homalosciadium homalocarpum</i>			+	+	+	+
<i>Hydrocotyle alata</i>			+	+		
<i>Hydrocotyle callicarpa</i>			+			
<i>Hydrocotyle pilifera</i> var. <i>glabrata</i>						
<i>Pentapeltis peltigera</i>					+	+
<i>Platysace filiformis</i>				+	+	+
<i>Platysace tenuissimsa</i>					+	
<i>Schoenolaena juncea</i>				+		
<i>Trachymene pliosaa</i>	+		+		+	+
<i>Xanthosia atkinsoniana</i>					+	+
<i>Xanthosia candida</i>					+	

Xanthosia ciliata			+		+	
Xanthosia huegelii			+			
Araceae						
* Arum italicum			+			
* Zantedeschia aethiopica			+			
Asteraceae						
* Arctotheca calendula		+				
* Conyza albida			+			
Cotula cotuloides			+			
Craspedia variabilis					+	
Gnaphalium gymnocephalum					+	+
Hyalosperma cotula						+
Hyalosperma demissum					+	
* Hypochaeris glabra	+	+	+	+	+	+
Ixiolaena viscosa				+		+
Lagenifera huegelii				+		+
Millotia tenuifolia	+		+		+	+
Olearia paucidentata					+	
Pithocarpa pulchella var melanostigma					+	+
Podolepis gracilis						
Podotheca angustifolia					+	
* Pseudognaphalium luteo-album			+			
Pterochaeta paniculata	+				+	+
Quinetia urvillei	+		+	+	+	+
Senecio hispidulus						+
Senecio minimus var. minimus					+	+
Senecio quadridentatus					+	+
Siloxerus humifusus				+		
* Sonchus asper			+		+	
* Sonchus oleraceus	+	+			+	
Trichocline spathulata					+	+
* Vellereophyton dealbatum			+			
Waitzia nitida					+	+
Campanulaceae						
* Wahlenbergia capensis				+		
Wahlenbergia preissii				+		+
Caryophyllaceae						
* Petrorrhagia velutina			+			
Caesalpiniaceae						
Labichea punctata	+				+	
Casuarinaceae						
Allocauarina fraseriana				+		+
Allocauarina humilis				+		
Allocauarina thuyoides	+		+			
Centrolepidaceae						
Aphelia cyperoides				+	+	+
Aphelia drummondii					+	

Centrolepis aristata			+	+	+	
Centrolepis drummondiana			+			
Clusiaceae						
Hypericum gramineum				+		
Colchicaceae						
Burchardia congesta	+		+		+	
Burchardia multiflora				+		
Crassulaceae						
Crassula colorata var. colorata	+		+		+	+
Crassula colorata var. tuberculata			+			
Crassula pedicellosa			+			
Crassula sieberiana subsp. tetramera				+		
Cupressaceae						
Actinostrobus acuminatus			+			
Cuscutaceae						
* Cuscuta epithymum				+		
Cyperaceae						
Baumea juncea				+		
Baumea rubiginosa				+		+
Cyathochaeta avenacea			+		+	
* Cyperus tenellus				+		
Isolepis congrua				+		
Isolepis cyperoides						+
Isolepis marginata	+				+	+
Isolepis nodosa				+		
Isolepis oldfieldiana			+	+		
Isolepis setiformis				+		
Isolepis stellata				+		
Lepidosperma angustatum			+		+	+
Lepidosperma longitudinale				+		+
Lepidosperma tenue					+	+
Lepidosperma squamatum					+	+
Mesomelaena graciliceps			+		+	
Mesomelaena tetragona				+		+
Schoenus brevisetis					+	+
Schoenus curvifolius	+		+			
Schoenus efoliatus	+		+		+	+
Schoenus subbulbosus			+		+	
Tetraria capillaris					+	+
Tetraria octandra			+			+
Tricostularia neesii	+				+	+
Dasypogonaceae						
Calectasia narragara			+			
Dasypogon bromeliifolius			+		+	
Kingia australis	+				+	+
Lomandra brittanii						+
Lomandra caespitosa			+		+	+

<i>Lomandra drummondii</i>						+
<i>Lomandra hermaphrodita</i>	+		+			+
<i>Lomandra micrantha</i>					+	
<i>Lomandra nigricans</i>	+		+		+	+
<i>Lomandra aff. nutans</i> (GK 15065)	+					
<i>Lomandra pauciflora</i>				+		+
<i>Lomandra preissii</i>			+		+	+
<i>Lomandra purpurea</i>					+	+
<i>Lomandra sericea</i>					+	
<i>Lomandra sonderi</i>					+	+
<i>Lomandra sparteae</i>	+					
<i>Lomandra suaveolens</i>			+			
Dennstaedtiaceae						
<i>Pteridium esculentum</i>				+		
Dilleniaceae						
<i>Hibbertia acerosa</i>			+			
<i>Hibbertia amplexicaulis</i>					+	+
<i>Hibbertia commutata</i>					+	
<i>Hibbertia huegelii</i>			+			
<i>Hibbertia hypericoides</i>			+			
<i>Hibbertia lasiopus</i>					+	
<i>Hibbertia perfoliata</i>				+		
<i>Hibbertia racemosa</i>			+			
<i>Hibbertia rhadinopoda</i>			+		+	+
<i>Hibbertia serrata</i>						+
<i>Hibbertia vaginata</i>			+			
Droseraceae						
<i>Drosera barbigera</i>					+	+
<i>Drosera erythrorhiza</i>			+		+	
<i>Drosera gigantea</i>				+		
<i>Drosera glanduligera</i>	+		+	+	+	+
<i>Drosera leucoblata</i>						
<i>Drosera macrantha</i>				+		
<i>Drosera marchantii</i> subsp. <i>marchantii</i>						+
<i>Drosera menziesii</i> subsp. <i>menziesii</i>			+			
<i>Drosera paleacea</i> subsp. <i>paleacea</i>					+	
<i>Drosera pallida</i>						+
<i>Drosera platystigma</i>	+					
<i>Drosera pulchella</i>				+		
<i>Drosera stolonifera</i>			+			
<i>Drosera subhirtella</i> subsp. <i>subhirtella</i>			+			+
Epacridaceae						
<i>Andersonia caerulea</i>			+			
<i>Andersonia heterophylla</i>			+			
<i>Andersonia lehmanniana</i>					+	+
<i>Andersonia involucrata</i>					+	+
<i>Astroloma ciliatum</i>					+	+
<i>Astroloma pallidum</i>			+		+	
<i>Conostephium pendulum</i>			+			
<i>Leucopogon australis</i>			+			

Leucopogon capitellatus					+	
Leucopogon conostephioides				+		
Leucopogon glabellus				+		
Leucopogon gracillimus				+		
Leucopogon pendulus					+	+
Leucopogon propinquus						+
Leucopogon verticillatus					+	+
Lysinema ciliatum				+		
Sphenotoma capitatum	+				+	+
Styphelia tenuiflora				+	+	
Euphorbiaceae						
Monotaxis occidentalis					+	
Phyllanthus calycinus					+	
Poranthera microphylla				+	+	+
Stachystemon vermicillaris					+	
Fumariaceae						
* Fumaria capreolata				+		
* Fumaria muralis				+	+	
Gentianaceae						
* Centaurium erythraea					+	+
Sebaea ovata					+	
Geraniaceae						
Geranium solanderi					+	
Goodeniaceae						
Dampiera alata					+	
Dampiera linearis				+		+
Goodenia caerulea	+			+		
Goodenia eatoniae					+	+
Lechenaultia biloba	+				+	+
Lechenaultia expansa				+		
Scaevola calliptera					+	
Scaevola glanduligera						+
Velleia trinervis					+	+
Haemodoraceae						
Anigozanthos flavidus					+	
Anigozanthos humilis				+		
Anigozanthos manglesii				+		+
Anigozanthos humilis x manglesii						
Anigozanthos viridis					+	
Conostylis aurea						+
Conostylis aculeata				+		
Conostylis laxiflora						+
Conostylis setigera						+
Haemodorum laxum				+		+
Haemodorum simplex					+	
Haemodorum sparsiflorum					+	
Haemodorum spicatum				+		+
Phelbocarya ciliatum				+		

Phelbocarya filifolia			+			
Tribonanthes australis				+		
Tribonanthes brachypetala				+		
Haloragaceae						
Haloragis brownii				+		
Hydatellaceae						
Trithuria bibracteata				+		
Hypoxidaceae						
Hypoxis glabella var. glabella				+		+
Hypoxis occidentalis				+		
Iridaceae						
Orthrosanthus laxus var. laxus	+				+	+
Patersonia babianoides					+	+
Patersonia juncea					+	+
Patersonia limbata	+					
Patersonia occidentalis			+			
Patersonia umbrosa var. xanthina					+	+
* Romulea rosea		+		+	+	+
Juncaceae						
* Juncus bufonius				+		
* Juncus capitatus				+		+
Juncus holoschoenus				+		
* Juncus microcephalus				+		
Luzula meridionalis					+	
Lamiaceae						
Hemiandra pungens var. pungens			+			
Hemigenia humilis					+	
Lauraceae						
Cassytha micrantha				+		
Cassytha pomiformis			+		+	
Cassytha racemosa			+	+	+	
Lentibulariaceae						
Polypompholyx multifida				+		
Polypomphylx tenella				+		
Lindsaeaceae						
Lindsaea linearis					+	+
Lobeliaceae						
Isotoma hypocrateriformis						
Lobelia rhombifolia						
Lobelia tenuior						
* Monopsis simplex						
Loganiaceae						
Logania campanulata			+		+	

<i>Logania serpyllifolia</i> subsp. <i>serpyllifolia</i>	+				+	
<i>Logania</i> sp. nov. (GK 15011)	+				+	+
<i>Phyllangium paradoxum</i>			+		+	+
Loranthaceae						
<i>Nuytsia floribunda</i>	+		+		+	+
Menyanthaceae						
<i>Villarsia albiflora</i>					+	
<i>Villarsia parnassifolia</i>					+	
Mimosaceae						
<i>Acacia applanata</i>			+			
<i>Acacia extensa</i>			+	+		
<i>Acacia flagelliformis</i>			+			
<i>Acacia huegelii</i>			+		+	
<i>Acacia luteola</i>					+	
<i>Acacia latericola</i>					+	+
<i>Acacia mooreana</i>	+					
<i>Acacia nervosa</i>					+	+
<i>Acacia obovata</i>					+	
<i>Acacia pulchella</i>			+	+	+	+
<i>Acacia saligna</i>					+	
<i>Acacia semitrullata</i>					+	
<i>Acacia stenoptera</i>			+		+	+
<i>Acacia teretifolia</i>					+	
<i>Acacia urophylla</i>					+	
<i>Acacia varia</i> var. <i>varia</i>					+	+
<i>Acacia willdenowiana</i>			+			
Myrtaceae						
<i>Agonis flexuosa</i>			+			
<i>Agonis grandiflora</i>	+				+	+
<i>Agonis linearifolia</i>					+	
<i>Astartea fascicularis</i>					+	
<i>Baeckea camphorosmae</i>					+	
<i>Calothamnus sanguineus</i>					+	+
<i>Calothamnus schaueri</i>					+	
<i>Calytrix flavescens</i>			+			
<i>Calytrix leschenaultii</i>			+			
<i>Chamelaucium erythrochlora</i>	+		+			
<i>Darwinia oederoides</i>			+			
<i>Darwinia vestita</i>						+
<i>Eremaea pauciflora</i>			+			
<i>Eucalyptus calophylla</i>					+	+
<i>Eucalyptus haematoxylon</i>	+					+
<i>Eucalyptus marginata</i>	+	+	+		+	+
<i>Eucalyptus rudis</i>					+	
<i>Hypocalymma angustifolium</i>					+	+
<i>Hypocalymma robustum</i>			+			
<i>Kunzea glabrescens</i>			+			
<i>Kunzea recurva</i>					+	+
<i>Melaleuca incana</i>			+	+		
<i>Melaleuca preissiana</i>					+	

Melaleuca scabra	+				+	+
Melaleuca thymoides			+			
Pericalymma ellipticum				+		
Verticordia densiflora				+		
Olacaceae						
Olax benthamiana					+	
Onagraceae						
Epilobium billardierianum subsp. cinereum				+		
Epilobium hirtigerum				+		
Orchidaceae						
Caladenia attingens subsp. attingens	+		+			
Caladenia cairnsiana			+			
Caladenia flava	+		+		+	+
Caladenia latifolia					+	
Caladenia longicauda			+		+	
Caladenia nana subsp. nana					+	
Caladenia reptans					+	+
Caladenia speciosa					+	
Cyanicula gemmata			+		+	+
Cyanicula sericea			+		+	+
Cryptostylis ovata			+			
Cyrtostylis huegelii				+		
Diuris corymbosa	+					+
Drakaea livida			+			
Elythranthera brunonis			+		+	
Elythranthera emarginata					+	
Eriochilus dilatatus			+		+	
Eriochilus scaber subsp. scaber					+	+
Leptoceras menziesii			+		+	
Leporella fimbriata			+		+	
Lyperanthus serratus	+				+	+
Microtis media	+			+		+
* Monadenia bracteata		+	+	+	+	
Paracaleana nigrita			+			
Praecoxanthus aphyllus			+			
Prasophyllum brownii	+				+	
Prasophyllum parvifolium			+			
Pterostylis aff. nana	+		+		+	+
Pterostylis barbata					+	+
Pterostylis recurva			+		+	
Pterostylis vittata			+	+	+	+
Pyrorchis nigricans			+		+	+
Thelymitra crinita	+		+		+	+
Thelymitra flexuosa				+		
Thelymitra fuscolutea	+		+			
Thelymitra pauciflora			+		+	+
Orobanchaceae						
* Orobanche minor			+	+		+
Papilionaceae						

Aotus procumbens			+			
Bossiaea eriocarpa			+			
Bossiaea aff. eriocarpa	+				+	+
Bossiaea linophylla					+	+
Bossiaea ornata						+
Chorizema glycinifolium			+			
Chorizema rhombeum					+	
Daviesia angulata	+		+			
Daviesia cordata					+	
Daviesia divaricata					+	
Daviesia physodes					+	
Daviesia preissii			+			
Gastrolobium spinosum					+	
Gompholobium capitatum					+	
Gompholobium confertum			+			
Gompholobium knightianum	+		+		+	
Gompholobium marginatum			+		+	+
Gompholobium polymorphum					+	
Gompholobium preissii	+		+		+	+
Gompholobium shuttleworthii					+	
Hardenbergia comptoniana			+			
Hovea chorizemifolia					+	+
Hovea trisperma subsp. trisperma			+			
Hovea trisperma subsp. grandiflora	+				+	+
Isotropis cuneifolia			+		+	
Jacksonia furcellata			+			
Jacksonia sparsa			+			
Kennedia coccinea					+	+
Kennedia prostrata			+		+	+
Latrobea tenella				+		
* Lotus angustissimus		+	+			
* Lotus suaveolens		+				
Nemcia capitata			+		+	
Nemcia whicherensis	+					
* Ornithopus compressus		+	+			
* Ornithopus sativus		+				
Pultenaea radiata	+				+	
Pultenaea reticulata			+	+		
Sphaerolobium medium	+		+		+	
* Trifolium campestre		+				
Viminaria juncea				+		
Philydraceae						
Philydrella pygmaea				+		
Phormiaceae						
Dianella revoluta var. revoluta	+		+		+	
Pittosporaceae						
Marianthus candidus	+				+	+
Billardiera variifolia			+		+	
Poronaya fraseri			+			
Poaceae						

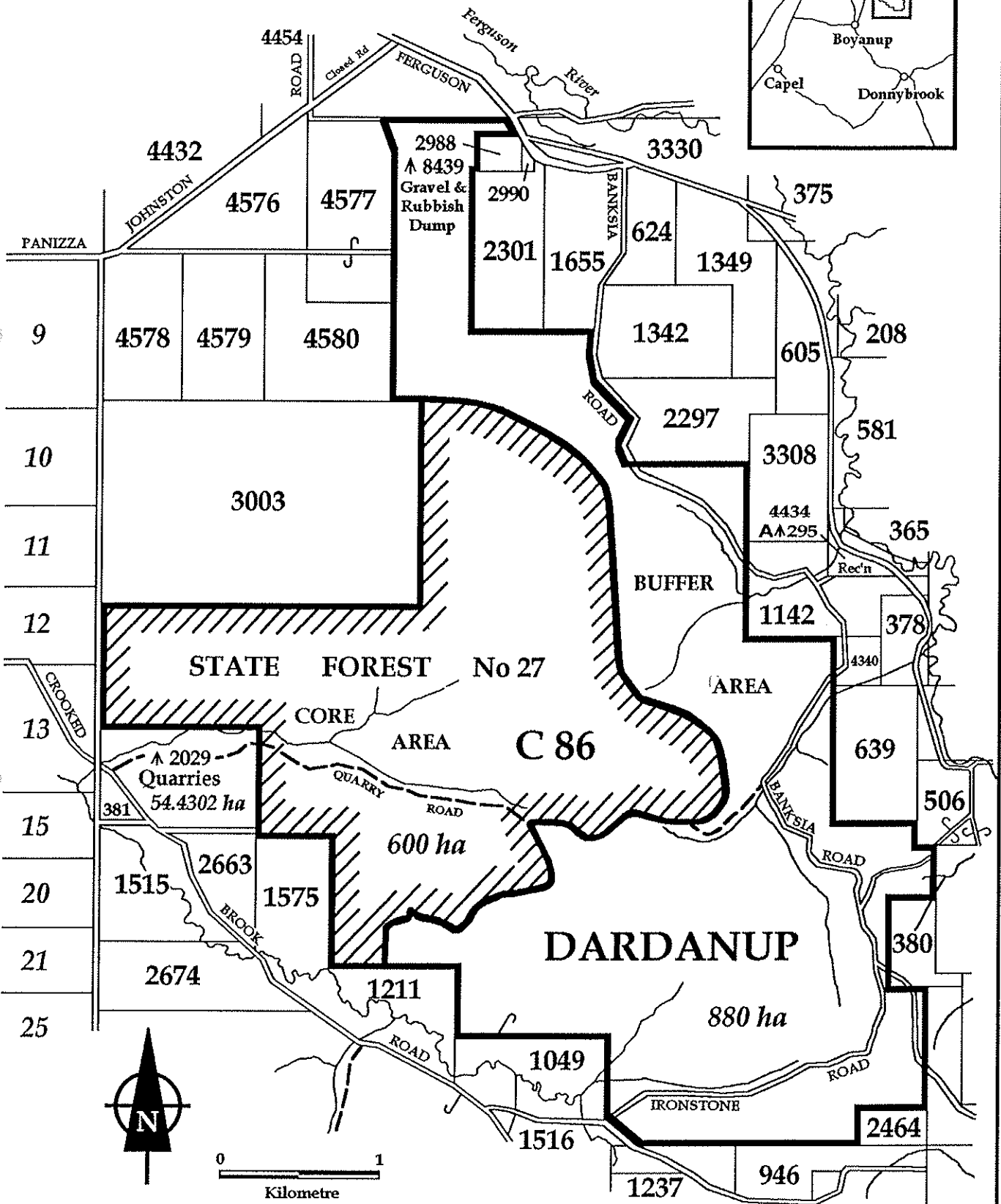
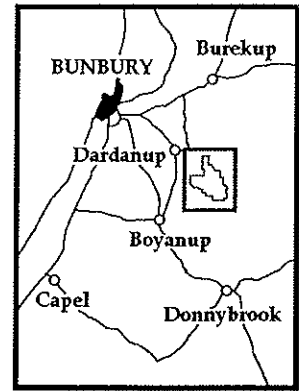
Agrostis avenacea				+		
* Aira cupaniana	+	+	+	+	+	
Amhipogon amhipogonoides			+		+	
Amhipogon laguroides	+					
Amhipogon turbinatus			+		+	+
Austrodanthonia occidentalis	+		+			
Austrodanthonia setacea					+	+
Austrostipa compressa			+			
Austrostipa pycnostachya	+		+		+	+
* Briza maxima	+	+	+		+	
* Briza minor		+		+		
Deyeuxia quadriseta				+		+
Dichelachne crinita				+		
* Lolium rigidum		+				
Microlaena stipoides				+		+
Neurachne alopecuroidea					+	+
* Poa annua		+		+		
Poa drummondiana			+			
Tetrarrhena laevis					+	+
* Vulpia myuros	+	+	+			+
Podocarpaceae						
Podocarpus drouyanus						+
Polygalaceae						
Comesperma calymega			+			
Comesperma volubile					+	
Comesperma virgatum					+	
Polygonaceae						
* Rumex acetosella		+		+		
Primulaceae						
* Anagallis arvensis var. arvensis		+				
* Anagallis arvensis var. caerulea		+		+		+
Proteaceae						
Adenanthos barbigerus					+	
Adenanthos meisneri			+			
Adenanthos obovatus				+		
Banksia attenuata			+			
Banksia grandis			+		+	
Banksia littoralis				+		
Conospermum capitatum			+			
Dryandra armata	+					
Dryandra bipinnatifida					+	
Dryandra lindleyana			+		+	+
Grevillea bipinnatifida					+	
Grevillea pilulifera					+	
Grevillea quercifolia	+				+	
Grevillea pulchella subsp. ascendens	+				+	
Grevillea trifida					+	
Hakea amplexicaulis					+	
Hakea ceratophylla				+		

