

## KOONDOOLA REGIONAL BUSHLAND

**Boundary Definition:** protected area boundary

### **SECTION 1: LOCATION INFORMATION**

**Bush Forever Site no.** 201

**Area (ha):** bushland 123.5

**Map no.** 35

**Map sheet series ref. no.** 2034-II NE, 2034-II NW

**Other Names:** Koondoola Open Space

**Local Authorities (Suburb):** Shire of Wanneroo (Koondoola)

### **SECTION 2: REGIONAL INFORMATION**

#### **LANDFORMS AND SOILS**

##### **Bassendean Dunes**

Bassendean Sands (Qpb: S8)

##### **Spearwood Dunes**

Sands derived from Tamala Limestone (Qts: S7)

##### **Wetlands (within the Spearwood Dunes)**

Holocene Swamp Deposits (Qhw: Cps)

#### **VEGETATION AND FLORA**

##### **Vegetation Complexes**

###### **Spearwood Dunes**

Karrakatta Complex — Central and South

**Floristic Community Types:** \*not sampled, type inferred

###### **Supergroup 2: Seasonal Wetlands**

\*11 Wet forests and woodlands

###### **Supergroup 3: Uplands centred on Bassendean Dunes and Dandaragan Plateau**

20a *Banksia attenuata* woodlands over species-rich dense shrublands

#### **WETLANDS**

**Wetland Types:** sumpland

##### **Natural Wetland Groups**

###### **Bassendean—Pinjarra transition OR Bassendean with fluvial features**

Bennet Brook (B/P.4)

###### **Bassendean Dunes**

Jandakot (B.3)

**Wetland Management Objectives:** Conservation (2.3ha), Resource Enhancement

**Swan Coastal Plain Lakes EPP:** none identified

#### **THREATENED ECOLOGICAL COMMUNITIES**

Not assessed, Endangered (floristic community type 20a)

### **SECTION 3: SPECIFIC SITE DETAIL**

**Landscape Features:** tall dune, vegetated wetland, vegetated uplands

**Vegetation and Flora:** limited survey (City of Wanneroo 1995b, Coalition for Wanneroo's Environment 1993, Gibson *et al.* 1994 (Koon 01–02), Wake 1995)

**Structural Units:** mapping (City of Wanneroo 1995b)

Uplands: *Banksia attenuata*, *B. menziesii* and *Allocasuarina fraseriana* Low Woodland to Low Open Woodland with scattered emergent *Eucalyptus marginata*; *Eremaea pauciflora*, *Melaleuca scabra* and *Leocopogon conostephioides* Shrubland

Wetlands: *Eucalyptus rudis* and *Melaleuca preissiana* Woodland; *Astartea* aff. *fascicularis* Heath over *Baumea articulata* and *Juncus pallidus* Sedgeland

**Scattered Native Plants:** not assessed

**Vegetation Condition:** mapping (City of Wanneroo 1995b)

>75% Excellent to Very Good, <25% Good to Degraded, with areas of severe localised disturbance

**Total Flora:** 175 native taxa, 17 weed taxa (Wake 1995) (estimated >70% expected flora)

**Significant Flora:** *Jacksonia sericea* (3); *Verticordia drummondii* (poorly conserved in the PMR, E. George pers. comm.), *Verticordia nitens* (most western occurrence in the PMR)

**Fauna:** structured survey for birds (34 species), native mammals (2 species), reptiles (21 species) and amphibians (Crypto Environmental Surveyors 1996). Significant bird species: category 1 (1) i.e. Carnaby's Cockatoo, category 3 (2) i.e. Western Thornbill and Splendid Fairy-wren, and category 4 (6). Significant mammal species: Quenda and

Western Brush Wallaby. Important site for Western Jewel Butterfly and Sciron Skipper (Williams *et al.* pers. comm. 1996).

**Linkage:** adjacent bushland to the south (Site 385, across road) and west; part of Greenways 12, 13 (Tingay, Alan & Associates 1998a); part of a regionally significant fragmented bushland/wetland linkage (Part A, Map 7)

**Other Special Attributes:** recommended to be declared as an A-class Nature Reserve for the protection of flora and fauna in Gibson *et al.* (1994); recommended for protection in study of City of Wanneroo (Trudgen 1996); Threatened or Poorly Reserved Plant Community (EPA 1994 GIS); National Trust of Australia (WA) Classification

#### ***SECTION 4: INTERNATIONAL AND NATIONAL SIGNIFICANCE***

Not listed; Indicative place (AHC 2000 D); subject to protection under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*

#### ***SECTION 5: SELECTION CRITERIA AND RECOMMENDATIONS***

**Criteria:** Representation of ecological communities, Diversity, Rarity, Scientific or evolutionary importance, General criteria for the protection of wetland, streamline and estuarine fringing and coastal vegetation

**Recommendation:** Site with Some Existing Protection; the existing care, control and management intent of the reserve is endorsed. The purpose of the reserve should be amended to include conservation and appropriate mechanisms applied in consultation with the management body (see Table 3, Volume 1).

**KOONDoola OPEN SPACE**

**Boundary Definition:** protected area boundary

**SECTION 1: CADASTRAL INFORMATION**

(Lots, locations and derived information to be updated in the public submission period)

**Bushplan Site no.** 201    **Map no.** 45, 46    **Map sheet series ref. no.** 2034-II NE, 2034-II NW

**Other Names:** not known

**Area (ha):** total 135.1; bushland 123.5

**Local Authorities (Suburb)**

**Zoning**

Shire of Wanneroo (Koondoola); City of Stirling (Koondoola)

**MRS:** Parks and Recreation, Important Regional Roads

**TPS:** Landscape

**Ownership Categories**

**Lot/Location/Reserve numbers (Purpose),**

State Government

**Street name**

4, 86, 8899 Waddington Cr; 4 Marangaroo Dr; 0, 2, 109 Alexander Dr; 0, 1 Beach Rd

Crown Reserve

**SECTION 2: REGIONAL INFORMATION**

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**Wetland Types:** sumpland

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**Linkage:** adjacent bushland to the south (BS385, across road) and west; part of proposed Greenways 13, 14 (Tingay, Alan & Associates 1997a); part of a regionally significant fragmented bushland/wetland linkage (Volume 2A, Map 8)

**Other Special Attributes:** recommended to be declared as an A-class Nature Reserve for the protection of flora and fauna in Gibson *et al.* 1994; recommended for protection in study of City of Wanneroo bushland (Trudgen 1996); Threatened or Poorly Reserved Plant Community (EPA 1994 GIS); National Trust of Australia (WA) Classification

**SECTION 4: INTERNATIONAL AND NATIONAL SIGNIFICANCE**

Not listed, Indicative Place of the Register of the National Estate

**SECTION 5: SELECTION CRITERIA AND RECOMMENDATIONS**

**Criteria:** Representation of ecological communities, Diversity, Rarity, Scientific or evolutionary importance, General criteria for the protection of wetland, streamline and estuarine fringing and coastal vegetation

**Opportunities and/or Constraints**

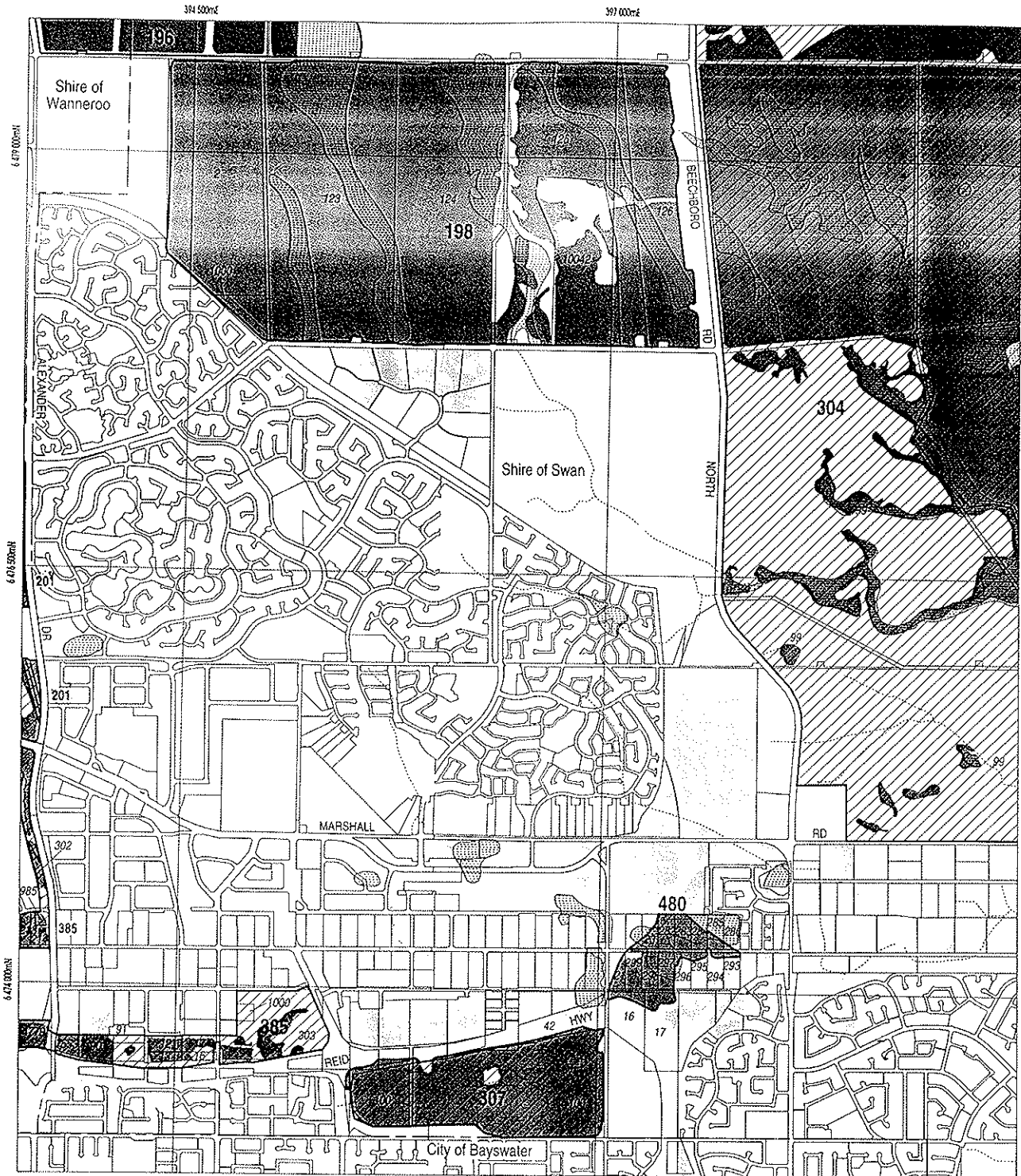
**Opportunities:** Bushplan Site/part Bushplan Site subject to Swan and Canning Rivers EPP; location of Scheduled Fauna, conservation category wetlands; under MRS Parks and Recreation Reservation and Landscape Zoning, Crown Reserve

**Constraints:** under MRD regional road requirements-

**Recommendation:** The existing care, control and management intent of the reserve is endorsed. Long-term security and support for conservation management of the Bushplan Site to be enhanced by: amending the purpose of the reserve to include conservation; and applying appropriate mechanisms in consultation with the reserve management body.

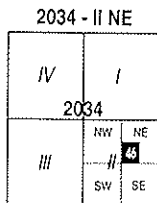






**LEGEND**

- Bushplan Sites With Regionally Significant Bushland
- Other Native Vegetation
- Conservation Category Wetlands
- Bushplan Sites With Some Existing Protection
- Lot Number, Location Number
- Channel Wetlands
- Local Government Boundary



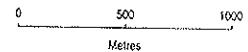
1 : 25 000 AMG Reference Grid showing Perth's Bushplan Map Sheet Breakdown

**PERTH'S BUSHPLAN MAP INDEX**

1	2										
3	4										
5	7	8	9	10	11						
12	13	14	15	16							
17	18	19	20	21	22	23					
24	25	26	27	28	29	30					
31	32	33	34	35	36						
37	38	39	40	41	42						
43	44	45	46	47	48						
49	50	51	52	53	54						
55	56	57	58	59							
60	61	62	63	64							
65	66	67	68	69	70						
71	72	73	74	75	76	77					
78	79	80	81	82	83	84					
85	86	87	88	89	90	91					
92	93	94	95	96	97						
98	99	100	101	102							
103	104	105	106								



SCALE



Produced by Project Mapping Section  
Land Information Branch, Ministry for  
Planning, Perth W.A. November 1998  
ntw-map11/enviro/bushplan/bushv2\_46.dgn

Cadastral Data supplied by Department  
of Land Administration, W.A.

Wetlands Data supplied by  
Water and Rivers Commission

Native Vegetation Extent for Study Area  
supplied by Agriculture Western Australia

Should this be in?  
 JJA/NET  
 2/1/9

-Sha  
 -Separated by existing track/road  
 -Sha

**201**

NOT FUNCTIONALLY  
 CONTIGUOUS SHA  
 PATCH

SPECIALLY EXCLUDED (PROPOSED)  
 NO.

KB,

IMPLEMENTATION  
 IMPLICATIONS

WATCH WOLF LAND  
 EXPANSION OF CRESTVIEW

Cut

As per Shenton Park, likely  
 Park maybe we have an  
 assume it was excluded  
 for a reason? In view of  
 sensitivities of knowledge  
 and possible additional  
 reservation implications  
 should be left out.

Kevin

BUSHPLAN SITES CORRECTED



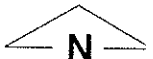
WESTERN  
 AUSTRALIAN  
 PLANNING  
 COMMISSION



CUSTOMER  
 FOCUS  
 WESTERN AUSTRALIA

Cooroola

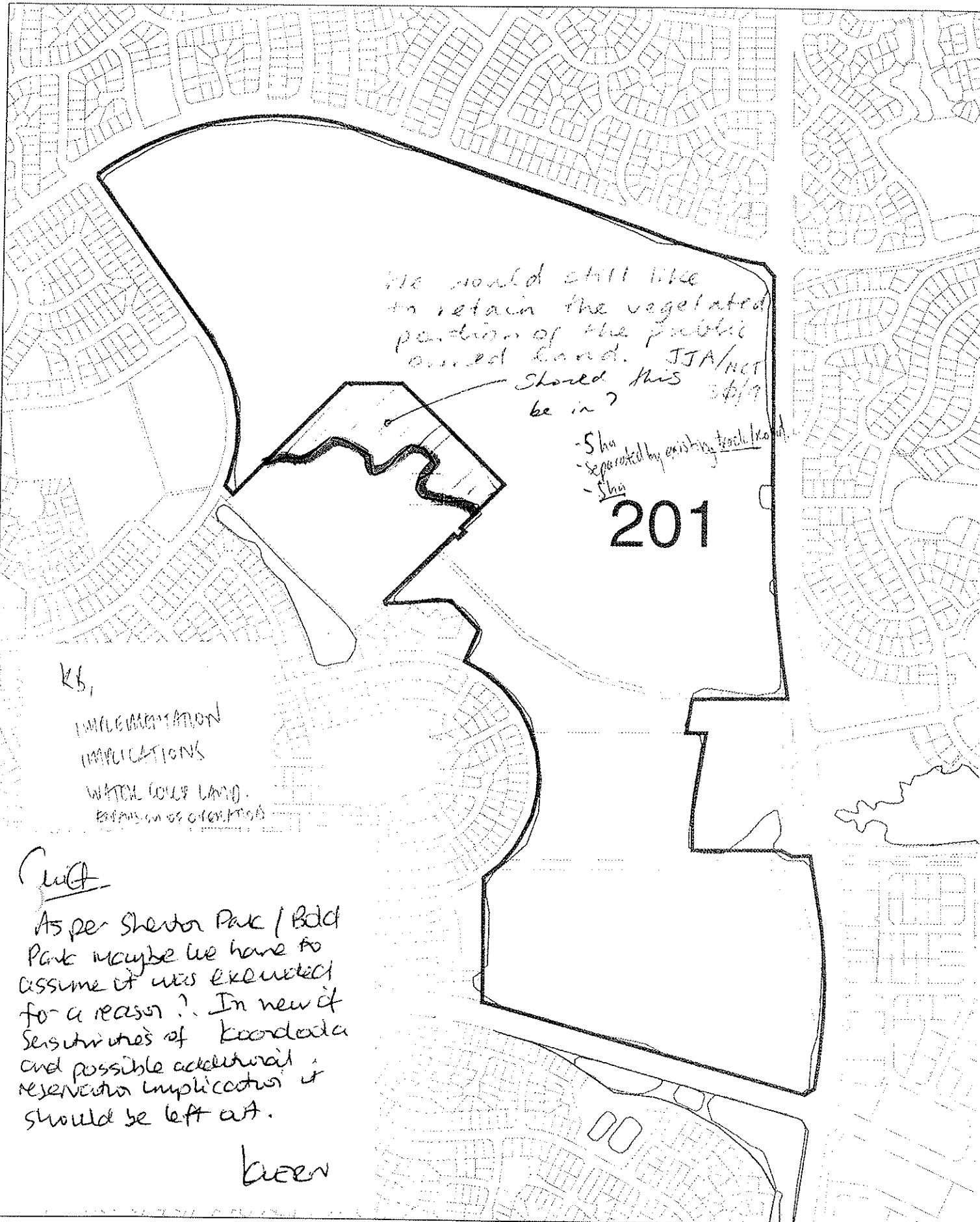
B: K/616 2/10/98



SCALE 1:2500

0 50

Metres



We would still like to retain the vegetated portion of the public owned land. JJA/NET should this still be in?

