

Mane

Southern Bunbury Remnant Bushland -Consolidated vascular plant Species List including B. Koch, 1990 (a) ; Hart, Simpson & Assoc. (h), Gibson & al .1994 (g) and B.J. Keighery, 13/3/96 (k) Also included are species collected and identified by B. Bischoff during 1996/1997 (b), A. Weston (w), Bunbury Naturalists' Club (n), Kathy Meney, 5/3/99 (M)

	MAID	ODE	USH	5MB	COL	MAN	AIRP	PRR
Ocean Dve W, Maidens								
Ocean Dve E								
Usher								
5-Mile Brook.- Hay Park								
College Gve								
Manea Park, Eedle Ck.								
Air Port, N and S of								
N.-Boy. Rd. -Preston R.								
.Adiantaceae (7)								
1 Adiantum aethiopicum								b 1
2 Cheilanthes sieberi								b 2
.Aizoaceae (110)								
* Carpobrotus virescens 1	kh 1							
* Tetragonia decumbens 2	h 2							
.Amaranthaceae (106)								
2 Ptilotus stirlingii	h 3							
3 Ptilotus manglesii					b			
.Anthericaceae (54F)								
4 Agrostocrinum scabrum	kh 4			kb	a	a		b 3
5 Amocrinum preissii	h 5							
Arthropodium see Dichopogon								
6 Caesia micrantha	k 6	b	b	k				
7 Caesia occidentalis						a		
8 Chamaescilla corymbosa		b	b	k	bk	kb		
9 Chamaescilla spiralis						b		
10 Corynotheca micrantha	kh 7				k	b		
1 Dichopogon capillipes	k 6	b	b		a k	a		
2 Dichopogon preissii						k	b	
3 Johnsonia acaulis						ak		
4 Sowerbea laxiflora	hk 9	b k	b	kb	ab	ak	b	b 4
5 Thysanotus arenarius	k 10	b k	b					
6 Thysanotus dichotomus					a			

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7	Thysanotus manglesianus						k		
	T. manglesianus/patersonii					b	b	b	b
8	Thysanotus multiflorus				k w	b	a	b	
9	Thysanotus patersonii	k 11		b			a?	b	
20	Thysanotus tenellus.						a	b	
	1 Thysanotus thyrsoides				k w		k		
2	Tricoyne elatior	h 12					kab		
.Apiaceae (281)									
3	Daucus glochidiatus	k 13	k	b			ak	ak	
4	Eryngium pinnatifidum subsp								
	pinnatifidum MS	k 14	k						
5	Eryngium rostratum							k	
6	Homalosciadium homalocarpum	k 15	k					ak	
7	Hydrocotyle alata				k w			k	
8	Hydrocotyle diantha	k 16			w			k	
9	Hydrocotyle hispidula	k 17							
30	Hydrocotyle sp.	k 18							
1	Platysace compressa					b	akb	b	
4	Schoenolaena juncea						b		
2	Trachymene pilosa	k 17	kb			kb	a	akb	
4	Xanthosia huegelii			b	k		ka	b	
Aponogetonaceae									
5	Aponogeton hexatepalus								record
Araceae									
*	Zantedeschia aethiopica	3	b 20					b	b
Asclepiadaceae									

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*Gomphocarpus fruticosus					w				
Asparagus *Asparagus Asphodeliaceae (54G)									b
*Trachyandra divaricata	4	hk b 21	b				b		
.Asteraceae (345)									
*Arctotheca calendula			b		b		n	k	b.
*Arctotheca populifolia	5	h 22							
*Aster subulatus	6	h 23						a	
Asteridea pulverulenta		k 4	k				k	ak	
Brachycome bellidioides									b
Brachycome iberidifolia			k				a	a b	
Calocephalus angianthoides ?									
*Carduus tenuiflorus	7	h 5							
*Conyza albida								a	
Cotula coronopifolia	40					k		ka	b
Cotula cotuloides	1					k n			
*Cotula turbinata			b		b	k w		a	
Craspedia sp	2		b		b		ab	a b	b
*Digitaria sanguinalis								a	
*Dittrichia graveolens								a	
Helichrysum see Ozothamnus	3								
Hyalosperma cotula	4							ak	
*Hypochoeris glabra	8	hk 6	bk		b	k	bk	ak	b b
*Lactuca saligna								a	
*Lactuca serriola								a	
Lagenifera huegelii	5		b		b		bk	ba	
Millotia myosotidifolia	6		k					a	
Millotia tenuifolia	7								
Olearia axillaris		hkb 7							
Ozothamnus cordatus	9	hk 8	b				a		

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?	50	*Picris angustifolia							
		Podolepis gracilis swamp							
		Podolepis nutans							
		Podotheca angustifolia							
		Pogonolepis stricta							
		Quinetia urvillei							
		Senecio hispidulus							
		Senecio lautus							
		Senecio lautus subsp.maritimus							
		*Senecio vulgaris							
		Siloxerus filifolius							
		Siloxerus humifusus							
	60	Siloxerus sp.							
		*Sonchus oleraceus							
		*Ursinia anthemoides							
		*Vellereophyton dealbatum							
		Waitzia citrina							
		Waitzia suaveolens							
Brassicaceae (138)									
		*Heliophila pusilla							
Campanulaceae (339)									
		Wahlenbergia multicaulis							
		Wahlenbergia preissii							
		*Wahlenbergia capensis							
Caryophyllaceae (113)									
		*Corrigiola littoralis							
		*Petrorhagia velutina							

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. *Silene gallica					b	a		
. *Stellaria media	11	k	3					
Casuarinaceae (70)								
. 5 Allocasuarina fraseriana					b	a		
. 6 Allocasuarina humilis.					b	a		
.Centrolepidaceae (40)								
. 7 Aphelia cyperoides					k	ka		b 6
. 8 Centrolepis aristata					k	ka	b	b 7
. 9 Centrolepis drummondiana						k		
. 70 Centrolepis polygyna					k	k	b	
. 1 Centrolepis sp.								
.Chenopodiaceae (105)								
. *Atriplex prostrata					k w			
. *Chenopodium album					b w			
. 2 Halosarcia sp. ?								
. 3 Rhagodia baccata		kbh	4					
. 4 Sarcocornia quinqueflora					k w			
.Colchicaceae (54J)								
. 5 Burchardia congesta		b	b		k w	ab	ak	b
. ?ex-umbellata 70%								
. 6 Burchardia multiflora			b		k w	b	a	b
. 7 Wurbmia tenella						b		
Commelinaceae (47)								

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9	Lepidosperma gladiatum	kh 3							
10	Lepidosperma longitudinale				k w		ka	b	b 7
1	Lepidosperma squamatum	k 4	b	b		b		b	b 10
2	Mesomelaena graciliceps						ka		
3	Mesomelaena tetragona					b	a	b	
4	Schoenus benthamii						g	b	b 11
5	Schoenus curvifolius						ka b	b	
6	Schoenus discifer						k		
7	Schoenus elegans				k				
8	Schoenus grandiflorus	kh 5	bk			b	a	b	
9	Schoenus odontocarpus				k		k		
110	Schoenus rigens				k		ka	b	
1	Schoenus rodwayanus				b		ka	b	
2	Schoenus sculptus				k				
3	Schoenus sp.2 (GJK 5739) scps.						k		
4	Schoenus sp.				k		k		
5	Schoenus subfascicularis						k		
6	Schoenus tenellus						k		
7	Tetraria octandra			b		b	ka		
Dasypogonaceae (54C)									
8	Acanthocarpus preissii	kh b 6	b			b			
9	Calectasia cyanea			b		b	a	b	
120	Dasypogon bromeliifolius			b	b w		ka b	b	
1	Lomandra ?brittaniai						a		
2	Lomandra caespitosa		k	b	k	bk	k	b	
3	Lomandra hermaphrodita			b		k	ka		
4	Lomandra maritima		k						
5	Lomandra micrantha	b 7	b	b	b	b			
6	Lomandra nigricans	k 8	b.	b.	bnw	ab	ka.b		b 12
7	Lomandra preissii			b	n	b	k		b 13
8	Lomandra purpurea					b	ab		

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9	Lomandra sonderi				k		ka		b 14
130	Lomandra suaveolens			?b		k	ka?		
1	Lomandra drummondii ?		b						
.Dilleniaceae (226)									
2	Hibbertia amplexicaulis			b	k n		ab		
3	Hibbertia cuneiformis	hk 9	b						
4	Hibbertia cunninghamii						kb		
5	Hibbertia hypericoides	kh 50	bk	b	n w	ba	kab	b	b 15
6	Hibbertia nymphaea k								
7	Hibbertia racemosa	h 1		b		b	a	b	
8	Hibbertia rhadinopoda				k		b	b	
9	Hibbertia stellaris				b	b	ba		
140	Hibbertia subvaginata		b	b		b	k		
1	Hibbertia vaginata				k w n	b	ka	b	
.Droseraceae (143)									
2	Drosera bulbosa (= ? rosulata)						a		
3	Drosera erythrorhiza ?								
4	Drosera gigantea				k n		k		
5	Drosera glanduligera				n		k		
6	Drosera menziesii					b	a		
	ssp. penicillaris				k		k		
7	Drosera occidentalis						k		
	Drosera occidentalis occedentalis						g		
8	Drosera paleacea						a		
9	Drosera pallida		b	b	b	b	k	b	
150	Drosera rosulata						k		
1	Drosera stolonifera	k 2	b	b		b	ka	b	
2	Drosera subaequalis							b	
.Epacridaceae (288)									

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3	Astroloma pallidum	k 3	kb.	b.			ka		
4	Astroloma ciliatum		b.	b					
5	Conostephium pendulum		b	b		b	bka	b	
6	Conostephium preissii	h 4	b						
7	Leucopogon australis						ab		
8	Leucopogon capitellatus					b			
9	Leucopogon conostephioides						ka		
160	Leucopogon nutans						a		
1	Leucopogon parviflorus	bk 5							
2	Leucopogon polymorphus			b		b			
3	Leucopogon aff. polymorphus					b			
4	Leucopogon propinquus		b	b		ba	ka	b	b 1/2
5	Leucopogon racemulosus						g		
6	Lysinema ciliatum						ab		
Euphorbiaceae (185)									
7	Adriana quadripartita	b 6							
8	Amperea ericoides						gk		
9	Beyeria ?								
	*Euphorbia peplus	12 k 7							
170	Monotaxis grandiflora						k		
1	Monotaxis occidentalis						k		
2	Phyllanthus calycinus	hbk 8	bk	b	w n	bk	ka	b	b 1/2
3	Poranthera microphylla	k 9							
Fumariaceae (136)									
	*Fumaria capreolata			b	n				
Gentianaceae (303)									
	*Centaurium sp.				k				

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*Cicendia filiformis				k		k		
.Geraniaceae (167)								
*Erodium cygnorum						b		
*Erodium moschatum ?								
*Erodium botrys						k		
*Erodium cicutarium			k					
*Erodium molle.			b.			b		
4 Geranium retrorsum	k 60							
Geranium solanderi	kh 1							
*Pelargonium capitatum	h 13							
0 Pelargonium littorale	hk 3					a	a	
.Goodeniaceae (341)								
7 Dampiera linearis			b	k	b	ak	b b	
8 Dampiera trigona				n			b ?	
9 Goodenia filiformis				b		ab	b	
180 Goodenia micrantha						k		
1 Leschenaultia floribunda				b			b	
2 Scaevola anchusifolia	hk 4	b						
3 Scaevola calliptera	h 5		b	n		ab		
6 Scaevola crassifolia	kb 6							
5 Scaevola nitida	h 7							
6 Scaevola phlebopetala						k	b	
7 Velleia trinervis				k				
..Haemodoraceae (55)								
8 Anigozanthus flavidus								b 18
9 Anigozanthus humilis					b	b		

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. 190	Anigozanthus manglesii		b	b	n	ba	kab	b	
1	Anigozanthus viridis				b		ab		b 19
. 2	Conostylis aculeata	k 8	bk	b	kb	bk	ak	b	b 20
	ssp. aculeata						k		
?	3 Conostylis aurea	k 9							
.	4 Conostylis candicans	k 20							
.	5 Conostylis setigera	k 1							
.	6 Conostylis setosa						a		
.	7 Haemodorum paniculatum	b					?b		
.	8 Haemodorum simplex							b	
.	9 Haemodorum spicatum	b							
. 200	Phlebocarya ciliata			b	b	bk	akb	b	b 21
1	Tribonanthes australis						kb		
Hydatellaceae (40 A)									
2	Trithuria bibracteata				k				
Hypoxidaceae (56 A)									
3	Hypoxis occidentalis			b			b	b	b 22
Iridaceae (60)									
.	4 Orthrosanthus laxus	k 2	bk	b		ba	ab	b	
.	5 Patersonia occidentalis			b	k	b	ak	b	b 23
.	6 Patersonia occidentalis (swamp form)						kb	b	
.	7 Patersonia umbrosa				n				
.	*Romulea flava			b					
.	*Romulea rosea	14 kh 9	bk	b	bk n	b	kba	b	
.	*Romulea rosea var.australis	5 k 4			k		k		