Hakea cyclocarpa				+	+	+
Hakea lissocarpa					+	
Hakea prostrata				+	+	
Hakea ruscifolia				+		
Hakea stenocarpa				+	+	
Isopogon sphaerocephalus					+	+
Lambertia multiflora subsp. darlingensis	+					
Persoonia elliptica				+	+	
Persoonia longifolia				+	+	
Persoonia saccata				+		
Petrophile linearis				+		
Petrophile striata	+			+		
Stirlingia latifolia				+		
Synaphea floribunda				+		
Synaphea gracillima						+
Synaphea petiolaris				+		
Synaphea aff. boyaginensis (GK 14538)	+			+		
Xylomelon occidentale				+		
Ranunculaceae						
Clematis pubescens					+	
Restionaceae						
Anarthria laevis					+	
Anarthria prolifera				+	+	+
Anarthria scabra	+					
Cyratogonidium leptocarpoides					+	
Desmocladus fasciculatus				+	+	
Desmocladus flexuosus					+	
Hypolaena exsulca				+	+	
Hypolaena pubescens						+
Lepyrodia heleocharoides	+					
Lepyrodia macra	+					
Lepyrodia muirii					+	
Loxocarya cinerea					+	+
Lyginia barbata				+		
Meeboldina co-angustata					+	
Rubiaceae						
* Galium murale				+	+	
Opercularia apiciflora					+	
Opercularia hispidula				+		+
Opercularia vaginata				+	+	
Rutaceae						
Boronia dichotoma				+		
Boronia fastigata subsp. fastigiata	+			+		
Boronia ramosa subsp. anethifolia				+		
Boronia spathulata					+	+
Eriostemon nodiflorus						+
Eriostemon spicatus	+			+	+	+
Santalaceae						
Leptomeria cunninghamii	+				+	

Scrophulariaceae						
*	Parentucellia viscosa				+	
Selaginellaceae						
	Selaginella gracillima				+	+
Solanaceae						
*	Solanum nigrum		+			
Stackhousiaceae						
	Stackhousia pubescens				+	+
	Tripterococcus brunonis			+	+	+
Sterculiaceae						
	Thomasia grandiflora				+	
Stylidiaceae						
	Levenhookia dubia	+		+	+	+
	Levenhookia pusilla			+	+	+
	Levenhookia stipitata			+	+	
	Stylidium adnatum				+	
	Stylidium amoenum				+	
	Stylidium brunonianum			+	+	
	Stylidium calcaratum	+		+	+	
	Stylidium carnosum					+
	Stylidium crassifolium					
	Stylidium junceum				+	
	Stylidium luteum					+
	Stylidium mimeticum				+	
	Stylidium petiolare				+	
	Stylidium piliferum			+	+	
	Stylidium repens var. repens			+		
	Stylidium striatum					+
Thymelaeaceae						
	Pimelea preissii	+				
	Pimelea rosea	+				
	Pimelea suaveolens subsp. suaveolens				+	+
Tremandraceae						
	Tetratheca hirsuta			+		
Violaceae						
	Hybanthus floribundus subsp. floribundus				+	
Xanthorrhoeaceae						
	Xanthorrhoea acanthostachya	+				
	Xanthorrhoea gracilis			+	+	
	Xanthorrhoea platyphylla				+	+

MAP 1: Dardanup Block

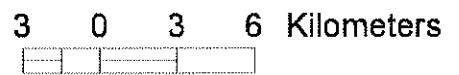
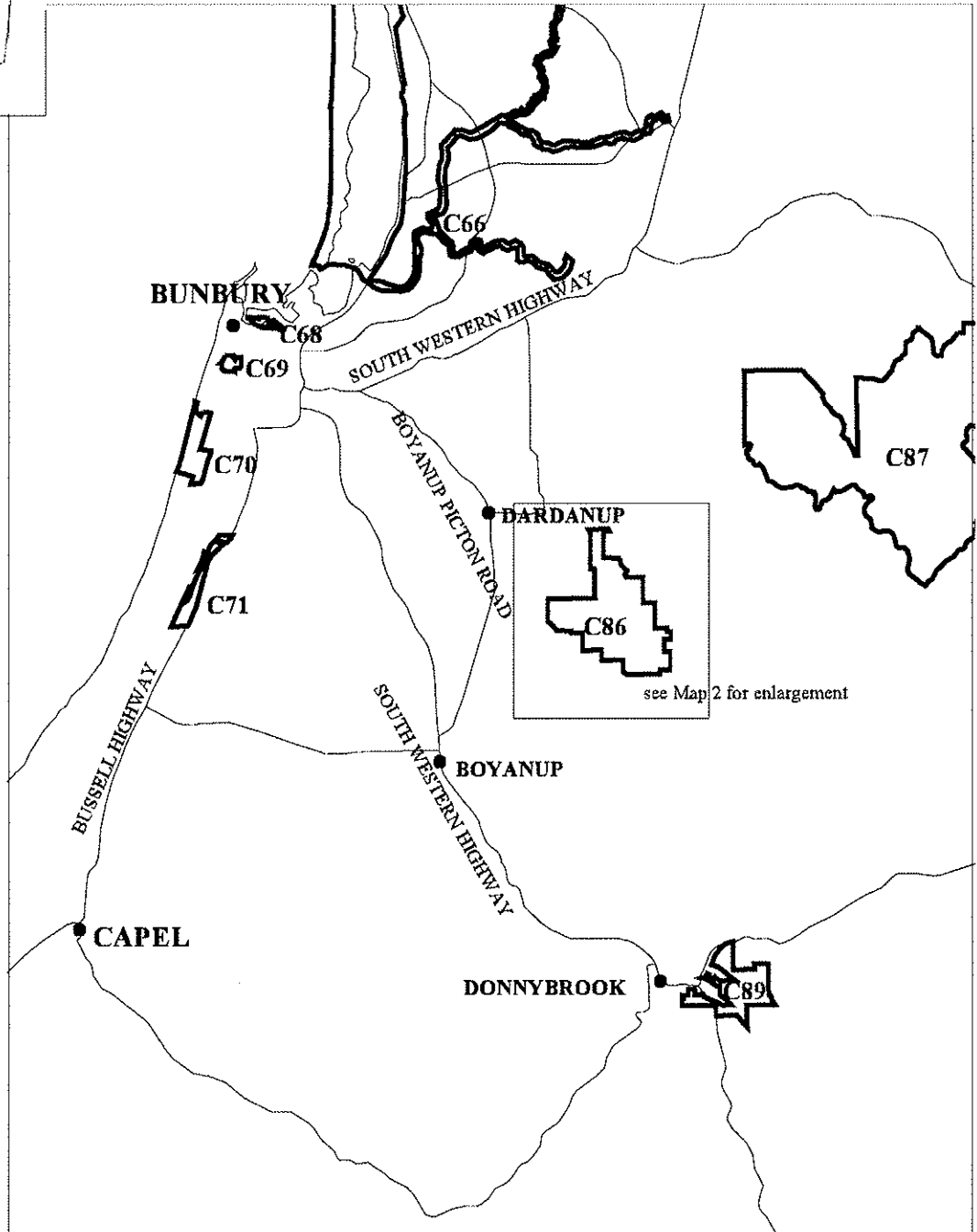
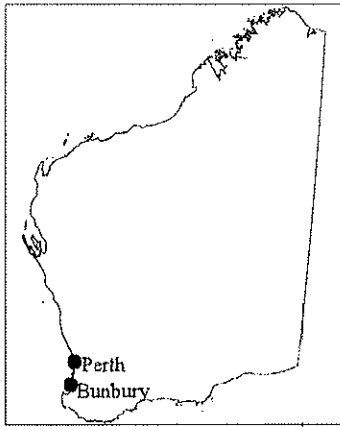
- Location Map





prepared by Natalie Thorning
Department of
Environmental Protection

Map 1. Location of Dardanup Forest Block



- Coastline of Western Australia
- Roads - Main (WA)
- Localities - Major (WA)
- System 6

MAP 2: Vegetation Map



Remnant vegetation
outside State Forest
(Agriculture WA)

Cadastral Boundaries

Dard 01 - 08 Department of
Environmental
Protection Sites

dard 01 - 03 Gibson *et al*
(1994 Sites)



Flora and Vegetation of Dardanup Forest Block

Keighery G.Jl., B.J. Keighery2 and Gibson, N.1

1: Department of Conservation and Land Management
P.O. Box 51, Wanneroo, 6065.

2: Department of Environmental Protection,
Westralia Square, Perth, 6000.

Abstract

Dardanup Forest Block is the only vegetated conservation area known to encompass the Darling and Whicher Scarp and associated foothills. Three principal plant communities are present in the area: Jarrah Woodland, Marri-Jarrah-Mountain Marri woodland and Banksia woodland. Three regional floristic community types are represented in the block, type 1a: *Eucalyptus haematoxylon*-*E. marginata* woodlands of the Whicher Foothills, type 21b: Southern Banksia woodlands and Jarrah forest of the Western Edge of the Darling Plateau. Types 1a and 21 b are at or near their northern limits in Dardanup Block. These are some of the largest known occurrences of these poorly reserved community types. The block contains a vascular flora of 481 taxa; 443 are natives and 38 weeds. Seven of these taxa are non-flowering plants, 177 are monocotyledons (162 natives and 15 weeds) and 297 are dicotyledons (274 natives and 23 weeds). One declared rare taxa, 3 priority taxa and 4 taxa deserving of listing (*Chamelaucium erythrochlora*, *Acacia semitrullata*, *Lambertia multiflora* var *darlingensis*, *Pultenea radiata*, *Logania* sp. nov., *Lomandra* sp. nov., *Nemcia cordata* and *Xanthorrhoea acanthostachya*) are found on the block. Two (*Logania* sp nov and *Lomandra* sp nov) of these taxa were discovered during the survey and are only known from this block.

INTRODUCTION

Dardanup Forest Block, part of State forest 27, is located on the conjunction of the Whicher and Darling Scarp, approximately 5 kilometres east of Dardanup along Ironstone Road (Map 1). The block was designated in the Forest's Department Working Plan No. 87 as the Dardanup Management Priority Area for the conservation of flora, fauna and landscape.

The System Six study (Dept. Conserv. Environ., 1983) endorsed this designation and suggested that Reserve 2029 be added to the MPA. This document suggesting that the MPA "conserves a range of vegetation associated with the northern extension of the Blackwood Plateau (Donnybrook Sunklands). Some of these vegetation associations are unique. Open - forest of Jarrah and Marri and woodland of Banksia and Paperbark are dominant, with some Yarri, Bullich and Swamp Banksia occurring in moister areas. The MPA also contains the only extensive stands of Mountain Gum in System Six."

There was little botanical data available on this area despite potential land use conflicts being present. This block was studied as part of the Swan Coastal Plain survey, since the lower section of the

block contains the foothills of the Darling Scarp. A more complete study was undertaken in 1996. The results are presented here.

SURVEY METHOD

Survey work in Dardanup Forest Block was performed over three flowering seasons from 1993 to 1996 in conjunction with regional survey work on the Swan Coastal Plain (Gibson et al. 1994).

Twelve sites were located in the block (Map 2) to sample the range of plant communities identified using aerial photographs and field interpretation. Four are permanently located 100 m² sites used in the regional floristic study of the Swan Coastal Plain (Gibson et al. 1994). Groups of conservation volunteers established a further eight sites in 1996. All sites were sampled on at least two occasions.

Opportunistic plant collections, that is collections made outside the sites, were made during vehicle and foot traverse at various times of the year, during 1996.

GEOMORPHOLOGY AND SOILS

Dardanup forest block is located on the Darling fault and spans the broad geomorphic units, the Darling Scarp, Whicher Scarp, their foothills, and a section of the Swan Coastal plain.

The soils comprise lateritic uplands and spurs of the western margin of the Darling plateau and escarpment, with small areas of outcropping Quartzite. Below these areas are colluvial sands and loams at the far west is a small area of Yoganup formation (Anon., 1981) of the Swan Coastal Plain.

Dardanup is the only area of the forest/conservation estate which spans the Darling Scarp, Whicher Scarp and the Swan Coastal Plain where they join, south east of Bunbury.

VEGETATION

The vegetation map (Map 2) shows the distribution of the principal plant communities based on the vegetation descriptions of the 12 sites.

Essentially the plant communities can be classed as woodlands.

Banksia/Jarraah woodlands (Map 2:bW)

Banksia attenuata dominates the lowest slopes, however, there are often scattered Jarraah trees throughout this area which increase in density towards the base of the scarp. Other low trees are *Banksia grandis*, *Xylomelon occidentale* and *Persoonia longifolia* over a dense understorey of shrubs, herbs and sedges. The characteristic shrubs are *Xanthorrhoea preissii*, *Stirlingia latifolia*, *Bossiaea eriocarpa*, *Jacksonia sparsa*, *Daviesia physodes*, *Hibbertia hypericoides* and the herbs *Patersonia umbrosa* var *xanthina*, *Phlebocarya ciliata*, *Dasypogon bromeliifolius*. Two sedges *Hypolaena exsulca* and *Lyginia barbata* dominate the sedge layer.

Jarraah woodland (map 2: jW)

Jarraah woodland to forest mixed with varying amounts of Marri is characteristic of lateritic soils. These trees have a dense

understorey of shrubs such as *Xanthorrhoea preissii*, *Hibbertia hypericoides*, *Acacia latericola*, *Xanthorrhoea gracilis*, *Hakea amplexicaulis*, *Hibbertia amplexicaulis*, *Dryandra lindleyana*, *Lechenaultia biloba*, *Bossiaea eriocarpa*, *Isopogon sphaerocephalus* and *Eriostemon spicatus*, and the herbs *Patersonia umbrosa* var *xanthina*, *Trichocline spathulata*, *Lagenifera huegelii*, *Patersonia babianoides* on the lower slopes Marri mixed becomes dominant

Mountain Marri low woodland (Map 2: MmLW)

Mountain marri woodland to low forest with varying amounts of Jarrah and Marri (Which can become dominant in deeper colluvial soils) and scattered trees of *Banksia grandis* and *Persoonia longifolia* over a dense understory of shrubs such as *Xanthorrhoea preissii*, *Hibbertia hypericoides*, *Adenanthos barbiger*, *Kennedia coccinea*, *Xanthorrhoea gracilis*, *Bossiaea ornata*, *Dryandra lindleyana*, *Isopogon sphaerocephalus*, *Eriostemon spicatus*, *Hakea lissocarpa*, *Hibbertia commutata* and the herbs *Patersonia juncea*, *P. umbrosa* var *xanthina*, *Patersonia babianoides*, *Lagenifera huegelii*, *Lomandra sericea* and *Johnsonia lupulina*. *Tetraria octandra* and *Loxocarya fasciculata* dominate the sedge layer.

A very distinctive form of this community occurs on outcropping quartzite ridges along the Darling Scarp. Here *Eucalyptus marginata* and *E. haematoxylon* open low woodland occurs over tall heath of *Xanthorrhoea acanthostachya*, *Nemcia cordata*, *Lambertia multiflora* var *darlingensis*, *Dryandra armata*, *Hakea cyclocarpa* and *Hibbertia hypericoides* over herbs of *Lomandra* aff. *nutans* and *Patersonia limbata*. It is likely with further studies along the southern Darling Scarp this may prove to be a separate floristic community, that is rare and restricted.

Floristic Community Types

Twelve floristic sites were established

The regional floristic survey of the Swan Coastal Plain identified floristic community types, 1a (*Eucalyptus haematoxylon* - *E. marginata* woodlands on Whicher Foothills and type, 21b (Southern *Banksia* woodlands). The first is at its northern limit and the second very near. Both occurrences in Dardanup block of these vulnerable and poorly reserved communities are large and significant for their conservation.

The Jarrah woodlands of the western edge of the Darling Plateau form a new group, but placement of this and the quartzite ridges await completion of the Darling Scarp survey.

FLORA

Dardanup Forest Block contains a vascular flora of 481 taxa (Table 1). Of these 443 are natives and 38 weeds. Seven of these are non flowering vascular plants, 177 are monocotyledons (162 natives and 15 weeds) and 297 are dicotyledons (274 natives and 23 weeds).

The Papilionaceae (35 natives, 5 weeds), Proteaceae (32 natives), Myrtaceae (26 natives), Cyperaceae (23 natives, 1 weed), Asteraceae (21 natives, 7 weeds), Anthericaceae (20 natives), Poaceae (13 natives, 6 weeds), Dasyopogonaceae (17 species), Haemodoraceae (17

natives, Mimosaceae (16 natives) and Stylidiaceae (16 natives). The largest genera are *Acacia* (16 species), *Lomandra* (14 species), *Drosera* (14 species), *Stylidium* (13 species) and *Caladenia* (11 species).

SIGNIFICANT FLORA

One species of declared rare flora (Atkins, 1996), *Chamelaucium erythrochlora* is recorded at the northern limit of its' range from Dardanup Block. Three priority taxa (*Acacia semitrullata*, *Lambertia multiflora* var *darlingensis* and *Pultenea radiata*) are also recorded from Dardanup Block.

Significant flora of particular interest

Thysanotus pseudojunceus (Anthericaceae)

A rhizomatous herb, found from Albany to Alexandra Bridge in low *Eucalyptus marginata* woodland. The population in Dardanup Block is disjunct from Nannup and the northern limit of the species' range.

Actinostrobus acuminatus (Cupressaceae)

A prostrate conifer from an underground stem which occurs from Three Springs to Boyanup. Rarely recorded south of Perth there are three known populations, one at Pinjarra, one in Dardanup and one near Boyanup (in a sand mining lease). The largest and only secure population is in Dardanup Block.

Lomandra aff *nutans* (GK 15,307) (Dasypogonaceae)

There are 14 species of *Lomandra* recorded from the block, one of the highest diversity of co-occurring and closely allopatric species known for this genus, normally 3-5 species are found in a block. One of these is a new species allied to *Lomandra nutans*, a species ranging from the Stirling Ranges to York. This species was discovered during the Swan Coastal Plain survey and is currently only known from this block. It should be added to CALM's priority flora list.

Patersonia limbata (Iridaceae)

A tufted rhizomatous herb found from Cape Arid to the Stirling Ranges with disjunct scattered populations north-west of this area.

Five species of *Patersonia* are recorded from the block, also a very high number for this genus.

Logania sp nov (GJK 15,234) (Loganiaceae)

This undescribed species of *Logania* is currently only known from Dardanup block where it is found in the Jarrah woodland on colluvial surfaces. It should be added to CALM's priority flora list.

Acacia mooreana (Mimosaceae)

A low shrub to 60 cm tall, occurs from Boyanup to Karridale. The population in Dardanup Block is at the northern limit of the species range.

Acacia semitrullata (Mimosaceae)

A low shrub to 60 cm tall, occurs from Yarloop to Donnybrook and Yallingup on sandy soils.

Calothamnus schaueri (Myrtaceae)

A low spreading shrub found between Pingelly and the Stirling Range. The species is present as a series of disjunct populations in the forest and is rarely recorded this far west.