- 5ha
- separated by existing track/lea
- 5ha

201

KB,  
IMPLEMENTATION  
IMPLICATIONS  
WATCH WOLF LAND.  
REVISIONS TO COORDINATE

Cliff

As per Shelter Park / Bdd Park maybe we have to assume it was exempted for a reason? In view of sensitivities of Koordada and possible celebratory reservation implications it should be left as is.

Green

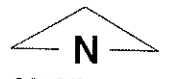
BUSHPLAN SITES CORRECTED



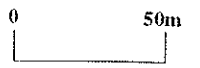
WESTERN AUSTRALIAN PLANNING COMMISSION



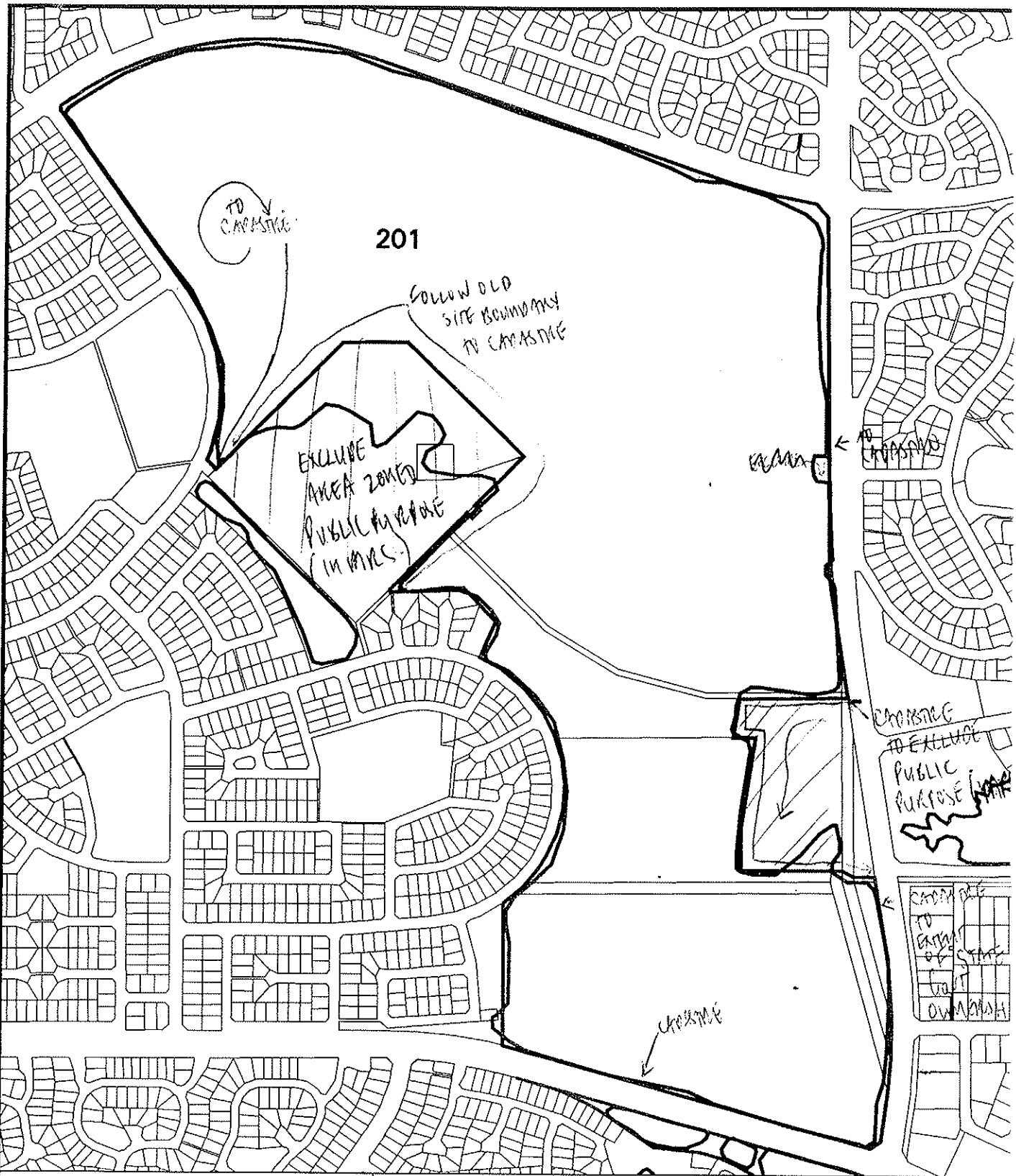
Koordada






SCALE 1:2500



Metres



**bp site 201**

-  AG VEG 1998 BOUNDARY THEME
-  Cadastre
-  Bushplan sites refno 1-500 SCP BOUNDARY THEME

MFP INTERNAL USE ONLY

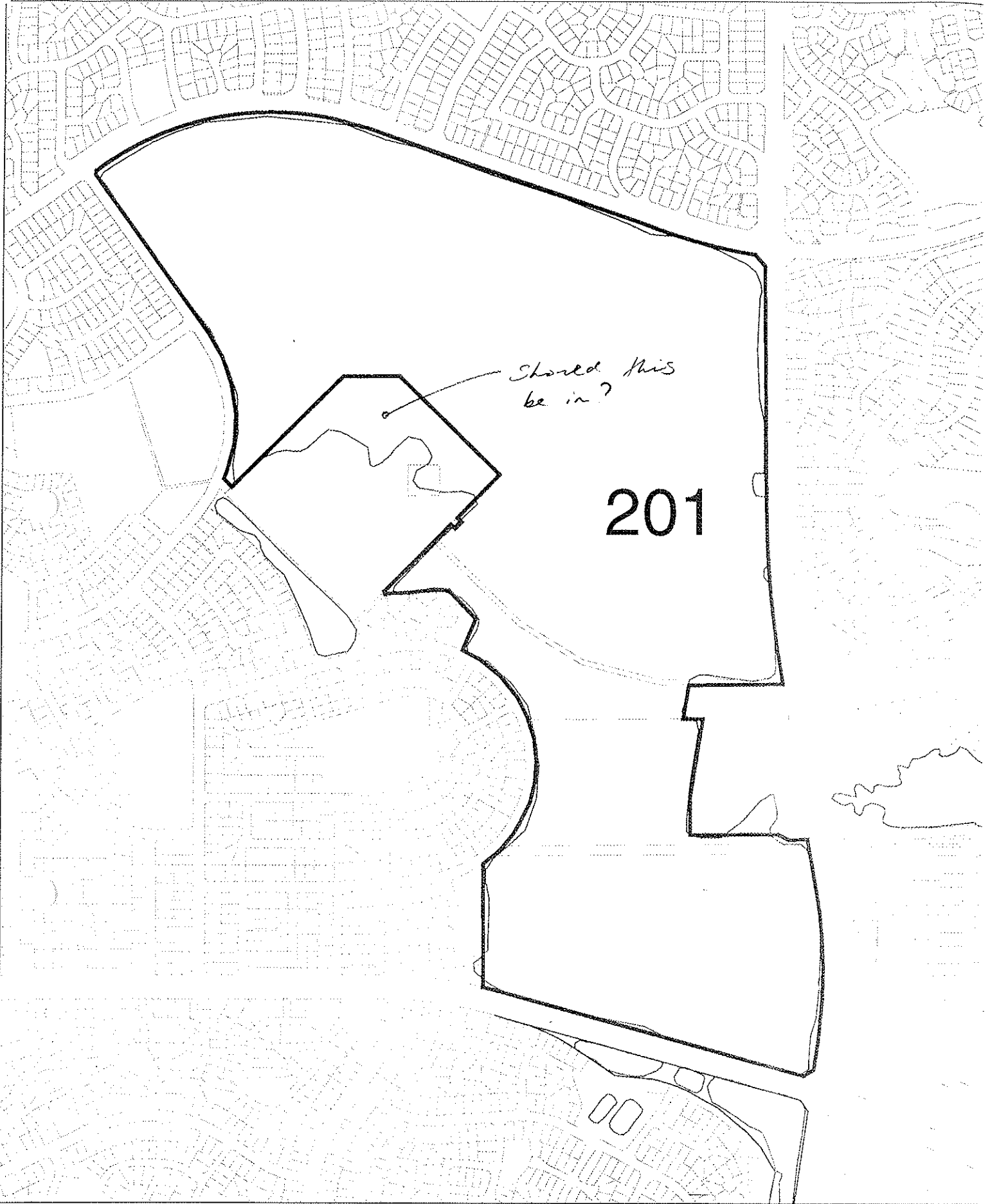
Prepared By: Andrea Zappacosta

Prepared For:

Map Ident: plot980526\_1

Date: 26 May 98

Scale 1:9761



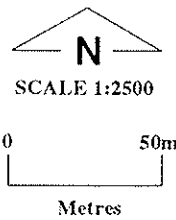
**BUSHPLAN SITES CORRECTED**

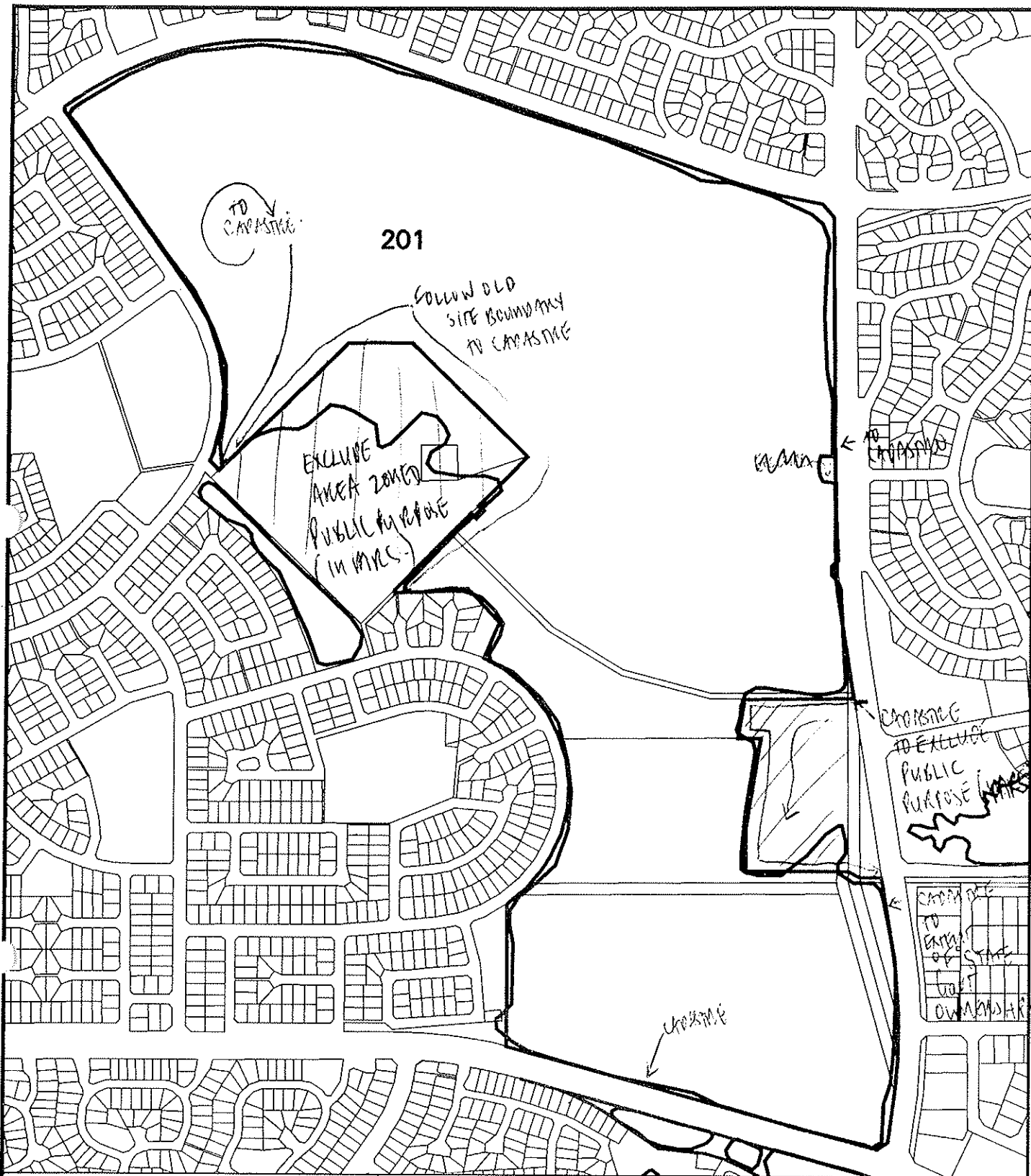


WESTERN  
AUSTRALIAN  
PLANNING  
COMMISSION



CUSTOMER  
FOCUS  
WESTERN AUSTRALIA





## bp site 201

- AG VEG 1998 BOUNDARY THEME
- Cadastre
- Bushplan sites refno 1-500 SCP BOUNDARY THEME

MFP INTERNAL USE ONLY

Prepared By: Andrea Zappacosta

Prepared For:

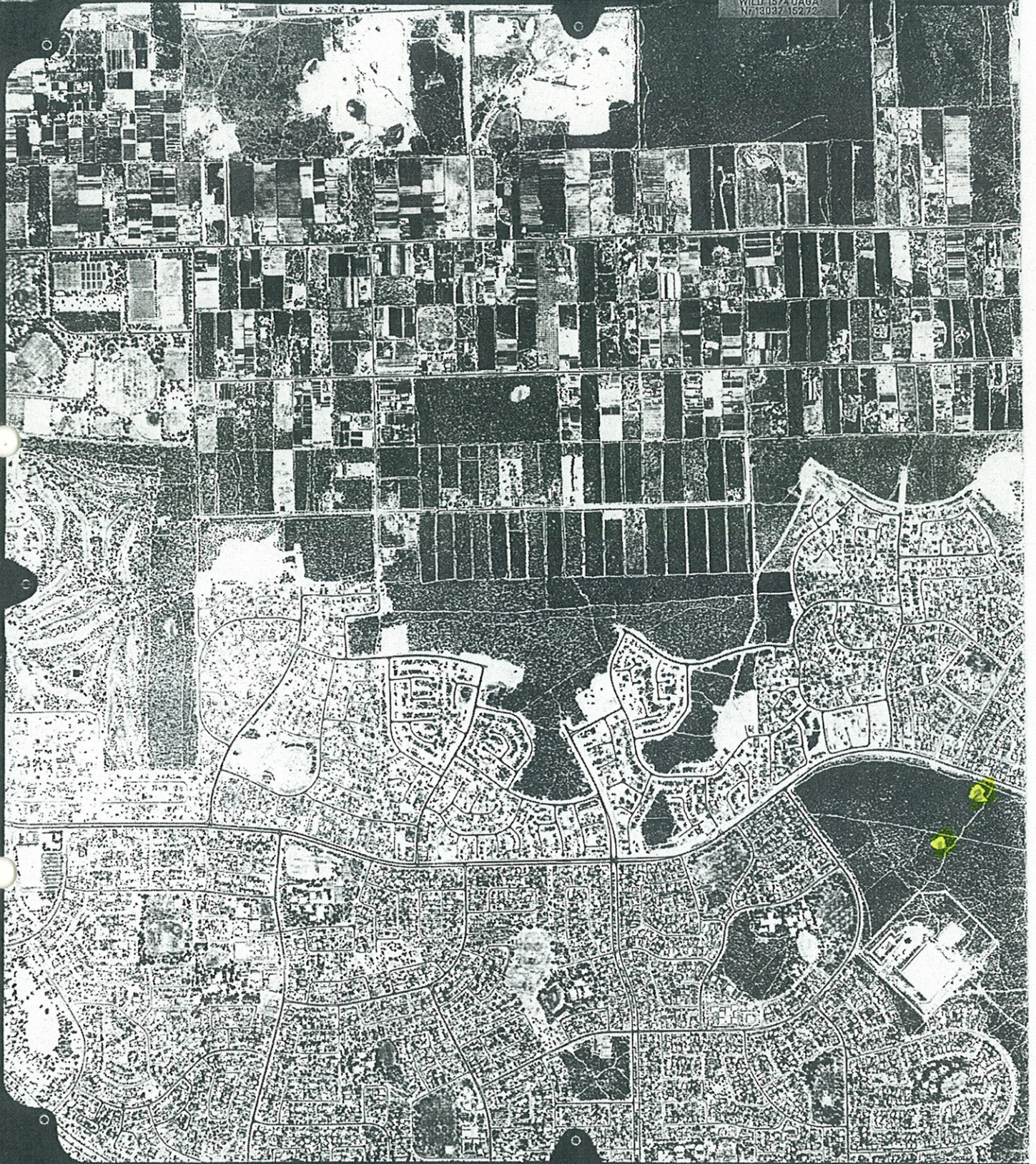
Map Ident: plot980526\_1

Date: 26 May 98

Scale 1:9761

WILD 1574 UAGA  
N718037 15272

50221 269 60 1000 5



5112 WA 2940(C) METRO STREET DIRECTORY & EXT. RUN 9 (5094-5189) 1:20000 5.1.91 910400

Koon Map Ai

# Bush Forever Site 201: Koondoola Regional Bushland



- Bush Forever Sites
- Bush Forever, MRS Ammdments
- Local Government Authority Boundaries
- Geomorphic Wetlands Feb04 by Evaluation
- Conservation
- Resource Enhancement
- Multiple Use
- No longer a wetland
- Not Assessed
- Floristic Survey Sites of the Southern Swan Coastal Plain**
- GJKENV (Keighery 1996)
- GRIFFIN (Griffen 1994)
- SCP (Gibson et al 1994)
- SYS6ENV (DEP 1996 and Trudgen & Keighery 1995)
- SYS6ENV2 (DEP 1996 and Trudgen & Keighery 1995)
- ★ CALM Threatened Ecological Communities 2002
- Roads - Perth Metropolitan
- Swan Coastal Plain - Eastern Boundary