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.Juncaceae (52)								
8	Juncus amabilis							Mb
	(*)Juncus articulatus.							b b
	*Juncus bufonius				k		ka	b
	*Juncus capitatus				k w		k	
	*Juncus microcephalus						a	
7	Juncus pallidus, ?Luzula pallidus						a	b
2	10 Juncus planifolius							b
1	Juncus subsecundus							b
2	Luzula meridionalis	k	5	b	b			b
.Juncaginaceae (26)								
3	Triglochin centrocarpa				k			b
4	Triglochin mucronata				k			
5	Triglochin procera				k			
6	Triglochin trichophora				k		a	
7	Triglochin striata ?	b	6					
.Lamiaceae (313)								
8	Hemiandra pungens	hk	7	b	b		ba	ak b
.Lauraceae (131)								
9	Cassytha glabella							k w
220	Cassytha melantha	h	8					
1	Cassytha micrantha						k	
2	Cassytha racemosa	k	9				ka	b
.Lentibulariaceae (323)								

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. 3 Polypompholyx multifida							k	b		
. 4 Utricularia violacea							k	b		
. 5 Utricularia dichotoma								b		
Lindsaeaceae (11D)										
. 6 Lindsaea linearis								b		
.Lobeliaceae (340)										
. 7 Isotoma hypercrateriformis						b		a		
. 8 Lobelia alata							b	a		
. 9 Lobelia gibbosa				b						
. 230 Lobelia tenuior	kh	80	k					ka	b	
. *Monopsis simplex						k		b		
. *Monopsis debilis						k		k		
.Loganiaceae (302)										
. 1 Logania serpyllifolia			b	b			b	ka	b	
. 2 Logania vaginalis	kb	1						b		
. 3 Mitrasacme paradoxa								k		
.Loranthaceae (97)										
. 4 Nuytsia floribunda	h	2	b	b	b	b	b	kb	b	b 2y
.Lycopodiaceae (2)										
. 5 Phylloglossum drummondii						k				
Lythraceae (265)										

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6	Lythrum hyssopifolia						a		
.Menyanthaceae (303A)									
7	Villarsia albiflora						b	b	
8	Villarsia capitata						b		
9	Villarsia latifolia						a		
240	Villarsia parnassifolia				k n				
1	Villarsia sp. scps.	k							
.Mimosaceae (163)									
7	Acacia alata				k		g		b 25
3	Acacia applanata	k 3		b	k	b	gk	b	
4	Acacia cochlearis	hkb 4	b			a			
5	Acacia extensa					b	b		
6	Acacia flagelliformis				b	b	kbag	b	b 26
7	Acacia huegelii			b			a		
8	Acacia incurva						abg		b 27
9	Acacia lasiocarpa	h 5							
250	Acacia pulchella	k 6	b	b	b w n	b	bka	b	b 28
	var. pulchella				k w				
1	Acacia rostellifera	k 7				b			
2	Acacia saligna	h 8	b	b	kbnw		kba	b	b 29
3	Acacia stenoptera		b	b	k n	b	kag	b	b 30
4	Acacia teretifolia						g		
5	Acacia willdenowiana	k h b 9	b	b	k n w		ka		
Myoporaceae (326)									
6	Eremophila glabra	k 90	b						
7	Myoporum caprarioides	h 1	b						

Southern Bunbury Remnant Bushland -Consolidated vascular plant Species List including
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Ocean Dve W,Maidens MAID
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 N.-Boy. Rd. -Preston R. PRR

.Myrtaceae (273)									
. 8	Agonis flexuosa	hk 2	b	b	w n	abk	ab	b	b 31
. 9	Agonis linearifolia						a b		
. 260	Astartea aff. fascicularis						kab	b.	b 32
. ?	Astartea sp. G. Keigheri						k	k	
. 1	Baekea camphorosmae					b.	kab		
. 2	Calothamnus lateralis						k	b	
	ssp. lateralis						a		
. 3	Calytrix angulata						k		
. 4	Calytrix flavescens			b		b	kba		
. 5	Calytrix leschenaultii						b		
. 6	Eucalyptus calophylla	b 3	b	b	b	b	bka	b	b 33
. 7	Eucalyptus gomphocephala	k h b 4	b	b	b	b k			
. 8	Eucalyptus marginata	h k b 5	b	b	n	b	akb	b	b 34
. 9	Eucalyptus rudis			b	b n w		ab	b	b 35
. 270	Hypocalymma angustifolium				k n w	b	kba	b	b 36
. 1	Kunzea ericifolia (=vestita)			b		b	b a	b	
. 2	Kunzea limnicola ?						a		
. 3	Kunzea micrantha				k				
. 4	Kunzea recurva				k n		ka	b	
. 5	Melaleuca incana				k b w		ak	b	
. 6	Melaleuca lateritia				b k n w			abk	b 37
. 7	Melaleuca lateriflora ssp.acutifolia MS						k		
. 8	Melaleuca parviflora k						k	b	
. 9	Melaleuca pauciflora						k	b	
. 280	Melaleuca preissiana			b	k b n w	b	abk	b	b 38
. 1	Melaleuca raphiophylla				k b n w	b	kba	b	b 39
. 2	Melaleuca teretifolia				k n w		a		
. 3	Melaleuca thymoides				n w	b	ka		b 40
. 4	Melaleuca viminea				k w		kb	b	
. 5	Pericalymma ellipticum				k b n w		kab	b	

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5-Mile Brook.- Hay Park

5MB

College Gve

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4	Microtis media					kb		
5	Microtis media densiflora						b	
6	Microtis unifolia					a	b	
	*Monadenia bracteata			k		ab		
7	Prasophyllum cyphochilum ?				b?			
8	Prasophyllum fimbria			b	b	ab		
9	Prasophyllum parvifolium			knw			b	
310	Prasophyllum rigens						b	
1	Prasophyllum sp.			k				
2	Pterostylis aff. nana	k/ob					?b	
3	Pterostylis nana	k /						
4	Pterostylis recurva			b			b	
5	Pterostylis sanguinea					k		
6	Pterostylis sp.scps k							
7	Pterostylis vittata		kb	b	wn	k		
8	Thelymitra antennifera				b			
9	Thelymitra benthamiana					k		
320	Thelymitra crinita			k	b			
1	Thelymitra flexuosa					k		
2	Thelymitra fuscolutea					b		
3	Thelymitra nuda					k		b43
4	Thelymitra pauciflora					k		
5	Thelymitra aff. holmesii				b			
6	Thelymitra sp.			k		ka		
7	Thelymitra variegata				b			

Onagraceae

8 Epilobium billardierianum

Orobanchaceae

7 Orobranche minor

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.Oxalidaceae (168)							
. *Oxalis glabra				nw	b		
330 Oxalis perennans	k 2		b				
. *Oxalis pes-caprae b		b	b	nw			
. *Oxalis sp.							
.Papilionaceae (165)							
. 1 Aotus gracillima						ba	b 44
. 2 Bossiea eriocarpa	khb 3	b	b	wn	b	akb	
. 3 Burtonia conferta						a	
. 4 Chorizema diversifolia	h 4						
. 5 Chorizema ilicifolium							b 45
. 6 Daviesia angulata						a	
. 7 Daviesia divaricata	kh 7	kb	b		ak	a	
. 8 Daviesia incrassata					n		
. 9 Daviesia physodes			b	kw	b	ka	b b 46
340 Daviesia preissii				kb		k	
. 1 Eutaxia virgata				k		k	b
. 2 Gompholobium tomentosum	kh 6	kb	b	nw	a	a	
. 3 Hardenbergia comptoniana	hkb 7	b	b	b	ba	bk	b b 47
. 4 Hovea chorizemifolia		b	b				
. 5 Hovea trisperma	hkb 8	b	b		ba	bak	
. 6 Isotropis cuneifolia		b	b		b	b	b
. 7 Jacksonia furcellata	kh 9		b	nw		ka	b b 48
. 8 Jacksonia sparsa			b				
same (E) Jacksonia sternbergiana	m 10		b		b	a	b 49
. Jacksonia sp. Busselton (G.J.Keighery 4482) PN						k	
. 9 Kennedyia coccinea	h 1	b			b	k	b
. 350 Kennedyia prostrata	khb 2	b	b		akb	a	b

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. *Lotus angustissimus							ka		
. *Lotus suaveolens							a		
. *Lotus sp.							k		
. 4 Lupinus consentinii			b		n				
. *Melilotus indica	16	h 3							
. 1 Nemcia capitata (ex Oxylibium)					kb	b	ka	b	
. *Ornithopus compressus							k		
. 2 Oxylobium lineare					b				
. 3 Pultenaea skinneri							ba		
. 4 Sphaerolobium sp.							k		
. 5 Sphaerolobium vimineum							b	b	
. 6 Templetonia retusa		hbk 4	b						
. *Trifolium arvense	17	k 5							
. *Trifolium campestre	18	kh 6	kb	b		ak	a		
. *Trifolium dubium			k		k				
. *Trifolium fragiferum							a		
. *Trifolium glomeratum							a		
. *Trifolium subterraneum							k		
. *Vicia sativa		h 7							
. 7 Viminaria juncea					b		ka	b	b 50
.Philydraceae (50)									
. 8 Philydrella drummondii					k		k	b	
. 9 Philydrella pygmaea					k w		k	b	
.Phormiaceae (54E)									
. 360 Dianella divaricata			k	?b					
. / Dianella revoluta		k 8		b					
Pittosporaceae									

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Ocean Dve W,Maidens

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Ocean Dve E

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5MB

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.Portulacaceae (111)

- . 8 Calandrinia corrigioloides
- . 9 Calandrinia liniflora

k 1
k 2

.Primulaceae (293)

- . *Anagallis arvensis
- . 40 Samolus junceus

30 kh 3

k b
k w ab b

.Proteaceae (90)

- . 1 Adenanthus intermedius
- . 2 Adenanthos meisneri
- . 3 Adenanthos obovatus
- . 4 Banksia attenuata
- . 5 Banksia grandis
- . 6 Banksia ilicifolia
- . 7 Banksia littoralis
- . 8 Conospermum capitatum
- . 9 Dryandra nivea
- . 420 Grevillea diversifolia
- . 1 Grevillea glabrata
- . 2 Grevillea vestita
- . 3 Hakea lissocarpa ?
- . 4 Hakea prostrata
- . 5 Hakea sulcata
- . 6 Hakea varia
- . 7 Persoonia longifolia
- . 8 Persoonia saccata
- . 9 Petrophile linearis
- . 430 Petrophile teretifolia ?
- . 1 Stirlingia latifolia

hkb 4 b
hkb 5 b
k 6
hk 7 b
kh 8

b b
b w bak bka b b 51
b w b a b b 52
kb b ab ab ?g b
b
n
k b
k wn ka b
b a b
b b kba b
n
wn b kab b

b 51
b 52
b 53

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2	<i>Synaphea petiolaris</i>							b	b 54
3	<i>Synaphea spinulosa</i>	hk 50	kb	b		b	a		
4	<i>Xylomelum occidentale</i>			b		bk	bak		
.Ranunculaceae (119)									
5	<i>Clematis microphylla</i>	hb//	b						
6	<i>Clematis pubescens</i>		b			b			
7	<i>Ranunculus colonorum</i>		b						
	* <i>Ranunculus muricatus</i>						kb		
.Restionaceae (39)									
8	<i>Anarthria laevis</i>					k			
9	<i>Anarthria prolifera</i>						b	b	
400	<i>Chaetanthus aristatus (Leptoc.)</i>					b		b	
1	<i>Desmoclades flexuosus</i>					w k		M	
2	<i>Hypolaena exsulca</i>			b			b	akb	b
3	<i>Hypolaena pubescens (ex Loxocarya?)</i>								M 55
4	<i>Leptocarpus coangustatus</i>							a	
5	<i>Leptocarpus tenax</i>							b	
6	<i>Lepyrodia glauca</i>							k	
7	<i>Loxocarya cinerea</i>							a	
8	<i>Loxocarya fasciculata</i>			b			b	kab	b b 56
	<i>Loxocarya flexuosa</i>	h 12		b		k	k	kab	b b 57
	<i>Loxocarya pubescens</i>					kb		k	b
9	<i>Lyginia barbata</i>			b		w	b	kb	b b 58
450	<i>Meeboldina decipiens</i>							b	M b
1	<i>Meeboldina kraussii</i>							Mb	
2	<i>Meeboldina roycei</i>					b		b	M b
3	<i>Sporodanthus strictus MS</i>					k			

