

BLACKWALL REACH, POINT WALTER, ALFRED COVE AND ADJACENT BUSHLAND, BICTON TO APPLECROSS

Boundary Definition: protected area/bushland (part taken to cadastre)/bushland group boundary (Areas of bushland/native vegetation within the boundaries of the Site are not accurately mapped.)

SECTION 1: LOCATION INFORMATION

Bush Forever Site no. 331

Area (ha): bushland 30.8

Map no. 52

Map sheet series ref. no. 2033-I NW

Other Names: Point Waylen, Submission Area 188

Local Authorities (Suburb): City of Melville (Attadale, Alfred Cove)

Includes CALM Managed Land: Reserve 35066 (Conservation of Flora and Fauna), 44414 (Conservation and Radio Facilities)

System 6 (1983): M58 and part M61 area of bushland goes beyond System area boundaries, all bushland described

SECTION 2: REGIONAL INFORMATION

LANDFORMS AND SOILS

Pinjarra Plain

Guildford Formation (Qha: S14, Sm1)

Spearwood Dunes

Sands derived from Tamala Limestone (Qts: S7)

Tamala Limestone (Qtl: LS1)

VEGETATION AND FLORA

Vegetation Complex

Spearwood Dunes

Karrakatta Complex — Central and South

Cottesloe Complex — Central and South

Floristic Community Types

Supergroup 2: Seasonal Wetlands

16 Highly saline seasonal wetlands

S7 Northern woodlands to forests over tall sedgeland alongside permanent wetlands (most southern occurrence)

Supergroup 4: Uplands centred on Spearwood and Quindalup Dunes

24 Northern Spearwood shrublands and Woodlands

WETLANDS

Wetland Types: estuary (waterbody), estuary (shoreline and peripheral)

Natural Wetland Groups

Estuaries

Swan River (E.2)

Wetland Management Objectives: Conservation (10.5ha)

Swan Coastal Plain Lakes EPP: none identified

THREATENED ECOLOGICAL COMMUNITIES

Not assessed, Not determined

SECTION 3: SPECIFIC SITE DETAIL

Blackwall Reach and Point Walter

Landscape Features: estuary — limestone cliff, vegetated wetland, estuary, vegetated uplands

Vegetation and Flora: limited (Gibson *et al.* 1994 (Ptwalt 01), Smith and Smith 1986, Greening WA Pt Walter Group 1994); detailed survey (part Site — Keighery, GJ, 1991a)

Structural Units

Spearwood Dunes

Uplands — Sands derived from Tamala Limestone: *Agonis flexuosa* Woodland and *Banksia attenuata*, *Banksia grandis* and *B. menziesii* Woodland; *Eucalyptus marginata* and *Eucalyptus calophylla* Tall Woodland

Tamala Limestone: *Olearia axillaris*, *Rhagodia baccata*, *Alyxia buxifolia* and *Clematis microphylla* Shrubland;

Open Heath to Open Low Heath dominated by *Acacia rostellifera*, *Dryandra sessilis* var. *cygnorum* and

Melaleuca systena; *Banksia prionotes* Low Woodland

Wetlands (wetflats): *Casuarina obesa* Low Open Woodland; *Juncus maritimus* and *Lepidosperma gladiatum*

Open Sedgeland; *Sporobolus virginicus* Very Open Grassland

Scattered Native Plants: *Eucalyptus gomphocephala* Tall Open Woodland; *Acacia cyclops* Tall Open Shrubland

Vegetation Condition: >60% Very Good, <40% Good to Degraded, with areas of severe localised disturbance (Greening WA Pt Walter Group 1994)

Total Flora: 146 native taxa, 67 weed taxa (compiled from Keighery, GJ, 1991a, Greening WA Pt Walter Group 1994, Smith and Smith 1986) (estimated >80% expected flora)