Chamelaucium erythrochlora (Myrtaceae)

A declared rare species, largely confined to the Blackwood plateau and Whicher Scarp with one population on the Swan Coastal Plain near Busselton. The population in Dardanup Block is the northern most.

Nemcia cordata ms (Papillionaceae)

This newly recognised species was previously only recorded from the Yoongarrillup area. The Dardanup population is currently the only known extant population. It should be added to Calm's priority flora list.

Pultenea radiata (Papillionaceae)

Largely confined to the western edge of the Blackwood Plateau along the Whicher Scarp, at the northern limit of the species range.

Lambertia multiflora var *darlingensis* (Proteaceae)

A tall shrub, occurring in scattered populations along the Darling scarp from Gingin to Busselton area. The population in Dardanup block is the southernmost extant (there are old records from the base of the Whicher Range) and disjunct from Pinjarra.

Xanthorrhoea acanthostachya (Xanthorrhoeaceae)

A species confined to the Darling Scarp. Previously recorded from Walyunga National Park to Harvey, it is at the southern margin of its range.

Acknowledgments

A weekend field session was held in the study area in 1996 when the survey was supported by the enthusiastic and effective participation of Anne B, Anne T, Bernhard, Brian, Diane, Gary, Harry, Logan, Margaret, Nicky, Peter, Rosemary and Shirley.

Aspects of this study were funded by the National Estates program, administered by the Australian Heritage Commission in 1992/93 and 1993/94. In 1996 funding for the volunteer survey was provided by Ecoplan, a DEP community participation program.

REFERENCES

- Anon. (1981) Bunbury - Burekup Sheet 2035 111 and part Sheet 1935, Urban geology Series. Department of Minerals and Energy, Perth.
- Atkins, K.J. 21/10/1996 Declared Rare and Priority List for Western Australia. Department of Conservation and Land Management, W.A.
- Churchward, H.M. and McArthur, W.M. 1980 Landforms and Soils of the Darling System. In "Atlas of Natural Resources, Darling System, Western Australia." Department of Conservation and Environment, Western Australia.
- Department of Conservation and Environment (1983) Conservation reserves for Western Australia. The Darling System - System Six. parts 1 and 2. report 13.

Gibson, N.G., Keighery, B.J., Keighery, G.J., Burbidge, A.H. and Lyons, M.N. (1994) A Floristic Survey of the Swan Coastal Plain. Report for the Australian Heritage Commission prepared by the Department of Conservation and land management and the Conservation Council of Western Australia (Inc.).

Heddle, E.M., Loneragan, O.W. and Havel, J.J. (1980) Vegetation of the Darling System. In: atlas of natural resources, Darling System, Western Australia. Department of Conservation and Environment, Western Australia,

Smith, F.G. (1973) Vegetation Map of Collie. Western Australian Department of Agriculture, Perth.

Table one Dardanup Forest Block Flora List

(Habitat Code: D - Disturbed, B - Banksia , SW - Swamps or creeklines, JA - Jarrah, JH - Jarrah, Haematoxylon)

Nat Taxon Name	Q	D	B	SW	JA	JH

Adiantaceae						
<i>Cheilanthes austrotenuifolia</i>				+		+
AMARANTHACEAE						
<i>Ptilotus manglesii</i>					+	
Amaryllidaceae						
* <i>Amaryllis belladonna</i>	+					
Anthericaceae						
<i>Agrostocrinum scabrum</i>					+	+
<i>Arthropodium capillipes</i>					+	
<i>Borya sphaerocephala</i>	+					
<i>Caesia micrantha</i>					+	+
<i>Caesia occidentalis</i>					+	
<i>Chamaescilla corymbosa</i> var. <i>corymbosa</i>			+	+	+	+
<i>Johnsonia acaulis</i>				+		
<i>Johnsonia lupulina</i>					+	+
<i>Laxmannia sessiliflora</i> subsp. <i>australis</i>				+	+	
<i>Sowerbaea laxiflora</i>	+			+	+	+
<i>Thysanotus arbuscular</i>				+		
<i>Thysanotus arenarius</i>	+					
<i>Thysanotus manglesianus</i>	+				+	
<i>Thysanotus multiflorus</i>	+				+	
<i>Thysanotus patersonii</i>	+				+	+
<i>Thysanotus pseudojunceus</i>					+	+
<i>Thysanotus sparteus</i>					+	+
<i>Thysanotus thyrsoideus</i>					+	+
<i>Tricoryne elatior</i>					+	+
<i>Tricoryne humilis</i>					+	
<i>Tricoryne tenella</i>	+					
Apiaceae						
<i>Actinotus glomeratus</i>			+	+	+	
<i>Daucus glochidiatus</i>			+		+	+
<i>Homalosciadium homalocarpum</i>			+			
<i>Hydrocotyle alata</i>			+	+		
<i>Hydrocotyle callicarpa</i>					+	
<i>Hydrocotyle pilifera</i> var. <i>glabrata</i>			+			
<i>Pentapeltis peltigera</i>					+	+
<i>Platysace compressa</i>				+	+	
<i>Platysace tenuissimsa</i>					+	
<i>Schoenolaena juncea</i>					+	
<i>Trachymene pliosaa</i>			+		+	
<i>Xanthosia atkinsoniana</i>					+	+
<i>Xanthosia candida</i>					+	
<i>Xanthosia ciliata</i>				+	+	
<i>Xanthosia huegelii</i>			+			
Araceae						
* <i>Arum italicum</i>			+			
* <i>Zantedeschia aethiopica</i>			+			
Asteraceae						
* <i>Arctotheca calendula</i>	+					
* <i>Conyza albida</i>	+					
<i>Cotula cotuloides</i>				+		
<i>Craspedia variabilis</i>					+	+
<i>Gnaphalium gymnocephalum</i>			+			
<i>Hyalosperma cotula</i>						+
<i>Hyalosperma pusillum</i>				+		

* Hypochaeris glabra	+	+	+	+	+
Ixiolaena viscosa			+		+
Lagenifera huegelii			+		+
Millotia tenuifolia			+	+	+
Olearia paucidentata					+
Pithocarpa corymbulosa					+
Podolepis gracilis					+
Podotheca angustifolia				+	
* Pseudognaphalium luteo-album		+			
Pterochaeta paniculata				+	+
Quinetia urvillei	+	+		+	+
Senecio hispidulus					+
Senecio minimus var. minimus			+		
Senecio quadridentatus					+
Siloxerus humifusus				+	
* Sonchus asper	+			+	
* Sonchus oleraceus	+			+	
Trichocline spathulata					+
* Vellereophyton dealbatum		+			
Waitzia nitida					+
Campanulaceae					
* Wahlenbergia capensis			+		
Wahlenbergia preissii					+
Caryophyllaceae					
* Petrorrhagia velutina		+			
Caesalpiniaceae					
Labichea punctata		+			+
Casuarinaceae					
Allocasuarina fraseriana					+
Allocasuarina humilis				+	
Allocasuarina thuyoides	+	+			
Centrolepidaceae					
Aphelia cyperoides				+	+
Aphelia drummondii					+
Centrolepis aristata	+	+			+
Centrolepis drummondiana				+	
Clusiaceae					
Hypericum gramineum					+
Colchicaceae					
Burchardia congesta				+	+
Burchardia multiflora					
Crassulaceae					
Crassula colorata var. colorata	+	+		+	+
Crassula colorata var. tuberculata				+	
Crassula pedicellosa				+	
Crassula sieberiana subsp. tetramera					+
Cupressaceae					
Actinostrobus acuminatus				+	
Cuscutaceae					
* Cuscuta epithymum					+
Cyperaceae					
Baumea juncea					+
Baumea laxa					+
Cyathochaeta avenacea			+		+
* Cyperus tenellus				+	
Isolepis congrua				+	
Isolepis cyperoides					+
Isolepis marginata	+			+	+

Isolepis nodosa			+	
Isolepis oldfieldiana			+	+
Isolepis setiformis				+
Isolepis stellata				+
Lepidosperma angustatum			+	
Lepidosperma longitudinale				+
Lepidosperma tenue				+
Lepidosperma squamatum				+
Mesomelaena graciliceps				+
Mesomelaena tetragona			+	
Schoenus brevisetis				+
Schoenus curvifolius			+	+
Schoenus efoliatus			+	+
Schoenus subbulbosus			+	+
Tetraria capillaris				+
Tetraria octandra			+	+
Tricostularia neesii			+	+
Dasypogonaceae				
Calectasia cyanea			+	
Dasypogon bromeliifolius			+	+
Kingia australis			+	+
Lomandra brittanii				+
Lomandra caespitosa			+	+
Lomandra drummondii				+
Lomandra hermaphrodita			+	+
Lomandra micrantha				+
Lomandra nigricans			+	+
Lomandra aff. nutans			+	
Lomandra pauciflora				+
Lomandra preissii			+	+
Lomandra purpurea				+
Lomandra sericea				+
Lomandra sonderi				+
Lomandra spartea			+	
Lomandra suaveolens			+	
Dennstaedtiaceae				
Pteridium esculentum			+	
Dilleniaceae				
Hibbertia acerosa			+	
Hibbertia amplexicaulis				+
Hibbertia commutata				+
Hibbertia huegelii			+	
Hibbertia hypericoides			+	
Hibbertia lasiopus				+
Hibbertia racemosa			+	
Hibbertia rhadinopoda			+	+
Hibbertia serrata				+
Hibbertia vaginata			+	
Droseraceae				
Drosera barbigera				+
Drosera erythrorhiza			+	+
Drosera gigantea			+	
Drosera glanduligera			+	+
Drosera leucoblata				+
Drosera macrantha			+	
Drosera marchantii				+
Drosera menziesii subsp. menziesii			+	
Drosera paleacea ssp. paleacea				+
Drosera pallida				+
Drosera platystigma			+	
Drosera pulchella			+	
Drosera stolonifera			+	
Drosera subhirtella subsp. subhirtella			+	+
Epacridaceae				

Andersonia caerulea		+		
Andersonia heterophylla		+		
Andersonia micrantha			+	
Astroloma ciliatum			+	
Astroloma pallidum		+	+	
Conostephium pendulum		+		
Leucopogon australis		+		
Leucopogon capitellatus				+
Leucopogon conostephioides		+		
Leucopogon glabellus		+		
Leucopogon gracillimus		+		
Leucopogon pendulus			+	+
Leucopogon propinquus				+
Leucopogon verticillatus			+	+
Lysinema ciliatum		+		
Sphenotoma capitatum	+		+	+
Styphelia tenuiflora		+	+	
Euphorbiaceae				
Monotaxis occidentalis			+	
Phyllanthus calycinus			+	
Poranthera microphylla	+		+	+
Stachystemon vermicillaris			+	
Fumariaceae				
* Fumaria capreolata		+		
* Fumaria muralis		+		
Gentianaceae				
* Centaurium erythraea			+	+
Sebaea ovata			+	
Geraniaceae				
Geranium solanderi		+		
Goodeniaceae				
Dampiera alata			+	
Dampiera linearis		+	+	+
Goodenia caerulea	+	+		
Goodenia eatoniae			+	+
Lechenaultia biloba		+	+	+
Lechenaultia expansa		+		
Scaevola calliptera			+	
Scaevola glanduligera				+
Velleia trinervis		+	+	
Haemodoraceae				
Anigozanthos flavidus			+	
Anigozanthos humilis		+		
Anigozanthos manglesii		+	+	
Anigozanthos humilis x manglesii		+		
Anigozanthos viridis			+	
Conostylis aurea				+
Conostylis aculeata		+		
Conostylis laxiflora				+
Conostylis setigera				+
Haemodorum laxum				+
Haemodorum simplex			+	
Haemodorum sparsiflorum			+	
Haemodorum spicatum		+	+	
Phelbocarya ciliatum		+		
Phelbocarya filifolia		+		
Tribonanthes australis			+	
Tribonanthes brachypetala			+	
Haloragaceae				
Haloragis brownii			+	
Hydatellaceae				

Trithuria bibracteata				+
Hypoxidaceae				
Hypoxis glabella var. glabella				+ +
Hypoxis occidentalis				+
Iridaceae				
Orthrosanthus laxus var. laxus				+ +
Patersonia babianoides				+ +
Patersonia juncea				+ +
Patersonia limbata				+
Patersonia occidentalis				+
Patersonia umbrosa var. xanthina				+ +
* Romulea rosea				+ + + +
Juncaceae				
* Juncus bufonius				+
* Juncus capitatus				+ +
Juncus holoschoenus				+
Luzula meridionalis				+
Lamiaceae				
Hemiantra pungens var. pungens				+
Hemigenia incana				+
Lauraceae				
Cassytha micrantha				+
Cassytha pomiformis				+
Cassytha racemosa				+ + +
Lentibulariaceae				
Polypompholyx multifida				+
Polypomphylx tenella				+
Lindsaeaceae				
Lindsaea linearis				+ +
Lobeliaceae				
Isotoma hypocrateriformis				+ + +
Lobelia rhombifolia				+
Lobelia tenuior				+ + +
* Monopsis simplex				+
Loganiaceae				
Logania campanulata				+ +
Logania serpyllifolia subsp. serpyllifolia				+ +
Logania sp nov				+ +
Phyllangium paradoxum				+ + +
Loranthaceae				
Nuytsia floribunda				+ +
Menyanthaceae				
Villarsia albiflora				+
Villarsia parnassifolia				+
Mimosaceae				
Acacia applanata				+
Acacia extensa				+
Acacia flagelliformis				+
Acacia huegelii				+ +
Acacia luteola				+ +
Acacia latericola				+ +
Acacia mooreana				+ + +
Acacia nervosa				+ +
Acacia obovata				+ +
Acacia pulchella				+ + +
Acacia saligna				+ +
Acacia stenoptera				+ + +

Acacia teretifolia				+
Acacia urophylla			+	
Acacia varia var varia				+
Acacia willdenowiana		+		
Myrtaceae				
Agonis flexuosa			+	
Agonis grandiflora	+			+
Agonis linearifolia			+	
Astartea fascicularis			+	
Baekkea camphorosmae				+
Calothamnus sanguineus				+
Calothamnus schaueri			+	
Calytrix flavescens			+	
Calytrix leschenaultii			+	
Chamelaucium erythrochlora	+	+		
Darwinia oederoides			+	
Eremaea pauciflora			+	
Eucalyptus calophylla				+
Eucalyptus haematoxylon	+			+
Eucalyptus marginata	+	+	+	+
Eucalyptus rudis			+	
Hypocalymma angustifolium			+	+
Hypocalymma robustum			+	
Kunzea ericifolia			+	
Kunzea recurva			+	+
Melaleuca incana			+	+
Melaleuca preissiana			+	
Melaleuca scabra	+			+
Melaleuca thymoides			+	
Pericalymma ellipticum			+	
Verticordia densiflora			+	
Olacaceae				
Olax benthamiana				+
Onagraceae				
Epilobium billardierianum subsp. cinereum			+	
Epilobium hirtigerum			+	
Orchidaceae				
Caladenia attingens ssp. attingens	+	+		
Caladenia cairnsiana			+	
Caladenia flava	+	+	+	+
Caladenia gemmata			+	+
Caladenia latifolia			+	
Caladenia longicauda			+	
Caladenia menziesii			+	
Caladenia nana subsp. nana				+
Caladenia reptans				+
Caladenia sericea			+	+
Caladenia speciosa				+
Cryptostylis ovata			+	
Cyrtostylis huegelii			+	
Diuris corymbosa	+			+
Drakaea glyptodon			+	
Elythranthera brunonis			+	+
Elythranthera emarginata				+
Eriochilus dilatatus				+
Eriochilus scaber subsp. scaber				+
Leporella fimbriata			+	+
Lyperanthus nigricans			+	+
Lyperanthus serratus	+			+
Microtis media	+			+
* Monadenia bracteata			+	+
Paracaleana nigrita			+	
Praecoxanthus aphyllus			+	
Prasophyllum elatum	+			+
Prasophyllum parvifolium			+	

Pterostylis aff. nana	+	+	+	+
Pterostylis barbata			+	+
Pterostylis recurva		+	+	
Pterostylis vittata		+	+	+
Thelymitra crinita	+	+	+	+
Thelymitra flexuosa			+	
Thelymitra fuscolutea	+	+		
Thelymitra pauciflora		+	+	+
Orobanchaceae				
* Orobanche minor			+	+
Papilionaceae				
Aotus procumbens		+		
Bossiaea eriocarpa		+		
Bossiaea aff. eriocarpa	+		+	+
Bossiaea linophylla			+	+
Bossiaea ornata				+
Chorizema diversifolium		+		
Chorizema rhombeum			+	
Daviesia angulata		+		
Daviesia cordata			+	
Daviesia divaricata			+	
Daviesia physodes			+	
Daviesia preissii		+		
Gastrolobium spinosum			+	
Gompholobium capitatum			+	
Gompholobium confertum		+		
Gompholobium knightianum	+	+	+	
Gompholobium marginatum		+	+	
Gompholobium polymorphum			+	
Gompholobium preissii	+		+	+
Gompholobium shuttleworthii			+	
Hardenbergia comptoniana		+		
Hovea chorizemifolia			+	+
Hovea trisperma ssp. trisperma		+		
Hovea trisperma ssp. grandiflora	+		+	+
Isotropis cuneifolia		+	+	
Jacksonia furcellata		+		
Jacksonia sparsa		+		
Kennedia coccinea			+	+
Kennedia prostrata		+	+	+
Latrobea tenella			+	
* Lotus angustissimus		+	+	
* Lotus suaveolens		+		
Nemcia cordata	+			
* Ornithopus compressus		+	+	
* Ornithopus pinnatus		+		
Pultenaea radiata	+		+	
Pultenaea reticulata		+	+	
Sphaerolobium medium	+	+	+	
* Trifolium campestre		+		
Viminaria juncea			+	
Philydraceae				
Philydrella pygmaea			+	
Phormiaceae				
Dianella revoluta var. revoluta	+	+	+	
Pittosporaceae				
Billardiera candida	+		+	+
Billardiera variifolia		+	+	
Poronaya fraseri		+		
Poaceae				
Agrostis avenacea			+	
* Aira cupaniana	+	+	+	+
Amphipogon amhipogonoides		+	+	

	Amphipogon turbinatus		+	+	+
*	Briza maxima	+	+	+	
*	Briza minor		+	+	
	Danthonia occidentalis	+	+		
	Danthonia setacea			+	+
	Deyeuxia quadriseta			+	+
	Dichelachne crinita			+	
*	Lolium rigidum		+		+
	Microlaena stipoides			+	
	Neurachne alopecuroidea				+
*	Poa annua		+	+	
	Poa drummondiana			+	
	Stipa compressa			+	
	Stipa semibarbata	+	+	+	+
	Tetrarrhena laevis				+
*	Vulpia myuros		+	+	
Podocarpaceae					
	Podocarpus drouyanus				+
Polygalaceae					
	Comesperma calymega		+		
	Comesperma volubile				+
	Comesperma virgatum				+
Polygonaceae					
*	Rumex acetosella		+		
Primulaceae					
*	Anagallis arvensis var. arvensis		+		
*	Anagallis arvensis var. caerulea		+		+
Proteaceae					
	Adenanthos barbigerus				+
	Adenanthos meisneri		+		
	Adenanthos obovatus			+	
	Banksia attenuata		+		
	Banksia grandis		+		+
	Banksia littoralis			+	
	Conospermum capitatum		+		
	Dryandra armata	+			
	Dryandra bipinnatifida				+
	Dryandra lindleyana		+		+
	Grevillea brevicuspis				+
	Grevillea bipinnatifida				+
	Grevillea pilulifera				+
	Grevillea quercifolia	+			+
	Grevillea pulchella ssp. ascendens	+			+
	Hakea amplexicaulis				+
	Hakea ceratophylla	+			
	Hakea cyclocarpa	+			
	Hakea lissocarpa				+
	Hakea prostrata				+
	Hakea ruscifolia		+		
	Hakea stenocarpa		+		+
	Isopogon sphaerocephalus				+
	Persoonia elliptica		+		
	Persoonia longifolia		+		+
	Persoonia saccata		+		
	Petrophile linearis		+		
	Petrophile striata	+	+		
	Stirlingia latifolia		+		
	Synaphea hians		+		
	Synaphea petiolaris		+		
	Xylomelon occidentale		+		
Ranunculaceae					
	Clematis pubescens				+