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.Rhamnaceae (215)							
. 4 Cryptandra arbutiflora		b.	b				
. 5 Spyridium globulosum	hkb 3	b			b		
.Rubiaceae (331)							
. 6 Opercularia hispidula	kh 4						b
. 7 Opercularia vaginata	hk 5	b	b				
.Rutaceae (175)							
. 8 Boronia crenulata ?				n			
. 9 Boronia dichotoma				k	b	kba	
. Boronia fastigiata ?						b	
. 460 Boronia spathulata						g	
. 1 Diploaena dampieri	hbk 6	b					
. 2 Eriostemon spicatus		b	b	n	b	kab	b
.Santalaceae (92)							
. 3 Exocarpos sparteus	hk 7						
. 4 Santalum acuminatum	hk 8						b
. 1 Leptomeria sp		b					
.Sapindaceae (207)							
. 6 Dodonaea aptera	k 9						
.Scrophulariaceae (316)							
*Dischisma arenarium 31	kh 10						

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. 600 Parietaria debilis	k 8							
. Viola (243)								
. 1 Hybanthus calycinus	khb 9	b	b		b k 4			
. 2 Hybanthus floribundus					b 7	a		
. Xanthorrhoeaceae (54D)								
. 3 Xanthorrhoea brevistyla						g		
. 4 Xanthorrhoea brunonis	h 17D	b		k w n		kb	b	
. 5 Xanthorrhoea gracilis ?b								
. 6 Xanthorrhoea preissii ?				k n w	a 6	a		
. Zamiaceae (16A)								
. 7 Macrozamia riedlei	hb 1	b	b		ba 7	ka	b	b 59
. Zygophyllaceae (173)								
. 8 Zygophyllum apiculatum	k 2							

509

MAID
 Total
 172 / 139 Noted

59 noted

**DRAFT ENVIRONMENTAL REVIEW FOR THE BUNBURY REGION
STRUCTURE PLAN REGIONALLY SIGNIFICANT VEGETATION**

System 6 Areas and adjacent bushlands

1. C57 - Myalup MP Area The section of C57 to the west of the Old Coast Road should be shown as included (intended to be part of Yalgorup NP).

MYALUP-2	25	SCP	SF Guthrie Forest Block
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2. C60 - Nature Reserves.

RIVD-1	12	SCP	C60 Riverdale Nature Reserve C12632, Harvey
RIVD-2	21a	SCP	C60 Riverdale Nature Reserve C12632, Harvey

C60 - C12049 – Harvey Flats Nature Reserve *Verticordia nitens* not sampled, notes

3. C61 - Crampton Nature Reserve.

CRAMPT-1	21a	SCP	C61 Crampton NR
CRAMPT-2	21a	SCP	C61 Crampton NR

4. C62- Wellard Road Nature Reserve Threat. ecological communities - floristic community types 9 (English and Blyth 1997, identified in Gibson *et al.* 1994).

welr 01	09	SCP	C62 Wellard Rd NR
welr 02	09	SCP	C62 Wellard Rd NR

Reserve 10687 to the north should be included

REDL-1	21a	SCP	Red Lake Water Reserve 10687
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C62 Wellard Rd NR: *Boronia crenulata*, *Myriophyllum echinatum* (3)

5. C63/Kemerton Buffer

C63 Myalup Swamp (N) and Mialla Lagoon (S) – visited, no plots

Kemerton Buffer - The boundaries of regionally significant vegetation within the buffer to an expanded Kemerton Industrial area to be included in ROS are being recommended by the EPA through review of the Bunbury 2030 report

KEME-1	25	SCP	Kemerton
KEME-2	21a	SCP	Kemerton
KEME-3	21c	SCP	Kemerton

Keighery (1998) describes the floristic community types expected in the Kemerton Area. Threat. ecological communities - floristic community types 1b and 7 and Muchea Limestones (English and Blyth 1997).

Kemerton: *Kennedia coccinea*, *Trichocline spathulata*,
Acacia semitrullata (3)

Supergroup 1 - Foothills/Pinjarra Plain

*1b	Southern <i>E. calophylla</i> woodlands on heavy soils	65.0
*2	Southern wet shrublands	50.3

Supergroup 2 - Seasonal Wetlands

*4	<i>Melaleuca preissiana</i> damplands	33.2
*7	Herb rich saline shrublands in clay pans	44.8
*12	<i>M. teretifolia</i> and / or <i>Astartea</i> aff. <i>fascicularis</i> shrublands	27.3
*13	Deeper wetlands on heavy soils	16.9

Supergroup 3 - Uplands, centred on Bassendean Dunes

21a	Central <i>Banksia attenuata</i> - <i>E. marginata</i> woodlands (KEME 2)	52.0
21b	Southern <i>Banksia attenuata</i> woodlands (KEME 3)	57.5

Supergroup 4 - Uplands centred on Spearwood and Quindalup Dunes

Spearwood Dunes		
25	Southern <i>E. gomphocephala</i> - <i>Agonis flexuosa</i> woodlands (KEME 01)	48.1

Restricted floristic community type mosaics

Muchea Limestones (Keighery and Keighery 1995)	CR
--	----

6. Part C64 Byrd Road Nature Reserve plus bushland to the west. Threat. ecological communities - floristic community types 9 (English and Blyth 1997, identified in Gibson *et al.* 1994)

BYRD-1	09	SCP	C64 Byrd NR
--------	----	-----	-------------

C64 Byrd NR: *Myriophyllum echinatum* (3),

7. C66 - Leschenault Peninsular The expansion of the ROS to match more closely the boundaries of C68 is endorsed.

LESCH-1	30b	SCP	C66 Leschenault Inlet
LESCH-2	30b	SCP	C66 Leschenault Inlet
LESCH-3	30b	SCP	C66 Leschenault Inlet
LESCH-4	30b	SCP	C66 Leschenault Inlet
LESCH-5	30b	SCP	C66 Leschenault Inlet
LESCH-6	17	SCP	C66 Leschenault Inlet

8. C66 - Leschenault Inlet, eastern foreshore All remnant vegetation on the foreshore should be protected, provision should be made for an open space connection through to the Kemerton Buffer. While there is no bushland area between the two

areas there is canopy connection which provides a corridor for wildlife. This link would complement the proposed Leschenault Inlet to Collie River link.
 C66 Leschenault Inlet: *Trachymene coerulea*, *Veronica* aff. *calycina* Alkimos

9. C68 – Anglesea Island/Koombana Bay Inlet The areas of remnant bushland and/or conservation category wetlands need to be identified and these areas specifically protected for conservation and landscape protection. As described the White Mangrove (*Avicennia marina*) population is the southern most mangrove population in Western Australia and is regionally significant. The wetlands have additional significance as they support one of two known areas of sedgeland dominated by *Schoenoplectus pungens*. The other populations of this sedge are found at Big Swamp and these are the only occurrences of this sedge in WA.

10. C69 - Big Swamp The areas of remnant bushland and/or conservation category wetlands need to be identified and these areas specifically protected for conservation and landscape protection. Big Swamp contains significant populations of *Schoenoplectus pungens* (see above) and of *Calocopepalus oliganthus* (only population on the Swan Coastal Plain).

11. C70 - The Maidens and adjacent bushland Well recognised conservation area. Aspects of the conservation values of the area have been identified by Hart Simpson and Associates Pty Ltd and B.K. Masters 1994, Gibson *et al.* 1994, Department of Environmental Protection 1996, Keighery 1995 and Bulletin 789 (EPA 1995). See Appendix 2.

Maidens Coast- Road

Nmaid01	29a	SYS6ENV2	C70 The Maidens, Bunbury
BMaid02	29a	SYS6ENV2	C70 South Bunbury coastal land (The Maidens)
Nmaid03	29a	SYS6ENV2	C70 The Maidens, Bunbury
Gmaid02	25	SYS6ENV2	C70 South Bunbury coastal land (The Maidens)
Gmaid01	25	SYS6ENV2	C70 South Bunbury coastal land (The Maidens)
Nmaid04	30b	SYS6ENV2	C70 The Maidens, Bunbury

C70 South Bunbury coastal land (The Maidens): *Lasiopetalum membranaceum* (2)

Nmaid05	25	SYS6ENV2	Adj C70 The Maidens, Bunbury
Gmaid03	25	SYS6ENV2	Adj C70 South Bunbury coastal land (The Maidens)
Gmaid04	25	SYS6ENV2	Adj C70 South Bunbury coastal land (The Maidens)

12. C71 - Daleyllum Reserves The delineation of C71 as ROS is endorsed but there is need for a linkage to the west to the coastal ROS to be shown. C71 is a long narrow reserve and its consolidation with some of this area will enhance its values and contribute to the increased representation of the Karrakatta Central and South complex in protected areas. It is unfortunate that previous planning decisions did not allow for this connection in better quality bushland towards the northern end of C71. Section 4.8.3 of 4.8 (Major Regional Roads) refers to the loss of up to 5ha of C71 (page 89). **This is not acceptable and will be considered as a factor that has not been assessed.** A considerable area of bushland on the eastern margin of C71 has already been used for the road works (dual carriageway) and further loss is not acceptable.

C71-1	11	SCP	C71 Reserves near Dalyellup
C71-2	21a	SCP	C71 Reserves near Dalyellup
C71-3	21a	SCP	C71 Reserves near Dalyellup
C71-4	25	SCP	C71 Reserves near Dalyellup

C71 Reserves near Dalyellup: *Acacia flagelliformis* (4)

13. C 86 - Dardanup Management Priority Area This area (C86) is significant in encompassing elements of the Darling Plateau, Darling Scarp and Foothills adjacent to the Whicher Scarp. The flora and vegetation conservation values of the area have been identified in Keighery *et al* 1997. In the Regional Forest Agreement (1999, Map Id 50,51) sections to the west and east of the block (not consistent with the ER which only shows the core area of the MPA as ROS) are shown as 'formal reserves' (It should also be noted that a series of forest blocks along the margins of the Darling Plateau/Whicher Plateau and their scarps and foothills occur to the south and east of C86. The values of these blocks are currently being identified. These values were not part of the RFA as they relate to both the plateaus and the Plain. It is apparent from this work that Crooked Brook Forest Block is substantially different from C86 and other blocks may have significant values and should be recognised as formal reserves in the future.)

dard01	01a	SCP	C86 SF Dardanup Management Forest Block
dard02	21b	SCP	C86 SF Dardanup Management Forest Block
dard03	01a	SCP	C86 SF Dardanup Management Forest Block

C86 SF Dardanup Management Forest Block: *Lomandra spartea*, *Patersonia babilanoides*, *Xanthorrhoea acanthostachya*, *Lambertia multiflora* var. *darlingensis* (3), *Acacia semitrullata* (3), *Jacksonia sparsa* MS (3)

14. C81 and C79 Areas C81 and C79 are existing crown reserves with significant conservation and open space values and should not be excluded from recognition without detailed justification for this exclusion.

Areas of Threat. and Poorly Reserved Plant Communities (EPA 1994) and Threat. Ecological Communities (English and Blyth 1997)

1. Yarloop Townsite All bushland within Yarloop and adjacent to Yarloop is regionally significant being on the Foothills of the Darling Plateau (Ridge Hill Shelf). Much of the area has been recognised as containing "Threat. and Poorly Reserved Plant Communities" by the EPA in 1994. The inclusion of some of the bushland as identified by EPA (1994) as ROS is endorsed but **all bushland shown by the EPA should be in the ROS.** Threat. ecological communities - floristic community types 3b and 20b (English and Blyth 1997, identified in Gibson *et al.* 1994). *EPA Bulletin for mining has allowed for some development seenew Maps. Other areas of bushland withn yarloop Townsite should also be recognised.*

yarl01	03c	SCP	Yarloop Threat. &/or poorly res...
yarl02	09	SCP	Yarloop Threat. &/or poorly res...
yarl03	03b	SCP	Yarloop Threat. &/or poorly res...
yarl04	20b	SCP	Yarloop Threat. &/or poorly res...