100 0 100 200 Meters 1:10000

N  
  
  
 Projection: GDA94  
 MGA Zone 50

**Department of Environment  
 Western Australia**  
*This map has been produced using  
 various data from other agencies.  
 No responsibility is accepted for  
 any error or omission.*

Aerial Photography: Perth Metro Area - North West 2003

# Bush Forever Site 202: Koondoola Regional Bushland



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Environmental Geology  
 Bush Forever Site 202: Koondoola Regional Bushland



Bush Forever Sites  
 Bush Forever, MRS Ammendments

Local Government Authority Boundaries

Floristic Survey Sites of the Southern Swan Coastal Plain

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Roads - Perth Metropolitan  
 Swan Coastal Plain - Eastern Boundary

100 0 100 200 Meters



1:10000



Projection: GDA94  
 MGA Zone 50

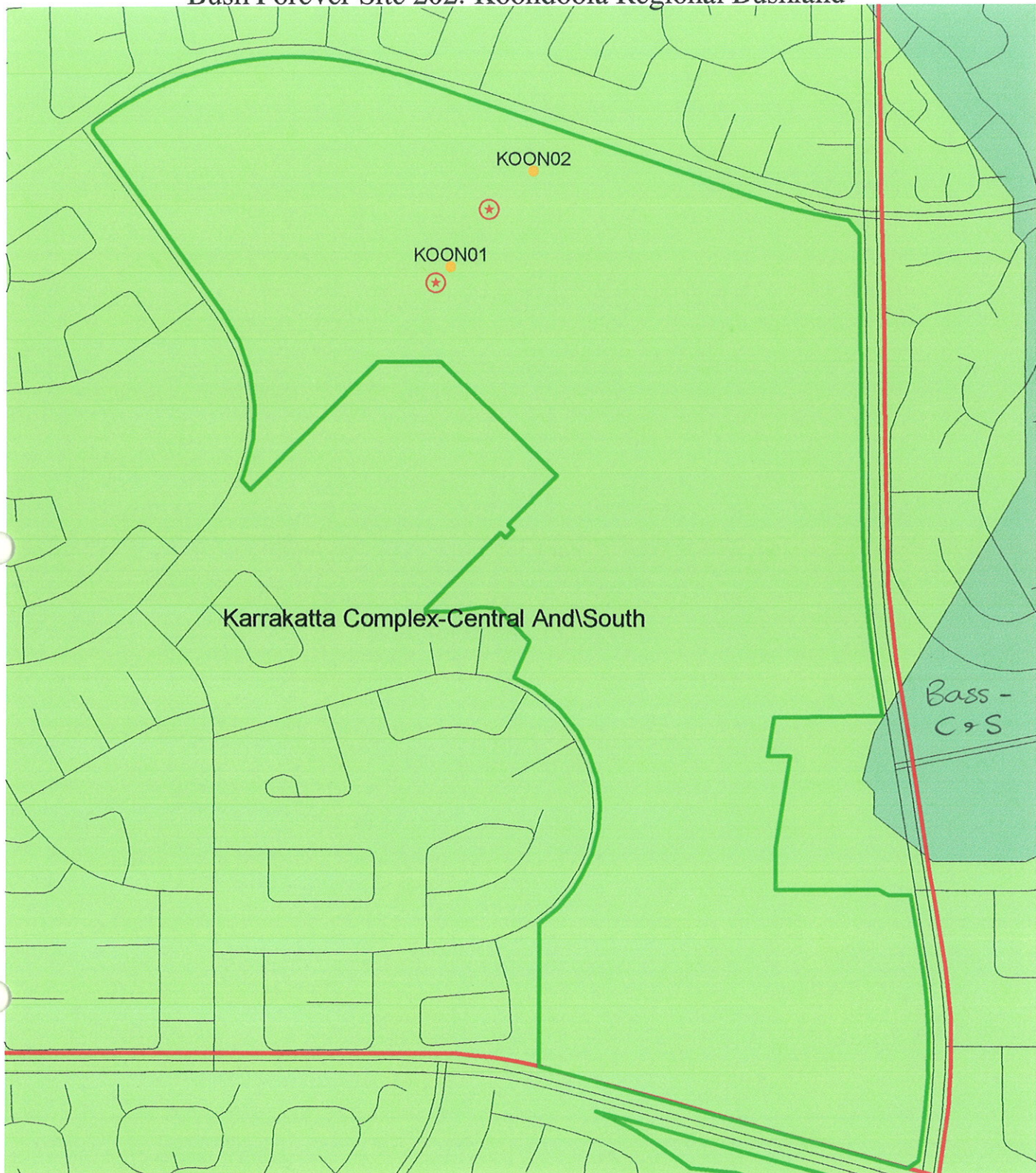
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# VEGETATION COMPLEXES

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100 0 100 200 Meters



1:10000



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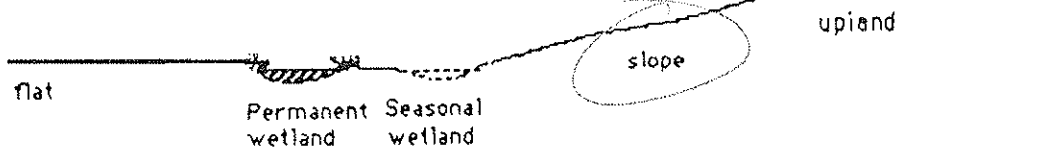
QUADRAT No. Koon 1 VEGETATION TYPE \_\_\_\_\_  
 DATE FIRST TRIP 20/7/92 VOLUNTEERS \_\_\_\_\_  
 DATE SECOND TRIP 18/1/92 VOLUNTEERS \_\_\_\_\_  
 BOTANIST NG & ML

1. LOCATION of the QUADRAT

a. Mud Map Draw a sketch of the location of the quadrat the back of this sheet

b. Photograph Photographer's name N. GIBSON #14

c. Topographic position - Circle position of quadrat



Keighery and Keighery, 1990  
Adapted from Griffin and Keighery, 1989  
MOORE RIVER to JURIE SANDPLAIN  
SURVEY. WILDFLOWER SOCIETY OF WA

2. SITE DATA - Circle the correct response

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

% Bare ground 10% Drainage well mod poor Wet All year winter/spring

Litter (% cover) 70% Surface soil light Brown Sand Sub-surface soil Environ 57

3. VEGETATION STRUCTURE AND COVER. Record appropriate cover class

Cover Class - percentage classes  
 over 70%  
 50-70%  
 30-50%  
 20-30%  
 10-20%  
 2-10%  
 0% under 2%

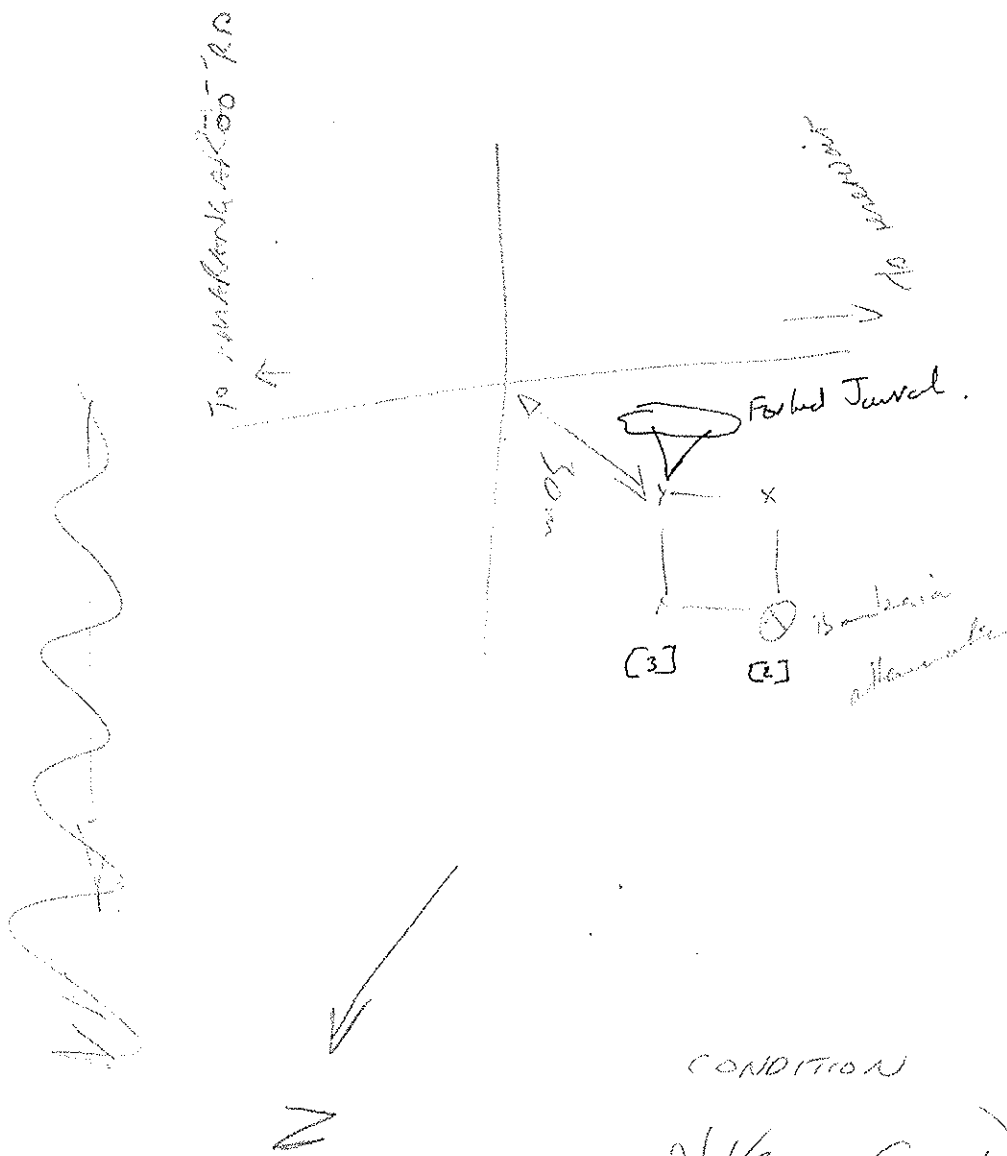
LIFE FORM	TREES	MALLEES	
		<i>Eucalyptus marginata</i> <i>Banksia attenuata</i>	MALLEE SHRUB less than 8m
COVER CLASS (%)	2-15m 5-15m 20-30%		

LIFE FORM	SHRUBS	Height (metres)				
		<i>Mitrasacme sp</i> ( <i>Distichlis spicata</i> ) <i>macrocarpa</i> <i>Dactyloctenium aegyptium</i>	over 2m	2.0-1.5m	1.5-1.0m	1.0m - 0.5m
COVER CLASS (%)		2-10%			50-70%	

LIFE FORM	BUNCH GRASSES	HERBS	SEDGES
		under 0.5m	under 0.5m (except creepers)
COVER CLASS (%)			2-10%

DPO? purchased from  
Horseshoe West (Shaw warrack)

Koon



CONDITION

2 (Very Good)

REVISIT

28/AUG/02

Peg at base of Jarval bent but still in ground.

Pegs [2] + [3] pulled out but lying on ground.



QUADRAT No. Koon 2 VEGETATION TYPE \_\_\_\_\_  
 DATE FIRST TRIP 30/9/92 VOLUNTEERS \_\_\_\_\_  
 DATE SECOND TRIP 23/11/92 VOLUNTEERS BSK MC  
 BOTANIST ML & RL

1. LOCATION of the QUADRAT

a. Mud Map Draw a sketch of the location of the quadrat the back of this sheet →

b. Photograph Photographer's name N. GIBSON # 8

c. Topographic position - Circle position of quadrat

28/11/2002  
 31 50 01.4  
 115 52 14.3  
 ± 7m  
 WS9 84

Keighery and Keighery, 1990  
 Adapted from Griffin and Keighery, 1989  
 MOORE RIVER to JURLEN SANDPLAIN  
 SURVEY. WILDFLOWER SOCIETY of WA

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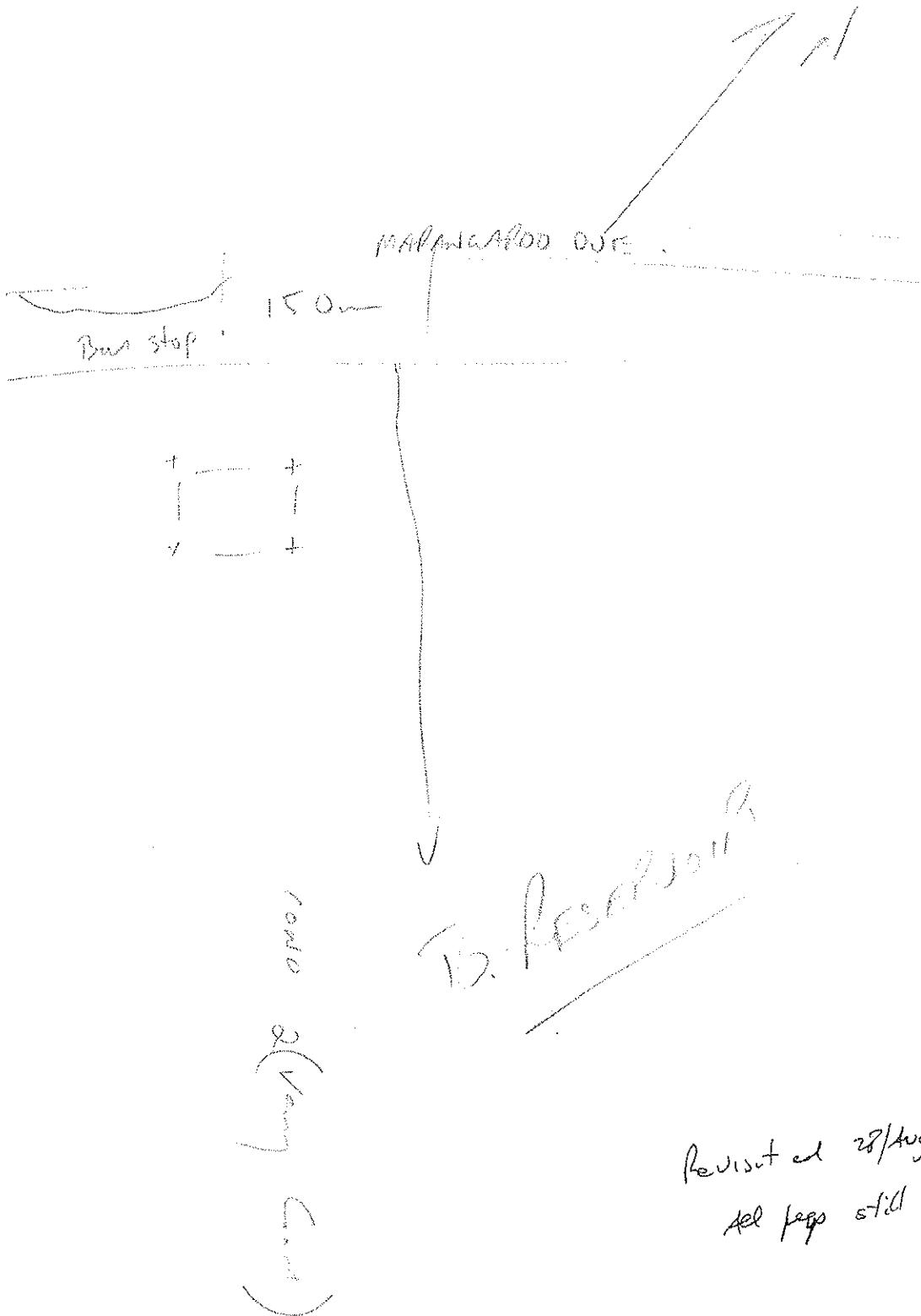
% Bare ground 20% Drainage well mod poor Wet All year winter/spring