Significant Flora: *Lechenaultia linarioides*, *Caladenia latifolia* (white flowers), *Agonis flexuosa* (possibly most easterly occurrence), *Alyogyne huegelii* var. *glabrescens* (uncommon in PMR), *Alyxia buxifolia* (rarely recorded for the mainland, common on adjacent offshore islands and Yalgorup National Park), *Pittosporum phylliraeoides* var. *phylliraeoides* (common only on adjacent offshore islands and in Yanchep and Yalgorup National Park), *Conospermum triplinervium*; typical Tamala Limestone taxa — *Templetonia retusa* and *Grevillea preissii*; a series of species associated with the Spearwood Dunes (sands and Tamala Limestone) the occurrence of which is extended inland along the river — *Acacia lasiocarpa* var. *lasiocarpa*, *Acacia xanthina*, *Acanthocarpus preissii*, *Alyxia buxifolia*, *Conostylis candicans*, *Conostylis aculeata* subsp. *cygnorum*, *Dryandra sessilis* var. *cygnorum*, *Eucalyptus gomphocephala*, *Grevillea vestita*, *Pittosporum phylliraeoides* var. *phylliraeoides*, *Scaevola nitida* and *Templetonia retusa*

Fauna: limited survey for birds (32 species) and reptiles (8 species) (Smith and Smith 1986). Significant bird species: category 4 (1)

Other Special Attributes: is one of a very limited number of bushland areas on the Swan Estuary, naturally vegetated areas on the Swan Estuary having particular conservation value in providing habitat for fauna and linkage between areas of bushland; part open space of regional significance (DCE 1983)

Alfred Cove

Landscape Features: vegetated wetland

Vegetation and Flora: limited survey (DEP 1996 (Alfr 01–02), EPA 1987, Pen 1983); detailed survey (Keighery, GJ, 1990b)

Structural Units: mapping (Pen 1983)

Wetlands (wetflats): *Eucalyptus rudis* Forest to Woodland; *Melaleuca rhapsiophylla* Low Open Forest to Low Woodland; Open Low Heath dominated by *Sarcocornia quinqueflora* or *Halosarcia halocnemoides*; Closed Sedgeland to Sedgeland dominated by *Bolboschoenus caldwellii*, *Schoenus subfascicularis*, *Baumea juncea* and *Juncus kraussii*

Scattered Native Plants: *Eucalyptus rudis* Forest to Woodland, *Melaleuca rhapsiophylla* Low Open Forest to Low Woodland — regionally significant vegetation recognised as being included in the area of Site in need of protection

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

Total Flora: 84 native taxa, 89 weed taxa (Keighery, GJ, 1990b) (estimated >90% expected flora)

Significant Flora: *Angianthus micropodioides* (3); *Burchardia bairdiae*, *Gyrostemon ramulosus* (southernmost record, only one plant remains), *Cyperus laevigatus* (only record on the Plain, possibly a weed), *Tribonanthes* aff. *violacea* (associated with freshwater seepages)

Fauna: multiple surveys for birds (132 species) (EPA 1987; RAOU 1996 D, 50 visits). Important feeding area for large assemblage (30 species) and population levels of trans-equatorial wading birds protected under the JAMBA/CAMBA treaties. Important breeding place for 30 species. Significant bird species: category 1 (2), category 2 (30), category 3 (11) and category 4 (6). Significant mammal species: Quenda (Friend 1996 D)

Other Special Attributes: National Trust of Australia (WA) Classification; 'last remaining area of shoreline samphire and rush on the lower estuary' (EPA 1987); the 'Middle Holocene beds are, as far as known, the last substantially undisturbed example on the Swan River, all others having been destroyed or buried by shore reclamation' (G.W. Kendrick pers. comm.); the Pt Waylen Shell Bed is the only undisturbed surface outcrop of a marine-gulf deposit of Middle Holocene age within the Swan River Estuary (Lemmon *et al.* 1979); is one of a very limited number of bushland areas on the Swan Estuary, naturally vegetated areas on the Swan Estuary having particular conservation value in providing habitat for fauna and linkage between areas of bushland; part open space of regional significance (DCE 1983)