Yarloop Threatened &/or poorly res...: *Kennedia coccinea*, *Trichocline spathulata*, *Haemodorum loratum* (3)

2. Waterloo Waterloo townsite and adjacent rail reserve, excluding cleared land (see Map 2 Appendix 1) area has been recognised as containing "Threat. and Poorly Reserved Plant Communities" by the EPA in 1994 and **should be shown as ROS.** Threat. ecological communities - floristic community types 3c and 8 (English and Blyth 1997, identified in Gibson *et al.* 1994)

waro 01	03b	SCP	C53 Coolup Reserves
waro 02	03b	SCP	C53 Coolup Reserves
waro 03	08	SCP	C53 Coolup Reserves
waro 04	08	SCP	C53 Coolup Reserves
waro 05	10a	SCP	C53 Coolup Reserves
waro 06	03a	SCP	C53 Coolup Reserves

Waterloo Townsite Threatened &/or poorly res: *Leptocarpus aff. crebriculmis*, *Drosera macrantha* "scp" (BJK&NG 228), *Drosera bulbigena*, *Trichocline spathulata*, *Aponogeton hexatepalus* (R)

3. Hay Park, Manea Park and adjacent bushland, Airfield BushlandThe above areas and C70 can be linked to each other and the Preston River as outlined in Appendix 2. This linked system of reserves has been promoted locally for many years and is referred to as the South Bunbury Bushland Corridor. The corridor contains a unique assemblage

of vegetation, flora, regional floristic community types and wetlands worthy of conservation category status. The areas shown as ROS are endorsed but should also include as **ROS areas of bushland between 'Manea ROS' and Boyanup Road around the Airport Runway**. Threat. ecological communities - floristic community types 7, 9 and 18 (English and Blyth 1997, identified in Gibson *et al.* 1994, DEP 1996 and field interpretation by DEP post 1996).

Section 4.8.4 of 4.8 (Major Regional Roads) locates this road through areas considered to be TEC's and Conservation Category Wetlands. **This is not acceptable and will be considered as a factor that is not assessed.**

Hay Park

Hay01	08	SYS6ENV2	Hay Park, Bunbury
Hay02	17	SYS6ENV2	Hay Park, Bunbury
Hay03	s05	SYS6ENV2	Hay Park, Bunbury
Hay04	s05	SYS6ENV2	Hay Park, Bunbury
Hay05	18	SYS6ENV2	Hay Park, Bunbury

Manea Park and adjacent bushland

MANEA-1	09	SCP	Manea Park
MANEA-2	21a	SCP	Manea Park
MANEA-3	21b	SCP	Manea Park
MGK01	21a	SYS6ENV2	Manea Park, Bunbury
MGK02	04	SYS6ENV2	Manea Park, Bunbury
MGK03	21b	SYS6ENV2	Manea Park, Bunbury
MGK04	21b	SYS6ENV2	Manea Park, Bunbury
Sunday01	06	SYS6ENV2	Manea Park, Bunbury
Sunday02	21a	SYS6ENV2	Manea Park, Bunbury
Swamp01	05	SYS6ENV2	Manea Park, Bunbury
Swamp02	07	SYS6ENV2	Manea Park, Bunbury
Swamp03	s01	SYS6ENV2	Manea Park, Bunbury
bunb01	25	SYS6ENV2	Manea Park, South Bunbury

Manea Park, South Bunbury: *Drosera macrantha* scp (BJK&NG 228), *Kennedia coccinea*, *Jacksonia sparsa* MS (3), *Schoenus benthamii* (3), *Drosera occidentalis* subsp. *occidentalis* (4), *Acacia flagelliformis* (4)

Airfield Bushland

See MRD work, ?Keighery notes.

4. Capel Nature Reserve and adjacent Bushland The flora and vegetation conservation values of the Nature Reserve have been identified in Keighery *et al.* 1996. The inclusion of the bushland area as identified by EPA (1994) as ROS is endorsed. Threat. ecological communities - floristic community types 1b (English and Blyth 1997, identified in Gibson *et al.* 1994)

CAPEL-1	21b	SCP	Capel Threat. &/or poorly res...
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CAPEL-2	21b	SCP	Capel Threat. &/or poorly res...
CAPEL-3	04	SCP	Capel Threat. &/or poorly res...
CAPEL-4	13	SCP	Capel Threat. &/or poorly res...
CAPEL-5	01b	SCP	Capel Threat. &/or poorly res...
CAPEL-6	12	SCP	Capel Threat. &/or poorly res...
CAPEL-7	21a	SCP	Capel Threat. &/or poorly res...
CAPEL-8	12	SCP	Capel Threat. &/or poorly res...
CAPEL-9	12	SCP	Capel Threat. &/or poorly res...

Capel Threatened &/or poorly res: *Evandra pauciflora*, *Drosera macrantha* scp (BJK&NG 228), *Hodgsoniola junciformis*, *Boronia crenulata* *Macarthuria* sp. Harvey (M.E.T. Trudgen & A. Tingay) (1), *Jacksonia sparsa* MS (3), *Acacia semitrullata* (3), *Acacia flagelliformis* (4), *Anthotium junciforme* (4), *Thysanotus glaucus* (4)

2.3.2 Comment on specific areas

Proposed Korljekup Nature Reserve (Harvey Townsite ROS) The recognition of this area as ROS is endorsed. The flora and vegetation values have been identified in Keighery 1996. Identified in RFA (1999).

Leschenault Recreation Park/Treendale Reserve While much of the area is not naturally vegetated the area to the south is vegetated and worthy of recognition as a conservation area. This area has been recognised by the Shire of Harvey and a management Plan is being prepared for the area. The flora and vegetation of the area was surveyed in 1996 by the Wildflower Society of WA in conjunction with local people. Regional Floristic Information (Gibson *et al.* 1994) - floristic community type 21a, Iso Tauss (?1998)

AUSTRA-1	21a	SCP	LG Reserve 26270, Australind
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LG Reserve 26270, Australind: *Jacksonia sparsa* MS (3)

Linkage Leschenault Inlet and Collie River The formation of ROS to cover this linkage is endorsed, there will need to be active management of this bushland to retain its values.

Vittoria Bay Foreshore This area contains regionally significant natural areas. The areas of remnant bushland and/or conservation category wetlands need to be identified and these areas specifically protected for conservation and landscape protection.

Bunbury City Foreshore The basalt outcrop is a significant geological feature (type exposure of the Bunbury Basalts) and landscape which should be protected. To the south

of the basalt outcrop is a freshwater seepage which is in need of recognition and protection.

South Bunbury Bushland Corridor The identification of bushland as ROS within this corridor is endorsed. The width of some of these bushland areas is of concern. Corridors narrower than 500m will need substantial management commitment to maintain their values and values as linkage. It is important that areas not constrained by previous advanced planning decisions be added to the ROS to consolidate sections of the linkage. This is still considered possible in the Manea/Airfield bushland section and it is recommended that **bushland between 'Manea ROS' and Boyanup Road around the Airport Runway be shown as ROS** in recognition of the overall values of the corridor and the TEC's considered to be present in the area.

Reserve 1167 and adjacent bushland to river (identified by CALM and local Naturalists' Club group) The recognition of this area as ROS is endorsed. It is unfortunate that the widening of the Boyanup Road has impacted on areas of this Reserve.

R116701	04	SYS6ENV2	Subm 34 Reserve 1167 Capel
R116702	21b	SYS6ENV2	Subm 34 Reserve 1167 Capel
R116703	01b	SYS6ENV2	Subm 34 Reserve 1167 Capel

Subm 34 Reserve 1167 Capel: *Evandra pauciflora*, *Kennedia coccinea*, *Acacia semitrullata* (3), *Jacksonia sparsa* MS (3)

Other Areas Considered for System 6 Update ? Bunbury Region

CORON-1	21a	SCP	C56 SF Treasure forest block
CORON-2	25	SCP	C56 SF Treasure forest block

Davies Road, Capel: *Laxmannia minor*, *Blennospora* sp. Ruabon (B.J. Keighery & N. Gibson 20) (3)

davies01	04	SYS6ENV2	Davies Road, Capel
davies02	07	SYS6ENV2	Davies Road, Capel

SF Boyanup Forest Block: *Adenanthos intermedius*, *Kennedia coccinea*, *Xanthorrhoea acanthostachya*, *Jacksonia sparsa* MS (3)

boyan 01	21b	SCP	SF Boyanup Forest Block
boyan 02	01a	SCP	SF Boyanup Forest Block

???

buffer01	21b	SCP	SF Argyle Forest Block
kelly01	01a	SCP	SF Argyle Forest Block
kelly02	21b	SCP	SF Argyle Forest Block

SF Guthrie Forest Block: *Evandra pauciflora*, *Boronia crenulata*, *Acacia semitrullata* (3)

GUTHR-1	04	SCP	SF Guthrie Forest Block
GUTHR-2	05	SCP	SF Guthrie Forest Block
GUTHR-3	21a	SCP	SF Guthrie Forest Block
GUTHR-4	05	SCP	SF Guthrie Forest Block
GUTHR-5	21a	SCP	SF Guthrie Forest Block
GUTHR-6	21a	SCP	SF Guthrie Forest Block

Subm 47 LG Reserve 14076: *Adenanthos intermedius*, *Jacksonia sparsa* MS (3),
Franklandia triaristata (4)

gibson01	21b	SCP	Subm 47 LG Reserve 14076
gibson02	01a	SCP	Subm 47 LG Reserve 14076

SF Lyons Forest Block: *Evandra pauciflora*

LYONS-1	04	SCP	SF Lyons Forest Block
LYONS-2	25	SCP	SF Lyons Forest Block

State Forest 12 Capel

Calothamnus aff. *quadrifidus*, *Kennedia coccinea*, *Amperea conferta*, *Schoenus NO loliaceus* (2), *Verticordia lindleyi* subsp. *lindleyi* (4)

sf1201	02	SYS6ENV2	State Forest 12 Capel
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Gelor01	25	SYS6ENV2	Subm 1 Road Reserve opposite C71, Gelorup
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gelor02	21a	SYS6ENV2	Road Reserve west of Giacci Sands, Gelorup
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dillo01	21c	SYS6ENV2	Subm 152 Jilley Road, Gelorup
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Subm 182 Old Coast Rd, Australind: *Lasiopetalum membranaceum* (2), *Jacksonia sparsa* MS (3)

colriv01	25	SYS6ENV2	Subm 182 Old Coast Rd, Australind
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Subm 330 Chidlow's, Riverdale Rd: *Verticordia nitens*, *Evandra pauciflora*, *Villarsia violifolia*, *Boronia crenulata* var. *gracilis*, *Acacia semitrullata* (3)

chid01	21b	SYS6ENV2	Subm 330 Chidlow's Riverdale Rd
chid02	21b	SYS6ENV2	Subm 330 Chidlow's, Riverdale Rd
chid03	04	SYS6ENV2	Subm 330 Chidlow's, Riverdale Rd
chid04	s17	SYS6ENV2	Subm 330 Chidlow's, Riverdale

			Rd
chid05	04	SYS6ENV2	Subm 330 Chidlow's, Riverdale Rd
chid06	17	SYS6ENV2	Subm 330 Chidlow's, Riverdale Rd

Plantation Road, Ludlow: *Actinodium cunninghamii*, *Hodgsoniola junciformis*, *Isopogon scaber*, *Amperea conferta*, *Evandra pauciflora*, *Actinodium cunninghamii*, *Restio ustulatus*, *Jacksonia sparsa* MS (3), *Restio gracilior* (3), *Acacia semitrullata* (3), *Franklandia triaristata* (4)








plant01	10a	SYS6ENV2	Plantation Road, Ludlow
plant02	04	SYS6ENV2	Plantation Road, Ludlow
plant03	21b	SYS6ENV2	Plantation Road, Ludlow

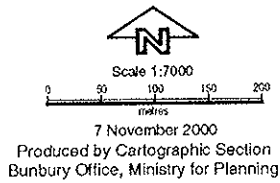
Areas in the Greater Bunbury Region Scheme requiring identification of regionally significant vegetation (Assessment Sheets)

Name of area	Subm No.	Aerial photo	Located on GIS	Assessment Sheet finished	Comments
* Australind Urban (WWTP)					
Harwood Road, Dalyellup*	BK	√	√		
Davenport Industrial Zone*	BK	√	√		
* Twin Rivers			√		
Picton Waters (being negotiated (??))					
College Grove			√+		
Lot 7 Buffalo Road*		√	√		
Muddy Lakes			√		
Lot 61 Howson Dve Australind*	152	√	√		
Lot 7 and 9 Clifton Road, Australind*	153	√	√		
Boyanup bypass wetlands	107				
Bunbury Outer ring road					
Boyanup urban deferred					
Pt Lot 1 Parade Rd (Brook Village)	262	√	√		
* Lot 5 and 6 Estuary Drive	197, 198				
Preston River Foreshore to Davenport Industrial Area			√		
Land North of Binningup	211				
Land South of Myalup (can't find submission)					
Lot 5 and Part 1 Boyanup Rd			√		



LEGEND

-  Proposed Revised Regional Open Space Boundary
-  Regional Open Space
-  Urban
-  Public Purposes
-  Waterway
-  Existing Cadastre
-  Subject Land



INTERNAL USE ONLY - CONFIDENTIAL
 Draft Greater Bunbury Region Scheme
 Regional Open Space Boundary At Twin Rivers

PROPOSED REVISED BOUNDARY

ATTACHMENT 6

feasibility. The proposed site has been incorporated into the Region Scheme and reserved for Public Purposes.