Litter (% cover) 30% Surface soil Light Yellow Sand Sub-surface soil Light Brown Sand

3. VEGETATION STRUCTURE AND COVER Record appropriate cover class

Cover Class - percentage classes	over 70%	<p><b>TREES</b> <i>Banksia attenuata</i> <i>acuminata</i></p> <p>LIFE FORM:  <span style="float: right;">15m</span></p> <p>COVER CLASS (%): <u>2-10%</u></p>				<p><b>MALLEES</b></p> <p>LIFE FORM:  <span style="float: right;">10m</span></p> <p>COVER CLASS (%): <u>2-10%</u></p>			
	50-70%	<p><b>SHRUBS</b> <i>Nedea prostrata</i> (1) <i>Drosera</i> <i>lyonii</i> (2) <i>Strobilanthes</i> <i>latifolia</i> <i>Mitrasacme</i> <i>acronata</i> (3) <i>Petrophile</i></p> <p>LIFE FORM:  <span style="float: right;">3m</span></p> <p>COVER CLASS (%): <u>2-10%</u></p>				<p><b>MALLEE SHRUB</b> less than 8m</p> <p><b>MALLEE TREE</b> 8m or more</p> <p>LIFE FORM:  <span style="float: right;">5m</span></p> <p>COVER CLASS (%): <u>2-10%</u></p>			
	30-50%	<p><b>BUNCH GRASSES</b></p> <p>LIFE FORM:  <span style="float: right;">2.0m</span></p> <p>COVER CLASS (%): <u>2-10%</u></p>				<p><b>HERBS</b> (except creepers)</p> <p>LIFE FORM:  <span style="float: right;">1.5m</span></p> <p>COVER CLASS (%): <u>2-10%</u></p>			
	20-30%	<p><b>SEDGES</b></p> <p>LIFE FORM:  <span style="float: right;">1.0m</span></p> <p>COVER CLASS (%): <u>2-10%</u></p>				<p><b>MONOPHYTES</b></p> <p>LIFE FORM:  <span style="float: right;">0.5m</span></p> <p>COVER CLASS (%): <u>2-10%</u></p>			
	10-20%	<p>COVER CLASS (%): <u>2-10%</u></p>				<p>COVER CLASS (%): <u>2-10%</u></p>			
	2-10%	<p>COVER CLASS (%): <u>2-10%</u></p>				<p>COVER CLASS (%): <u>2-10%</u></p>			
	0%	<p>COVER CLASS (%): <u>2-10%</u></p>				<p>COVER CLASS (%): <u>2-10%</u></p>			
	under 2%	<p>COVER CLASS (%): <u>2-10%</u></p>				<p>COVER CLASS (%): <u>2-10%</u></p>			
	under 2%	<p>COVER CLASS (%): <u>2-10%</u></p>				<p>COVER CLASS (%): <u>2-10%</u></p>			
	under 2%	<p>COVER CLASS (%): <u>2-10%</u></p>				<p>COVER CLASS (%): <u>2-10%</u></p>			
	under 2%	<p>COVER CLASS (%): <u>2-10%</u></p>				<p>COVER CLASS (%): <u>2-10%</u></p>			

KOON-2



Revised at 28/Aug/2002  
All fees still in place.



## 4. Bushplan site 385: Reid Hwy Bushland

Recently *Eleocharis sphacelata* was discovered at this site, the most southerly distribution of this species known, with the next population at Gin Gin. Vesting for this area needs to be established so that appropriate management for conservation can occur. The Bennett Brook Catchment group will be active in the eastern end of the reserve in the near future, as the RSPCA are establishing a centre there, and have requested the assistance of the catchment group in implementing a rehabilitation plan.

## 5. Bushplan site 200: Koondoola Open Space

The area needs to be zoned for conservation, and the local councils need to take an active management role in the reserve

## 6. Bushplan site 107: Lightning Swamp

A Management Plan was prepared for this area by Murdoch University in 1996, however it is difficult for management to occur until a local council accepts vesting. At present the boundaries of Swan and Bayswater Councils may change, and neither council will accept vesting until this is determined. This needs to be resolved immediately, as the eastern section is not fenced, and four wheel drive vehicles are rapidly degrading the perched wetland.

## 7. Bushplan site 400: Victoria Rd Bushland

The zoning of this site needs to urgently be changed to conservation, and a management body appointed.

## 8. Bushplan site 200: Caversham Airbase

A report on vegetation and fauna was published in 1998 Final Report: Henley Brook and West Swan Landcare Project, Bevan Carter. This area is under threat from housing from Homeswest, and requires immediate protection. It contains the priority 3 species *Restio stenostachyus*.

## 9. Bushplan site 102: Swan River Bassendean to Upper Swan

The catchment group have recently enlarged their boundaries to include this area, and are keen to work with landholders to extend the riparian vegetation buffer

## 10. Bushplan site 200: Bennett Brook

The catchment group has 3 restoration areas along the brook, which is an extremely important wildlife corridor between Whiteman Park and the Swan River. It is under threat from new subdivisions which are too close to the brook, allowing only a 30m buffer. Often these are opposed by the Shire and won on appeal to the Minister. It is vital that buffers on all wetland systems are increased to 100m. Other pressures include proposed developments at Whiteman Park on the edge of the brook, pumping from the Gnangara mound leading to decreased flow in the headwaters and increased polluted stormwater flow carrying sediment from council and Water Corporation drains into the Brook. Apart from the Quenda, Bennett Brook supports freshwater mussels as well as many species of native fish (Report from Murdoch University 1998)

## qryBFS201KoondoolaSppList

Plotorsource	Na	Genus	Species	InfraspRank	InfraspName	Informal	ConsvCode
KOON-1	*	Aira	caryophyllea				
KOON-1		Alexgeorgea	nitens				
KOON-1		Amphipogon	turbinatus				
KOON-1		Anigozanthos	manglesii	subsp.	manglesii		
KOON-1		Arnocrinum	preissii				
KOON-1		Astroloma	pallidum				
KOON-1		Austrodanthonia	occidentalis				
KOON-1		Banksia	attenuata				
KOON-1		Banksia	ilicifolia				
KOON-1		Banksia	menziesii				
KOON-1		Bossiaea	eriocarpa				
KOON-1		Burchardia	congesta				
KOON-1		Calectasia	narragara				
KOON-1		Calothamnus	sanguineus				
KOON-1		Calytrix	flavescens				
KOON-1		Chordifex	sinuosus			MS	
KOON-1		Conospermum	stoechadis	subsp.	stoechadis		
KOON-1		Conostephium	pendulum				
KOON-1		Conostylis	aurea				
KOON-1		Conostylis	setigera	subsp.	setigera		
KOON-1		Dampiera	linearis				
KOON-1		Daviesia	divaricata	subsp.	divaricata	MS	
KOON-1		Daviesia	nudiflora	subsp.	nudiflora		
KOON-1		Daviesia	triflora				
KOON-1		Desmocladius	fasciculatus				
KOON-1		Desmocladius	fasciculatus				
KOON-1		Drosera	erythrorhiza	subsp.	erythrorhiza		
KOON-1		Drosera	menziesii	subsp.	penicillaris		
KOON-1		Eremaea	pauciflora	var.	pauciflora		
KOON-1		Eucalyptus	marginata	subsp.	marginata		
KOON-1	*	Gladiolus	caryophyllaceus				
KOON-1		Gompholobium	tomentosum				
KOON-1		Haemodorum	laxum				
KOON-1		Hemiandra	pungens				
KOON-1		Hibbertia	huegelii				
KOON-1		Hibbertia	hypericoides				
KOON-1		Hibbertia	racemosa				
KOON-1		Hovea	trisperma	var.	trisperma		
KOON-1		Hybanthus	calycinus				
KOON-1		Hypocalymma	robustum				
KOON-1		Hypolaena	exsulca				
KOON-1		Jacksonia	floribunda				
KOON-1		Jacksonia	sternbergiana				
KOON-1		Lepidosperma	sp. (Coastal terete) (BJ Keighery and N Gibson 231)				
KOON-1		Lyginia	barbata				
KOON-1		Mesomelaena	pseudostygia				
KOON-1		Monotaxis	grandiflora				
KOON-1		Nemcia	reticulata				

qryBFS201KoondoolaSppList

Plotorsource	Na	Genus	Species	InfraspRank	InfraspName	Informal	ConsvCode
KOON-1		Patersonia	occidentalis				
KOON-1		Persoonia	saccata				
KOON-1		Petrophile	linearis				
KOON-1		Petrophile	macrostachya				
KOON-1		Philothea	spicata				
KOON-1		Pimelea	leucantha				
KOON-1		Pterostylis	sanguinea				
KOON-1		Scaevola	repens	var.	repens		
KOON-1		Schoenus	curvifolius				
KOON-1		Stirlingia	latifolia				
KOON-1		Stylidium	brunonianum	subsp.	brunonianum		
KOON-1		Stylidium	calcaratum				
KOON-1		Stylidium	piliferum	subsp.	piliferum		
KOON-1		Stylidium	repens				
KOON-1		Synaphea	spinulosa	subsp.	spinulosa		
KOON-1		Tetralia	octandra				
KOON-1		Thysanotus	triandrus				
KOON-1		Xanthorrhoea	preissii				
KOON-1		Xanthosia	huegelii	subsp.	huegelii	MS	

AREA INFORMATION

System 6 Area (C or M) or Update Area (Update) KBONDOLA 1

Conservation Area
Nature Reserve
Reserve No
National Park
Reserve No
Local Government
Reserve No
Other
Proposed Conservation Areas
Local Government
Reserve No
Other <u>Homeswest</u>

Conservation Area

Nature Reserve
Reserve No
National Park
Reserve No
Local Government
Reserve No
Other

TOTAL AREA

Bushland Area	hectares
Completely Degraded	

AREA MAPPED FLORISTIC UNITS

Units	Site (Condition)	Code	Bound	Area (ha)
<u>20a</u>	<u>φ1 (2) φ2 (2)</u>	<u>G: K00N</u>		

Boundaries determined by use of

aerial photograph <u>Metro Street Directory run 9 512 5/1/91</u>
orthophoto
vegetation map
soil map

Metro map 3



CONTACT DR N. GIBSON CALM WOODVALE for further information.

Flora list for Koondoola1 (extracted from Swan Coastal Plain database, Koon01-02, 87 taxa, 25/5/1995).

**Department of Environmental Protection System 6 Update: Site Based Flora List for Koondoola1**

(extracted from the CALM Swan Coastal Plain database, Koon01-02, 87 taxa, 25/5/95)

Amaranthaceae

*Ptilotus manglesii*

Anthericaceae

*Arnocrinum preissii*

*Caesia occidentalis*

*Chamaescilla corymbosa*

*Thysanotus patersonii*

*Thysanotus sparteus*

*Thysanotus triandrus*

*Tricoryne tenella*

Apiaceae

*Xanthosia huegelii*

Asteraceae

*Waitzia suaveolens*

Colchicaceae

*Burchardia umbellata*

Cyperaceae

*Lepidosperma "coastal terete" scps (BJK&NG 231)*

*Mesomelaena pseudostygia*

*Schoenus curvifolius*

*Tetraria octandra*

Dasypogonaceae

*Calectasia cyanea*

*Lomandra caespitosa*

*Lomandra hermaphrodita*

*Lomandra sp. scps*

Dilleniaceae

*Hibbertia huegelii*

*Hibbertia hypericoides*

*Hibbertia racemosa*

Droseraceae

*Drosera erythrorhiza*

*Drosera menziesii*

Epacridaceae

*Astroloma pallidum*

*Conostephium pendulum*

*Conostephium preissii*

Euphorbiaceae

*Monotaxis grandiflora*

Goodeniaceae

*Dampiera linearis*

*Scaevola repens var. repens*

Haemodoraceae

- Anigozanthos manglesii
- Conostylis aurea
- Conostylis setigera
- Haemodorum laxum

Iridaceae

- \* Gladiolus caryophyllaceus
- Patersonia occidentalis

Lamiaceae

- Hemiandra pungens

Mimosaceae

- Acacia sessilis

Molluginaceae

- Macarthuria australis

Myrtaceae

- Calothamnus sanguineus
- Calytrix flavescens
- Eremaea pauciflora subsp. pauciflora scps
- Eucalyptus marginata
- Hypocalymma robustum

Orchidaceae

- Pterostylis aff. sanguinea scps

Papilionaceae

- Bossiaea eriocarpa
- Daviesia divaricata
- Daviesia nudiflora
- Daviesia physodes
- Daviesia triflora
- Gompholobium confertum
- Gompholobium tomentosum
- Hovea trisperma var. trisperma
- Jacksonia densiflora
- Jacksonia sericea
- Jacksonia sternbergiana
- Nemcia reticulata

Poaceae

- \* Aira caryophyllea
- Amphipogon turbinatus
- Danthonia occidentalis
- Stipa semibarbata group scps

Proteaceae

- Banksia attenuata
- Banksia ilicifolia
- Banksia menziesii
- Conospermum stoechadis
- Dryandra nivea
- Hakea prostrata

Persoonia saccata  
Petrophile linearis  
Petrophile macrostachya  
Stirlingia latifolia  
Synaphea spinulosa

Restionaceae

Alexgeorgea nitens  
Hypolaena exsulca  
Loxocarya fasciculata  
Loxocarya flexuosa  
Lyginia barbata  
Restio sinosus seps ms

Rutaceae

Eriostemon spicatus

Stylidiaceae

Levenhookia pusilla  
Stylidium brunonianum  
Stylidium calcaratum  
Stylidium piliferum  
Stylidium repens

Thymelaeaceae

Pimelea leucantha

Violaceae

Hybanthus calycinus

Xanthorrhoeaceae

Xanthorrhoea preissii

# Flora List for Koondola Open Space

1

Compiled from Site data (KOON 01 & 02), Gibson et al. 1994 and National Trust Assessment 1993 (B. J. Keigery 1995).