Alfred Cove to Point Walter

Landscape Features: vegetated wetland

Vegetation and Flora: limited survey (DEP 1996)

Scattered Native Plants: *Eucalyptus rudis* Forest to Woodland, *Melaleuca rhapsiophylla* Low Open Forest to Low Open Woodland — regionally significant vegetation recognised as being included in the area of Site in need of protection

Linkage: (Blackwall Reach, Point Walter, Alfred Cove and adjacent bushland) no adjacent bushland; part of Greenway 24 (Tingay, Alan & Associates 1998a); part of a regionally significant contiguous bushland/wetland linkage (Part A, Map 7)

Other Special Attributes: naturally vegetated areas on the Swan Estuary have particular conservation value in providing habitat for fauna and linkage between larger more intact areas of bushland; one of the few naturally vegetated areas on the Swan Estuary; open space of regional significance (DCE 1983)

SECTION 4: INTERNATIONAL AND NATIONAL SIGNIFICANCE

Directory of Important Wetlands in Australia (Swan–Canning Estuary); Entered in the Register of the National Estate; location for JAMBA/CAMBA species; subject to protection under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*

SECTION 5: SELECTION CRITERIA AND RECOMMENDATIONS

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

Recommendation: Site with Some Existing Protection; the existing purpose, care, control and management of Reserves 35066, 44414 is endorsed. Remainder of the Site — the existing care, control and management intent of the reserve is endorsed (see Table 3, Volume 1).

BLACKWALL REACH, POINT WALTER, ALFRED COVE AND ADJACENT BUSHLAND, BICTON TO APPECROSS

Boundary Definition: protected area/bushland (part taken to cadastre)/bushland group boundary (Areas of bushland/native vegetation within the boundaries of the Bushplan Site are not accurately mapped.)

SECTION 1: CADASTRAL INFORMATION

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

Bushplan Site no. 331 **Map no.** 60, 61 **Map sheet series ref. no.** 2033-I NW

System 6 (1983): M58 and part M61 area of bushland goes beyond System area boundaries, all bushland described

Other Names

Point Waylen, Submission Area 188

Local Authorities (Suburb)

City of Melville (Attadale, Alfred Cove)

Ownership Categories

Local Government, State Government

CALM Managed Land

Area (ha): total 109.8; bushland 30.8

Zoning

MRS: Parks and Recreation, Urban, Waterways

TPS: Landscape

Lot/Location/Reserve numbers (Purpose),

Street name

10, 11143, 11543 Burke Dr; 9, 10, 31, 38 Canning Hwy; 0 Dunkley Ave

Reserve 35066 (Conservation of Flora and Fauna), 44414 (Conservation and Radio Facilities)

SECTION 2: REGIONAL INFORMATION

LANDFORMS AND SOILS

Pinjarra Plain

Guildford Formation (Qha: S14, Sm1)

Spearwood Dunes

Sands derived from Tamala Limestone (Qts: S7)

Tamala Limestone (Qtl: LS1)

VEGETATION AND FLORA

Vegetation Complex

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Karrakatta Complex — Central and South

Cottesloe Complex — Central and South

Floristic Community Types

Supergroup 2: Seasonal Wetlands

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Estuaries

Swan River (E.2)

Wetland Management Objectives: Conservation (10.5ha)

Swan Coastal Plain Lakes EPP: none identified

THREATENED ECOLOGICAL COMMUNITIES

Not assessed, Not determined

SECTION 3: SPECIFIC SITE DETAIL

Blackwall Reach and Point Walter

Landscape Features: estuary — limestone cliff, vegetated wetland, estuary, vegetated uplands

Vegetation and Flora: detailed survey (part Bushplan Site — Keighery, GJ, 1991a); limited survey (Gibson *et al.* 1994 (Ptwalt 01), Smith, V, and Smith 1986, Greening WA Pt Walter Group 1994)