When the WWTP is relocated, the constraint to residential development in Australind posed by the odour buffer will be removed. In the meantime, no residential development will be permitted within the area affected by the buffer. This will be enforced through the provisions of *Statement of Planning Policy No. 4: State Industrial Buffer Policy*.

5.4 Urban Deferred Zone at Burekup

Relevant factors:

- Estuaries

5.4.1 Background

Approximately 66 ha of land is proposed to be rezoned from Rural to Urban Deferred south-east of Burekup, as shown on Figure 17. The proposed rezoning is surrounded to the north-west by Urban (Burekup townsite) and elsewhere by Rural land uses. The site consists of cleared farm paddocks. The Burekup WWTP is located approximately 2 km from the site.

The site is located approximately 1 km south-west of the Collie River and occurs within the Leschenault Inlet Catchment.

5.4.2 Impacts and Management Estuaries

The site is situated on palusplain and will require filling and/or drainage to enable development.

In order to prevent excessive export of phosphorus and other contaminants to Leschenault Inlet, the drainage system will employ water sensitive design principles including:

- no increase in peak or total water discharge;
- sewerage of all development;

- subsoil drains to be set at or above the AAMGL; and
- maximum retention of drainage and stormwater onsite.

This management will be ensured by Environmental Management Measures 2 and 3.

5.5 Urban Deferred Zone at Boyanup

Relevant factors:

- Regionally significant vegetation
- Estuaries

5.5.1 Background

About 225 ha of land east of Boyanup is proposed to be rezoned from Rural to Urban Deferred, as shown on Figure 18. About 50% of this land has been mined for mineral sands and consequently only small areas of native vegetation or natural landforms remain. The remainder is mostly cleared farmland.

In 1996, the WAPC approved the East Boyanup Structure plan that proposed the subdivision of land that had been mined for mineral sands into approximately 255 lots, ranging in size from 4000 m² to 1 ha. The land for the first stages of development has already been zoned for residential purposes in the Shire of Capel Town Planning Scheme No. 7, following referral to the EPA.

5.5.2 Impacts and Management Regionally Significant Vegetation

Two small areas of remnant vegetation in poor to moderate condition exist in the south-east and west of the site. This vegetation is mapped by Heddle et al. (1980) as Guildford Complex (20 ha) and Cartis Complex (3 ha). These remnants have been subjected to stock grazing, partial clearance and other disturbances over a number of years. They mostly have a poor understorey and a high level of weed invasion.

The Guildford Complex is very heavily cleared (>95%) and unreserved (0.1% in existing and 0.2% in proposed ROS) in the Greater Bunbury Region. Of the Cartis Complex, 67.3% remains and nearly 44% of this is secured in conservation reserves. The Region Scheme proposes an additional 57 ha to be included in ROS (1.2%).

Notwithstanding the poor reservation status of these complexes, the small amount and disturbed condition of the vegetation on this site greatly reduces its value for conservation.

Prior to the lifting of the Urban Deferred zone, a vegetation survey shall be undertaken to ensure that no DRF or threatened communities will be cleared for development. If regionally significant vegetation is found, this will be protected or managed in an appropriate manner on advice of CALM.

Estuaries

The site is mostly elevated dry ground which is not expected to require filling or drainage prior to construction. The site is, however, within the Leschenault Inlet catchment. Any drainage that is undertaken will need to be managed in order to prevent increased phosphorus export to the Inlet.

In accordance with Environmental Management Measure 2, the responsible authority may require a Drainage and Nutrient Management Plan (DNMP) to be prepared where subsoil drainage is likely to be required and where there is a significant risk of nutrient export.

WSD principles will be incorporated in the development, including:

- no increase in peak or total discharge;
- deep sewerage of all lots smaller than 2,000 square metres;
- maximum retention of stormwater and drainage on-site; and
- subsoil drainage to be set at or above AAMGL.

Deep sewerage is not currently available in Boyanup. Therefore, small lot (less than 2,000 m²) development on the site will not be permitted until sewerage becomes available. In addition, unsewered development will not be permitted on lots where subsoil drainage is required due to shallow groundwater.

A commitment to deep sewerage of all small-lot residential development is given by Environmental Management Measure 3.

5.6 Urban Deferred Zones at Dalyellup

Relevant factors:

- *Conservation Estate*
- *Regionally significant vegetation*
- *Regionally significant wetlands*

5.6.1 Background

Two proposed new Urban Deferred zones adjacent to the proposed Dalyellup Beach Estate are assessable under this Region Scheme. The local government rezoning amendment for the Dalyellup Beach Estate has been assessed separately by the EPA. The location of the new zones is shown on Figure 19.

5.6.2 Impacts and Management Conservation Estate

System 6 Area C71 abuts the site to the east. C71 consists of several small reserves on the western side of Bussell Highway. The area is mostly vegetated with Karrakatta – Central and South Complex. Developers of the land adjoining C71 will be required to manage edge effects in accordance with Environmental Management Measure 1.

Regionally Significant Vegetation

The site is mostly cleared farmland apart from some scattered trees in the northern part and

5.13.1.2 Impacts

The widened road reserve impinges slightly on System 6 Area C78, located about 2 km north of Harvey. C78 is mostly cleared or parkland cleared and contains active recreation areas including a car racing circuit. DRF and Priority Flora have been identified in reserves located on the eastern side of the road just south of Yarloop.

Main Roads WA has not assessed the proposed road works in detail but has identified the key environmental factors and incorporated these in planning the road alignment. The reserves south of Yarloop will be protected by locating the road works on the west side of the road away from the reserves.

One of the reserves south of Yarloop is vested in Main Roads WA for sand supply but will not be used for this purpose. Main Roads WA is negotiating the possible vesting of this reserve in CALM.

The road passes just north of a Threatened Flora Community near Waterloo (Figure 9) but will not impinge on that community.

Other than the above instances, the road generally traverses cleared farm paddocks. No EPP Lakes, DRF or other key environmental features are affected.

5.13.1.3 Management

Main Roads WA will prepare an Environmental Assessment and Management Plan (EAMP) for each stage of the works prior to construction. The EAMP will contain a detailed assessment of environmental matters and management prescriptions. Where road works are carried out near sensitive areas such as the Yarloop Reserve and Waterloo Threatened Flora Community, management measures including dieback hygiene and drainage controls will be used to minimise impacts.

Main Roads WA will consult with the DEP during the preparation of the EAMP.

5.13.2 Coalfields Highway

Relevant factors:

- No relevant regional factors

5.13.2.1 Background

Coalfields Highway is to be widened, straightened and equipped with passing lanes between the Australind Bypass and the eastern boundary of the Region. MRWA has already acquired the land required for most of the proposed road improvements. Most of these works are scheduled to be completed by the year 2000.

5.13.2.2 Impacts

The widened road reserve mostly crosses cleared farmland. A few small patches of modified remnant vegetation are adjacent to the eastern end of the road. The road reserve has been aligned so as to avoid these areas. No significant wetlands, System 6 Areas, significant vegetation or other environmental features are impacted by the road works.

5.13.2.3 Management

Main Roads WA will prepare an EAMP before construction of each stage in consultation with the DEP. The EAMP will examine environmental issues and specify management measures where necessary.

5.13.3 Bunbury Outer Ring Road

Relevant factors:

- Conservation Estate
- Regionally significant vegetation
- Regionally significant wetlands
- Local urban bushland

5.13.3.1 Background

A ring road from the Australind Bypass to North Boyanup Road has been planned for some years and is reflected on the City of Bunbury Town Planning Scheme No. 6 and the Shire of Dardanup

Town Planning Scheme No. 3. The Region Scheme proposes a new section linking North Boyanup Road to Bussell Highway, as shown on Figure 3. The alignment of this southern section of the Bunbury Outer Ring Road is shown on the Shire of Capel Town Planning Scheme No. 7.

5.13.3.2 Impacts

Main Roads WA commissioned an Environmental Impact Assessment (EIA) of the Bunbury Outer Ring Road in October 1995 (Halpern Glick Maunsell, 1995). The assessment found that the potential environmental impacts of the bypass construction were:

- loss of native vegetation and fauna habitat;
- loss of wetland (part of the Hynes Road wetland);
- disturbance of a population of DRF (*Aponogeton hexatepalus*, in the Hynes Road wetland – this species has since been downgraded from DRF to Priority 4 status);
- noise and vibration from construction machinery; and
- loss of riparian vegetation at bridge crossings over the Preston and Ferguson Rivers.

A further impact identified by Main Roads is possible encroachment of the bypass on System 6 Area C71 at the junction with Bussell Highway. C71 contains vegetation of the Karrakatta – Central and South complex, which is very well reserved (31.5% existing and 9.8% proposed) in the Greater Bunbury region.

The intersection may remove up to 5 ha from System 6 area C71. This encroachment has been anticipated for a number of years and was foreshadowed in the 1983 System 6 Red Book report prepared by the EPA.

5.13.3.3 Management

The EIA commissioned by Main Roads WA made the following recommendations for environmental management to minimise the

adverse impacts of the Bunbury Outer Ring Road construction:

- Loss of native vegetation and fauna habitat should be minimised by avoiding, where possible, the most diverse remnant bushland (incorporated in the alignment plan), clearly marking working areas and carrying out comprehensive rehabilitation;
- indirect impacts on wetlands should be minimised by careful drainage design that avoids direct drainage into the wetlands and changes to the hydrological regime;
- where disturbance or removal of wetlands is unavoidable, consideration should be given to establishing an equivalent amount of new wetland habitat;
- direct and indirect disturbance to EPP Lakes should be avoided;
- installation of fauna underpasses at appropriate intervals should be considered to minimise habitat severance and road kills;
- application should be made to the Minister for the Environment for permission to disturb the population of the DRF species *Aponogeton hexatepalus* in the Hynes Road wetland;
- WRC guidelines for river crossings should be adhered to in designing and constructing the bridges over the Preston and Ferguson Rivers; and
- an Environmental Management Program (EMP) should be prepared when detailed design has been finalised, and implemented at the commencement of construction.

Main Roads WA will implement the recommendations of the EIA Report as far as they are applicable to the final alignment of the Ring Road. Main Roads WA will consult with appropriate agencies including the DEP and WRC in the preparation and implementation of the EMP.

Bunbury 2020

This initiative is endorsed by Labor as a valuable tool in fighting our road toll.

To assist in the further development of this program Labor will:

- **allocate funds collected from multi-nova fines programs (\$160m) to road safety in WA with a significant proportion of this money being earmarked for road safety training;**
- **encourage all high schools in the area to participate in the program; and**
- **provide assistance in establishing mechanisms to assess the effectiveness of the program.**

ENVIRONMENT

Labor believes that everybody in Bunbury should be able to enjoy the benefits of clean air, clean water and a healthy environment at home, at work and at play.

They are aware that Bunbury people place great importance on the quality of the lifestyle the region can offer and that there is a need to balance development with preservation of that lifestyle.

Labor is committed to preserving and enhancing the natural environment of the area and will work with local authorities to ensure that green corridor networks in the region are improved and that coastal enhancement programs are implemented.

The Beaches

Labor supports the recently announced redevelopment of the Bunbury Back Beach but believes the development should go a lot further.

Labor, in association with the local authorities, will develop a coastal management plan which will encompass the coastline from the Leschenault Peninsula in the north through to the coastline adjacent to the 'Maidens' area in the south.

The plan would include the beachfront adjacent to Turkey Point, the Cut and Koombana Bay.

Labor will:

- **proceed with the landscaping planned for the Back Beach;**
- **conduct a joint study with the Bunbury City Council to develop a structure plan for the Turkey Point area; and**
- **develop a management plan which will link the entire beachfront from the coastal zone north of Bunbury to the coastal zone south of Bunbury.**

Koombana Bay

For many visitors to Bunbury, Estuary Drive is their first experience of the city.