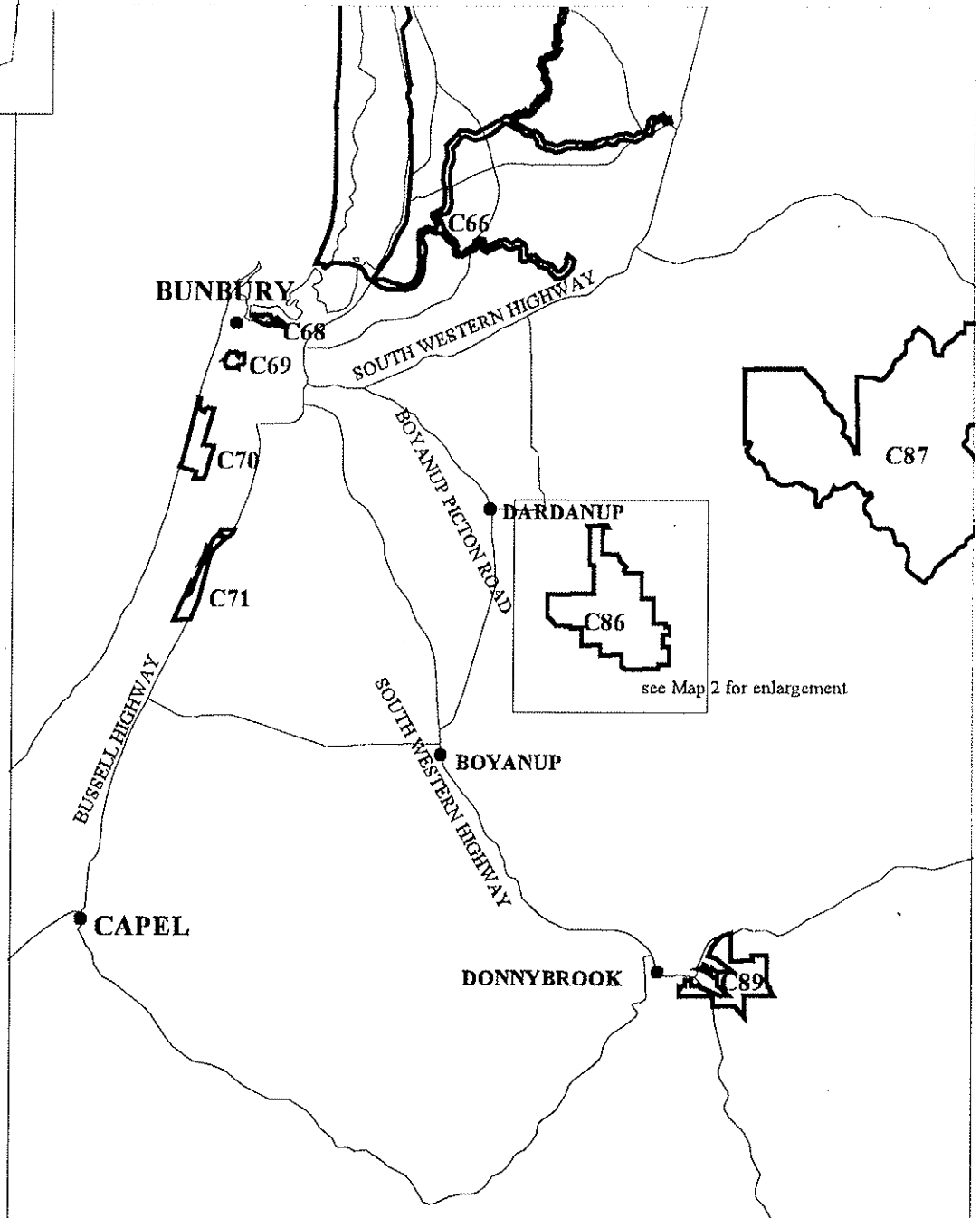
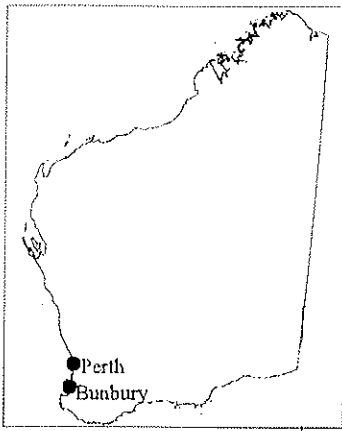
Restionaceae				
	Anarthria laevis		+	
	Anarthria prolifera		+	+
	Anarthria scabra	+		+
	Hypolaena exsulca		+	
	Leptocarpus co-angustatus		+	
	Lepyrodia macra	+		
	Lepyrodia muirii		+	
	Loxocarya cinerea		+	
	Loxocarya fasciculata		+	
	Loxocarya flexuosa			+
	Loxocarya pubescens			+
	Lyginia barbata		+	
	Restio leptocarpoides		+	
Rubiaceae				
*	Galium murale		+	
	Opercularia apiciflora			+
	Opercularia hispidula		+	+
	Opercularia vaginata		+	+
Rutaceae				
	Boronia dichotoma		+	
	Boronia ramosa subsp. anethifolia		+	
	Boronia spathulata			+
	Eriostemon nodiflorus			+
	Eriostemon spicatus	+	+	+
Santalaceae				
	Leptomeria cunninghamii	+		+
Scrophulariaceae				
*	Parentucellia viscosa		+	
Selaginellaceae				
	Selaginella gracillima		+	+
Solanaceae				
*	Solanum nigrum		+	
Stackhousiaceae				
	Stackhousia pubescens			+
	Tripterococcus brunonis		+	+
Sterculiaceae				
	Thomasia grandiflora			+
Stylidiaceae				
	Levenhookia dubia	+	+	+
	Levenhookia pusilla		+	+
	Levenhookia stipitata		+	
	Stylidium adnatum			+
	Stylidium amoenum			+
	Stylidium brunonianum		+	+
	Stylidium calcaratum		+	+
	Stylidium carnosum			+
	Stylidium crassifolium		+	
	Stylidium junceum			+
	Stylidium luteum			+
	Stylidium mimeticum		+	
	Stylidium petiolare		+	
	Stylidium piliferum		+	+
	Stylidium repens var. repens		+	
	Stylidium striatum			+
Thymelaeaceae				
	Pimelea preissii		+	
	Pimelea rosea		+	
	Pimelea sulphurea			+

Tremandraceae				
<i>Tetratheca hirsuta</i>		+		
Violaceae				
<i>Hybanthus floribundus</i> subsp. <i>floribundus</i>				+
Xanthorrhoeaceae				
<i>Xanthorrhoea acanthostachya</i>		+		
<i>Xanthorrhoea gracilis</i>			+	+
<i>Xanthorrhoea platyphylla</i>			+	+



prepared by Natalie Therning
Department of
Environmental Protection




Map 1. Location of Dardanup Forest Block



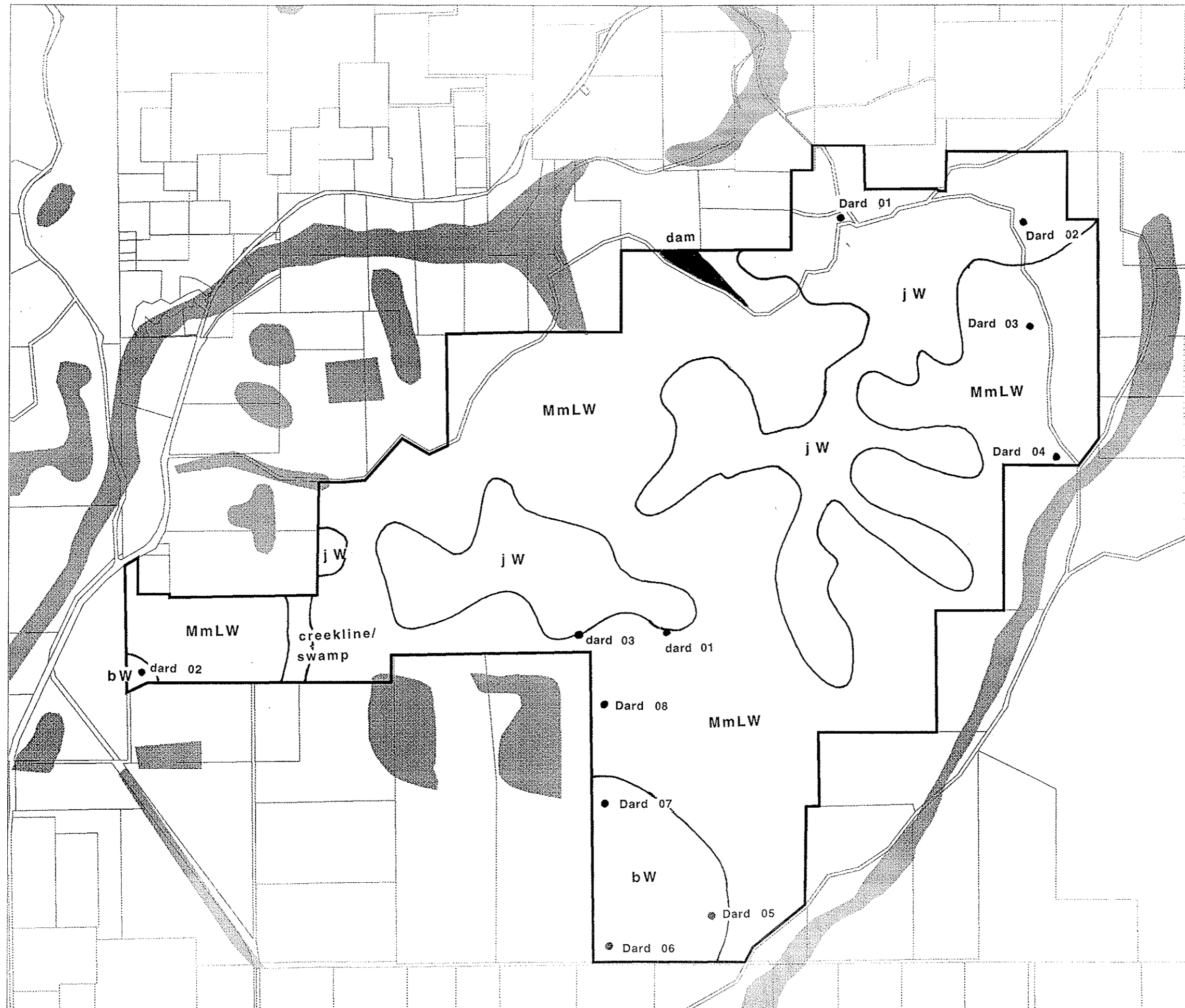
- Coastline of Western Australia
- Roads - Main (WA)
- Localities - Major (WA)
- System 6


MAP 2: Vegetation Map

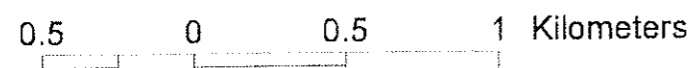
Key

-  System 6 Boundary
-  Cadastral Boundaries
-  Remant vegetation outside State Forest (Agriculture WA)

- dard 01 - 03 Gibson *et al.* (1994) Sites
- Dard 1 - 08 Department of Environmental Protection Sites




 prepared by Natalie Thorning
 Department of
 Environmental Protection



1:25000

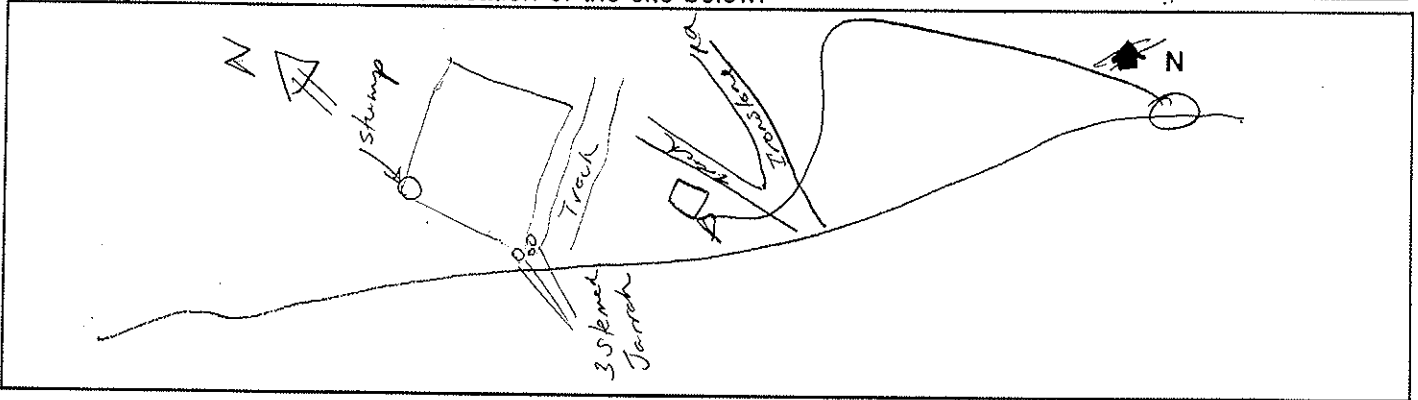
BUSHLAND PLANT SURVEY RECORDING SHEET 1- use pencil only

BUSHLAND AREA DARDANUP SITE NUMBER DARD 01
 DATE TRIP 13/10/96 RECORDERS GM, DM, LA^{son}, (AT)
 DATE TRIP _____ RECORDERS _____
 DATE TRIP _____ RECORDERS _____
 BOTANIST BJK (13/10/96)

1. LOCATION of the QUADRAT

From 'Bushland Plant Survey' written by B. Keighery (1994) and published by the Wildflower Society of WA (Inc.), PO Box 64 Nedlands WA 6008.

Mud Map Draw a sketch of the location of the site below.

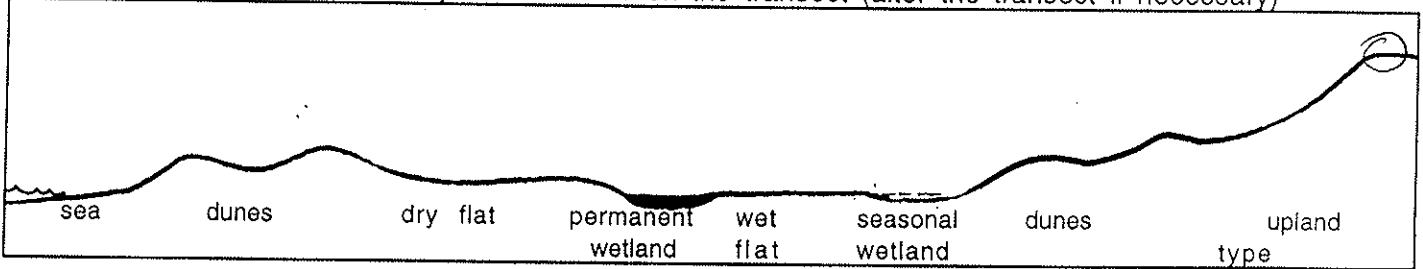


Road Location Ironstone Road (gravel pit)

Geographic Location Latitude 33° 26.789' S Longitude 115° 49.761' E Altitude ? 45m ± 4/m

Photograph Photographer's Name _____ Photo No _____

Topographic position Circle position of site on the transect (alter the transect if necessary)



2. SITE DATA Circle the correct response.

Slope	flat	<input checked="" type="radio"/> gentle	steep	Aspect	N	NE	E	SE	S	SW	W	<input checked="" type="radio"/> NW	
Surface Soil	loamy sand (lat. pebbles) ^{on surface}						Colour	brown					
Exposed rock	type _____ % surface						none exposed						
Sub-surface Soil	loamy sand						Colour						
Rock	type laterite not						depth to rock ≈						
Drainage	<input checked="" type="radio"/> well	mod	poor	depth	water cm		Wet all year		winter/spring				
Litter	30-70 % cover			Bare Ground				< 10 % cover					
	Depth 2 leaves < 1cm												






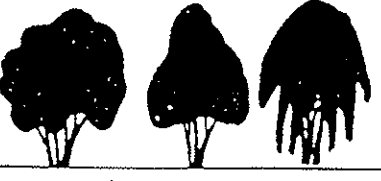
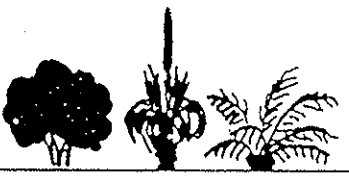

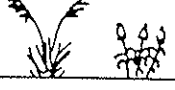


BUSHLAND PLANT SURVEY RECORDING SHEET 2 - use pencil only

From 'Bushland Plant Survey' written by B. Keighery (1994) and published by the Wildflower Society of WA (Inc.), PO Box 64 Nedlands WA 6008.

3. VEGETATION STRUCTURE AND COVER

For each layer record - appropriate life form, cover class (see below), and dominant species in each layer.

Cover Class 2-10% 10-30% 30-70% over 70%

		TREES			MALLEES	
		over 30m	10-30m	under 10m	over 8m	under 8m
LIFE FORM	30m			Site trees in this class adj logged. 		
	10m					
COVER CLASS (%)				30-70		
DOMINANT SPECIES				Marri Jarrah		
		SHRUBS		SHRUBS		
		over 2m	2m-1m	under 1m		
LIFE FORM	2m			< 0.5m 		
	1m					
COVER CLASS (%)			2-10	30-70		
DOMINANT SPECIES			Xanth. preissii (1-1.5m)	Hibb. hyp Acacia? latericola		
		GRASSES	HERBS	SEDGES	OTHER	
LIFE FORM	1m					
COVER CLASS (%)		< 2	2-10	2-10		
DOMINANT SPECIES			Pat. umb val xant.	Tet. oct		

4. VEGETATION CONDITION

1	'PRISTINE'	COMMENTS logging, too frequent fires
2	EXCELLENT	
3	VERY GOOD	
4	GOOD	
5	DEGRADED	

DARN 01

BUSHLAND PLANT SURVEY RECORDING SHEET 3 - use pencil only

5. SPECIES PRESENCE

Label each plant with plants number, site code, date and plant's name or working name if required

SITE No DARDP 01

Record on Sheet

Date 13/10/96

- Column 1 plant name-
- Column 2 plant number
- Column 3 flowering time- TICK if species flowering
- Column 4 identification check

From 'Bushland Plant Survey' written by
B. Keighery (1994) and published by the
Wildflower Society of WA (Inc.), PO Box
64 Nedlands WA 6008.