Structural Units

Spearwood Dunes

Uplands - Sands derived from Tamala Limestone: *Agonis flexuosa* Woodland and *Banksia attenuata*, *Banksia grandis* and *B. menziesii* Woodland; *Eucalyptus marginata* and *Eucalyptus calophylla* Tall Woodland

Tamala Limestone: *Olearia axillaris*, *Rhagodia baccata*, *Alyxia buxifolia* and *Clematis microphylla* Shrubland; Open Heath to Open Low Heath dominated by *Acacia rostellifera*, *Dryandra sessilis* var. *cygnorum* and *Melaleuca acerosa*; *Banksia prionotes* Low Woodland

Wetlands (wetflats): *Casuarina obesa* Low Open Woodland; *Juncus maritimus* and *Lepidosperma gladiatum* Open Sedgeland; *Sporobolus virginicus* Very Open Grassland

Scattered Native Plants: *Eucalyptus gomphocephala* Tall Open Woodland; *Acacia cyclops* Tall Open Shrubland

Vegetation Condition: >60% Very Good, <40% Good to Degraded, with areas of severe localised disturbance (Greening WA Point Walter Group 1994)

Total Flora: 146 native taxa, 67 weeds (Keighery, GJ, 1991a, Greening WA Point Walter Group 1994, Smith, V, and Smith 1986) (estimated >80% expected flora)

Significant Flora: *Lechenaultia linarioides*; *Caladenia latifolia* (white flowers); Species of interest: one of most northerly (and possibly most easterly) occurrences of *Agonis flexuosa*, *Alyogyne huegelii* var. *glabrescens*, uncommon in PMR, *Alyxia buxifolia* (rarely recorded for the mainland, common on adjacent offshore islands and Yalgorup National Park), *Pittosporum phylliraeoides* var. *phylliraeoides* (common only on adjacent offshore islands and in Yanchep and Yalgorup National Park), *Conospermum triplinervium*; typical Tamala Limestone taxa - *Templetonia retusa* and *Grevillea preissii*; a series of species associated with the Spearwood Dunes (sands and Tamala Limestone) the occurrence of which is extended inland along the river — *Acacia lasiocarpa* var. *lasiocarpa*, *Acacia xanthina*, *Acanthocarpus preissii*, *Alyxia buxifolia*, *Conostylis candicans*, *Dryandra sessilis* var. *cygnorum*, *Eucalyptus gomphocephala*, *Grevillea vestita*, *Pittosporum phylliraeoides* var. *phylliraeoides*, *Scaevola nitida* and *Templetonia retusa*.

Fauna: limited survey by Smith, V and Smith (1986) for reptiles (8) and birds (32). Significant bird species: category 4 (1)

Other Special Attributes: is one of a very limited number of bushland areas on the Swan Estuary, naturally vegetated areas on the Swan Estuary having particular conservation value in providing habitat for fauna and linkage between areas of bushland; part open space of regional significance (DCE 1983)

Alfred Cove

Landscape Features: vegetated wetland

Vegetation and Flora: detailed survey (Keighery, GJ, 1990b); limited survey (DEP 1996 (Alfr 01-02), EPA 1987, Pen 1983)

Structural Units: mapping (Pen 1983)

Wetlands (wetflats): *Eucalyptus rudis* Forest to Woodland; *Melaleuca raphiophylla* Low Open Forest to Low Woodland; Open Low Heath dominated by *Sarcocornia quinqueflora* or *Halosarcia halocnemoides*; Closed Sedgelands to Sedgelands dominated by *Bolboschoenus caldwellii*, *Schoenus subfascicularis*, *Baumea juncea* and *Juncus kraussii*

Scattered Native Plants: *Eucalyptus rudis* Forest to Woodland, *Melaleuca raphiophylla* Low Open Forest to Low Woodland - regionally significant vegetation recognised as being included in the area of Bushplan Site in need of protection

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

Total Flora: 84 native taxa, 89 weeds (Keighery, GJ, 1990b) (estimated >90% expected flora)