While much has been done in previous years to improve the visual amenity of the area, major work is still required.

The close proximity of Koombana Bay and the estuary provides us with a unique opportunity for a startling entry statement to the city.

Because of the space available, consideration should to be given to the setting up of a caravan parking bay which would enable visitors to park their caravans for a time and proceed into the town centre to sightsee without the burden of towing.

An upgrade of the beachfront on the Bay has commenced but has languished over the past few years. This upgrade now needs to be progressed so that the beach is again seen by the local residents as a safe swimming place, particularly for young children.

Labor will develop plans for Koombana Bay area which will include:

- **the linking of a Visitors Centre/ Tourist Bureau with the Dolphin Centre;**
- **landscaping the area between the caravan park and the harbour;**
- **establishing a temporary caravan parking area for day visitors;**
- **completion of the landscaping of the beachfront; and**
- **funding a study into ways of addressing the silt problem in the Inlet.**

The Leschenault Peninsula

The Leschenault Peninsula is the greatest landmark for the Australind-Eaton region but to a large extent it has been ignored as a passive recreational and tourist venue. This scenic and ecologically-important landmark has now been designated as a regional park.

Labor intends to work with the local community to develop plans which will see this area opened up for the enjoyment of the public, while at the same time ensuring that the area's unique character and beauty is preserved.

Improving Infrastructure

One of the reasons this wonderful asset has been largely ignored by the neighbouring communities and as a tourist destination is the poor state of the access road to it.

Limited development of amenities on the Peninsula has also discouraged visitors.

Bunbury 2020

Shortcomings in the basic infrastructure must be addressed before people can appreciate and enjoy the diverse landscape the Peninsula has to offer.

Environmentally acceptable access routes, parking space and toilet and picnic facilities need to be further developed for people wishing to use the beach for recreational purposes.

Walk trails and campsites could be improved at minimal cost.

On the northern end of the Peninsula there is a memorial to the famous Irish convict, John Boyle O'Reilly, who managed to escape from the area after being picked up by an American clipper ship.

A more substantial structure containing details outlining the history of O'Reilly, who later became a prominent American writer, could become a significant tourist attraction.

The Leschenault Peninsula lends itself to further development for low impact tourism such as bird watching, photography, bushwalking and lightweight camping in designated areas.

Environmentally sensitive development and proper management will see the Leschenault Peninsula become an asset of icon status for the region.

A Labor government will:

- **in consultation with the community, develop a comprehensive management plan for the future use of the park;**
- **seal Buffalo Road to allow easier access;**
- **seal and landscape beachfront car parking areas;**
- **construct a Visitor Information Centre at the John Boyle O'Reilly monument; and**
- **develop a range of educational programs for students to experience the diverse environment of the peninsula.**

Further consultation will be sought on issues such as:

- a picnic and boat landing site on the inlet side of the peninsula;
- improved walk trails;
- improved facilities for overnight campers and day trippers;
- extending the revegetation program;
- the eco-tourism potential of the peninsula; and
- the establishment of a coastal and marine research centre on the peninsula.

Bunbury 2020

All residents will be invited to comment on these ideas during detailed community consultation to determine the future of the Leschenault Peninsula.

Urban bushland

Rapid population growth in the Bunbury region, and Australind in particular, has seen vast areas of bushland developed for housing.

In some areas there is little, if any, of the native bushland of marri, jarrah, tuart, peppermint and paperbark.

Labor believes that greater care needs to be taken when approving housing developments to ensure that as much as possible of the native bushland is preserved.

This issue is currently under scrutiny in Australind, where developers have proposed a residential subdivision which severely impacts on the natural environment near the junction of the Collie and Brunswick rivers.

In cases such as this Labor wants to see the development of a structure plan which includes proper local community consultation before approval is given to proceed.

Labor will:

- ensure that in further housing developments, areas of representative remnant bushland are preserved in public open space;
- establish a trust for the purchase of urban bushland areas in regional centres like Bunbury; and
- revitalise the Adopt-a-Park scheme which provides local groups with the opportunity to develop small parks in their immediate locality.

Eaton Foreshore

LIMA and the Water and Rivers Commission have been working with the Dardanup Shire to improve facilities along the Eaton foreshore. They have installed dual use pathways, steps, and footbridges to enable residents to enjoy the beauty of the river environment without impacting directly on it.

To assist the Shire in its efforts Labor will:

- provide funding of up to \$10,000 to provide lighting for the foreshore land between Watson St Reserve and the Scout Camp.

KEMERTON INDUSTRIAL PARK

As the Government responsible for the development of the Kemerton Industrial Park (KIP), Labor maintains a keen interest in its future.

Labor believes that the model of industrial location adopted at Kemerton should be used when establishing other industrial centres.

Widespread public consultation, rigorous environmental safeguards and buffer zones around industrial core were key elements in the development of the KIP.

It is unfortunate that there has only been limited use of the KIP and Labor welcomes any attempt to attract industry to Kemerton, seeing this as a continuation of Labor policy of decentralising industry.

Labor was disappointed at the lack of community consultation prior to the announcement of a significant expansion in the size of the Park. This disappointment has been echoed by the local shire and community organisations.

Local community input through representation on the Kemerton Advisory Board had been an important element in the administration of the Park. The disbanding of this board and its replacement by a Coordinating Committee has resulted in a loss of this community voice.

Labor is also conscious of the sensitive nature of the area, especially the presence of fragile wetland areas, and the potential for problems associated with waste disposal.

While welcoming industries to the Park, Labor will ensure that rigorous environmental assessments are carried out and that conditions applied through these assessments are put in place and constantly monitored.

Labor will:

- **actively promote the Kemerton Industrial Park overseas;**
- **plan for the rail corridor between the Bunbury Port and Kemerton;**
- **appoint community representatives on the Kemerton Coordinating Committee;**
- **ensure environmental safeguards are in place for the continued development of the Park; and**
- **oppose any development of a port on the coast adjacent to Kemerton.**

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Western Australian Planning Commission

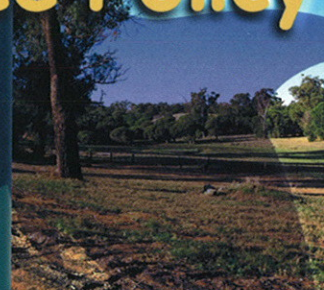
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Bulletin 1108
September 2003

Greater Bunbury Region Scheme

Strategic Minerals and Basic Raw Materials Resource Policy



WESTERN AUSTRALIAN
PLANNING COMMISSION

Greater Bunbury Region Scheme



Strategic Minerals and Basic Raw Materials Resource Policy



WESTERN AUSTRALIAN
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August 2000

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Internet: <http://www.planning.wa.gov.au>

email: corporate@planning.wa.gov.au

Fax: (08) 9264 7566

Phone: (08) 9264 7777

TTY: (08) 9264 7535

Infoline: 1800 626 477

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- ii. *Statement of Planning Policy No. 4 - State Industrial Buffer Policy;*
- iii. *Greater Bunbury Region Scheme Strategic Agricultural Resource Policy;* and
- iv. *Rural Land Use Planning Policy (DC 3.4)*¹.

3.0 Application

3.1 This policy applies to the Greater Bunbury Region Scheme and amendments, local government town planning schemes and amendments, and in the consideration of subdivision and development applications within the Greater Bunbury Region Scheme area. More specifically, this policy applies to:

- i. land within the Policy Areas and Basalt Extraction Area shown on Figure 1;
- ii. land adjacent or in close proximity (generally 500 metres or less) to the Policy Areas shown on Figure 1, where the WAPC or the local government is of the opinion that the type or form of the proposed land use or development would potentially be incompatible with or sensitive to mining activities or extraction of basic raw materials within the Policy Areas, or vice versa; and
- iii. land within the Basalt Extraction Referral Area 2² shown on Figure 1.

4.0 Objectives

- 4.1 To identify land within the Greater Bunbury Region Scheme area which contains mineral resources and basic raw materials of State or regional significance.
- 4.2 To prevent mineral resources and basic raw materials of State or regional significance being sterilised from incompatible development and land uses.
- 4.3 To promote the rehabilitation and restoration of mining and extraction sites, after works have been completed, in a way that is consistent with the long-term use of the land.
- 4.4 To ensure considerations relating to the mining of mineral resources and extraction of basic raw materials of State and regional significance are taken into account in preparing amendments to the Greater Bunbury Region Scheme, local government town planning schemes and amendments, and in assessing subdivision and development applications.

¹ **Note:** The Rural Land Use Planning Policy (DC 3.4) is currently being reviewed and is to be formulated as a Statement of Planning Policy.

² **Note:** The proposed Basalt Extraction referral Area will be revised in response to the findings of the Buffer Area Definition Study for the Basalt quarries, which should be completed by the end of 2000.

5.0 Policy Statement

- 5.1 This policy will be taken into account by the WAPC in considering amendments to the Greater Bunbury Region Scheme and local government town planning schemes and amendments, and in determining subdivision and development applications.
- 5.2 This policy must be taken into account by local governments in preparing town planning schemes and amendments, and in land use planning decisions affecting land within the Policy Areas.
- 5.3 Local governments shall ensure town planning schemes and amendments are compatible with the objectives and specific requirements of this policy.
- 5.4 The Policy Areas should be shown on town planning scheme maps (for example, as Special Control Areas) or on maps adopted as policy under the scheme.
- 5.5 Local government town planning schemes shall not prohibit mineral exploration, extraction of basic raw materials or mining of mineral resources within the Policy Areas. Where land within the Policy Areas is zoned for rural purposes under the local government town planning schemes, "industry-extractive" should be a "P", "D" or "A" use and "industry-mining" should be a "P" use.
- 5.6 There is a presumption against rezonings, subdivisions and development which would result in the establishment of sensitive land uses on land within, adjacent to or in close proximity to the Policy Areas, as this would potentially prejudice current or future mining of mineral resources or extraction of basic raw materials.
- 5.7 Notwithstanding Clause 5.6 of this policy, consideration may be given to approving rezoning, subdivision or development within, adjacent to or in close proximity to the Policy Areas where, following detailed investigations and consultations with the Department of Environmental Protection (DEP), DME, the Ministry for Planning and where appropriate, the Department of Resources Development (DRD), it can be demonstrated that the proposed rezoning, subdivision or development would not prejudice current or future mining of mineral resources or extraction of basic raw materials within the Policy Areas. The acceptability of any proposed rezoning, subdivision or development within, adjacent to or in close proximity to, the Policy Areas will be determined having regard to:
- i. advice received from the DEP, DME and/or DRD in relation to the matters referred to in Clauses 7.1, 8.1 and 8.2 of this policy; and
 - ii. any other planning or environmental considerations, including policies of the WAPC and policies adopted by local governments under their town planning schemes.
- 5.8 In determining the acceptability of any proposed development within, adjacent to or in close proximity to the Policy Areas, regard will also be given to advice received from the DME that the development is of a scale and for a use that would not prejudice current or future mining of mineral resources or extraction of basic raw materials (for example, a small rural shed).

6.0 Basalt Extraction Area and Basalt Extraction Referral Area

- 6.1 There is a presumption against rezonings, subdivisions and development which would result in the establishment of sensitive land uses on land within the Basalt Extraction Area shown on Figure 1, as this would potentially prejudice current or future extraction of basalt material from within the Basalt Extraction Area.
- 6.2 Within the Basalt Extraction Referral Area shown on Figure 1 there is a presumption against the following which would potentially prejudice current or future extraction of basalt material from within the Basalt Extraction Area:
- i. rezoning of land which would result in the establishment of new or additional sensitive land uses in addition to what is already permitted under an existing zoning; and
 - ii. further subdivision or development, except where such subdivision or development is permitted under the current zoning of the land and complies with the relevant policies of the WAPC and policies adopted by local government under their town planning schemes.
- 6.3 Notwithstanding Clauses 6.1 and 6.2 of this policy, consideration may be given to approving rezoning, subdivision or development within the Basalt Extraction and Referral Areas where, following detailed investigations and consultations with the DEP, DME, and the Ministry for Planning it can be demonstrated that the proposed rezoning, subdivision or development would not prejudice current or future extraction of basalt material from within the Basalt Extraction Area. The acceptability of any proposed rezoning, subdivision or development within the Basalt Extraction and Referral Areas will be determined having regard to:
- i. advice received from the DME and/or DEP in relation to the matters referred to in Clauses 7.1, 8.1 and 8.2 of this policy; and
 - ii. any other planning or environmental considerations, including policies of the WAPC and policies adopted by local governments under their town planning schemes.
- 6.4 In determining the acceptability of any proposed development within the Basalt Extraction and Referral Areas, regard will also be given to advice received from the DME that the development is of a scale and for a use that would not prejudice current or future mining of mineral resources or extraction of basic raw materials (for example, a small rural shed).