TREES	No	FI	ID	SHRUBS (cont.)	No	FI	ID	HERBS (cont.)	No	FI	ID
<i>Euc. calophylla</i>	1			HERBS				<i>Phrasoph. (hollow leaf)</i>	34		
<i>Euc. marg.</i>	2			<i>Xanthosia</i>	58			<i>Cassia micrantha</i>	37		
				<i>Levenhookia pusilla</i>	59			<i>Lomandra. sericea</i>	39		
SHRUBS				<i>Coladenia</i>	60			<i>Billardiera</i>	42		
<i>Grevillea 'guarri'</i>	57			<i>Scaevola</i>	61			<i>Xanthosia huegelii</i>	43		
<i>Hakea lissocarpa</i>	62			<i>Xanthosia</i> sp	66			<i>Lagarosiphon hutch.</i>	44		
MALLEES				<i>Dianus</i>	67			<i>Hydrocotyle</i>	46		
<i>Leucopogon</i>	63			<i>Thysanotus</i> sp	70			* <i>Hyoscyamus glabra</i>	47		
<i>Gompholob. preissii</i>	64			GRASSES				<i>Orchid leaf</i>	48		
				<i>Danthonia (sterile)</i>	45			<i>Dampiera linearis</i>	51		
				<i>Stipa. campylochaeta</i>	49			<i>Lomandra</i>	53		
				<i>Amphipogon ? amphipog.</i>	52			<i>Chamaecilla ? conybosia</i>	54		
				* <i>Briza minor (at least)</i>	65			<i>Stylidium uncaum</i>	56		
				<i>Stipa ? tetraera</i>	73			SEDGES			
SHRUBS				SHRUBS				<i>Mesomet. tetragona</i>	35		
<i>Xanth. preissii</i>	3			<i>Hibb rhadinopoda</i>	69			<i>Tetraria octandria</i>	36		
<i>Xanth. gracilis</i>	4							<i>Tetraria capillaris (condolle)</i>	38		
<i>Hakea amplexicaulis</i>	5							<i>Cyatho. avenacea</i>	40		
<i>Hibb. hyp.</i>	6							<i>Lepid. ? scabrum</i>	41		
<i>Acacia ? latericola</i>	7							<i>Lepid. angustat.</i>	50		
<i>Dryandras bipinnat.</i>	8			HERBS							
<i>Myandria lindleyana hills</i>	9			<i>Dampiera ? alata (bigie)</i>	13						
<i>Lechenaultia bilobas</i>	10			<i>Pater. umbrosa var. xanth.</i>	16						
<i>Acacia nervosa</i>	11			<i>Scaevol ? strata</i>	17						
<i>Bassiaea encocarpa 'large'</i>	12			<i>Tachochne spath</i>	21						
<i>Pimilea (pink)</i>	14			<i>Elyth. brun.</i>	22						
<i>Hypocotymma angustifolium</i>	15			<i>Xanthosia candida</i>	25						
<i>Thomsonia</i>	18			<i>Stylidium calcareum</i>	24						
<i>Comesperma (pink)</i>	19			<i>Scaevola aetnii</i>	25						
<i>Isopogon sphaerocephalus</i>	20			<i>Tricornis ? et alia humilis</i>	27						
<i>Franklinia sprakas</i>	26			<i>Drosera ? sp (extra in bag)</i>	28						
<i>Gompholobium ? marg</i>	29			<i>Potersonia bab. (no spec)</i>	31						
<i>Coronia spath</i>	30			<i>Thelymitra conita (no spec)</i>	32						
<i>Gastrolob. sprasum</i>	58			<i>Platysace</i>	33						

BUSHLAND PLANT SURVEY RECORDING SHEET 1- use pencil only

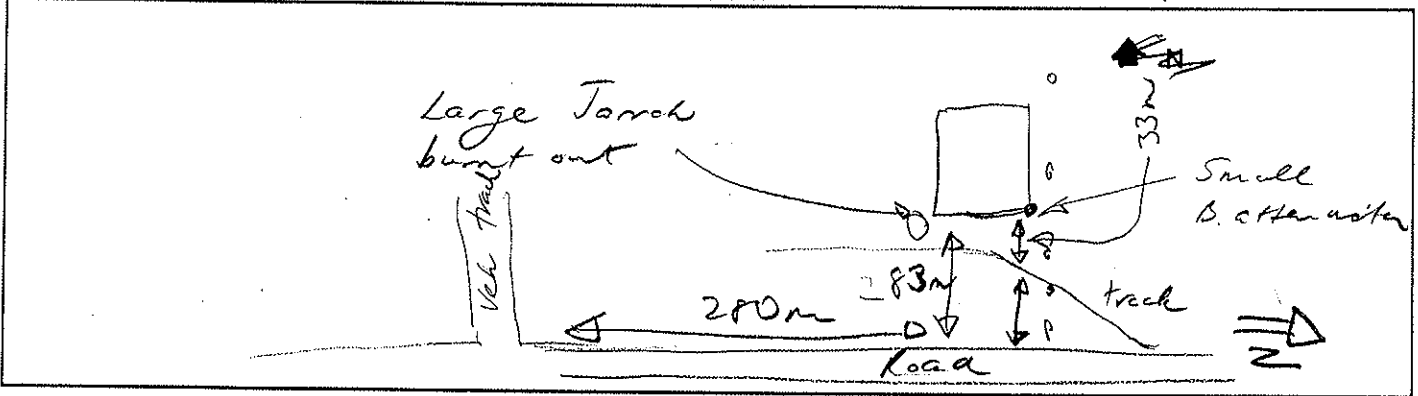
BUSHLAND AREA DAROANUP FOREST block SITE NUMBER 13/ DARO 02
 DATE TRIP 13/10/96 RECORDERS AB, RG, AT, PE
 DATE TRIP _____ RECORDERS _____
 DATE TRIP _____ RECORDERS _____
 BOTANIST BJK

Logon
Anne B

1. LOCATION of the QUADRAT

From 'Bushland Plant Survey' written by B. Keighery (1994) and published by the Wildflower Society of WA (Inc.), PO Box 64 Nedlands WA 6008.

Mud Map Draw a sketch of the location of the site below.



Road Location

Geographic Location Latitude 33° 21.290' S Longitude 115° 46.405' E Altitude

Reference Map

± 48m

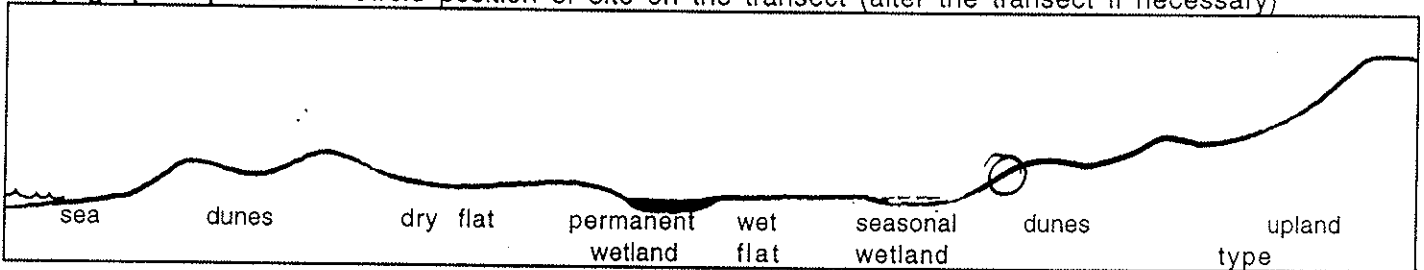
Photograph

Photographer's Name

BJK

Photo No

Topographic position Circle position of site on the transect (alter the transect if necessary)



2. SITE DATA Circle the correct response.

Slope flat v.gentle steep Aspect N NE E SE S SW W NW

Surface Soil sand Colour grey
 Exposed rock type % surface

Sub-surface Soil sand Colour pale grey
 Rock type depth to rock

Drainage well mod poor depth water cm Wet all year winter/spring

Litter 30-70 % cover Bare Ground %cover
 Depth 2 leaves < 1 cm

BUSHLAND PLANT SURVEY RECORDING SHEET 3 - use pencil only

5. SPECIES PRESCENCE

Label each plant with plants number, site code, date and plant's name or working name if required

SITE No DARN 08

Record on Sheet

Date 13/10/93

- Column 1 plant name.
- Column 2 plant number
- Column 3 flowering time- TICK if species flowering
- Column 4 identification check

From 'Bushland Plant Survey' written by B. Keighery (1994) and published by the Wildflower Society of WA (Inc.), PO Box 64 Nedlands WA 6008.

TREES	No	FI	ID	SHRUBS (cont.)	No	FI	ID	HERBS (cont.)	No	FI	ID
Euc. haem	1			Xanthosia	58			Laxmanea racemosa	35		
Euc. calophy (no spec)	2			Stylid diacoides	65			Lomandra nigricans	36		
Banksia attenuata	3			Stylid schoenoides	66			Cham. corym (no spec)	38		
Xyloc. occid	4			Lam. herm	70			Hyp. glabra (in bag)	39		
Myrt. florib.	5			Caladenia (white spider)	73			Stylid. brunnea spec	43		
Euc. marg. (no spec)	6			Acacia appennata	74			Quinetia urveitii (bag)	53		
SHRUBS MALLEES				Monot. occidentalis	75			Hydrocotyle (bag)	54		
Uros. trisperma	67							Mitotria tenuifolia	57		
Gomph. tomentosum	68			GRASSES				Drosera pulchra	59		
Acacia shr	69			*Aira cory.	42			Stach. hirsuta mono	60		
				Stipa (sterile)	44			Leven. stip.	63		
SHRUBS				*Vulpia (sterile)	52			Crassula sp.	64		
Acacia extensa	7							SEDGES			
Stich. latifolia	8			HERBS				Lax. fascic	30		
Dry. lind. subsp. plains	9			Trichorhynchus latior	77			Hyp. exsulca	40		
Acacia pulchella	10			Craunla				Anarthra prolifera	46		
Mel. thymoides	11			HERBS				Meso. tet	49		
Leucop. sp1	14			El. the brunonis (no spec)	12			Centropus	55		
Bassiaea erio (thin)	17			Caladenia flava (no spec)	13			Aphelia cyperoides	56		
Aden. meisn.	18			Conostylis	15			TET. OCT	71		
Hibb. vaginata	19			Phleb. ciliata	16			Schoenus aff. bred.	72		
Hyp. robust.	20			Scaevola stricta	23			ADJACENT			
Hibb. hyp	21			Dasy. brom	24			Kunzea racemosa	61		
Erast. spicatus	22			Trich. pilosa	26			Pariclymme ellip	62		
Andersonia heterophylla	25			Walteria citrina	27			Thelmitia crenata (Bib. orchid)	73		
Xanth. preussii (red spec)	27			Burch. congesta	28			Conosph. pend (no spec)	78		
Sphaerolobium (yellow)	57			Phleb. hirsuta	31						
Leucop. sp 2	41			Cassytha micrantha	32						
Peboon. succata	45			Drosera erythro	33						
Conos. capitatum	48			Lindsea glaucans	34						
Boronia	47										
Baeckha. camphoros	51										



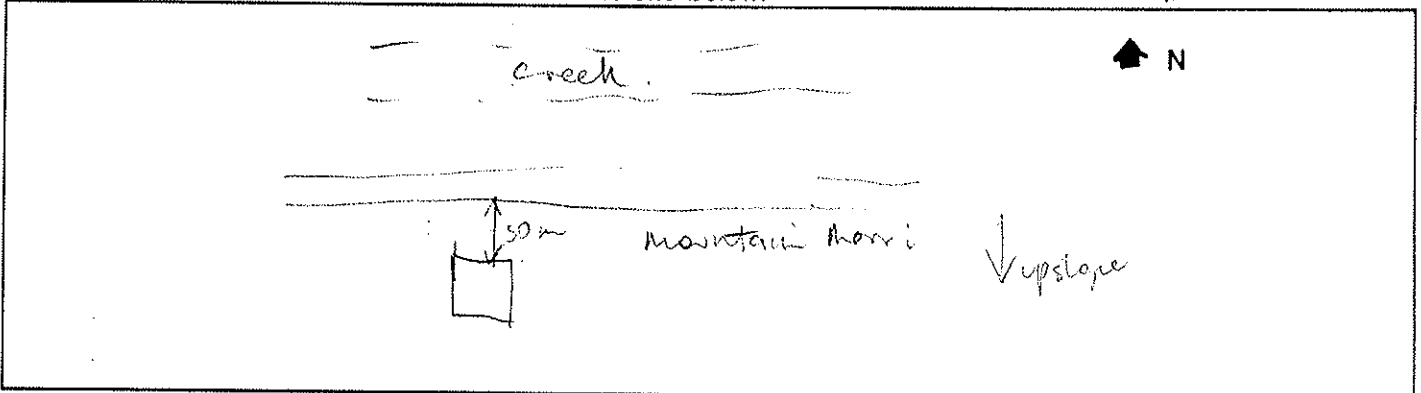
BUSHLAND PLANT SURVEY RECORDING SHEET 1- use pencil only

BUSHLAND AREA Dardanus Systemic Area SITE NUMBER Dard. 3
 DATE TRIP 13/10/96 RECORDERS B M, P E, A G, H
 DATE TRIP _____ RECORDERS _____
 DATE TRIP _____ RECORDERS _____
 BOTANIST C J

1. LOCATION of the QUADRAT

From 'Bushland Plant Survey' written by B. Keighery (1994) and published by the Wildflower Society of WA (Inc.), PO Box 64 Nedlands WA 6008.

Mud Map Draw a sketch of the location of the site below.

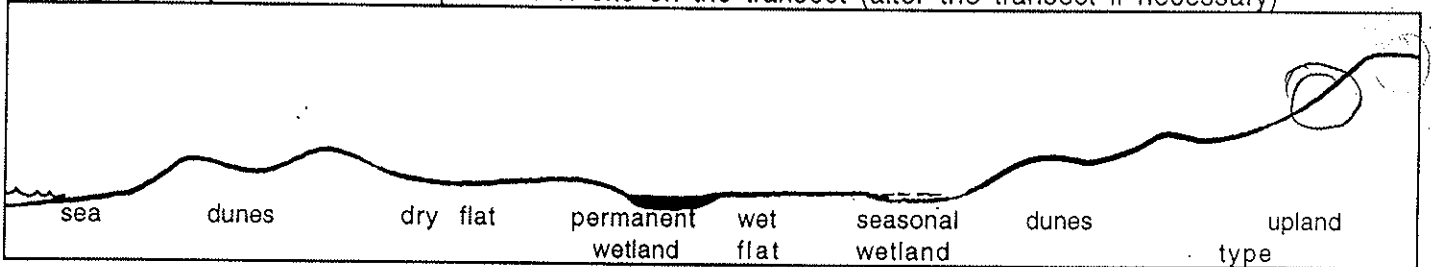


Road Location

Geographic Location Latitude 33° 27' 56.9 S Longitude 115° 49' 10.7 E Altitude _____
 Reference Map _____

Photograph Photographer's Name _____ Photo No _____

Topographic position Circle position of site on the transect (alter the transect if necessary)



2. SITE DATA Circle the correct response.

Slope flat gentle steep **Aspect** N NE E SE S SW W NW

Surface Soil ~~loamy~~ loamy sandy gravel **Colour** brown
Exposed rock type talcite % surface 10-30 %

Sub-surface Soil 2% talcinite **Colour** pale
Rock type talcite depth to rock 0

Drainage well mod poor **depth water** _____ **Wet** all year winter/spring

Litter 30 - 70 % cover **Bare Ground** < 2 % cover
 Depth < 1 cm











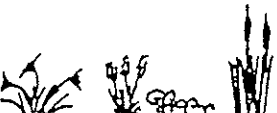
BUSHLAND PLANT SURVEY RECORDING SHEET 2 - use pencil only

From 'Bushland Plant Survey' written by B. Keighery (1994) and published by the Wildflower Society of WA (Inc.), PO Box 64 Nedlands WA 6008

3. VEGETATION STRUCTURE AND COVER

For each layer record - appropriate life form, cover class (see below), and dominant species in each layer.

Cover Class 2-10% 10-30% 30-70% over 70%

		TREES			MALLEES	
		over 30m	10-30m	under 10m	over 8m	under 8m
LIFE FORM						
COVER CLASS (%)		—	2-10%	10-30%	—	—
DOMINANT SPECIES			Jarrah	Euc. haemotoxida Persoonia long. B. grandis ✓		
		SHRUBS over 2m		2m-1m	SHRUBS under 1m	
LIFE FORM						
COVER CLASS (%)		—		2-10%	10-30%	
DOMINANT SPECIES				Xanth. preissii	Hib. hypericoides	
		GRASSES	HERBS	SEDGES	OTHER	
LIFE FORM						
COVER CLASS (%)		—	2-10%	2%		
DOMINANT SPECIES			Duttonia umbrosa 50% Xanth. me			

4. VEGETATION CONDITION

1	'PRISTINE'		COMMENTS burnt within last few years
2	EXCELLENT	✓	
3	VERY GOOD		
4	GOOD		
5	DEGRADED		

BUSHLAND PLANT SURVEY RECORDING SHEET 3 - use pencil only

5. SPECIES PRESENCE

SITE No DARD. 3
Date 12/10/96

Label each plant with plants number, site code, date and plant's name or working name if required
Record on Sheet

- Column 1 plant name-
- Column 2 plant number
- Column 3 flowering time- TICK if species flowering
- Column 4 identification check

From 'Bushland Plant Survey' written by B. Keighery (1994) and published by the Wildflower Society of WA (Inc.), PO Box 64 Nedlands WA 6008.

TREES				SHRUBS (cont.)				HERBS (cont.)			
No	FI	ID		No	FI	ID		No	FI	ID	
<i>Eucalyptus marginata</i> ^{no}		✓		<i>Tetradlea</i> ? <i>hirsuta</i>	26			? <i>Podalyria</i>			
<i>Eucalyptus haemata</i> ^{no}		✓		<i>Scaevola</i> <i>sp.</i>	28			? <i>Poranthemum</i> <i>sp.</i>			
<i>Banksia grandis</i> ^{no}		✓		<i>Hovea chorizemifolia</i>	54			<i>Stylidium</i> <i>sp.</i>			
<i>Prosopea longifolia</i> ^{no}		✓		<i>Mascocarpus</i> <i>sp.</i>				<i>Tubularia</i> <i>sp.</i>			
				<i>Astroblomus ciliatum</i>	58			<i>Conostylis</i> <i>sp.</i>			
MALLEES				GRASSES							
				<i>Amphipogon turbinatus</i>	35	✓	✓	<i>Stylidium schoenoides</i>	25		
				<i>Tetraria</i>	50	✓		<i>Colpodenia</i> ? <i>hirta</i>	53		
SHRUBS				HERBS							
<i>Dampiera</i> <i>sp.</i>	7	✓	✓	<i>Burchardia</i> <i>sp.</i>	65	✓		<i>Johnsonia</i> <i>sp.</i>	55		
<i>Xanthorrhoea gracilis</i>	5	✓	✓	<i>Thysanotus</i> <i>sp.</i>	62			<i>Lomandra</i> <i>sp.</i>	56	✓	
<i>Xanthorrhoea</i> <i>sp.</i>	6	✓	✓	<i>Thelmitia</i> <i>sp.</i>	63			<i>Lomandra</i> <i>sp.</i>	57		
<i>Kennedia coccinea</i>	8	✓	✓	<i>Thelmitia</i> <i>sp.</i>	63			<i>Thysanotus pseudojuncus</i>	59	bud	✓
<i>Boscabea ornata</i>	9	✓	✓	<i>Thelmitia</i> <i>sp.</i>	63			<i>Caladenia</i> <i>sp.</i>	60		
<i>Dryandra</i> <i>sp.</i>	10	✓	✓	<i>Thelmitia</i> <i>sp.</i>	63			SEDGES			
<i>Adiantum barbatum</i>	11	✓	✓	<i>Thelmitia</i> <i>sp.</i>	63			<i>Tetraria</i> <i>sp.</i>	36		✓
<i>Labiella punctata</i>	12		✓	<i>Thelmitia</i> <i>sp.</i>	63			<i>Tetraria</i> <i>sp.</i>	36		✓
<i>Hibbertia</i> <i>sp.</i>	13	✓		<i>Thelmitia</i> <i>sp.</i>	63			<i>Tetraria</i> <i>sp.</i>	36		✓
<i>Eriostemon</i> <i>sp.</i>	14	✓	✓	<i>Thelmitia</i> <i>sp.</i>	63			<i>Tetraria</i> <i>sp.</i>	36		✓
<i>Petrophile</i> <i>sp.</i>	15			<i>Thelmitia</i> <i>sp.</i>	63			<i>Tetraria</i> <i>sp.</i>	36		✓
<i>Hypocadmona</i> <i>sp.</i>	16	✓	✓	<i>Thelmitia</i> <i>sp.</i>	63			<i>Tetraria</i> <i>sp.</i>	36		✓
<i>Hibbertia</i> <i>sp.</i>	17	✓	✓	<i>Thelmitia</i> <i>sp.</i>	63			<i>Tetraria</i> <i>sp.</i>	36		✓
<i>Hibbertia</i> <i>sp.</i>	18	✓		<i>Thelmitia</i> <i>sp.</i>	63			<i>Tetraria</i> <i>sp.</i>	36		✓
<i>Gonolobum</i> <i>sp.</i>	19	bud		<i>Thelmitia</i> <i>sp.</i>	63			<i>Tetraria</i> <i>sp.</i>	36		✓
<i>Styphelia</i> <i>sp.</i>	20			<i>Thelmitia</i> <i>sp.</i>	63			<i>Tetraria</i> <i>sp.</i>	36		✓
<i>Acacia</i> <i>sp.</i>	21			<i>Thelmitia</i> <i>sp.</i>	63			<i>Tetraria</i> <i>sp.</i>	36		✓
<i>Hakea</i> <i>sp.</i>	22	✓		<i>Thelmitia</i> <i>sp.</i>	63			<i>Tetraria</i> <i>sp.</i>	36		✓
<i>Prosopea</i> <i>sp.</i>	23			<i>Thelmitia</i> <i>sp.</i>	63			<i>Tetraria</i> <i>sp.</i>	36		✓
<i>Leucopogon</i> <i>sp.</i>	64			<i>Thelmitia</i> <i>sp.</i>	63			<i>Tetraria</i> <i>sp.</i>	36		✓