## Amaranthaceae

*Ptilotus manglesii*

## Anthericaceae

*Arnocrinum preissii*

*Arthropodium capillipes*

*Caesia occidentalis*

*Chamaescilla corymbosa*

*Corynotheca micrantha*

*Laxmannia squarrosa*

*Sowerbaea laxiflora*

*Thysanotus multiflorus*

*Thysanotus patersonii*

*Thysanotus sparteus*

*Thysanotus triandrus*

*Tricoryne elatior*

*Tricoryne tenella*

## Apiaceae

*Centella cordifolia*

*Platysace compressa*

*Xanthosia huegelii*

## Asteraceae

*Lagenifera huegelii*

*Olearia axillaris*

*Ozothamnus cordatus*

\* *Ursinia anthemoides*

\* *Vellereophyton "candisimum"*

*Waitzia paniculata*

*Waitzia suaveolens*

## Caryophyllaceae

\* *Petrorhagia velutina*

## Casuarinaceae

*Allocasuarina fraseriana*

*Allocasuarina humilis*

## Colchicaceae

*Burchardia umbellata*

## Commelinaceae

*Cartonema philydroides*

## Cyperaceae

*Baumea articulata*

*Baumea juncea*

*Baumea riparia*

*Cyperus rotundus*

\* *Cyperus tenuiflorus*

*Isolepis marginata*

*Lepidosperma "coastal terete" (BJK&NG 231)*

*Lepidosperma angustatum*

*Mesomelaena pseudostygia*

*Schoenus brevisetis*

*Schoenus clandestinus*

*Schoenus curvifolius*

*Tetraria octandra*

Dasyogonaceae

- Acanthocarpus preissii
- Calectasia cyanea
- Dasyogon bromeliifolius
- Lomandra caespitosa
- Lomandra hermaphrodita
- Lomandra suaveolens

Dilleniaceae

- Hibbertia huegelii
- Hibbertia hypericoides
- Hibbertia racemosa

Droseraceae

- Drosera erythrorhiza
- Drosera menziesii

Epacridaceae

- Astroloma pallidum
- Conostephium pendulum
- Conostephium preissii
- Leucopogon conostephioides
- Leucopogon propinquus
- Lysinema ciliatum

Euphorbiaceae

- Monotaxis grandiflora
- Phyllanthus calycinus

Gentianaceae

- \* Centaurium erythraea

Geraniaceae

- \* Pelargonium capitatum

Goodeniaceae

- Dampiera linearis
- Goodenia pulchella
- Lechenaultia floribunda
- Scaevola repens var. repens

Haemodoraceae

- Anigozanthos humilis
- Anigozanthos manglesii
- Conostylis aurea
- Conostylis setigera
- Haemodorum laxum
- Haemodorum spicatum
- Phlebocarya ciliata

Haloragaceae

- Gonocarpus pithyoides

Iridaceae

- \* Gladiolus angustus
- \* Gladiolus caryophyllaceus
- Patersonia occidentalis

Juncaceae

- \* Juncus bufonius

*Juncus pallidus*

Lamiaceae

*Hemiandra pungens*

Lauraceae

*Cassytha glabella*

Lobeliaceae

*Lobelia alata*

Loranthaceae

*Nuytsia floribunda*

Meliaceae

*Melia azedarach*

Mimosaceae

*Acacia huegelii*

*Acacia pulchella*

*Acacia saligna*

*Acacia sessilis*

*Acacia stenoptera*

*Acacia willdenowiana*

\* *Acacia iteaphylla*

Molluginaceae

*Macarthuria australis*

Myrtaceae

*Astartea fascicularis*

*Calothamnus sanguineus*

*Calytrix angulata*

*Calytrix flavescens*

*Calytrix fraseri*

*Chamelaucium uncinatum*

*Eremaea asterocarpa*

*Eremaea pauciflora* subsp. *pauciflora*

*Eucalyptus marginata*

*Eucalyptus rudis*

*Eucalyptus tottiana*

*Hypocalymma angustifolium*

*Hypocalymma robustum*

*Kunzea ericifolia*

*Leptospermum spinescens*

*Melaleuca preissiana*

*Melaleuca scabra*

*Melaleuca trichophylla*

*Pericalymma ellipticum*

*Regelia ciliata*

*Scholtzia involucrata*

*Verticordia densiflora*

*Verticordia drummondii*

*Verticordia nitens*

Onagraceae

*Epilobium billardierianum* subsp. *pertigerum*

Orchidaceae

*Pterostylis* aff. *sanguinea*

Papilionaceae

- Aotus procumbens
- Bossiaea eriocarpa
- Callistachys lanceolata
- Daviesia divaricata
- Daviesia nudiflora
- Daviesia physodes
- Daviesia triflora
- Euchilopsis linearis
- Gompholobium confertum
- Gompholobium tomentosum
- Hardenbergia comptoniana
- Hovea trisperma
- Hovea trisperma var. trisperma
- Jacksonia densiflora
- Jacksonia furcellata
- Jacksonia sericea
- Jacksonia sternbergiana
- Kennedia prostrata
- \* Lotus angustissimus
- Nemcia capitata
- Nemcia reticulata
- Pultenaea reticulata

Phormiaceae

- Dianella divaricata

Poaceae

- \* Aira caryophyllea
- Amphipogon turbinatus
- \* Briza maxima
- \* Cortaderia seloana
- Cynodon dactylon
- Danthonia occidentalis
- \* Ehrharta calycina
- \* Eragrostis curvula
- \* Paspalum dilatatum
- Stipa flavescens
- Stipa semibarbata group

Polygalaceae

- Comesperma calymega

Polygonaceae

- Polygonum salicifolium

Proteaceae

- Adenanthos cygnorum
- Banksia attenuata
- Banksia grandis
- Banksia ilicifolia
- Banksia menziesii
- Conospermum stoechadis
- Dryandra nivea
- Hakea prostrata
- Hakea ruscifolia
- Persoonia saccata
- Petrophile linearis
- Petrophile macrostachya

*Stirlingia latifolia*  
*Synaphea spinulosa*

Restionaceae

*Alexgeorgea nitens*  
*Hypolaena exsulca*  
*Loxocarya fasciculata*  
*Loxocarya flexuosa*  
*Lyginia barbata*  
*Restio sinosus* ms

Rubiaceae

*Opercularia vaginata*

Rutaceae

*Eriostemon spicatus*

Santalaceae

*Exocarpos sparteus*

Stylidiaceae

*Levenhookia pusilla*  
*Stylidium brunonianum*  
*Stylidium calcaratum*  
*Stylidium piliferum*  
*Stylidium repens*  
*Stylidium schoenoides*

Thymelaeaceae

*Pimelea leucantha*  
*Pimelea sulphurea*

Tremandraceae

*Platytheca galioides*  
*Tetratheca hirsuta* "glabrous"

Typhaceae

\* *Typha orientalis*

Violaceae

*Hybanthus calycinus*

Xanthorrhoeaceae

*Xanthorrhoea brunonis*  
*Xanthorrhoea preissii*

Zamiaceae

*Macrozamia riedlei*

12

**SYSTEM 6 BUSHLAND SUBMISSION FORM  
FOR CONSIDERATION IN THE UPDATE PROGRAMME**

If you wish to submit more than one area for consideration in the System 6 update, please use a separate form for each area.

Please fill in each section giving as much information as possible.

**LOCATION, OWNERSHIP AND ZONING OF THE AREA**

1. Location *Koondoola*

Please give as accurate and detailed a description as possible of the site location

Please include either a hand drawn or copied map showing the area of the area

a) Bordering Roads: *Alexander Drive / Manangeroo Drive*

b) Nearest Corner: .....

c) Lot Number: ..... Street Number: .....

d) Town/Suburb/Location: *Koondoola*

e) Local Council: *Wanneroo*

f) Site Name (if any): *"Koondoola Open Space"*

g) Approximate size of the area (ha): .....

h) Please locate the area on a map and give us map references if possible:

i) Map: ..... Streetsmart /UBD/Other: .....

j) Map no.: .....

k) Grid Ref: .....

l) Please give any other information that may help us to find the location:

*See mapping Threatened Rainforest*

*Received from Council*  
m) Are you aware of any development proposals that are likely to affect the area?

**NOTE: Areas that have already been given development APPROVAL should not be nominated**

Please fill out those questions that you can answer

2. Who owns the area? (If owned by the person/s making the nomination please indicate) ..... *Govt - various* .....

3. If you own the area, and may be interested in participating in conservation on private land initiatives please indicate (and leave your name and address at the end of this submission form) .....

4. What is the area zoned? (please indicate whether zoning is Town Planning Scheme or Metropolitan Region Scheme) .....

CAN YOU TELL US A LITTLE ABOUT THE PHYSICAL CHARACTERISTICS OF THE AREA

5. Why do you consider this area important? (Refer to Guiding Issues paper)

*① Important plant community  
Prepared by Govt. for protection because of values.*

6. What is/are the soil type/s and colours ? ..... *② Poorly represented in reserves* .....

Type: Sand/Clay/Gravel/Loam/Silt  
Colour: White/Grey/Brown/Orange/Yellow/Red/Black

7. Does the area have any special features such as unusual landforms / landscapes that still retain their natural vegetation? Yes/No

If yes, what are they? .....  
.....  
.....

8. Is the area a wetland or does it include a wetland? .....

If yes, what kind of a wetlands is it?

- a) lake
- b) river
- c) stream
- d) swamp
- e) estuary
- f) seasonally wet
- g) other

9. What percentage of the wetland is open water in summer? .....

**CAN YOU TELL US A LITTLE ABOUT THE VEGETATION /FAUNA ON THE NOMINATED AREA.**

10. What percentage of the area is indigenous vegetation? .....

11. If the area includes regions cleared of native bushland please indicate reasons for the inclusion. ....

.....

12. Has any previous flora or fauna survey work been done on the area?

.....

If yes, please give details of the work .....

.....

.....

13. How would you rate the condition of the native bushland? (see attached table)

- a) pristine
- b) excellent
- c) very good
- d) good
- e) degraded
- f) completely degraded
- g) don't know

14. Please indicate the disturbances affecting the area and where appropriate the percentage of the area disturbed.

- a) Partial clearing
- b) fragmentation
- c) Selective removal of species: timber cutting, wildflower picking, mowing dieback and other plant diseases
- d) Fire regime, including intensity, season and frequency
- e) 'Enrichment plantings' that is plantings of species not found in that community
- f) Weed invasion
- g) Animal impact: horses, foxes, rabbits, cats, dogs, camels, goats etc
- h) Soil movement, both removal and dumping
- i) Changes in water regimes; flooding, drainage and watering
- j) Salinity
- k) Fertiliser drift and along waterways nutrient influx
- l) Mining, including that for road works

- m) Grazing: stock, overgrazing by feral or native mammals
- n) Proliferation of tracks, fire breaks and walk trails
- o) Off-road vehicle use
- p) Use as service corridors by the SEC, Main Roads, Water Authority.

(Source: B Keighery. Bushland Plant Survey, September 1994)

**15. Does the area contain any plant species of special interest that you know of?**  
(eg. declared rare flora, priority taxa, outlier populations) .....

Do you know what they are? .....

**16. Do you know of any native animals that use the area?** .....

Can you list those you know of? (birds, mammals, reptiles, amphibians etc)

**17. Is the area used by any native animals of special interest?** (eg. endangered species, large/important populations).....

If yes, please name them and indicate source of information

.....  
.....

<i>CAN YOU TELL US A LITTLE ABOUT THE SURROUNDING AREA</i>
--

**18. Are there any bushland areas (including wetlands) near to this area?**

.....

If yes, how close are they ? .....

.....  
.....

Are they already conservation reserves? .....

What is their approximate size? .....

**19. Does the submitted area link other bushland areas?** .....

.....  
.....

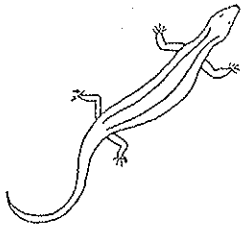
Please attach any additional information about the area which may be of use when assessing it.

## qryBFS201KoondoolaSppList

Plotorsource	Na	Genus	Species	InfraspRank	InfraspName	Informal	ConsvCode
KOON-2		Acacia	sessilis				
KOON-2		Alexgeorgea	nitens				
KOON-2		Amphipogon	turbinatus				
KOON-2		Astroloma	pallidum				
KOON-2		Austrodanthonia	occidentalis				
KOON-2		Austrostipa	semibarbata group (Gibson et al. 1994)				
KOON-2		Banksia	attenuata				
KOON-2		Banksia	menziesii				
KOON-2		Bossiaea	eriocarpa				
KOON-2		Burchardia	congesta				
KOON-2		Caesia	occidentalis				
KOON-2		Chamaescilla	corymbosa	var.	corymbosa		
KOON-2		Conostephium	pendulum				
KOON-2		Conostephium	preissii				
KOON-2		Conostylis	aurea				
KOON-2		Conostylis	setigera	subsp.	setigera		
KOON-2		Dampiera	linearis				
KOON-2		Daviesia	divaricata	subsp.	divaricata	MS	
KOON-2		Daviesia	nudiflora	subsp.	nudiflora		
KOON-2		Daviesia	physodes				
KOON-2		Daviesia	triflora				
KOON-2		Desmocladus	fasciculatus				
KOON-2		Desmocladus	fasciculatus				
KOON-2		Drosera	erythrorhiza	subsp.	erythrorhiza		
KOON-2		Drosera	menziesii	subsp.	penicillaris		
KOON-2		Dryandra	lindleyana				
KOON-2		Eremaea	pauciflora	var.	pauciflora		
KOON-2		Eucalyptus	marginata	subsp.	marginata		
KOON-2	*	Gladiolus	caryophyllaceus				
KOON-2		Gompholobium	confertum				
KOON-2		Haemodorum	laxum				
KOON-2		Hakea	prostrata				
KOON-2		Hemiandra	pungens				
KOON-2		Hibbertia	huegelii				
KOON-2		Hibbertia	hypericoides				
KOON-2		Hibbertia	racemosa				
KOON-2		Hovea	trisperma	var.	trisperma		
KOON-2		Hybanthus	calycinus				
KOON-2		Hypolaena	exsulca				
KOON-2		Jacksonia	sericea				P4
KOON-2		Lepidosperma	sp. (Coastal terete) (BJ Keighery and N Gibson 231)				
KOON-2		Levenhookia	pusilla				
KOON-2		Lomandra	caespitosa				
KOON-2		Lomandra	hermaphrodita				
KOON-2		Lyginia	barbata				
KOON-2		Macarthuria	australis				
KOON-2		Mesomelaena	pseudostygia				
KOON-2		Monotaxis	grandiflora				

qryBFS201KoondoolaSppList

Plotorsource	Na	Genus	Species	InfraspRank	InfraspName	Informal	ConsvCode
KOON-2		Nemcia	reticulata				
KOON-2		Patersonia	occidentalis				
KOON-2		Petrophile	linearis				
KOON-2		Petrophile	macrostachya				
KOON-2		Ptilotus	manglesii				
KOON-2		Scaevola	repens	var.	repens		
KOON-2		Schoenus	curvifolius				
KOON-2		Stirlingia	latifolia				
KOON-2		Stylidium	calcaratum				
KOON-2		Stylidium	piliferum	subsp.	piliferum		
KOON-2		Tetraria	octandra				
KOON-2		Thysanotus	patersonii				
KOON-2		Thysanotus	sparteus				
KOON-2		Thysanotus	triandrus				
KOON-2		Tricoryne	tenella				
KOON-2		Waitzia	suaveolens	var.	suaveolens		
KOON-2		Xanthosia	huegellii	subsp.	huegellii	MS	



# CRYPTO

BIOLOGICAL  
SURVEYORS & CONSULTANTS

24 WOOTAN Rd,  
INNALOO,  
W.A.6018  
Ph: 445 2409

21 February 1995

Dear David,

The following represents an opportunistic annotated frog and reptile list without any proper sampling and a predicted herpetofauna checklist for the Koondoola Regional Open Space. We have only randomly visited the area several times to inspect the quality of habitat and found specimens during our walks. Overall this site because of size, topography and vegetation diversity has the potential to support over 40 species of herpetofauna; an area this close to Perth supporting this diversity is indeed rare.

## FROGS:

Crinia insignifera Sandplain Froglet

Several found beneath logs and rubbish in low-lying swamp area in S.E. corner.

Myobatrachus gouldii Turtle Frog

Several found beneath logs and excavated from spoil heaps in Banksia woodland.

## LEGLESS LIZARDS:

Aprasia repens Sandplain Worm Lizard

Common in Banksia woodland inside decaying logs/stumps and spoil heaps.

## DRAGONS:

Pogona minor minor Western Bearded Dragon

One found basking on Banksia log.

## SKINKS:

Cryptoblepharus plagiocephalus Fence or Snake-Eyed Skink

Commonly observed basking/active on logs and trees in the area.

Ctenotus fallens Striped Skink

Seen active in low vegetation throughout the area and found beneath surface debris.

Hemiergis quadrilineata Yellow-Bellied Skink

*SPECIALISING IN*  
Reptiles ~ Amphibians

Common beneath logs and other surface debris.

Lerista elegans Four-Toed Burrowing Skink  
Common inside stumps and spoil heaps in Banksia woodland.

Lerista praepedita Western Worm Skink  
As above.

Morethia obscura Shrubland Dark Skink  
Seen active in low vegetation throughout the area.

Tiliqua rugosa rugosa Bobtail  
Seen active and found beneath surface debris throughout the area.

### SNAKES:

Pseudonaja affinis affinis Dugite  
One sub-adult excavated from inside spoil heap on edge of track in Jarrah/Banksia woodland.

Rhinoplocephalus gouldii Gould's Hooded Snake  
Several found inside spoil heaps and beneath surface debris.

## PREDICTED HERPETOFAUNA FOR KOONDOOLA REGIONAL OPEN SPACE (Based on local distribution records and habitat quality)

### FROGS

Crinia glauerti Glauert's Froglet  
Heleioporus eyrei Moaning Frog  
Limnodynastes dorsalis Pobblebonk or Banjo Frog  
Pseudophryne guentheri Guenther's Toadlet  
Litoria adelaidensis Slender Tree Frog  
Litoria moorei Green Tree Frog

### GECKOS

Diplodactylus alboguttatus West-Coast Spotted Gecko  
Diplodactylus polyophthalmus Rusty Stone Gecko  
Phyllodactylus marmoratus marmoratus Marbled Gecko  
Strophurus spinigerus spinigerus Spiny-Tailed Gecko

### LEGLSS LIZARDS

Delma fraseri fraseri Fraser's Snake Lizard  
Delma grayii Side-Barred Snake Lizard  
Lialis burtonis Burton's Legless Lizard  
Pletholax gracilis gracilis Keeled Legless Lizard

**LEGLSS LIZARDS** Cont.....

Pygopus lepidopodus Common Scaly-Foot

**DRAGONS**

Tympanocryptis adelaidensis adelaidensis West-Coast Heath Dragon

**SKINKS**

Bassiana trilineatum Common Swamp Skink

Ctenotus gemmula Jewelled Heath Skink

Ctenotus lesueurii Striped Skink

Cyclodomorphus branchialis West-Coast Gunthers' Skink

Egernia napoleonis Napoleon Skink

Lerista lineopunctulata Robust Burrowing Skink

Menetia greyii Common Dwarf Skink

Morethia lineocellata Ocellated Heath Skink

Tiliqua occipitalis Western Bluetounge

**MONITOR LIZARDS**

Varanus flavirufus Common Sand Monitor

Varanus tristis tristis Black-Headed Monitor

**SNAKES**

Ramphotyphlops australis Blind Snake

Demansia psammophis reticulata Whip Snake

Echiopsis curta Bardick

Vermicella bertholdi Western Banded Snake

Vermicella bimaculata Black-Naped Snake

Vermicella calonotos Black-Striped Snake

Vermicella fasciolata fasciolata Narrow Banded Snake

Vermicella semifasciata Shovel-Nosed Snake

\*\*\*\*\*

I hope that the above lists are useful additions to the information on KROS and that sometime in the near future extensive faunal sampling can be initiated to access the conservation value of the region.