7.0 Buffer Areas

7.1 Buffer areas between extractive or mining operations, or any resources within the Policy Areas, and incompatible land uses shall be determined having regard to the following principles:

- i. recommended buffer areas between particular extractive and mining operations and other land uses in relevant scientifically based studies regarding appropriate buffer area requirements;
- ii. environmentally acceptable standards for noise, dust and light spill* (for example, noise limits required under the Environmental Protection (Noise) Regulations 1997);
- iii. the ability to achieve and adhere to performance standards and best practice management for the mining industry, which are applicable to buffer area requirements;
- iv. current or proposed mechanisms to ameliorate off-site impacts (for example, construction of bunds and/or provision of screen planting);
- v. the nature and scale of any land use, subdivision and development proposals;
- vi. the nature, scale and timing of any current or future extractive or mining operations;
- vii. available mechanisms to secure land or restrict further development within potentially affected areas;
- viii. local topographical characteristics and climate conditions;

- ix. existing or future settlement patterns; and
- x. the cultural, environmental or heritage significance of any place or area that is of relevance in the determination of buffer areas.

8.0 Referral and Applications

- run off water quality*
- 8.1 The WAPC and relevant local governments when preparing amendments to the Greater Bunbury Region Scheme, town planning schemes and amendments to town planning schemes, that include land either:
- i. partly or wholly within, or adjacent to, the Policy Areas; or
 - ii. partly or wholly within the Basalt Extraction or Basalt Extraction Referral Areas, shall consult and have due regard to the advice and recommendations of the DME and, where appropriate, DRD.
- 8.2 The WAPC, prior to determining subdivision and development applications on land within, adjacent to, or in close proximity to the Policy Areas, shall consult the DME and have due regard to its advice and recommendations, except where the DME has agreed that particular types of development in specific areas do not require referral.
- 8.3 In providing advice on town planning schemes, amendments, subdivision and development applications, the DME shall have regard to the following:

- i. the known extent, quality and quantity of the mineral resources or basic raw materials in the locality;
- ii. the potential impact on current or future mining or extractive operations;
- iii. buffer areas required between mining or extractive operations and incompatible land uses;
- iv. the proposed timing for the mining of mineral resources or extraction of basic raw materials; and
- v. the possible importance of the mineral resources or basic raw materials to the State economy and regional and international markets.

9.0 Implementation

- 9.1 This policy will be implemented by the WAPC and relevant local governments through the:
 - i. administration of the Greater Bunbury Region Scheme;
 - ii. administration of local government town planning schemes and advice provided to the Minister for Planning regarding proposals to prepare or amend town planning schemes; and
 - iii. subdivision and development control processes.
- 9.2 The Policy Areas shown on Figure 1 will be updated on a regular basis, in recognition of mineral resources or basic raw materials areas that have been mined or extracted and the identification of new mineral resources or basic raw materials considered to be of State or regional significance.
- 9.3 The WAPC will, after this policy has been in operation for a period of five years, or sooner if appropriate, undertake a review of this policy and, if necessary, amend this policy.

Appendix 1

Definitions

A use means that the use is not permitted unless the local government has exercised its discretion by granting planning approval after giving special notice of the application for planning approval.

Environmental Protection (Noise) Regulations 1997 means the Environmental Protection (Noise) Regulations 1997 made pursuant to Section 123 of the *Environmental Protection Act 1986*.

D use means that the use is not permitted unless the local government has exercised its discretion by granting planning approval.

Greater Bunbury Region Scheme Strategic Agricultural Resource Policy means the Greater Bunbury Region Scheme Strategic Agricultural Resource Policy published by the Western Australian Planning Commission in draft form in August 2000.

Industry-Extractive means an industry which involves the extraction, quarrying or removal of sand, gravel, clay, hard rock, stone or similar materials from the land and includes the treatment and storage of those materials, or the manufacture of products from those materials on, or adjacent to, the land from which the materials are extracted, but does not include industry-mining.

Industry-Mining means land used commercially to extract minerals from the land.

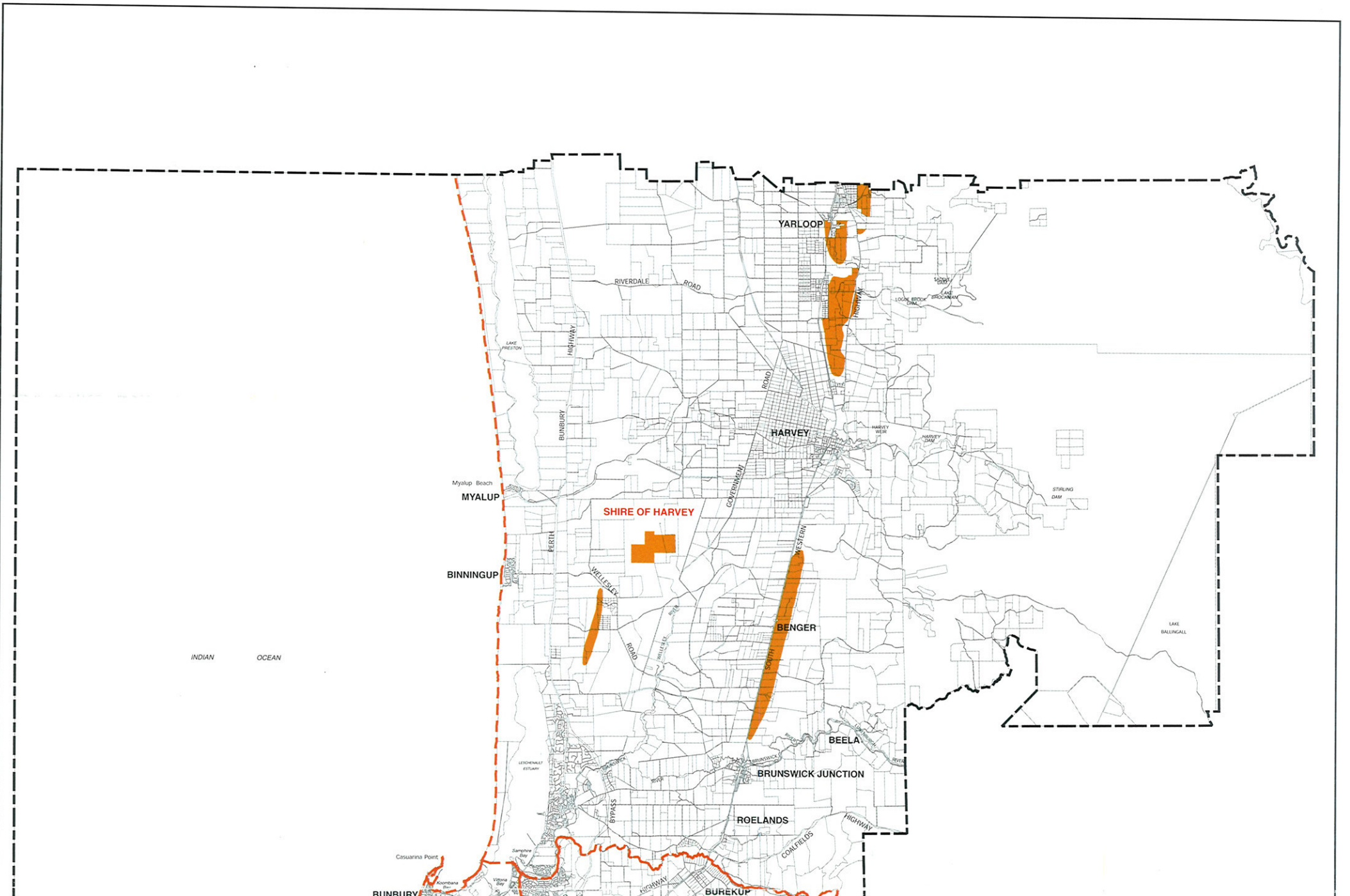
Local Government has the same meaning as it has in the *Local Government Act 1995*.

P use means that the use is permitted by the local government town planning scheme providing the use complies with the relevant development standards and the requirements of the town planning scheme.

State Planning Framework means the Statement of Planning Policy No. 8 made under Section 5AA of the *Town Planning and Development Act 1928* (as amended) which sets out the State planning policies, strategies and guidelines of the State which apply to land use planning and development in Western Australia.

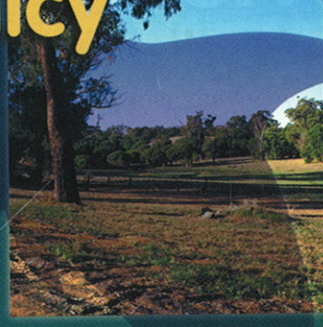
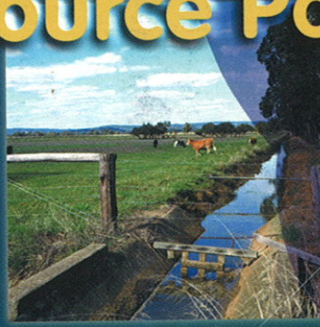
State Planning Strategy means the *State Planning Strategy* published by the Western Australian Planning Commission, December 1997.

Strategic Resource Areas for the Greater Bunbury Region Scheme means the report *Strategic Resource Areas for the Greater Bunbury Region Scheme* prepared by Landvision (Land Use Planning and Development Consultants) for the Western Australian Planning Commission, August 2000.



Greater Bunbury Region Scheme

Strategic Agriculture Resource Policy



WESTERN AUSTRALIAN
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Greater Bunbury Region Scheme



Strategic Agricultural Resource Policy



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Internet: <http://www.planning.wa.gov.au>

email: corporate@planning.wa.gov.au

Fax: (08) 9264 7566

Phone: (08) 9264 7777

TTY: (08) 9264 7535

Infoline: 1800 626 477

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1.0 Introduction

- 1.1 Agricultural production is important to the well-being of Western Australia. It provides essential food products and employment opportunities. Continued agricultural productivity minimises the State's reliance on imports and maximises export earnings.
- 1.2 *The State Planning Strategy* (WAPC, 1997) promotes the planning, management and protection of resources in Western Australia. In particular it recommends that areas of agricultural significance should be identified in local government town planning schemes and regional schemes and that Rural-Residential development should not be permitted in these areas.

or clearing of native veg
- 1.3 Strategic Agricultural Resource Policy Areas have been identified for the Greater Bunbury Region as part of the Greater Bunbury Region Scheme and this Strategic Agricultural Resource Policy aims to prevent development which may adversely affect the efficient ongoing use of the Policy Areas for existing and potential agricultural production.
- 1.4 This policy will form part of the State Planning Framework and the Western Australian Planning Commission (WAPC) is required where possible to ensure that its determinations under the Greater Bunbury Region Scheme are consistent with this policy.

2.0 Background

- 2.1 The Strategic Agricultural Resource Policy Areas are shown on Figure 1 at the rear of this document. The mapping and methodology used to define these Policy Areas is set out in the report *Strategic Resource Areas for the Greater Bunbury Region Scheme* (WAPC, 2000). The Policy Areas principally cover the irrigation areas within the Shires of Harvey and Dardanup, the main coastal horticultural land in the Myalup area, as well as the dairy and grazing areas within the Shire of Capel.
- 2.2 Definitions and terms used in this policy are contained in Appendix 1.
- 2.3 This policy should be read in conjunction with:
 - i. *Rural Land Use Planning Policy (DC 3.4)*¹;
 - ii. *Greater Bunbury Region Scheme Strategic Minerals and Basic Raw Materials Resource Policy*; and
 - iii. *Statement of Planning Policy No. 4 - State Industrial Buffer Policy*.

¹ **Note:** The Rural Land Use Planning Policy (DC 3.4) is currently being reviewed and is to be formulated as a Statement of Planning Policy.

3.0 Application

- 3.1 This policy applies to the Greater Bunbury Region Scheme and amendments, local government town planning schemes and amendments, and in the consideration of subdivision and development applications within the Greater Bunbury Region Scheme area. More specifically, this policy applies to:
- i. land within the Policy Areas shown on Figure 1; and
 - ii. land adjacent to or in close proximity (generally 500 metres or less) to the Policy Areas shown on Figure 1, where the WAPC or the local government is of the opinion that the type or form of the proposed land use or development would potentially be incompatible with or sensitive to agricultural activities within the Policy Areas or vice versa.