ADJACENT SPECIES

<i>Acacia</i> <i>sp.</i>			
<i>Caladenia</i> <i>sp.</i>			
<i>Conostylis</i> <i>sp.</i>	48		
<i>Hakea</i> <i>sp.</i>	66	✓	
<i>Leschenaultia</i> <i>sp.</i>			
<i>Leschenaultia</i> <i>sp.</i>	67	✓	

BUSHLAND PLANT SURVEY RECORDING SHEET 1- use pencil only

BUSHLAND AREA _____ SITE NUMBER DARD 4

DATE TRIP 13.10.96 RECORDERS Grog Micky Anne Rosemary

DATE TRIP _____ RECORDERS _____

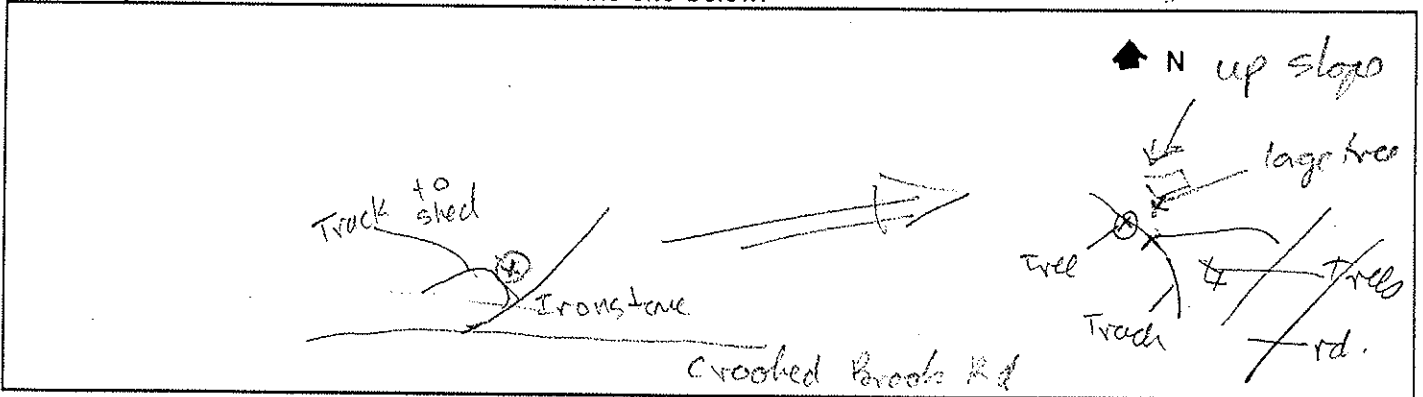
DATE TRIP _____ RECORDERS _____

BOTANIST _____

1. LOCATION of the QUADRAT

From 'Bushland Plant Survey' written by B. Keighery (1994) and published by the Wildflower Society of WA (Inc.), PO Box 64 Nedlands WA 6008.

Mud Map Draw a sketch of the location of the site below.



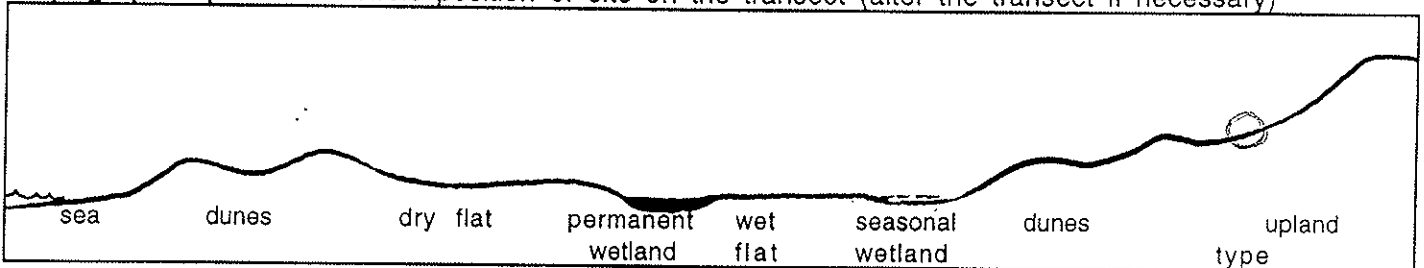
Road Location

Geographic Location Latitude 33° 27.544' S Longitude 115° 48.646' E Altitude _____

Reference Map _____

Photograph Photographer's Name _____ Photo No _____

Topographic position Circle position of site on the transect (alter the transect if necessary)



2. SITE DATA Circle the correct response.

Slope flat gentle steep **Aspect** N NE E SE S SW (W) NW

Surface Soil sandy loam **Colour** brown
Exposed rock type % surface _____

Sub-surface Soil gravel **Colour** _____
Rock 5% type some gravel / not much depth to rock _____

Drainage well mod poor depth water _____ cm **Wet** all year winter/spring

Litter	<u>70</u> % cover	Bare Ground	<u>5</u> % cover
Depth	<u>21</u> cm		

























BUSHLAND PLANT SURVEY RECORDING SHEET 2 - use pencil only

From 'Bushland Plant Survey' written by B. Keighery (1994) and published by the Wildflower Society of WA (Inc.), PO Box 64 Nedlands WA 6108.

3. VEGETATION STRUCTURE AND COVER

For each layer record - appropriate life form, cover class (see below) and dominant species in each layer.

Cover Class 2-10% 10-30% 30-70% over 70%

		TREES			MALLEES	
		over 30m	10-30m	under 10m	over 8m	under 8m
LIFE FORM				 		
COVER CLASS (%)			2-10			
DOMINANT SPECIES			<i>E. calcophylla</i> <i>E. marginata</i>			
		SHRUBS		SHRUBS		
		over 2m	2m-1m	under 1m		
LIFE FORM		  	  	   		
COVER CLASS (%)		2-10		10-30		
DOMINANT SPECIES		<i>X. affinis</i>		<i>A. amplexicaulis</i> <i>H. leucorhiza</i>		
		GRASSES	HERBS	SEDGES	OTHER	
LIFE FORM		 	  	  		
COVER CLASS (%)		<2	10-30	2-10		
DOMINANT SPECIES						

4. VEGETATION CONDITION

1	'PRISTINE'		COMMENTS Five 3-4 years ago A little weed invasion.
2	EXCELLENT	✓	
3	VERY GOOD		
4	GOOD		
5	DEGRADED		

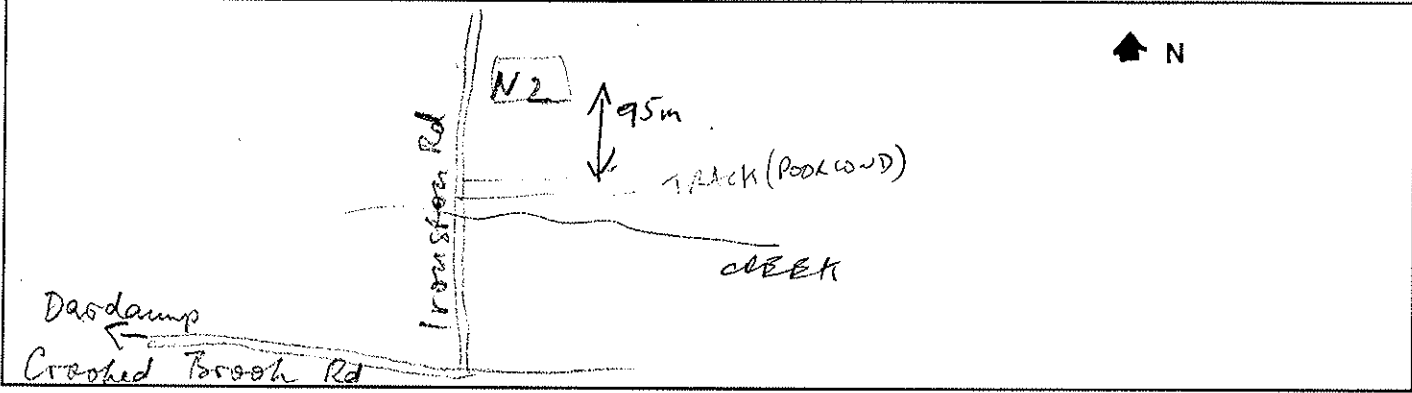
BUSHLAND PLANT SURVEY RECORDING SHEET 1- use pencil only

BUSHLAND AREA Dardamp SITE NUMBER Dard - N2
 DATE TRIP 13/10/96 RECORDERS Neill, Shirley, Margaret, Bernhard
 DATE TRIP _____ RECORDERS _____
 DATE TRIP _____ RECORDERS _____
 BOTANIST _____

1. LOCATION of the QUADRAT

From 'Bushland Plant Survey' written by B. Keighery (1994) and published by the Wildflower Society of WA (Inc.), PO Box 64 Nedlands WA 6008.

Mud Map Draw a sketch of the location of the site below.

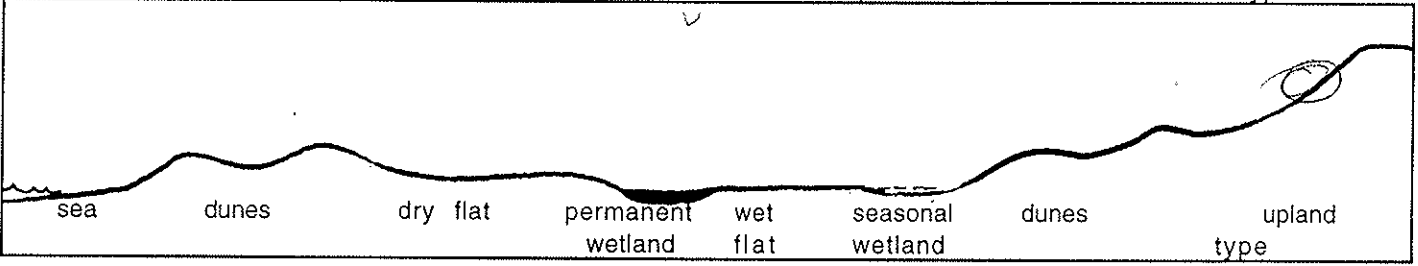


Road Location off Ironstone Rd

Geographic Location Latitude 33 27.209 S Longitude 115 49.618 E Altitude _____
 Reference Map _____

Photograph _____ Photographer's Name Margaret Photo No _____

Topographic position Circle position of site on the transect (alter the transect if necessary)



2. SITE DATA Circle the correct response.

Slope flat gentle steep Aspect N NE E SE S SW W NW

Surface Soil loam Colour brown
 Exposed rock type laterite % surface 5-10%

Sub-surface Soil _____ Colour _____
 Rock type _____ depth to rock _____

Drainage well mod poor depth water _____ cm Wet all year winter/spring

Litter 30-70 % cover _____ Bare Ground 2-10 % cover _____
 Depth _____ cm < 1cm












BUSHLAND PLANT SURVEY RECORDING SHEET 2 - use pencil only

From 'Bushland Plant Survey' written by B. Keighery (1994) and published by the Wildflower Society of WA (Inc.), PO Box 64 Nedlands WA 6008.

3. VEGETATION STRUCTURE AND COVER

For each layer record - appropriate life form, cover class (see below) and dominant species in each layer.

Cover Class 2-10% 10-30% 30-70% over 70%

LIFE FORM	TREES			MALLEES	
	over 30m	10-30m	under 10m	over 8m	under 8m
					
		10-30%	10-30		
		Jacrah	Manni Pteronia		
LIFE FORM	SHRUBS		SHRUBS		
	over 2m	2m-1m	under 1m		
					
			30-70		
	Xanthorrhoea praezii	Xanthorrhoea praezii Zamia	Xanthorrhoea praezii Hakea stenocarpa Petrophile sphaerocarpa Bossiaea aff. eriocarpa		
LIFE FORM	GRASSES	HERBS	SEDGES	OTHER	
					
		2-10			
		Paterosmia xanth.			

4. VEGETATION CONDITION

1	'PRISTINE'		COMMENTS burnt 1-2 yrs.
2	EXCELLENT	✓	
3	VERY GOOD		
4	GOOD		
5	DEGRADED		

DMP 05

BUSHLAND PLANT SURVEY RECORDING SHEET 3 - use pencil only

5. SPECIES PRESENCE

Label each plant with plants number, site code, date and plant's name or working name if required

SITE No DARD N-2

Record on Sheet

Date 13/10/92

- Column 1 plant name-
- Column 2 plant number
- Column 3 flowering time- TICK if species flowering
- Column 4 identification check

From 'Bushland Plant Survey' written by B. Keighery (1994) and published by the Wildflower Society of WA (Inc.), PO Box 64 Nedlands WA 6008.

TREES	No	FI	ID	SHRUBS (cont.)	No	FI	ID	HERBS (cont.)	No	FI	ID
Jarrah	1			Lybocentris comata	24			Mitella tenuifolia	41		
Manni	2			Scaevola striata group	25			Myrsine laevis	42		
Banksia grandis	3							Tridaxnema pilosa	43		
Persea longifolia	4							Tetradlea hirsuta	44		
								Lomandra purpurea	45		
								Lomandra sericea	46		
MALLEES								Lomandra ? sordida	47		
								Thelmitra blue	48		
				GRASSES				Caladenia flava	49		
				grass	35			Eriochilus dilatatus	50		
								Lera hookeri var. hirsuta	51		
								Chaenactis complanata	52		
SHRUBS								Lurula meridiana	53		
Petrophile sphaerocarpa	5			HERBS							
Hakea stenocarpa	6			Conosperma virgatum	55			SEDGES			
Bassia aff. erio carpa	7			Opercularia albiflora	56			Tetraria octandra	54		
Hakea strictocarpa	8			Billardiera ciliata	57			Coccoloba	54		
Eriostemon spicatum	9			Senecio ? sp.	59			Tetraria canalicata	58		
Lybocentris hypoleuca	10			Lomandra sp. 1	60			Lomandra sp. 2	61		
Macrorhynchus 'ricollii'	11			HERBS				Lomandra sp. 3	62		
Leptomeria	12			Paterosmia umbrosa xanthina	26			Lomandra sp. 4	63		
Stachys pulchella	13			Drosera pallida	27			Lappula sp. hirsuta	64		
Georhynchus thymoides	14			Losocarya fasciculata	28			Thysanotus speciosus	65		
two colours				Paterosmia ? sp.	29			Poa densiflora	66		
Lachenalia biloba	15			Paterosmia hirsutoides	30			Lomandra sp. 5	67		
Lomandra lidleyi	16			Stylidium pilosum	31			Sterculaceae ? gen ? sp.	68		
Hibbertia cummingsii	17			Hibbertia adnata homalocarpa	32			Trichostema	69		
Tamara lucida	18			Lomandra sp.	33						
Smilax sp.	19			Thysanotus ? ciliatus	34			ADJACENT			
Xanthorrhoea preissii	20			Atrosora eschscholoides	36			Helianthus barbigerus	70		
Xanthorrhoea maculata	21			Atrosora ? holosericea	37			Crostylis setigera	71		
Leucopogon pycnostachyus	22			Platysace ? sp.	38			DIVUS' sp	92		
Leucopogon axillaris	23			Therostylis ?	40						

DARD #6

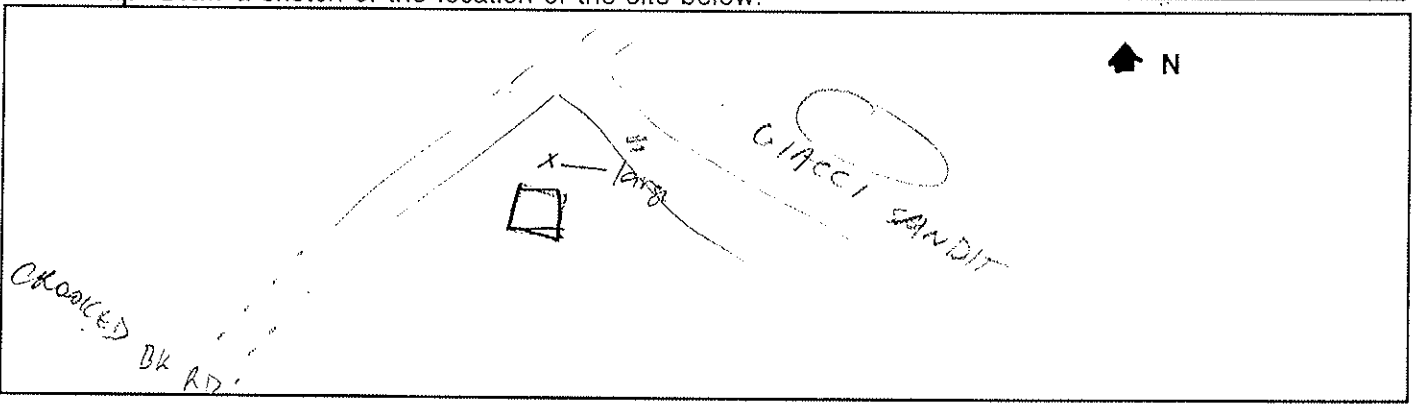
BUSHLAND PLANT SURVEY RECORDING SHEET 1- use pencil only

BUSHLAND AREA DARDINUP SYSTEM 6 SITE NUMBER DARD CT (pm.)
 DATE TRIP 13/10/96 RECORDERS _____
 DATE TRIP _____ RECORDERS _____
 DATE TRIP _____ RECORDERS _____
 BOTANIST CIT.

From 'Bushland Plant Survey' written by B. Keighery (1994) and published by the Wildflower Society of WA (Inc.), PO Box 64 Nedlands WA 6008.

1. LOCATION of the QUADRAT

Mud Map Draw a sketch of the location of the site below.

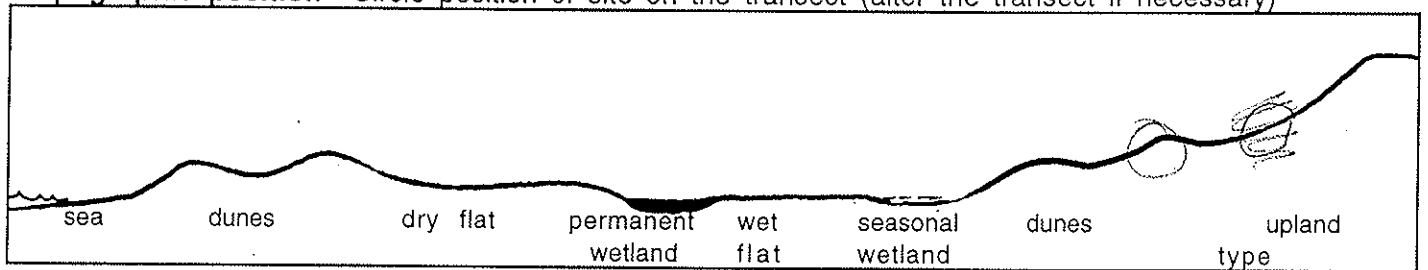


Road Location

Geographic Location Latitude _____ S Longitude _____ E Altitude _____
 Reference Map _____

Photograph _____ Photographer's Name _____ Photo No _____

Topographic position Circle position of site on the transect (alter the transect if necessary)



2. SITE DATA Circle the correct response.

Slope flat gentle steep Aspect N NE E SE S SW W NW

Surface Soil sand Colour grey
 Exposed rock type — % surface —

Sub-surface Soil sand Colour white
 Rock type — depth to rock _____

Drainage well mod poor depth water _____ cm Wet all year winter/spring

Litter 30-70 % cover _____
 Depth <1 cm Bare Ground 22 % cover














BUSHLAND PLANT SURVEY RECORDING SHEET 2 - use pencil only

From 'Bushland Plant Survey' written by B. Keighery (1994) and published by the Wildflower Society of WA (Inc.), PO Box 64 Nedlands WA 6008.