I thank-you David for the opportunity to be involved.

Cheers,  
*Brad*

## Koondoola Open Space heritage assessment

Koondoola Open Space is an important area of urban bushland located 12km north of Perth in the City of Wanneroo. The site features a range of habitats including Banksia woodlands and seasonal wetlands and covers the transition between the Spearwood and Bassendean dunes. It is a large area of bushland most of which is in good condition.

The Coalition for Wanneroo's Environment has completed a heritage assessment of Koondoola Open Space. This urban bushland area is to be proposed to the National Trust for classification as a place of heritage significance.

A copy of the assessment report is enclosed. It describes Koondoola Open Space including the vegetation, flora, fauna and wetlands of the site. Recommendations for conservation and future management are made. A statement of the heritage value of the bushland is included.

Thank you for your input to the assessment.

Classification of Koondoola bushland by the National Trust would recognise its heritage value. It is important that the area be protected through reservation as an A-class reserve for conservation and appropriate management.

For further information or to contribute to efforts to protect Koondoola Open Space please contact Jill Brown Ph 306 1645, Cate Tauss Ph 448 0058 or David Wake Ph 305 1591.

Coalition for Wanneroo's Environment  
April 1993

**NATIONAL TRUST OF AUSTRALIA (W.A.)**  
**NATURAL ENVIRONMENT ASSESSMENT FORM**  
**LANDSCAPES & CONSERVATION**

**1. Identification / Location**

**Current Name of Place :** Koondoola Regional Open Space

**Postal Address of Property :** Alexander Drive, Koondoola 6064

**Title details :**

Lot no.	Vol.	Folio	Area	Owner
Lot 4	Vol. 1904	Folio 618	98.42ha	State Housing Commission
Lot 1	Vol. 1591	Folio 805	28.96ha	State Planning Commission
Pt Lot 86	Vol. 1632	Folio 534	9.21ha	State Planning Commission

**Local Authority :** City of Wanneroo

**Map references :** 1:100,000

Topographic Survey Sheet 2034, Perth Lat. 31°51'S Long. 115°53'E

**Original owner :** Crown

**Current owners :** Homeswest (State Housing Commission) and State Planning Commission

**Description of location :** The site is located 12km north of Perth in the district of Koondoola, City of Wanneroo. It is situated along Alexander Drive between Beach Road and Marangaroo Drive.

**Site access :** Open / Unoccupied.

**Sketch map :** Location map and aerial photograph attached.

**2. Description**

**General Description and Setting :** Koondoola Open Space is a large area, some 136ha, of remnant bushland in an urban setting. A description of the site follows.

**Geomorphology :** Koondoola Open Space covers the transition between the Spearwood and Bassendean dune systems. Karrakatta sands occur on much of the site with Bassendean sands in the south eastern portion (Churchward and McArthur, 1980). The topography of the site is varied with uplands in the north sloping down to a depression including wetland basin in the south (refer to contour map).

**Vegetation :** Koondoola Open Space includes vegetation of the Karrakatta complex central and south and the Bassendean complex central and south of Heddlie et al. (1980) corresponding to the landform units occurring at the site. A number of broad communities can be recognised on the site, refer to map.

Most of the bushland features Jarrah-*Banksia attenuata*-*B. menziesii*-*Allocasuarina fraseriana* Woodland. Stands of *Eucalyptus tottiana* occur in the southern part of woodland. The understorey varies with dominants including *Allocasuarina humilis*, *Bossiaea eriocarpa*, *Calytrix angulata*, *Conospermum stoechadis*, *Eremaea pauciflora*, *Hakea ruscifolia*, *Hibbertia huegelii*, *Scholtzia involucreta*, and *Stirlingia latifolia*. In the southern portion of the site *Eremaea pauciflora*-*Melaleuca scabra*-*Leucopogon conostephioides* Shrubland occurs with emergent *Banksia ilicifolia*, *Eucalyptus tottiana* and *Nuytsia floribunda*.

On the Bassendean soils surrounding the eastern wetland is *Melaleuca preissiana*-*Eucalyptus rudis* woodland with a dense understorey including *Adenanthos cygnorum*, *Calytrix fraseri*, *Kunzea ericifolia*, *Melaleuca scabra*, *Pultenaea reticulata*, *Regelia ciliata* and *Verticordia nitens*. Around the western wetland an Open Woodland of Jarrah-*Eucalyptus rudis*-*Melaleuca preissiana* occurs with an understorey of *Anigozanthos manglesii*, *Gompholobium confertum*, *Lepidospermum spp* and *Patersonia occidentalis*. The wetland communities are described below.

Koondoola Open Space includes a range of plant communities. The Jarrah-*Banksia*-*Allocasuarina* Woodlands in the northern portion of the site are in good condition with little weed invasion and a diverse understorey. Such a large area of *Banksia* woodland on Karrakatta sands is significant. It is estimated (Burbidge, A.H., pers. comm.) that at 1986 over 80% of the *Banksia* woodlands of the Karrakatta central and south complex had been cleared. Much of the *Banksia* woodlands which characterise metropolitan Perth have been lost to urban and agricultural development, the protection of additional areas in conservation reserves is important (Hopper, S.D. and Burbidge, A.H., 1988). The southern area features a number of communities reflecting transition between soil types and proximity to the wetlands.

**Flora** : Some 155 species of indigenous flora have been recorded on the site during a preliminary survey undertaken over summer. Information on the survey and a flora list is provided (see attachment). The majority of species found were in the families Myrtaceae, Papilionaceae, Proteaceae, Cyperaceae and Anthericaceae.

A number of significant species occur in Koondoola Open Space. *Davesia physodes* is a priority 2 species - known from one or a few localities on land not under immediate threat. *Gonocarpus pithyoides* is a priority 3 species. It is known from several localities some of which are not under immediate threat. *Cartonema philydroides* and *Jacksonia sericea* are also priority 3 species considered to be in need of further survey. (Information from Department of Conservation and Land Management, Wildlife branch) *Verticordia drummondii* is becoming uncommon and may not be well represented in conservation reserves (George, E., pers. comm.). *Verticordia nitens* is not common in metropolitan Perth (Keighery, B., pers. comm.).

**Wetlands** : Two seasonal wetlands covering 5.16ha occur in the south of the site. The wetlands are surface expressions of the Gnangara groundwater mound. Both are sumplands (seasonally inundated basins) of the Jandakot consanguineous suite (Semeniuk, C.A. 1988). The wetlands have been classified (Murdoch University, 1991) in the resource enhancement category, these wetlands have been modified and management should maintain and enhance existing ecological functions (Environmental Protection Authority, 1990).

The wetlands are disturbed with weed invasion, rubbish dumping, vehicle activity and urban stormwater drainage evident. There are however indigenous species present and parental seed stock is available from the surrounding vegetation. The immediate catchment is largely in good condition. Seasonal wetlands are resilient ecosystems and the Koondoola wetlands are considered to be in good biological condition with potential for regeneration (Balla, S.A., pers. comm.). Regeneration of some species such as *Astartea fascicularis* and *Eucalyptus rudis* is already occurring following the exclusion of vehicles from the site.

The eastern wetland includes *Astartea fascicularis* Heathland over *Baumea articulata*-*Juncus palidus* Sedgeland with neighbouring Woodland of *Melaleuca preissiana* and *Eucalyptus rudis*. The western wetland is very disturbed with exotic grasses including *Eragrostis curvula* and *Paspalum dilatatum*. The native species *Baumea articulata* and *Juncus palidus* occur as scattered emergents. Jarrah-*Eucalyptus rudis*-*Melaleuca preissiana* Open Woodland fringes the wetland.

The wetlands add to the natural diversity of the area supporting wildlife and contributing to the bushland landscape.

**Fauna :** No fauna survey has been undertaken but site inspections indicate that some significant mammal species may occur in the bushland. Footprints, scratchings and runs near the wetlands suggest that the Bandicoot *Isodon obesulus* may be present (Holze, B., Pers. comm.). The Banksia woodlands are potential habitat for the Honey Possum *Tarsipes rostratus* (Bamford, M. & M., Dell, J. and Holze, B., pers. comm.). In addition waterfowl and ibis have been seen visiting the wetlands. The combination of flora species in the bushland, with something in flower throughout the year, would likely support a diverse bird population. Jewel beetles have been seen on flowers of *Melaleuca scabra* in the shrublands. The habitat diversity, condition and size of the Koondoola bushland make it an important area for fauna.

**Social environment :** The area, particularly the wetlands, may have been used as hunting and camping grounds by Aboriginal people (Bodney, T., pers. comm.). The site is in close proximity to Emu Swamp, a place of recognised Aboriginal significance which was used for hunting and camping in pre- and post-contact times (O'Connor, R., Quartermaine, G. and Bodney, C., 1988, 1989).

The site is owned by State Government agencies. It is Regional Open Space zoned under the Metropolitan Region Scheme and the City of Wanneroo Town Planning Scheme as Parks and Recreation. Rezoning and residential development of part of the site was proposed in 1988 but rejected by the City of Wanneroo. The Council supports protection of the Koondoola bushland as an A-class reserve for conservation (Holmes, P., pers. comm.).

The site provides a large conservation and open space area in an urban setting. Surrounding land is largely developed for residential and light industrial use. The bushland provides relief from the urban landscape. The ridge in the north of the site affords views to the Darling Scarp. Wildflowers in the bushland provide a colourful display through much of the year. The bushland buffers residential areas from the Water Authority's water treatment facilities and adjacent industrial estates.

The bushland is used by local residents for passive recreation such as walking. It has potential for environmental education, as a research site and as a seed resource for revegetation work in other areas. The site has been used for seed collecting for the Yellagonga Regional Park LEAP project. There is community support for retention of Koondoola Open Space.

**Bibliography :** Listing of references consulted for the assessment is attached.

**Photographs / Slides :** Labelled photographs and slides provided.

**Sketch Plan of Site :** An aerial photograph and map of the nominated site are provided. The site is bound by Marangaroo Drive to the north; Alexander Drive and Lot 301 (WAWA Mirrabooka Water Treatment Plant) to the east; Beach Road to the south, and; Recreation reserve 37937, Waddington Crescent, residential lots, Lot 3 (WAWA Mirrabooka Reservoir site) and Koondoola Avenue to the west.

**Type of Landform :** Transition between Spearwood and Bassendean dunes, includes Karrakatta and Bassendean sands.

**Type of Vegetation :** Jarrah-Banksia woodland, woodlands of *Eucalyptus rudis* and *Melaleuca preisiana*, shrublands and wetland communities.

**Special Features :** Timbered uplands, large area of Banksia woodlands in good condition, seasonal wetlands, transition between soil and vegetation types.

**Original Use :** Bushland and wetlands, possible Aboriginal hunting ground.

**Current Use :** Regional Open Space - remnant bushland.

**Prominent associated persons/events :** -

**Significant associated dates :** -

**Condition / Integrity:** Large, viable area of bushland, mostly in good condition with few invasive weeds.

**Conservation recommendations :** Koondoola Open Space is an important area of urban bushland worthy of protection. It should become an A-class reserve for conservation vested in the National Parks and Nature Conservation Authority. Recommendations for management of the site are provided (see attachment). Priority should be given to fostering community awareness of the values of the bushland; fencing to regulate access, removing rubbish, an ecological survey of the site and preparing a management plan.

### **3. Statement of Significance**

**Presence of endangered species :** A number of significant species occur in the Koondoola bushland. The priority flora species *Cartonema philydroides*, *Davesia physodes*, *Gonocarpus pithyoides* and *Jacksonia sericea* have been recorded during a survey over summer. The rare Bandicoot *Isodon obesulus* may be present around the wetlands. Jewel beetles (family Buprestidae), an endangered taxon, have been seen in the bushland.

**Scientific importance :** Koondoola Open Space features a range of habitats including Banksia woodlands and seasonal wetlands and covers the transition between the Spearwood and Bassendean dunes. As such it provides a resource for scientific inquiry into the ecology of Karrakatta and Bassendean complexes including the Banksia woodlands and wetlands. The significant species of flora and fauna in the bushland add to its scientific interest. The site is also of interest as urban bushland and could provide information on the management of remnants of bushland in the metropolitan region. It is close to Perth, accessible to tertiary institutions and researchers.

**Educational importance :** Koondoola bushland has potential as an educational resource. The site features a diversity of habitats providing opportunities for nature study, learning about the value and ecology of bushland and wetlands and environmental art projects. There are some 44 primary and secondary schools within 5km of the site making it highly accessible for educational activities.

**Social importance :** Koondoola bushland provides relief from the urban landscape. The area provides a buffer to local residents from light industry and traffic. It provides open space in a low socio-economic residential area. It is a place to study and enjoy the natural environment. Through the involvement of local people in management work, particularly with the Friends group, the site can develop community. The bushland can provide a focus for community activity and a sense of place for local people.

**Aesthetic importance :** High wooded slopes in the north of the site afford views east to the Darling Scarp. Wildflowers in the bushland provide a colourful display through much of the year including including the lemon yellow and red *Banksia spp.*, cerise *Calytrix fraseriana*, yellow *Hibbertia spp.*, dark purple *Melaleuca scabra*, bright orange *Nuytsia floribunda* and pink *Hypocalymma robustum*. The bushland provides visual interest and diversity in the urban landscape.

**Historic importance :** The site may have been used as a hunting and camping ground by Aboriginal people. It is in close proximity to Emu Swamp, a place of recognised Aboriginal significance. As a bushland remnant the site shows how the landscape was before urbanisation, it is part of the natural heritage of the area.

**Recreational importance :** Koondoola Open Space provides recreational opportunities for the community. It offers a setting for passive recreation including nature study, photography and bushwalking. The bushland can also be used for community projects such as bush regeneration, ecological monitoring and educational tours.

**Diversity of species and communities :** The diversity of species and communities found in Koondoola reflect the transition between Karrakatta and Bassendean sands, topographic variation on the site and the seasonal wetlands. The bushland includes Jarrah-Banksia woodlands, shrublands, woodlands of Eucalyptus rudis and Melaleuca preisiana, and wetland communities. The site supports a range of habitats.

**'Naturalness' :** Koondoola Open Space is a large area of bushland in good condition. Much of the vegetation is undisturbed with little weed invasion, the Banksia woodlands on the northern uplands are particularly notable in this regard. As a sizeable area the bushland has the capacity to sustain itself. The area is valuable as natural bushland in an urban setting.

**Rarity** : The bushland includes a remnant of the once widespread Banksia woodlands, this vegetation has been extensively cleared especially from the central and southern Karrakatta and Bassendean sands. The sumplands are part of a previously more extensive suite of wetlands on the Swan Coastal Plain. Koondoola Open Space is of importance as a large area of urban bushland covering a range of landform units and habitats.

**Fragility** : The Banksia woodlands are in good condition but susceptible to weed invasion which is promoted by disturbance. Frequent fire has impacted on the condition of vegetation particularly around the wetlands. The ecology of the wetlands can be affected by urban runoff changing water levels and nutrient loading. Management will need to mitigate such problems.

**Position in an ecological or geographic unit** : The site covers two soil and landform units; the Spearwood dunes and the Bassendean dunes. The vegetation of the site, reflecting the geomorphology, is of the Karrakatta complex - central and south and the Bassendean complex - central and south. The seasonal wetlands are part of the Jandakot consanguineous suite. Koondoola Open Space is significant in encompassing transition between geographic and vegetation units.

#### **4. Assessment Details**

**Nominator** : Coalition for Wanneroo's Environment

Contact : Jill Brown, 385 Hawkins Road, Jandabup 6065 Ph 306 1645.