4.0 Objectives

- 4.1 To identify strategic agricultural land within the Greater Bunbury Region Scheme area considered to be of State and regional significance.
- 4.2 To protect the agricultural base of the Greater Bunbury Region Scheme area from the unplanned loss of high quality productive agricultural land due to permanent changes of land use.
- 4.3 To minimise land use conflicts between the agricultural activities and other land use activities within and adjacent to the identified strategic agricultural areas.

- 4.4 To ensure considerations relating to the protection of the identified strategic agricultural areas are taken into account in preparing amendments to the Greater Bunbury Region Scheme, local government town planning schemes and amendments, and in assessing subdivision and development applications.

5.0 Policy Statement

- 5.1 This policy will be taken into account by the WAPC in considering amendments to the Greater Bunbury Region Scheme and local government town planning schemes and amendments, and in determining subdivision and development applications.
- 5.2 This policy must be taken into account by local governments in preparing town planning schemes and amendments, and in land use planning decisions affecting land within the Policy Areas.
- 5.3 Local governments should ensure town planning schemes and amendments are compatible with the objectives and specific requirements of this policy.
- 5.4 The Policy Areas should be shown on town planning scheme maps (for example, as Special Control Areas) or on maps adopted as policy under the scheme.
- 5.5 The following land use permissibility categories are appropriate for the stated and related land uses in any Rural zone within the Policy Areas:

Land Use	Land Use Permissibility Category
Agricultural Employee Dwelling	D or A
Agriculture-Intensive	P or D
Agriculture-Extensive	P
Animal Husbandry-Intensive	P or D
Single House	P or D
Industry-Rural	D or A
Stockyards	D or A

Definitions for the land use permissibility categories "P", "D" and "A" are contained in Appendix 1.

- 5.6 There is a presumption against rezonings, subdivision and development, including bed and breakfast proposals, which would result in the establishment of sensitive land uses on land within, adjacent to or in close proximity to the Policy Areas, as this would potentially prejudice current or potential agricultural activities and production.
- 5.7 Notwithstanding Clause 5.6 of this policy, consideration may be given to approving rezoning, subdivision or development within, adjacent to or in close proximity to the Policy Areas where, following detailed investigations and consultations with the Department of Environmental Protection (DEP), Agriculture Western Australia (AGWEST) and the Ministry for Planning, it can be demonstrated that the proposed rezoning, subdivision or development would not prejudice current or potential agricultural activities and production within

the Policy Areas. The acceptability of any proposed rezoning, subdivision or development within, adjacent to or in close proximity to the Policy Areas will be determined having regard to:

- i. advice received from the DEP and/or AGWEST in relation to the matters referred to in Clauses 6.1, 7.1 and 7.2 of this policy; and
 - ii. any other planning or environmental considerations, including policies of the WAPC and policies adopted by local governments under their town planning schemes.
- 5.8 To prevent non-agricultural development on lots that have been specifically created for agricultural purposes within the Policy Areas, single houses shall not be approved.

6.0 Buffer Areas

- 6.1 Buffer areas between agricultural areas and incompatible land uses shall be determined having regard to the following principles:
- i. recommended buffer areas between particular types of agricultural activities and other land uses in relevant scientifically based studies regarding appropriate buffer area requirements;
 - ii. environmentally acceptable standards for noise, odour, chemical spray drift, dust and light spill (for example, noise limits required under the Environmental Protection (Noise) Regulations 1997);
 - iii. the ability to achieve and adhere to best practice management for particular agricultural activities, which are applicable to buffer area requirements;

- iv. current or proposed mechanisms or management measures to ameliorate off-site impacts from particular agricultural activities (for example, management measures to minimise odour producing activities);
- v. the nature and scale of any land use, subdivision and development proposals;
- vi. the nature, scale and timing of any current or future agricultural activities;
- vii. available mechanisms to secure land or restrict further development within potentially affected areas;
- viii. local topographical characteristics and climate conditions;
- ix. existing or future settlement patterns; and
- x. the cultural, environmental or heritage significance of any place or area that is of relevance in the determination of buffer areas.

7.0 Referral and Applications

- 7.1 The WAPC and relevant local governments, when preparing amendments to the Greater Bunbury Region Scheme, town planning schemes and amendments to town planning schemes, that include land within, adjacent to or in close proximity to the Policy Areas, shall consult and have due regard to, the advice and recommendations of AGWEST.
- 7.2 In providing advice on town planning schemes and amendments AGWEST will have regard to the following:
 - i. the potential impact of proposed land uses on existing or potential agricultural activities and production;
 - ii. whether the proposed land use is associated with, or will complement, the agricultural activities within the Policy Areas;
 - iii. buffer areas required for particular agricultural activities or any proposed incompatible land uses;
 - iv. the land's suitability and capability rating for one or more agricultural activities; and
 - v. the minimum lot size or property holdings required to support current or potential agricultural activities for a particular locality.

8.0 Implementation

- 8.1 This policy will be implemented by the WAPC and relevant local governments through the:
- i. administration of the Greater Bunbury Region Scheme;
 - ii. administration of local government town planning schemes and advice provided to the Minister for Planning regarding proposals to prepare or amend town planning schemes; and
 - iii. subdivision and development control processes.
- 8.2 The WAPC will, after this policy has been in operation for a period of five years, or sooner if appropriate, undertake a review of this policy and if necessary amend this policy.

Appendix 1

Definitions

A use means that the use is not permitted unless the local government has exercised its discretion by granting planning approval after giving special notice of the application for planning approval.

Agricultural Employee Dwelling means a dwelling occupied by a person or persons whose primary employment is the maintenance or management of the operation of the rural pursuit occurring on the land upon which their accommodation is situated.

Agriculture-Extensive means premises used for the raising of stock or crops but does not include agriculture-intensive and animal husbandry-intensive.

Agriculture-Intensive means premises used for trade or commercial purposes, including outbuildings and earthworks, associated with the following:

- a. the production of grapes, vegetables, flowers, exotic or native plants, or fruit or nuts;
- b. the establishment and operation of plant or fruit nurseries;
- c. the development of land for irrigated fodder production or irrigated pasture (including turf farms); or
- d. aquaculture.

Animal Husbandry-Intensive means premises used for keeping, rearing or fattening of pigs, poultry (for either egg or meat production), rabbits (for either meat or fur production) and other livestock in feedlots.

Bed and Breakfast means a dwelling, used by a resident of the dwelling, to provide accommodation for persons away from their normal place of residence on a short-term commercial basis and includes the provision of breakfast.

D use means that the use is not permitted unless the local government has exercised its discretion by granting planning approval.

Environmental Protection (Noise) Regulations 1997 means the Environmental Protection (Noise) Regulations 1997 made pursuant to Section 123 of the *Environmental Protection Act 1986*.

Greater Bunbury Region Scheme Strategic Minerals and Basic Raw Materials Resource Policy means the *Greater Bunbury Region Scheme Strategic Minerals and Basic Raw Materials Resource Policy* published by the Western Australian Planning Commission in draft form in August 2000.

Appendix 1

Industry-Rural means:

- a. an industry handling, treating, processing or packing rural products; or
- b. a workshop servicing plant or equipment used for rural purposes.

Local Government has the same meaning as it has in the *Local Government Act 1995*.

P use means that the use is permitted by the local government town planning scheme providing the use complies with the relevant development standards and the requirements of the town planning scheme.

Single House means an independently constructed dwelling standing wholly on its own lot created pursuant to the *Town Planning and Development Act 1928* (as amended).

State Planning Framework means the Statement of Planning Policy made under Section 5AA of the *Town Planning and Development Act 1928* (as amended) which sets out the State planning policies, strategies and guidelines of the State which apply to land use planning and development in Western Australia.

State Planning Strategy means the *State Planning Strategy* published by the Western Australian Planning Commission, December 1997.

Stockyards means any land building or other structure used for holding and/or sale of livestock.

Strategic Resource Areas for the Greater Bunbury Region Scheme means the report titled the *Strategic Resource Areas for the Greater Bunbury Region Scheme* prepared by Landvision (Land Use Planning and Development Consultants) for the Western Australian Planning Commission, August 2000.

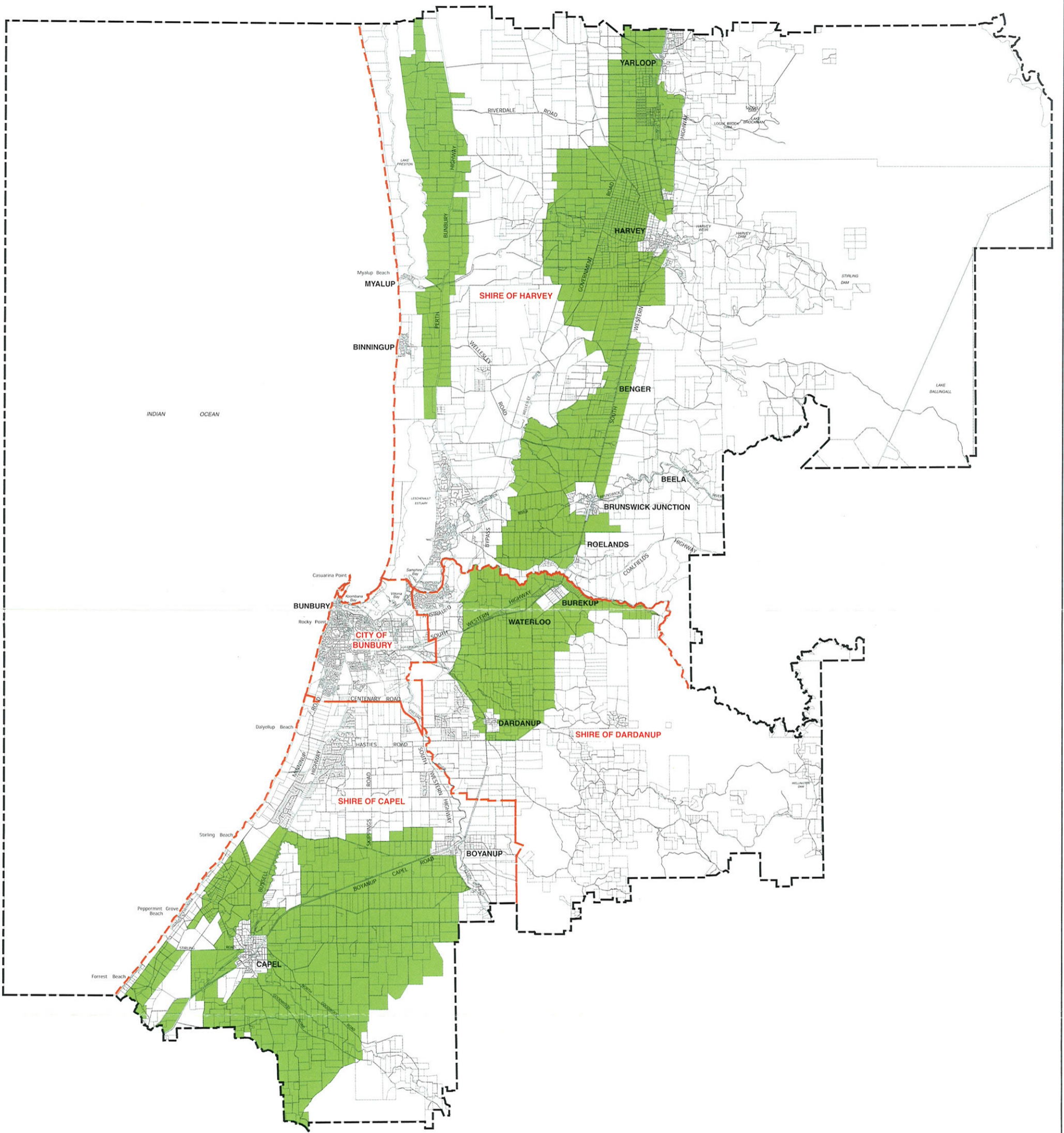


FIGURE 1

	<p>WESTERN AUSTRALIAN PLANNING COMMISSION</p> <p>CUSTOMER FOCUS</p>	<p>LEGEND</p> <ul style="list-style-type: none"> STRATEGIC AGRICULTURAL RESOURCE POLICY AREAS GREATER BUNBURY REGION SCHEME BOUNDARY LOCAL GOVERNMENT BOUNDARY 	<p style="text-align: center;">N</p> <p style="text-align: center;">SCALE 1:300000</p> <p style="text-align: center;">45m 0 45m</p>	<p>GREATER BUNBURY REGION SCHEME</p> <p>STRATEGIC AGRICULTURAL RESOURCE POLICY</p>
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