3. VEGETATION STRUCTURE AND COVER

For each layer record - appropriate life form, cover class (see below), and dominant species in each layer.

Cover Class 2-10% 10-30% 30-70% over 70%

LIFE FORM	TREES			MALLEES	
	over 30m	10-30m	under 10m	over 8m	under 8m
					
			10-30%		
COVER CLASS (%)					
DOMINANT SPECIES			<i>Corymbia kaemleri</i> <i>B. grandis</i> <i>B. laevigata</i>		
LIFE FORM	SHRUBS over 2m		2m-1m	SHRUBS under 1m	
					
			< 2%		30-70%
COVER CLASS (%)					
DOMINANT SPECIES			<i>Mel. myrtaoides</i> <i>Y. occidentalis</i>	<i>Hib. hypericoides</i> <i>Strobilium</i> <i>Yucca</i>	
LIFE FORM	GRASSES	HERBS	SEDGES	OTHER	
					
	< 2%	2-10%	< 2%		
COVER CLASS (%)					
DOMINANT SPECIES		<i>Phlebotan. ciliata</i> <i>Dasmagrostis</i>	<i>Horocorys fasciata</i>		

4. VEGETATION CONDITION

1	'PRISTINE'		COMMENTS large Jarachs fire + logging staghorned no weed invasion
2	EXCELLENT	✓	
3	VERY GOOD		
4	GOOD		
5	DEGRADED		

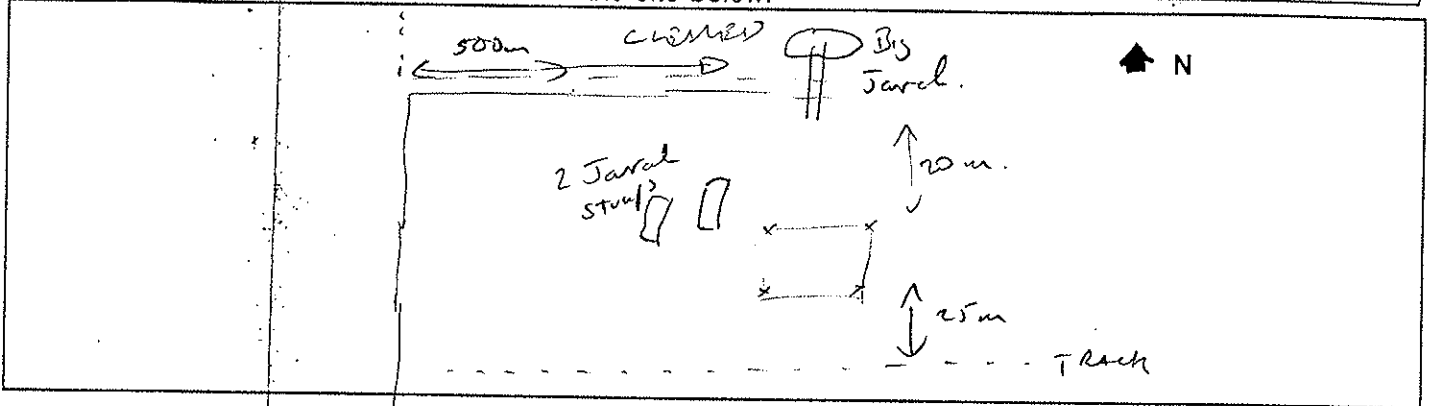
BUSHLAND PLANT SURVEY RECORDING SHEET 1- use pencil only

BUSHLAND AREA DARDAW UP SITE NUMBER DND 07
 DATE TRIP 13/10/96 RECORDERS Margaret, Dean, Ann, Neil
 DATE TRIP _____ RECORDERS _____
 DATE TRIP _____ RECORDERS _____
 BOTANIST _____

From 'Bushland Plant Survey' written by B. Keighery (1994) and published by the Wildflower Society of WA (Inc.), PO Box 64 Nedlands WA 6008.

1. LOCATION of the QUADRAT

Mud Map Draw a sketch of the location of the site below.

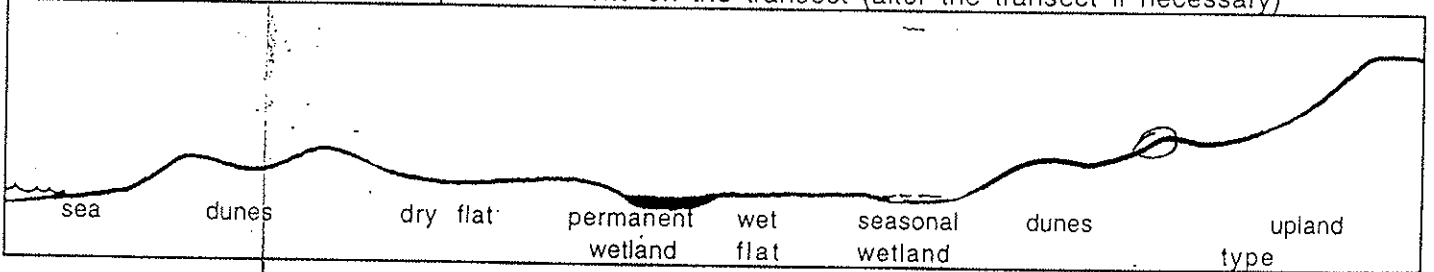


Road Location

Geographic Location Latitude 33 25.963 S Longitude 115 47.018 E Altitude
 Reference Map DOP = 28m

Photograph Photographer's Name Photo No

Topographic position Circle position of site on the transect (alter the transect if necessary)



2. SITE DATA Circle the correct response.

Slope	flat	<u>gentle</u>	steep	Aspect	N	NE	E	SE	S	SW	W	<u>NW</u>	
Surface Soil	<u>GRY SAND</u>						Colour						
Exposed rock	type						% surface						
Sub-surface Soil	<u>GRY SAND</u>						Colour						
Rock	type						depth to rock						
Drainage	<u>well</u>	mod	poor	depth water	cm	Wet	all year	winter/spring					
Litter	<u>30-70</u> % cover			Bare Ground	<u>2-10</u> % cover								
	Depth <u>to 1cm</u> cm												












BUSHLAND PLANT SURVEY RECORDING SHEET 2 - use pencil only

From 'Bushland Plant Survey' written by B. Keighery (1994) and published by the Wildflower Society of WA (Inc.), PO Box 64 Nedlands WA 6008.

3. VEGETATION STRUCTURE AND COVER

For each layer record - appropriate life form, cover class (see below), and dominant species in each layer.

Cover Class 2-10% 10-30% 30 - 70% over 70%

		TREES			MALLEES	
		over 30m	10 - 30m	under 10m	over 8m	under 8m
LIFE FORM			10m 			
COVER CLASS (%)			2-10			
DOMINANT SPECIES			Jarrah			
		SHRUBS		SHRUBS		
		over 2m	2m - 1m	under 1m		
LIFE FORM						
COVER CLASS (%)		2-10	2-10	30-70		
DOMINANT SPECIES		Battlementia grandis Xylaria olearia Persoonia long.	Xanthorrhoea Tuck. ficifolia Drosera ptychodes	Hibiscus Panicum Petrophile lin.		
		GRASSES	HERBS	SEDGES	OTHER	
LIFE FORM						
COVER CLASS (%)			10-30			
DOMINANT SPECIES			Pteris Lomandra ssp Dasyssandra			

4. VEGETATION CONDITION

1	'PRISTINE'		COMMENTS Disturbed now by, damaged to it Sand mining close by
2	EXCELLENT	✓	
3	VERY GOOD		
4	GOOD		
5	DEGRADED		

BUSHLAND PLANT SURVEY RECORDING SHEET 1- use pencil only

BUSHLAND AREA _____ SITE NUMBER JARD 8

DATE TRIP 13.10.96 RECORDERS Greg, Nicky, Diane, Garry

DATE TRIP _____ RECORDERS _____

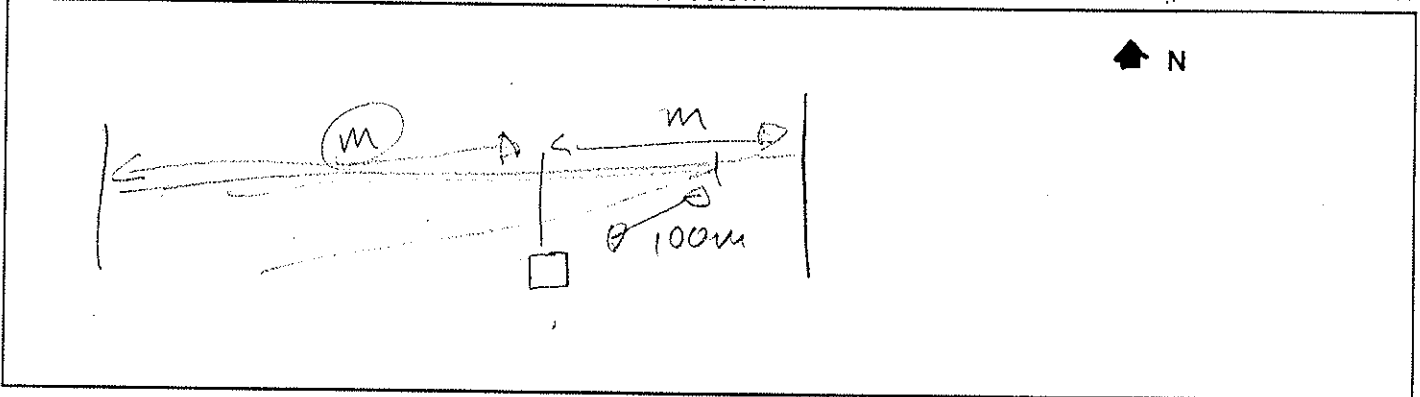
DATE TRIP _____ RECORDERS _____

BOTANIST _____

1. LOCATION of the QUADRAT

From 'Bushland Plant Survey' written by B. Keighery (1994) and published by the Wildflower Society of WA (Inc.), PO Box 64 Nedlands WA 6008.

Mud Map Draw a sketch of the location of the site below.



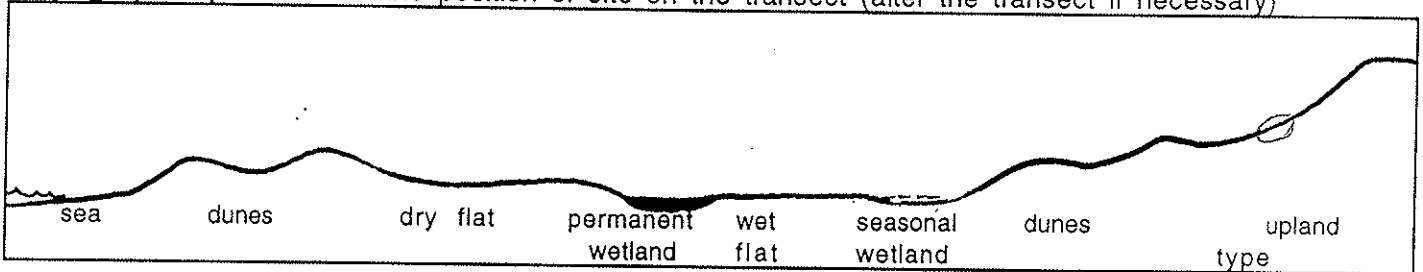
Road Location _____

Geographic Location Latitude 33 25.917 S Longitude 115 47.512 E Altitude _____

Reference Map _____

Photograph Photographer's Name _____ Photo No _____

Topographic position Circle position of site on the transect (alter the transect if necessary)



2. SITE DATA Circle the correct response.

Slope flat gentle steep **Aspect** N NE E SE S SW W NW

Surface Soil laterite with sand **Colour** _____
Exposed rock type laterite 5 % surface

Sub-surface Soil laterite **Colour** _____
Rock type _____ depth to rock _____

Drainage well mod poor depth water cm **Wet** all year winter/spring

Litter	Depth	<u>> 70</u> % cover	Bare Ground	<u>5</u> % cover ✓
		<u>< 1</u> cm		












BUSHLAND PLANT SURVEY RECORDING SHEET 2 - use pencil only

From 'Bushland Plant Survey' written by B. Keighery (1994) and published by the Wildflower Society of WA (Inc.), PO Box 64 Nedlands WA 6008.

3. VEGETATION STRUCTURE AND COVER

For each layer record - appropriate life form, cover class (see below) and dominant species in each layer.

Cover Class 2-10% 10-30% 30-70% over 70%

		TREES			MALLEES	
		over 30m	10-30m	under 10m	over 8m	under 8m
LIFE FORM						
COVER CLASS (%)				2-10		
DOMINANT SPECIES			<i>E. marginata</i>	<i>E. marginata</i> <i>E. haematocylon</i>		
		SHRUBS			SHRUBS	
		over 2m		2m-1m		under 1m
LIFE FORM						
COVER CLASS (%)		2-10		2-10		10-30
DOMINANT SPECIES		<i>Peperomia longifolia</i> <i>B. grandis</i>		<i>Haake pulocarpa</i> <i>Acacia extensa</i>		<i>X. preissii</i>
		GRASSES	HERBS	SEDGES	OTHER	
LIFE FORM						
COVER CLASS (%)		<2	2-10	<2		
DOMINANT SPECIES						

4. VEGETATION CONDITION

1	'PRISTINE'		COMMENTS <i>Jantah logged</i>
2	EXCELLENT	✓	
3	VERY GOOD		
4	GOOD		
5	DEGRADED		

Dord 3 (1)

Drosera erythrorhiza 41

? 45

Isolep. marginata 49

Tetrarrhena laevis 50

Loxo. fascic 52

Hovea chorizem. 54

Pat. babianoides 29

Pteros. aff nana 28

Senecio hispid 43

(*Neurachne alopec* = *Amph. turb* 35)

Platys. tenuissima 32

Operc. apicifl. 51

Thysan. thyrs 59

Acacia latericola 21

Ad. barbigeris 11

Leucop. proping 64

Eriochilus ^{scalpa} 53

? 58

Burch. umb 65

Xanth. hueg 47

Styl. calc 44

Amphip. ? turbin

Stipa 57

Hyp. robustum 16

Trachy pilosa 46

35

Tetra thec. hispidula 26

Cal. flava 27

Boronia spathulata 3

Styl. schoenocels 25

Lom purpurea 52

Dry. lindl. 10

Kenn cocueia 8

Dard (3) — 2

Goodenia eatoniae — 34

Hibbertia cunningh 18

Johns. lupulin 55

Hibb. perfoliata 13

Xanth. preiss 6

Pat. juncea 30

Conost. laxiflora (juncea) 4 1

Lom. purpurea 38

Gomph. preissii 19

Tetr. oct. 36

Damp. lin 7

Pat. xantha 31

Erio. spic 14

Labichea punct 12

Persoon saccata 23

Xanth. gracilis 5

Tetraria cap 40

Lom. preissii 37

Hibb hyp 17

Hak. lissoc. 22

Scoer. striata 33

Lag. hueg. 24

leucop. nutans 20

Thys. spat 62

Cono setig 42

Lom. sericea 39

Hakea stenocarpa 66

Isop. sphaero 15

Euc. haem 1

Bow. erioc (lge) 9

Dard 4 — ①

Pim. sulph. 15

Ken. cocc 16

Coesa micr 21

Agr. scabrum 58

Briza max 25

" minor 26

Bill. variif. 17

Lag. hueg. 37

Erios. spic 42

Platy. tenuiss 45

Hypoc. glabra 27

Caladema 36

Billard. candida 47

Cham corymb. 62

Lom purpurea 67

Tetrarrh. laevis 57

Scaev. strala 37

Trach. pilosa 28

Good. pulchella 40

John. lupul. 54

Isol. marg. 32

Damp. lin 20

Loxo. fascic 46

Choriz. rhomb 48

Grev. pilulifera (ADJ)

Gomph. marg 38

Daucus gloch. 33

Drosera marchantii 50

Lom. sericea 55

Tricory. humilis 65

Danth. occid 66

Lom. ? ^{drum} ~~mutans~~ 60

Dad 4 — (2)

Lev. pusilla 34

Millotia tenuif 51

Centrolep arslala 39

Aira cupiana 63

Hydrocot. pilif 35

Erioch. dilatatus 39

Thely. crinita 61

Styl. calcaratum. 64

Cono. aurea 13

" acul. 14

Boronia (dk pink) 23

Sph. scabrius 18

Hyp. robustus 9

O percul. apic 56

Wuzala merid 40

Trichost nelsii 29

Dry. lind 8

Hak. liss 5

Hak. amplex 4

Leucop. propin 12

Styl. pilif 43

Hibb hyp. 6

Ac. lateric 7

Pat. xantha 24

Boron. spath 22

Hyp. ang. 10

Trich. spath 53

Tetr. cap 59

Xanth. candid 19

Tet. oct 20

Horeatrisp 1

Dard CT — ① = Dard #6

Ad. meiseni 17	Hibb hyp 20
Ad. barbig 16	Mel. thym 19
Erioch. dilat 12	Gomph. knight 6
Loxoc. flexuosa 7	Hyp. robustum 23
Eriost. spic 8	Pet. linearis 5
Stirl. latifolia 15	Damp. linearis 16
Sph. ? median 11	Synaph. favosa 10
Tetr. hispidula	Dav. podophylla 14
Dros. maranth	— — divar 29
Phleb. ciliata 25	Isot. cuenif 64
styl. brunon 39	Ac. nervosa 21
Dasyp. brom 26	Dry. lindley 9
Boss. erioc 25	Ac. extensa 22
Cassytha glabella 31	Dros erythr 45
Gomph. confert 37	Xanth. hueg 27
Anarth. prolif 28	Loxo. fascic 41
Hibb cunningh 32	Ad. barbig
	Hibb huegellii 33

Dard - CT - (2) = DARD 46

Hibb. cunnn (montana) 32

Xanth. pr 38

~~Lyginia barb~~ Hypol. ex 30

Gomph. prassii 34

Borania spath 36

Gomph. polym 35

Acac. applan 40

Tetrar cap 42

Bill varii f. 43

Lom. hermaph 60

Pt. nana 58

Lom. nigricans 59

Ad. meisuri 65

Hak. amplex 62

Lepid. tenuis 50

Lom. ~~pr~~ ^{integra} 51

" caespit 49

Cal. flora 46

Xanth. grac 55

Leuc. prop 54

Tet. hispid

Kunzea micrantha 53

Schoenus subflav. 56

Acac. extensa 60

Jack. ?cap 57

Pat. occ 52

Lys. ciliatam.	33
Alloc. humi.	8
Ph. cil	23
Anarth. prol	47
Dav. phys	56
Lox. flex	24
Hom. sericea	60
" herm	55
Dry lindl	28
Ac. stenopt	30
Leuc. capitell	50
Bor. spath	38
Lep. ang.	61
Pat. occ	39
Styl. brunov	
Cassyth. racemosa	41
Leucop gracillini	60
Melal. thym	7

Hibb. vag.	15
Gomp. knight	16
Conost. pend	26
Hyg. barb	35
Ac. extensa	9
Stack. pub	40
Burch. umb.	36
Ac. appl.	37
Hibb. commutata	63
Thys. multifl	59
Hom nigricans	64
Havea trisperma.	29
Naytsia flor.	54
xanth. huegl	49
Caloth. sang.	38
Calytrix angulata	27
Lepido. tenue	62

Dard 7 — (2)

Styl. brunon 46
 Hyp. exsulca 52
 Tetr. hirsuta 59
 Pim. rosea 17
 Hyp. robust 10
 Eriost. spic 21
 Gomph. cap 31
 Johni acaulis 51
 cham corym 58
 Lech. biloba 58

Boss. erioc 19
 Dasy. brom 22
 Leuc. oxycedrus
 (nutans) 18
 Ac. semitrall 20
 Cal. attingens 57
 Isotr. cuenif 34
 Cassytha. glabella 13

Dard 8 - NO2 - (7)

Platy tenuiss 41

Dros. march. 59

Trachy pilosa 50

Mesomel. graciliceps (49)

A.c. appplanata 56

Keun coce 61

Drosera menz 31

Dard. 8

Burch. umbell	26
Conostylis aurea	32
Gomph. preussii	23
Leucopogon propinquus	15
Opercul. apicigera	25
Thys. spatens	64
Mesomel. graciliceps	
Styl. piliferum	45
Thelym. crinita	51
Isop. sphaeroceph	11
Hakea stenocarpa.	43
Gomph. polym	57

Petroica capillaris	48
Xanth. huegelii	47
Ac. extensa	8
Hibb. hyp	10
Pers. longif	4
Hak. cycloc	7
Ac. latricola	9
Bossa. erioc (lge)	14
Dry. lindl	12
Lepid. ang	53
Xanth. cilia	63

CONTACT DR N. GIBSON CALM WOODVALE for further information.