**Assessment Team** :

Jill Brown, 385 Hawkins Road, Jandabup 6065 Ph 306 1645

Cate Tauss, 46 Barker Drive, Duncraig 6023 Ph 448 0058

David Wake, 36 Graham Road, Quinns Rocks 6030 Ph 305 1591.

**Extent of Assessment** : Field surveys, literature review and contact with government agencies, scientific authorities and community groups.

Coalition for Wanneroo's Environment

April 1993

1993

Natural Environment nomination for the  
Register of the National Estate

Koondoola Open Space

1. NAME OF PLACE

Koondoola Open Space (or Koondoola Regional Open Space), Koondoola.

2. LOCATION / BOUNDARIES

Koondoola Open Space is located 12km north of Perth city centre, in the district of Koondoola, City of Wanneroo. It is situated along Alexander Drive, between Beach Road and Marangaroo Drive.

The area is bound to the north by Marangaroo Drive, to the east by Alexander Drive and the boundary of the Mirrabooka Water Treatment Plant (lot 301), to the south by Beach Road and to the west by Reserve 37937, Waddington Crescent, residential lots off Rintel Court and Penn Place, the boundary of the Mirrabooka Reservoir Site (lot 8) and Koondoola Avenue. A location map, site map and aerial photograph of site are attached.

**Administrative area**

State: WA                      Local government area: City of Wanneroo

**Area and Property details**

Lot no.	Area	Owner
Lot 4	98.42ha	Homeswest (State Housing Commission) 99 Plain Street, East Perth WA 6004 Telephone 09 222 4666 Fax 09 221 1388
Lot 2	0.84ha	Water Authority of Western Australia 629 Newcastle Street, Leederville WA 6007 Telephone 09 420 2420 Fax 09 420 3200
Lot 1	25.34ha	Western Australian Planning Commission 469-489 Wellington Street, Perth WA 6000 Telephone 09 264 7777 Fax 09 321 1617
Pt Lot 86	9.21ha	Western Australian Planning Commission
Pt Lot 109	0.56ha	Western Australian Planning Commission

total area: 134ha.

3. NOMINATOR

Thomas E. Perrigo, Chief Executive Officer, National Trust of Australia (WA),  
4 Havelock Street, West Perth WA 6005 Telephone 09 321 6088 Fax 09 324 1571

#### 4. PREVIOUS ASSESSMENTS

A heritage assessment of Koondoola Open Space was undertaken by the Coalition for Wanneroo's Environment (April 1993). It found the place to be an important urban bushland remnant. The heritage significance of the place, according to the assessment, included: the diversity of species and communities, the 'naturalness' of the area, the presence of significant flora and fauna and social value as a large bushland area in an urban setting.

On the basis of the assessment the place was classified by the National Trust in June 1993 and included on its heritage register.

Koondoola Open Space was surveyed as part of the floristic survey of the southern Swan Coastal Plain (Gibson et al, 1994). The survey report described the plant community sampled at Koondoola as *Banksia attenuata* woodland over species rich dense shrublands. This community type was recorded from only five sites and is considered regionally rare.

The conservation status of this community is endangered, that is, it is in danger of severe modification or destruction throughout its range if causal factors continue operating. The report recommended the urgent reservation of the sites where this community has been found, including Koondoola Open Space, as A-class reserves for protection of flora and fauna.

#### 5. DESCRIPTION

Koondoola Open Space is a large (134ha) urban bushland remnant, located in the northern Perth Suburb of Koondoola. It is surrounded by urban development including residential and light industry.

The site is situated on the western side of the Swan Coastal Plain on the transition between the Spearwood and Bassendean Dune Systems. Most of the area has yellow-brown sandy soil with limestone at depth, the Karrakatta soil-type. Pale grey sandy soil of the Bassendean soil-type occurs in the south-eastern corner. (Churchward and McArthur, 1980.)

The topography of the site is varied. The uplands in the northern part of the site reach 84m AHD, the land slopes down to 30m AHD in lowlying sumplands in the southern end. The northern rise affords views eastward to the Darling Scarp.

Most of Koondoola Open Space is within the Karrakatta central and south vegetation complex, corresponding to soil-type (Hedde et al, 1980). The most extensive plant community in the area is Banksia-Jarrah woodland, dominated by Candle Banksia (*Banksia attenuata*), Menzies' Banksia (*B. menziesii*), Jarrah (*Eucalyptus marginata*) and Common Sheoak (*Allocasuarina fraseriana*). The composition of the understorey is varied, common species include *Allocasuarina humilis*, *Bossiaea eriocarpa*, *Calytrix angulata*, *Conospermum stoechadis*, *Eremaea pauciflora*, *Hakea ruscifolia*, *Hibbertia huegelii*, *Scholtzia involucrata* and *Stirlingia latifolia*.

Shrubland of *Eremaea pauciflora*-*Melaleuca scabra*-*Leucopogon conostephioides* with emergent *Banksia ilicifolia*, *Eucalyptus todtiana* and *Nuytsia floribunda* occurs in the southern portion. Near the eastern wetland is woodland of Stout Paperbark (*Melaleuca preissiana*) and Flooded Gum (*Eucalyptus rudis*) with a dense understorey including *Adenanthos cygnorum*, *Calytrix fraseri*, *Kunzea ericifolia*, *Melaleuca scabra*, *Pultenaea reticulata*, *Regelia ciliata* and *Verticordia nitens*.

Around the western wetland an open woodland of Jarrah, Flooded Gum and Stout Paperbark occurs with an understorey of *Anigozanthos manglesii*, *Gompholobium confertum*, *Lepidospermum spp* and *Patersonia occidentalis*. The two wetlands cover 5.16ha, they are seasonally inundated basins (Semeniuk, 1988). The eastern wetland includes *Astartea fascicularis* heathland over *Baumea articulata-Juncus palidus* sedgeland. The western wetland is dominated by the exotic grasses *Eragrostis curvula* and *Paspalum dilatatum*.

One hundred and ninety two plant species, 175 indigenous and 17 aliens, have been recorded during opportunistic survey and in two quadrats located in the area for the Swan Coastal Plain Floristic survey. A flora list is attached.

Thirteen species of herpetofauna have been recorded at Koondoola and the size, topography and vegetation diversity give it potential to support over 40 species (Brad Maryan, herpetologist, pers. comm.). The bird fauna is also likely to be diverse. The Southern Brown Bandicoot (*Isodon obesulus*) is expected to occur on the site (Bob Holze, naturalist, pers. comm.) and the Banksia woodlands are potential habitat for the Honey Possum (*Tarsipes rostratus*) (John Dell, WA Museum, pers. comm.). A list of recorded and expected herpetofauna is attached.

The area retains a large remnant of vegetation of the Spearwood dunes. It is Regional Open Space zoned Parks and Recreation under the regional planning scheme.

## 6. SIGNIFICANCE AGAINST REGISTER CRITERIA

critrion	significance	ranking
A3. Importance in exhibiting unusual richness or diversity of flora, fauna, landscapes, or cultural features.	<b>Diversity of vegetation, habitats and landscapes</b> The area contains a range of plant communities and habitats, reflecting the varying soils, topography and hydrology of the site. It includes a gradient from uplands in the northern part of the site to lowlying sumplands in the south. It includes Banksia-Jarrah woodlands with a rich understorey, Paperbark woodlands and wetland vegetation. This urban bushland remnant has an unusual diversity of vegetation, habitat types and natural landscapes within its 134ha.	high
B1. Importance for rare, endangered, or uncommon flora, fauna, communities, ecosystems, natural landscapes or phenomena, or as a wilderness.	<b>Remnant vegetation</b> The area is significant as a large remnant of bushland on the Spearwood dunes. Near Perth vegetation on this dune system has been extensively cleared for urban development. The area includes vegetation of the Karrakatta central and south complex, of which about one fifth is estimated to remain in the metropolitan region (Dixon et al, 1994). Another estimate is that four per cent or less of this vegetation complex remains on the coastal plain and is poorly conserved (Bowman Bishaw Gorham, 1994). Only one percent is retained in conservation reserves (Allan Burbidge, CALM, pers. comm.). Koondoola Open Space is an important remnant of Banksia woodland, this vegetation has been extensively cleared elsewhere on the coastal plain (Hopper and Burbidge, 1989).	very high

### Rare plant community

Koondoola is one of five sites where *Banksia attenuata* woodlands over species rich dense shrublands were recorded in the southern Swan Coastal Plain floristic survey (Gibson et al, 1994). This plant community is regionally rare and considered in danger of degradation or loss. Urgent reservation of the sites where the community occurs was recommended by the survey to protect it.

very high

C1. Importance for information contributing to a wider understanding of Australian natural history, by virtue of its use as a research site, teaching site, type locality, reference or benchmark site.

### Potential research site

Koondoola Open Space features a range of habitats and a gradient from uplands to sunplands. It includes a *Banksia* woodland community which is regionally rare. Little survey work has been undertaken in the area. This makes the area a resource for scientific inquiry into the ecology of urban bushland and *Banksia* woodlands. It is accessible to tertiary institutions (e.g. Edith Cowan University Mt. Lawley and Joondalup campuses). It is also close to many primary and secondary schools who could use it for environmental education (Coalition for Wanneroo's Environment, 1993).

high

D1. Importance in demonstrating the principal characteristics of the range of landscapes, environments or ecosystems, the attributes of which identify them as being characteristic of their class.

### Remnant *Banksia* woodland

The area provides a good representation, because of its condition, size and topography, of vegetation on the Karrakatta soils. There are few large reserves in the metropolitan region which retain examples of the Karrakatta central and south complex. Kings Park occurs within this complex and is an important remnant, but its condition has been affected by historical use and fire (Kings Park and Botanic Garden, 1993). Koondoola Open Space is particularly important as it contains a large and intact example of a rare *Banksia* woodland plant community. The other sites where this community occur are smaller or under threat from proposed development (Gibson et al, 1994).

very high

## 7. STATEMENT OF SIGNIFICANCE

Vegetation on the Spearwood dune system on the Swan Coastal Plain around Perth has been extensively cleared for urban development, agriculture and pine plantations. The Karrakatta central and south vegetation complex, which occurs on the Spearwood dunes, has been affected by land clearing. It is estimated that between twenty and four per cent of this vegetation type remains (Dixon et al, 1994; Bowman Bishaw Gorham, 1994). This vegetation type is poorly conserved, as little as one percent is estimated to be represented in conservation reserves (Allan Burbidge, CALM, pers. comm.).

Koondoola Open Space is important as a remnant of the vegetation of the Karrakatta central and south complex. It is a large area (134ha) in good condition, the structure of the vegetation is intact and includes a good representation of species. Koondoola is a good example of this vegetation type because of its condition, size and topography. There are few reserves which retain examples of this vegetation complex. Kings Park is an important remnant, but its condition has been affected by historical use and fire (Kings Park and Botanic Garden, 1993).

The area is also an important remnant of Banksia woodland, this vegetation has been extensively cleared elsewhere on the coastal plain (Hopper and Burbidge, 1989). Koondoola includes a rare Banksia woodland community recorded from only five sites during the Southern Swan Coastal Plain Floristic Survey (Gibson et al, 1994). This community, characterised by species-rich shrublands and woodland of *Banksia attenuata*, is considered regionally rare.

The conservation status of the community is poor, it endangered because of the risk of severe modification or destruction throughout its range if causal factors continue operating. The urgent reservation of the sites where this community has been found, including Koondoola Open Space, as A-class reserves for protection of flora and fauna has been recommended. Koondoola is particularly important as it contains a large and intact example of the community. Many of the other sites where this community is known to occur are smaller or under threat from proposed development. (Gibson et al, 1994).

The area includes a range of plant communities reflecting the varying topography, soils and hydrology of the site. It includes a gradient from uplands with Banksia woodland to lowlying sumplands surrounded by Stout Paperbark and Flooded Gum woodlands. This diversity of habitats contributes to the ecological significance of the area and gives it value for research and teaching. Lack of research work undertaken on the site and the proximity to teaching institutions adds to this value.

The fauna of the area has not been surveyed comprehensively but its size and diversity give it much potential as habitat for many species. The rare and endangered Southern Brown Bandicoot is thought to occur in the bushland, with signs of its presence noted (Bob Holze, naturalist, pers. comm.). Thirteen species of herpetofauna have been recorded in the bushland and over forty may be present (Brad Maryan, herpetologist, pers. comm.).

Koondoola Open Space is a significant area of urban bushland in Perth's northern suburbs. Community awareness of the value of urban bushland, especially for conservation of biological diversity, is growing (Keighery and Gray, 1994). Koondoola includes a range of natural features which are representative of poorly conserved ecological units of the Perth metropolitan region.

## 8. CONDITION

Overall bushland in Koondoola Open Space is in good condition. The northern two thirds of the area has been assessed as having very good condition with vegetation structure intact and the understorey comprising a dense cover of indigenous species (Coalition for Wanneroo's Environment, 1993). The vegetation in the two quadrats located in the area for the Southern Swan Coastal Plain floristic survey was assessed as being in good condition (Bronwen Keighery, botanist, pers. comm.). A hot wildlife burnt out the northern part of the bushland in 1994, the vegetation is regenerating.

The southern third of the area is degraded, particularly in the sumplands where weed species including Lovegrass (*Eragrostis curvula*) are present. The woodlands around the sumplands vary from very good to degraded. Off-road vehicles and fire has affected condition. The long-term condition of the area will depend on management to exclude off-road vehicles, discourage rubbish dumping and reduce the incidence and impact of fire as well as control weed species. A management plan is to be prepared for the land owned by the WA Planning Commission with the area to be managed by the City of Wanneroo (Marie Ward, Ministry for Planning, pers. comm.).

## 9. RATIONALE FOR PROPOSED BOUNDARIES

The boundaries identified for the nominated area encompass the land zoned Parks and Recreation under the Metropolitan Region Scheme and designated for Regional Open Space by planning authorities (refer to site map attached). It includes bushland but excludes nearby infrastructure on public land, for example the Mirrabooka reservoir site. The southern sumplands are degraded but have been included as some of the surrounding vegetation is in very good condition and as they add to the habitat diversity and overall conservation value of the area. These boundaries of Koondoola Open Space are recognised planning authorities and by several people in community groups interested in conservation of the bushland.

## 10. PERSONAL CONTACTS

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Terry Neil, Land Officer, Town Planning Department, City of Wanneroo, Boas Avenue, Joondalup WA 6027 Telephone 09 405 0333 Fax 09 300 1383.

Marie Ward, Environmental Planning Branch, Ministry for Planning, 469 Wellington Street, Perth WA Telephone 09 264 7777 Fax 09 09 321 1617.

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## 12. ATTACHMENTS

Location map, site map and aerial photograph.

Flora list for Koondoola Open Space.

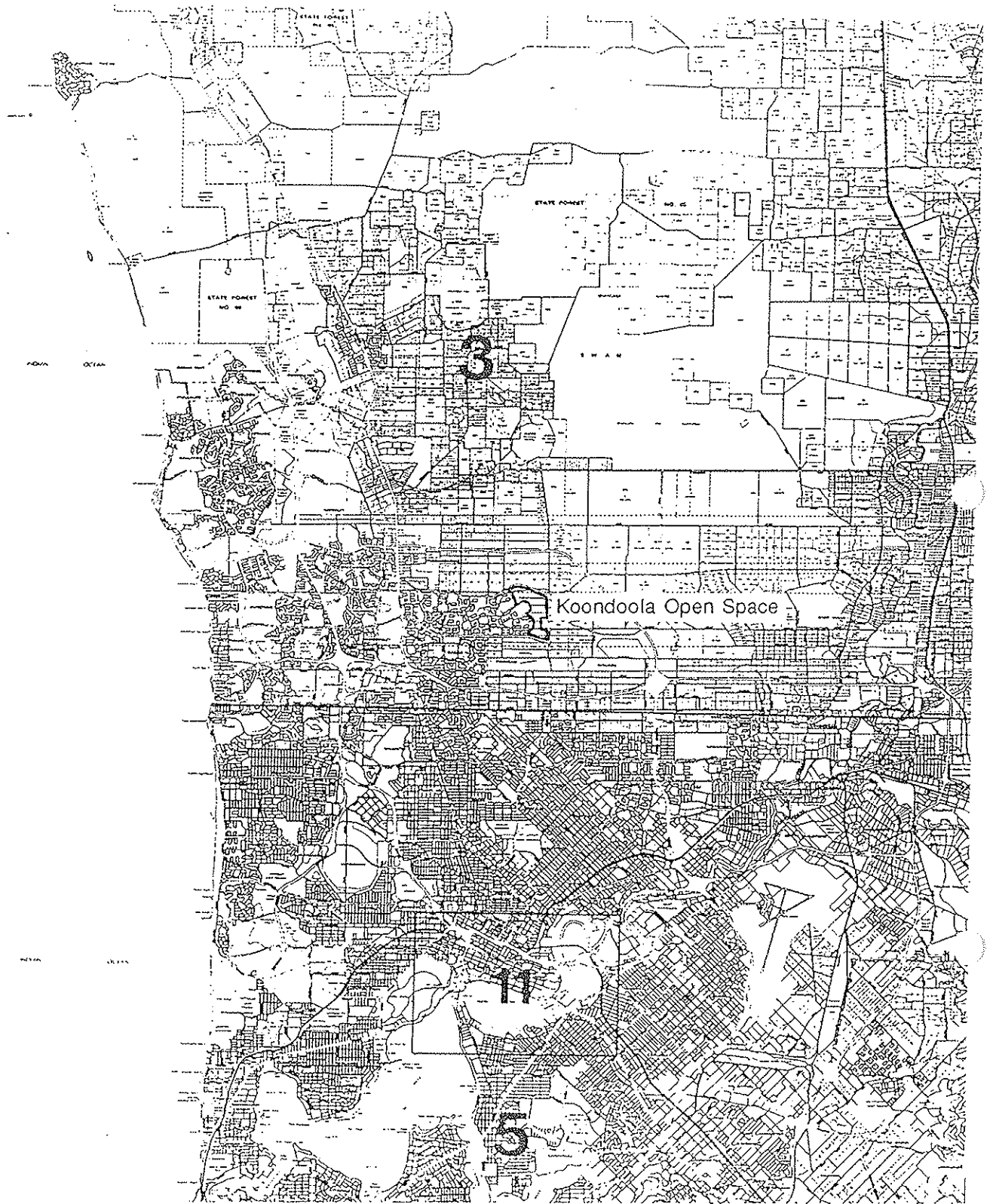
Extract from Southern Swan Coastal Plain Floristics Survey (Gibson et al, 1994).