Significant Flora: *Angianthus micropodioides* (3); *Burchardia bairdiae*, *Gyrostemon ramulosus* (southernmost record, only one plant remains), *Cyperus laevigatus* (only record on the Plain, possibly a weed), *Tribonanthes* aff. *violacea* (associated with freshwater seepages)

Fauna: surveyed by RAOU (1996 D), 50 visits, and EPA 1987 for birds (132 species). Important feeding area for large assemblage (30 species) and population levels of trans-equatorial wading birds protected under the JAMBA/CAMBA treaties. Important breeding place for 30 species. Significant bird species: category 1 (2), category 2 (30), category 3 (11) and category 4 (6). Significant mammal species: Quenda (Friend 1996 D)

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Alfred Cove to Point Walter

Landscape Features: vegetated wetland

Vegetation and Flora: limited survey (DEP 1996)



Scattered Native Plants: *Eucalyptus rudis* Forest to Woodland, *Melaleuca raphiophylla* Low Open Forest to Low Open Woodland - regionally significant vegetation recognised as being included in the area of Bushplan Site in need of protection

Linkage: (Blackwall Reach, Point Walter, Alfred Cove and adjacent bushland) no adjacent bushland; part of proposed Greenway 24 (Tingay, Alan & Associates 1997a); part of a regionally significant contiguous bushland/wetland linkage (Volume 2A, Map 8)

Other Special Attributes: naturally vegetated areas on the Swan Estuary have particular conservation value in providing habitat for fauna and linkage between larger more intact areas of bushland; one of the few naturally vegetated areas on the Swan Estuary; open space of regional significance (DCE 1983)

SECTION 4: INTERNATIONAL AND NATIONAL SIGNIFICANCE

Directory of Important Wetlands in Australia (Swan-Canning Estuary); Part Bushplan Site listed on the Register of the National Estate; Location for JAMBA/CAMBA species

SECTION 5: SELECTION CRITERIA AND RECOMMENDATIONS

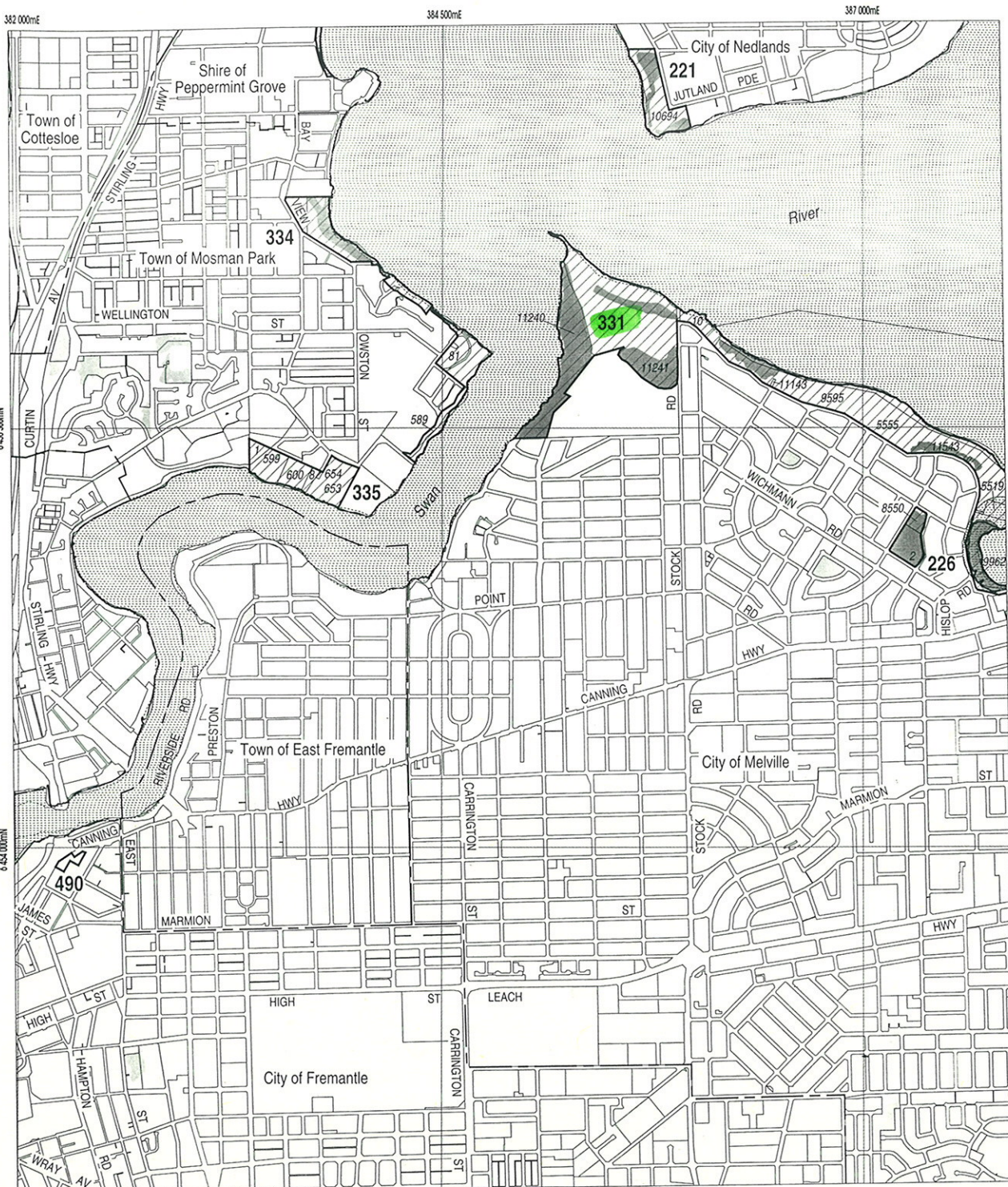
Criteria: Representation of ecological communities, Rarity, Maintaining ecological processes or natural systems, Scientific or evolutionary importance, General criteria for the protection of wetland, streamline and estuarine fringing and coastal vegetation