Flora list for C86 Dardanup MPA (extracted from Swan Coastal Plain database, Dard 1-3, 178 taxa, 4/5/1995).

Department of Environmental Protection System 6 Update: Site Based Flora List C86 Dardanup MPA

(extracted from the CALM Swan Coastal Plain database, Dard 1-3, 178 taxa, 4/5/95)

Anthericaceae

Agrostocrinum scabrum
Chamaescilla corymbosa
Johnsonia acaulis
Johnsonia lupulina
Laxmannia sessiliflora subsp. australis
Thysanotus arenarius
Thysanotus patersonii
Thysanotus pseudojunceus
Thysanotus thyrsoides
Tricoryne elatior
Tricoryne humilis

Apiaceae

Actinotus glomeratus
Platysace tenuissima
Trachymene pilosa
Xanthosia candida
Xanthosia huegelii

Asteraceae

* Hypochaeris glabra
Millotia tenuifolia
Pithocarpa corymbulosa
Quinetia urvillei
* Ursinia anthemoides

Campanulaceae

* Wahlenbergia capensis
Wahlenbergia preissii

Casuarinaceae

Allocasuarina thuyoides

Centrolepidaceae

Centrolepis drummondiana
Centrolepis sp. scps

Colchicaceae

Burchardia umbellata

Crassulaceae

Crassula colorata

Cyperaceae

Cyathochaeta avenacea
Lepidosperma angustatum
Mesomelaena graciliceps
Mesomelaena tetragona
Schoenus curvifolius
Tetraria capillaris
Tetraria octandra

CONTACT DR N. GIBSON CALM WOODVALE for further information.

Flora list for C86 Dardanup MPA (extracted from Swan Coastal Plain database, Dard 1-3, 178 taxa, 4/5/1995).

Tricostularia neesii var. *neesii*

Dasypogonaceae

Dasypogon bromeliifolius
Kingia australis
Lomandra brittanii
Lomandra caespitosa
Lomandra hermaphrodita
Lomandra nigricans
Lomandra nutans
Lomandra sericea
Lomandra spartea

Dilleniaceae

Hibbertia acerosa
Hibbertia amplexicaulis
Hibbertia commutata
Hibbertia huegelii
Hibbertia hypericoides
Hibbertia racemosa
Hibbertia rhadinopoda
Hibbertia vaginata

Droseraceae

Drosera paleacea scps subsp. *paleacea*
Drosera platystigma
Drosera sp. scps

Epacridaceae

Andersonia caerulea
Andersonia heterophylla
Conostephium pendulum
Leucopogon aff. *capitellatus* scps (BJK&NG 156)
Leucopogon aff. *gracillis* scps
Leucopogon conostephioides
Leucopogon glabellus
Lysinema ciliatum
Sphenotoma capitatum

Euphorbiaceae

Monotaxis occidentalis
Stachystemon vermicularis

Goodeniaceae

Dampiera alata
Dampiera linearis
Goodenia caerulea
Lechenaultia biloba
Scaevola calliptera

Haemodoraceae

Anigozanthos humilis
Anigozanthos manglesii
Conostylis aculeata
Phlebocarya ciliata

CONTACT DR N. GIBSON CALM WOODVALE for further information.

Flora list for C86 Dardanup MPA (extracted from Swan Coastal Plain database, Dard 1-3, 178 taxa, 4/5/1995).

Iridaceae

- Patersonia babianoides
- Patersonia juncea
- Patersonia limbata
- Patersonia occidentalis
- Patersonia umbrosa var. xanthina

Lamiaceae

- Hemiandra pungens
- Hemigenia incana

Lauraceae

- Cassytha racemosa

Lindsaeaceae

- Lindsaea linearis

Loganiaceae

- Logania serpyllifolia

Mimosaceae

- Acacia "applanata" scps map
- Acacia nervosa
- Acacia pulchella
- Acacia semitrullata
- Acacia teretifolia
- Acacia varia var. varia ms scps

Myrtaceae

- Agonis grandiflora
- Calothamnus sanguineus
- Calytrix flavescens
- Eremaea pauciflora subsp. pauciflora scps
- Eucalyptus haematoxylon
- Eucalyptus marginata
- Hypocalymma angustifolium
- Hypocalymma robustum
- Kunzea recurva
- Melaleuca acerosa
- Melaleuca aff. trichophylla scps
- Melaleuca thymoides
- Scholtzia involucrata

Olacaceae

- Olax benthamiana

Orchidaceae

- Caladenia attingens warr subsp. attingens
- Caladenia flava
- Caladenia sp. scps
- Eriochilus dilatatus
- Leporella fimbriata
- Lyperanthus nigricans
- * Monadenia bracteata
- Thelymitra aff. pauciflora scps
- Thelymitra crinita

CONTACT DR N. GIBSON CALM WOODVALE for further information.

Flora list for C86 Dardanup MPA (extracted from Swan Coastal Plain database, Dard 1-3, 178 taxa, 4/5/1995).

Papilionaceae

Bossiaea eriocarpa
Daviesia angulata
Daviesia physodes
Gompholobium knightianum
Gompholobium polymorphum
Gompholobium tomentosum
Hovea trisperma var. grandiflora
Hovea trisperma var. trisperma
Jacksonia sp. Busselton (G.J. Keighery 4482) PN
Nemcia "cordata" scps (BJK & NG 032) (Groves sn)
Sphaerolobium aff. macranthum FPR

Pittosporaceae

Billardiera variifolia

Poaceae

* Aira sp. scps
Amphipogon amphipogonoides
Amphipogon turbinatus
* Briza maxima
* Briza minor
Danthonia occidentalis
Stipa compressa
Tetrarrhena laevis

Polygalaceae

Comesperma volubile

Proteaceae

Adenanthos meisneri
Banksia attenuata
Banksia grandis
Dryandra armata
Dryandra bipinnatifida
Dryandra nivea
Grevillea quercifolia
Hakea amplexicaulis
Hakea cyclocarpa
Hakea lissocarpa
Hakea stenocarpa
Isopogon sphaerocephalus
Lambertia multiflora
Persoonia saccata
Petrophile linearis
Petrophile striata
Stirlingia latifolia
Synaphea petiolaris
Xylomelum occidentale

Restionaceae

Anarthria prolifera
Hypolaena exsulca
Lepyrodia macra
Loxocarya fasciculata

CONTACT DR N. GIBSON CALM WOODVALE for further information.

Flora list for C86 Dardanup MPA (extracted from Swan Coastal Plain database, Dard 1-3, 178 taxa, 4/5/1995).

Loxocarya flexuosa
Lyginia barbata

Rutaceae

Boronia ramosa
Boronia spathulata
Eriostemon spicatus

Stackhousiaceae

Tripterococcus brunonis

Stylidiaceae

Levenhookia pusilla
Levenhookia stipitata
Stylidium amoenum
Stylidium brunonianum
Stylidium junceum
Stylidium piliferum
Stylidium repens

Thymelaeaceae

Pimelea preissii
Pimelea sulphurea

Tremandraceae

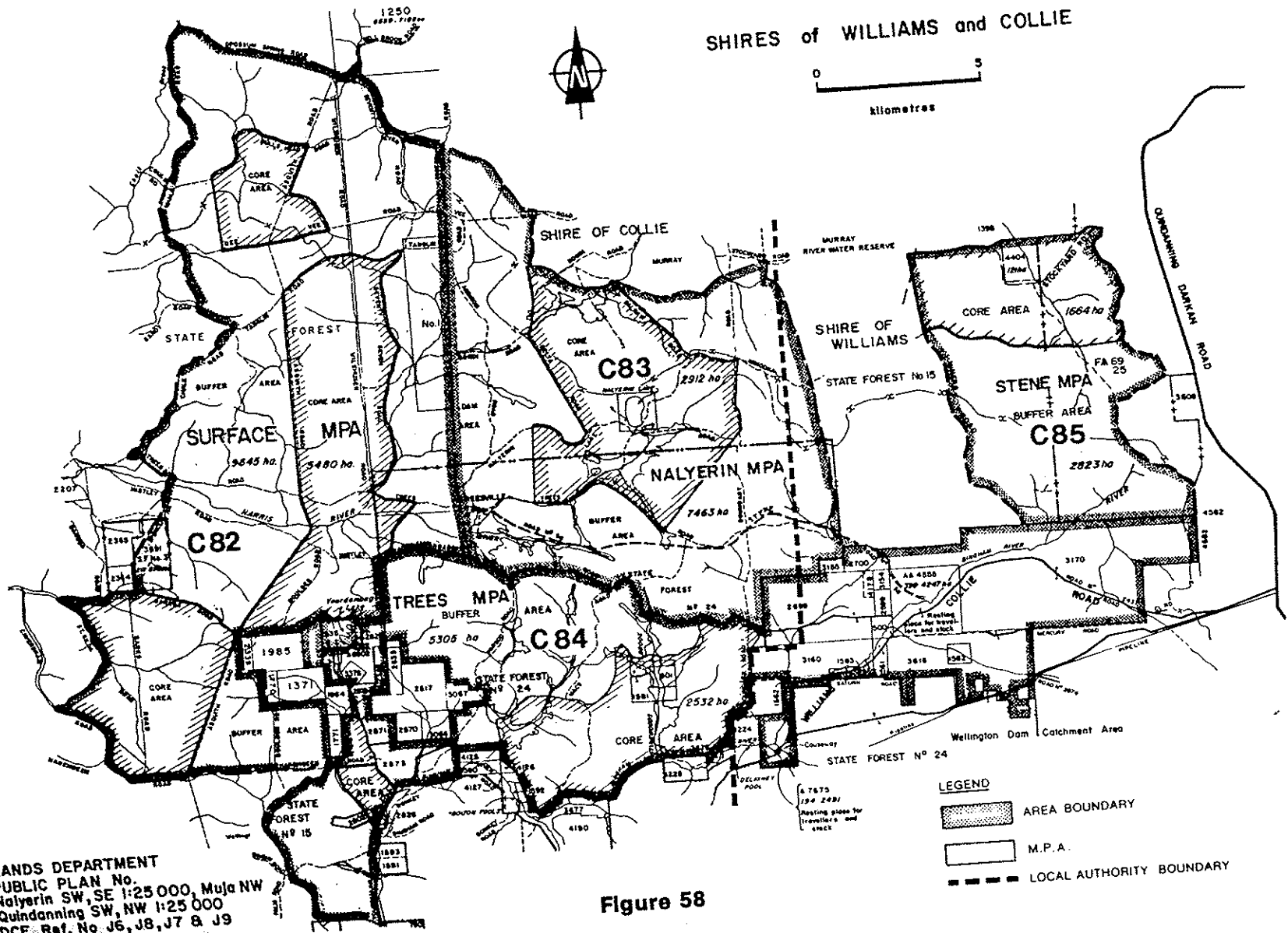
Tetratheca hirsuta

Xanthorrhoeaceae

Xanthorrhoea acanthostachya
Xanthorrhoea gracilis

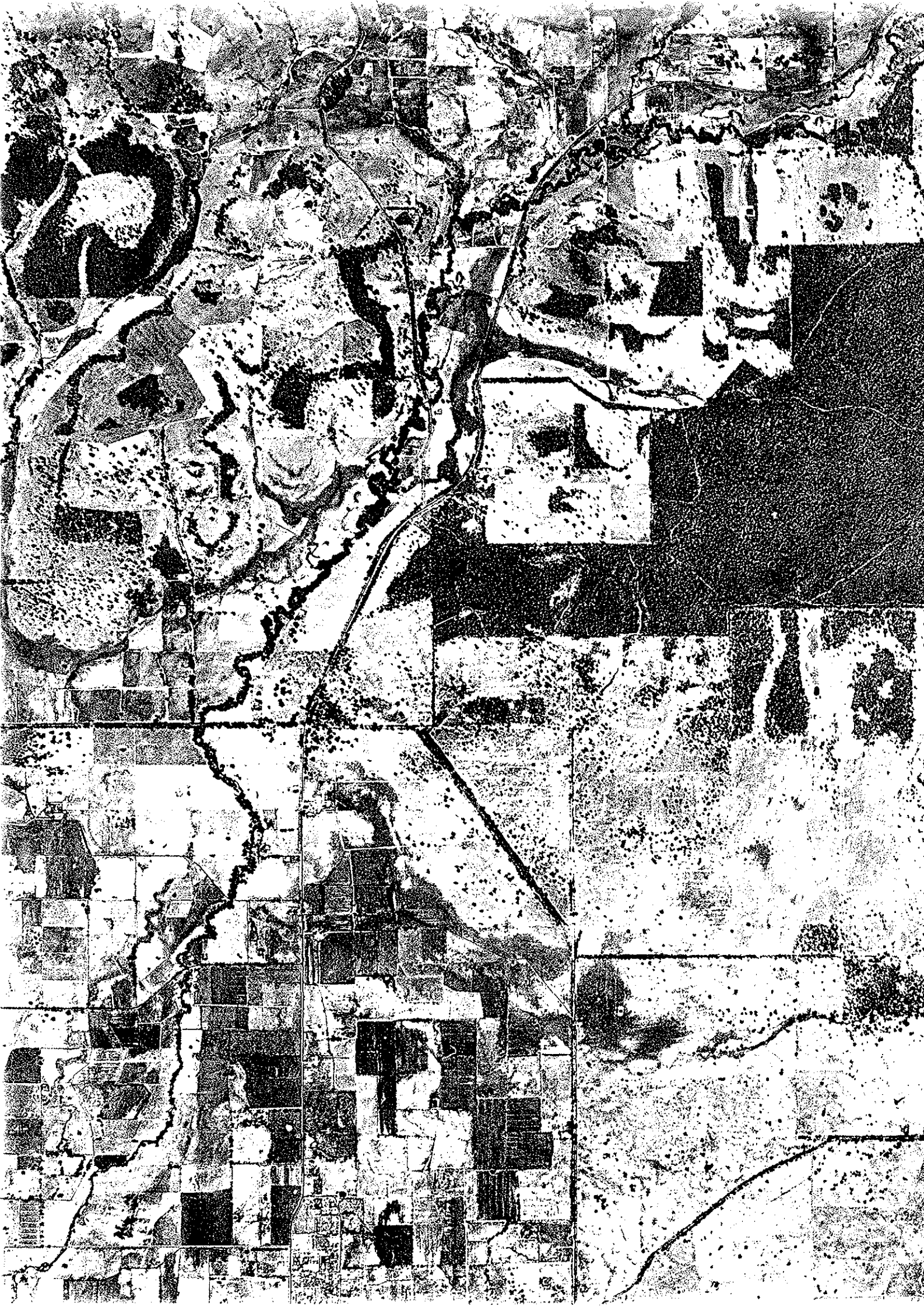
Zamiaceae

Macrozamia riedlei



LANDS DEPARTMENT
 PUBLIC PLAN No.
 Nalyerin SW, SE 1:25 000, Muja NW
 Quindanning SW, NW 1:25 000
 DCE Ref. No J6, J8, J7 & J9

Figure 58




MAP 2: Vegetation Map

Key

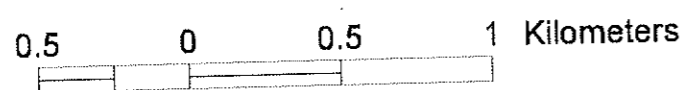
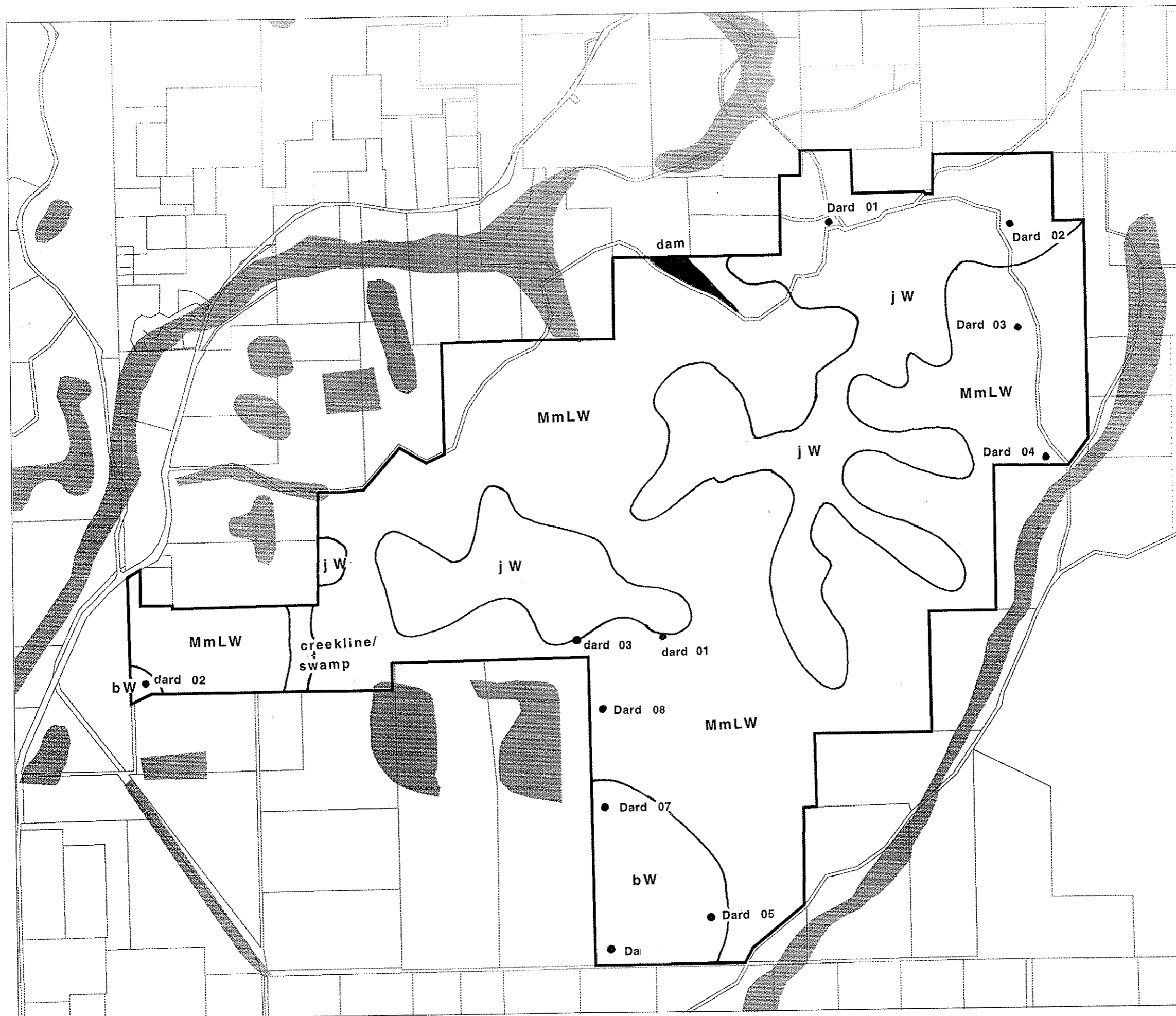
 System 6 Boundary

 Cadastral Boundaries

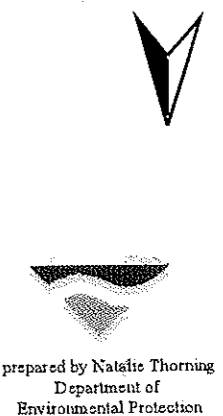
 Remant vegetation outside State Forest (Agriculture WA)

dard 01 - 03 Gibson *et al.* (1994) Sites

Dard 1 - 08 Department of Environmental Protection Sites



1:25000



prepared by Natalie Thorning
Department of
Environmental Protection

Map 2. Vegetation Map

BLW = Barren
J/M = (JA Juncus - rarely Marri) S/N = Creeks or Swamp