Information on herpetofauna of the site.

Photographs.

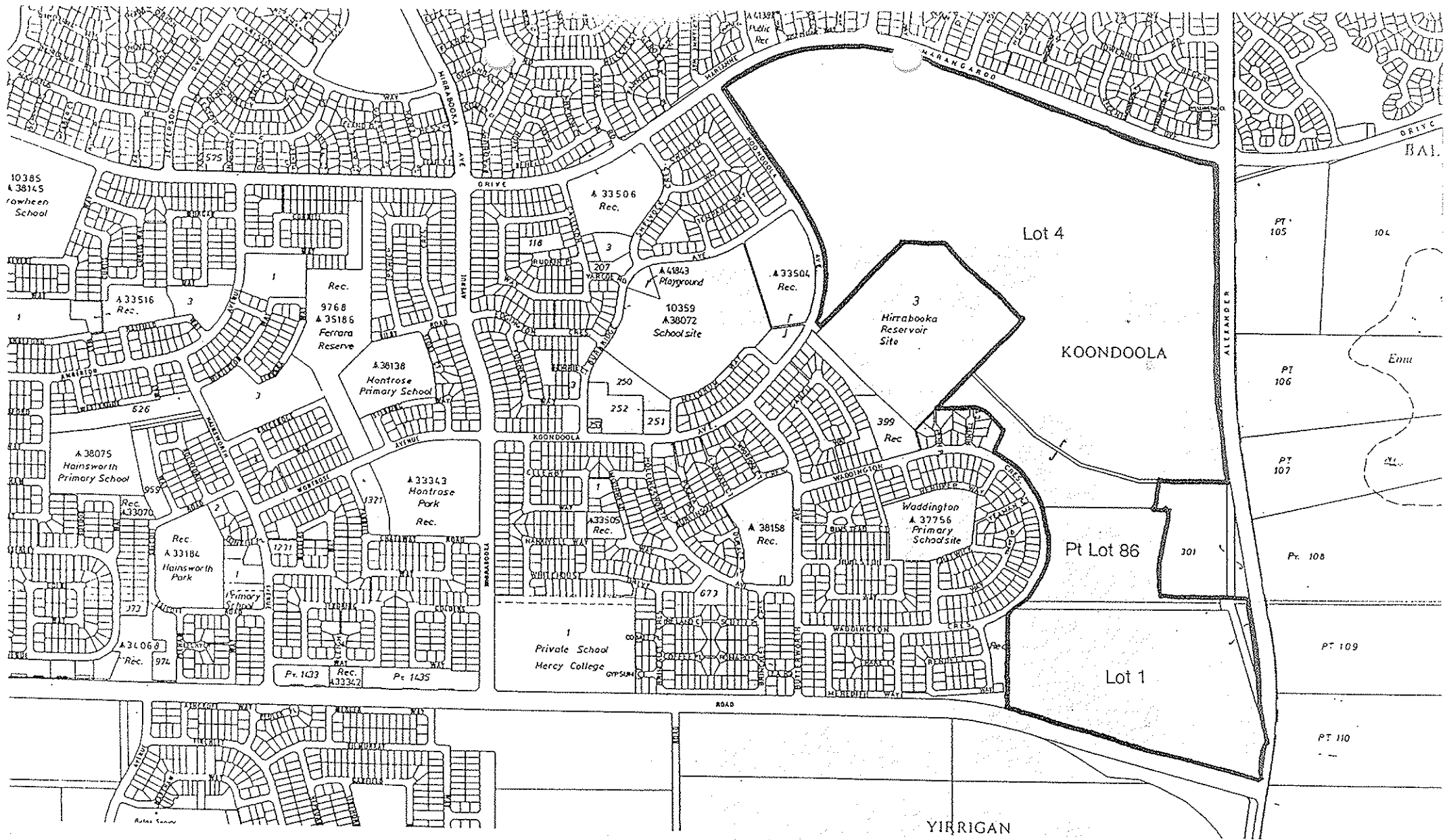
Prepared by David Wake  
for the National Trust of Australia (WA)

March 1995



Koondoola Open Space

location map

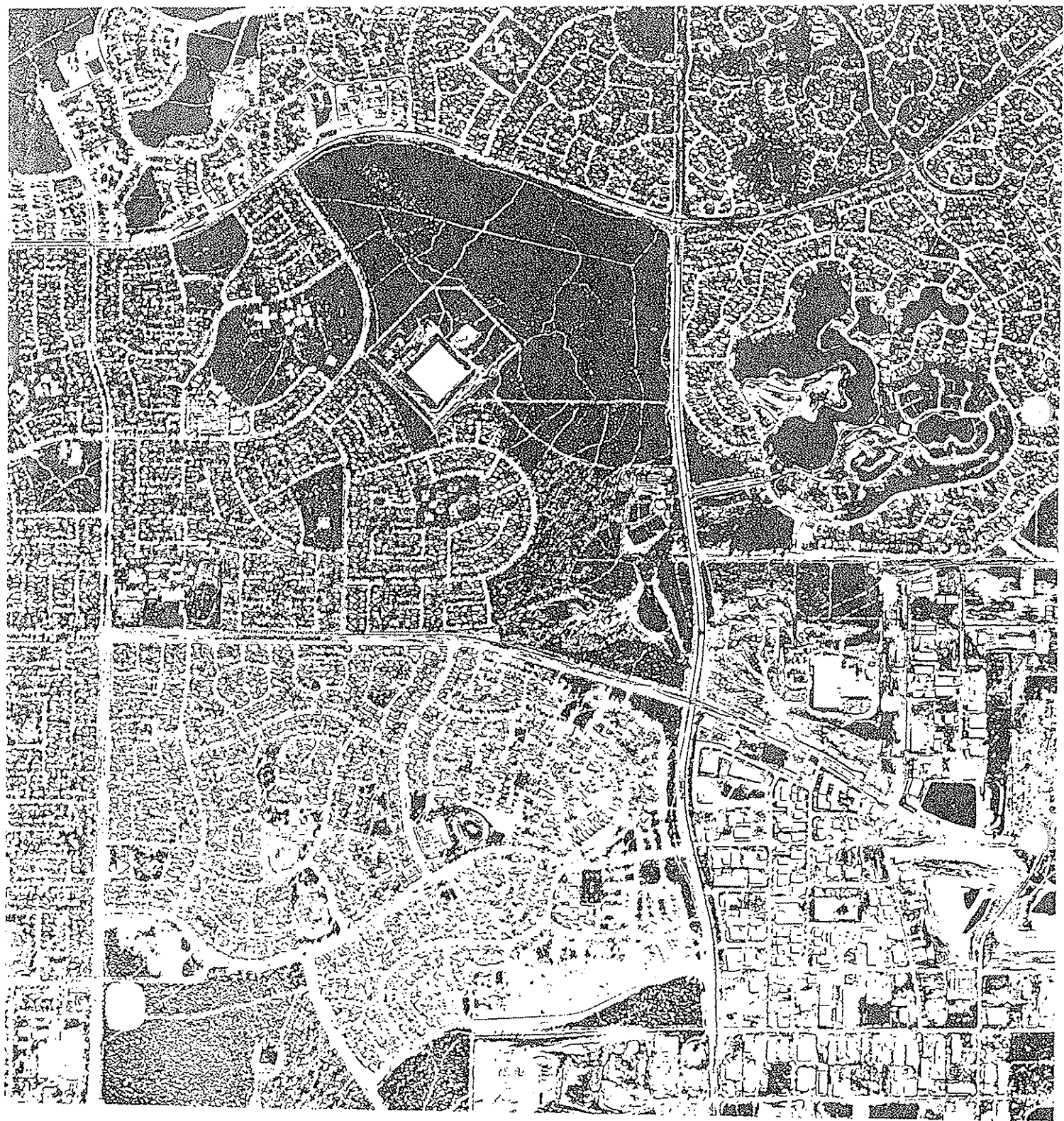


Koondoola Open Space

site map showing boundaries

1:10,000

source: City of Wanneroo cadastral map



Koondoola Open Space

aerial view

1:20,000

source : Department of Land Administration

# Flora List for Koondola Open Space

1

Compiled from Site data (KOON 01 & 02), Gibson et al. 1994 and National Trust Assessment 1993 (B. J. Keigery 1995).

## Amaranthaceae

*Ptilotus manglesii*

## Anthericaceae

*Amocrinum preissii*  
*Arthropodium capillipes*  
*Caesia occidentalis*  
*Chamaescilla corymbosa*  
*Corynotheca micrantha*  
*Laxmannia squarrosa*  
*Sowerbaea laxiflora*  
*Thysanotus multiflorus*  
*Thysanotus patersonii*  
*Thysanotus sparteus*  
*Thysanotus triandrus*  
*Tricoryne elatior*  
*Tricoryne tenella*

## Apiaceae

*Centella cordifolia*  
*Platysace compressa*  
*Xanthosia huegelii*

## Asteraceae

*Lagenifera huegelii*  
*Olearia axillaris*  
*Ozothamnus cordatus*  
\* *Ursinia anthemoides*  
\* *Vellereophyton "candisimum"*  
*Waitzia paniculata*  
*Waitzia suaveolens*

## Caryophyllaceae

\* *Petrorhagia velutina*

## Casuarinaceae

*Allocasuarina fraseriana*  
*Allocasuarina humilis*

## Colchicaceae

*Burchardia umbellata*

## Commelinaceae

*Cartonema philydroides*

## Cyperaceae

*Baumea articulata*  
*Baumea juncea*  
*Baumea riparia*  
*Cyperus rotundus*  
\* *Cyperus tenuiflorus*  
*Isolepis marginata*  
*Lepidosperma "coastal terete" (BJK&NG 231)*  
*Lepidosperma angustatum*  
*Mesomelaena pseudostygia*  
*Schoenus brevisetis*  
*Schoenus clandestinus*  
*Schoenus curvifolius*  
*Tetraria octandra*

Dasyopogonaceae

- Acanthocarpus preissii
- Calectasia cyanea
- Dasyopogon bromeliifolius
- Lomandra caespitosa
- Lomandra hermaphrodita
- Lomandra suaveolens

Dilleniaceae

- Hibbertia huegelii
- Hibbertia hypericoides
- Hibbertia racemosa

Droseraceae

- Drosera erythrorhiza
- Drosera menziesii

Epacridaceae

- Astroloma pallidum
- Conostephium pendulum
- Conostephium preissii
- Leucopogon conostephioides
- Leucopogon propinquus
- Lysinema ciliatum

Euphorbiaceae

- Monotaxis grandiflora
- Phyllanthus calycinus

Gentianaceae

- \* Centaurium erythraea

Geraniaceae

- \* Pelargonium capitatum

Goodeniaceae

- Dampiera linearis
- Goodenia pulchella
- Lechenaultia floribunda
- Scaevola repens var. repens

Haemodoraceae

- Anigozanthos humilis
- Anigozanthos manglesii
- Conostylis aurea
- Conostylis setigera
- Haemodorum laxum
- Haemodorum spicatum
- Phlebocarya ciliata

Haloragaceae

- Gonocarpus pithyoides

Iridaceae

- \* Gladiolus angustus
- \* Gladiolus caryophyllaceus
- Patersonia occidentalis

Juncaceae

- \* Juncus bufonius

*Juncus pallidus*

Lamiaceae

*Hemiandra pungens*

Lauraceae

*Cassytha glabella*

Lobeliaceae

*Lobelia alata*

Loranthaceae

*Nuytsia floribunda*

Meliaceae

*Melia azedarach*

Mimosaceae

*Acacia huegelii*

*Acacia pulchella*

*Acacia saligna*

*Acacia sessilis*

*Acacia stenoptera*

*Acacia willdenowiana*

\* *Acacia iteaphylla*

Molluginaceae

*Macarthuria australis*

Myrtaceae

*Astartea fascicularis*

*Calothamnus sanguineus*

*Calytrix angulata*

*Calytrix flavescens*

*Calytrix fraseri*

*Chamelaucium uncinatum*

*Eremaea asterocarpa*

*Eremaea pauciflora* subsp. *pauciflora*

*Eucalyptus marginata*

*Eucalyptus rudis*

*Eucalyptus todtiana*

*Hypocalymma angustifolium*

*Hypocalymma robustum*

*Kunzea ericifolia*

*Leptospermum spinescens*

*Melaleuca preissiana*

*Melaleuca scabra*

*Melaleuca trichophylla*

*Pericalymma ellipticum*

*Regelia ciliata*

*Scholtzia involucrata*

*Verticordia densiflora*

*Verticordia drummondii*

*Verticordia nitens*

Onagraceae

*Epilobium billardierianum* subsp. *pertigerum*

Orchidaceae

*Pterostylis* aff. *sanguinea*

Papilionaceae

- Aotus procumbens
- Bossiaea eriocarpa
- Callistachys lanceolata
- Daviesia divaricata
- Daviesia nudiflora
- Daviesia physodes
- Daviesia triflora
- Euchilopsis linearis
- Gompholobium confertum
- Gompholobium tomentosum
- Hardenbergia comptoniana
- Hovea trisperma
- Hovea trisperma var. trisperma
- Jacksonia densiflora
- Jacksonia furcellata
- Jacksonia sericea
- Jacksonia sternbergiana
- Kennedia prostrata
- \* Lotus angustissimus
- Nemcia capitata
- Nemcia reticulata
- Pultenaea reticulata

Phormiaceae

- Dianella divaricata

Poaceae

- \* Aira caryophyllea
- Amphipogon turbinatus
- \* Briza maxima
- \* Cortaderia selloana
- Cynodon dactylon
- Danthonia occidentalis
- \* Ehrharta calycina
- \* Eragrostis curvula
- \* Paspalum dilatatum
- Stipa flavescens
- Stipa semibarbata group

Polygalaceae

- Comesperma calymega

Polygonaceae

- Polygonum salicifolium

Proteaceae

- Adenanthos cygnorum
- Banksia attenuata
- Banksia grandis
- Banksia ilicifolia
- Banksia menziesii
- Conospermum stoechadis
- Dryandra nivea
- Hakea prostrata
- Hakea ruscifolia
- Persoonia saccata
- Petrophile linearis
- Petrophile macrostachya

*Stirlingia latifolia*  
*Synaphea spinulosa*

Restionaceae

*Alexgeorgea nitens*  
*Hypolaena exsulca*  
*Loxocarya fasciculata*  
*Loxocarya flexuosa*  
*Lyginia barbata*  
*Restio sinosus* ms

Rubiaceae

*Opercularia vaginata*

Rutaceae

*Eriostemon spicatus*

Santalaceae

*Exocarpos sparteus*

Stylidiaceae

*Levenhookia pusilla*  
*Stylidium brunonianum*  
*Stylidium calcaratum*  
*Stylidium piliferum*  
*Stylidium repens*  
*Stylidium schoenoides*

Thymelaeaceae

*Pimelea leucantha*  
*Pimelea sulphurea*

Tremandraceae

*Platytheca galioides*  
*Tetratheca hirsuta* "glabrous"

Typhaceae

\* *Typha orientalis*

Violaceae

*Hybanthus calycinus*

Xanthorrhoeaceae

*Xanthorrhoea brunonis*  
*Xanthorrhoea preissii*

Zamiaceae

*Macrozamia riedlei*

# *A Floristic Survey of the Southern Swan Coastal Plain*

by

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