Opportunities and/or Constraints

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

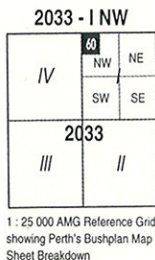
Constraints: under MRS Urban Zoning

Recommendation: The existing purpose, care, control and management of Reserves 35066, 44414 is endorsed. For the remainder of the Bushplan Site — 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.



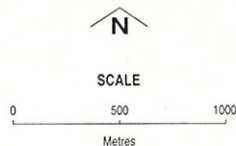
LEGEND

- 472 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

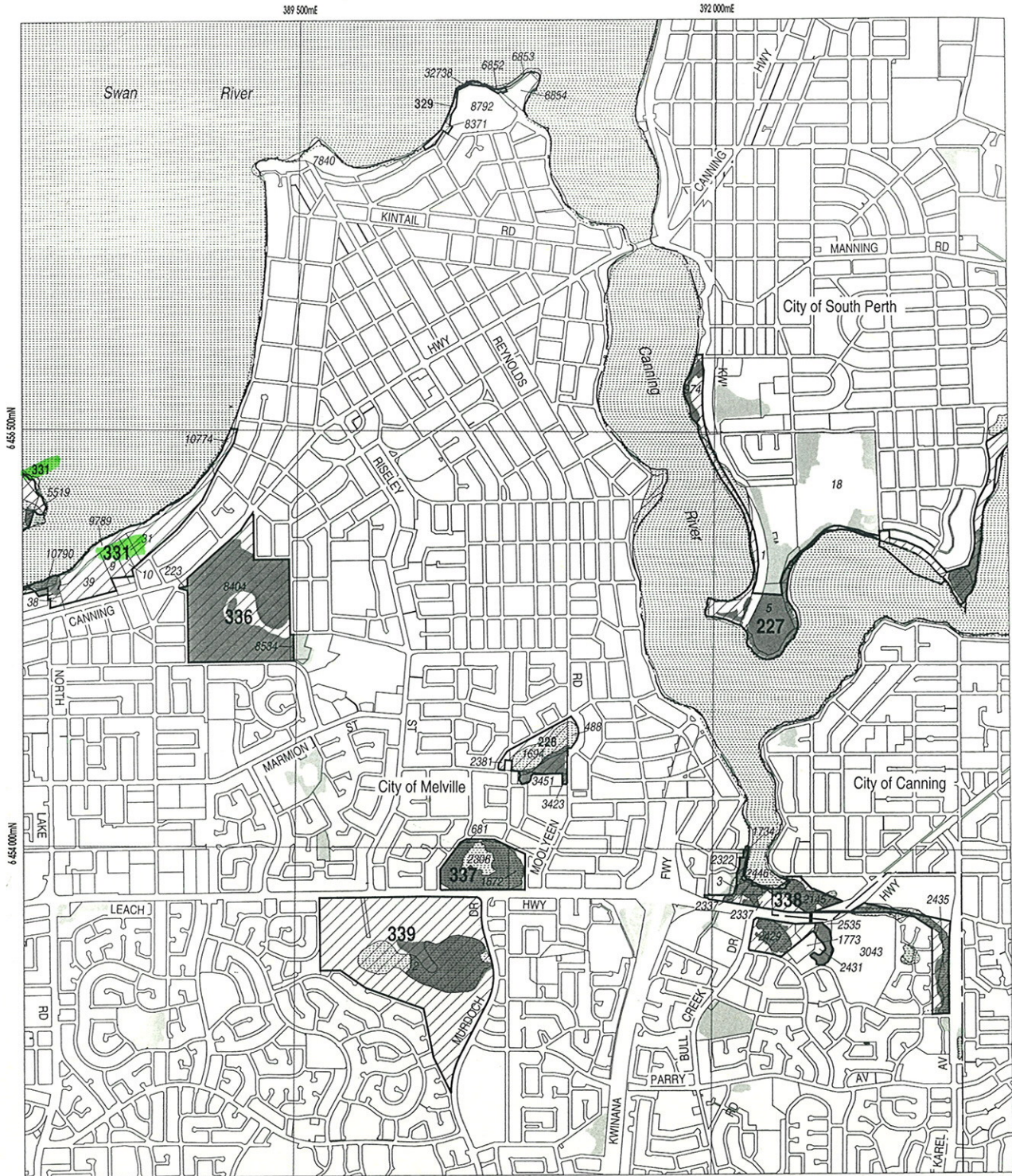


PERTH'S BUSHPLAN MAP INDEX

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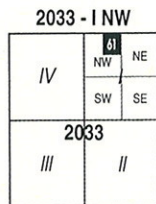


Produced by Project Mapping Section
Land Information Branch, Ministry for
Planning, Perth W.A. November 1998
ntw-map18/environ/bushplan/bushv2_60.dgn
Cadastral Data supplied by Department
of Land Administration, W.A.
Wetlands Data supplied by
Water and Rivers Commission
Native Vegetation Extent for Study Area
supplied by Agriculture Western Australia

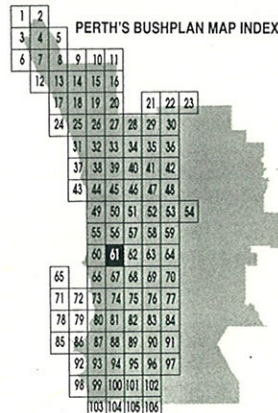


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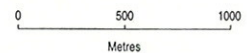
-  Bushplan Sites With Regionally Significant Bushland
-  Other Native Vegetation
-  Conservation Category Wetlands
-  Bushplan Sites With Some Existing Protection
-  Lot Number, Location Number
-  Channel Wetlands
-  Local Government Boundary



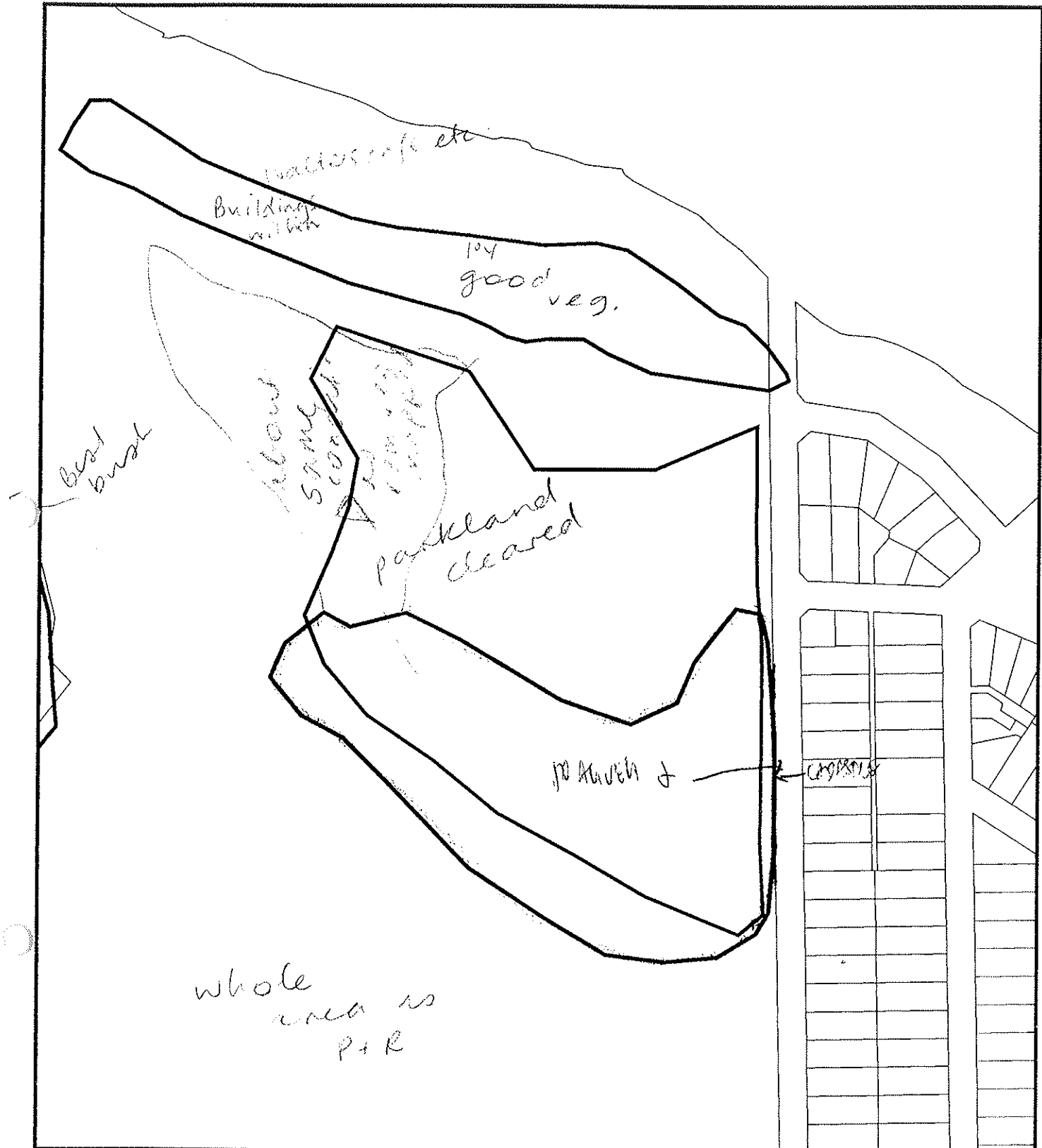
1 : 25 000 AMG Reference Grid showing Perth's Bushplan Map Sheet Breakdown



SCALE



Produced by Project Mapping Section
 Land Information Branch, Ministry for
 Planning, Perth W.A. November 1998
 ntw-map18/environ/bushplan/bushv2_61.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



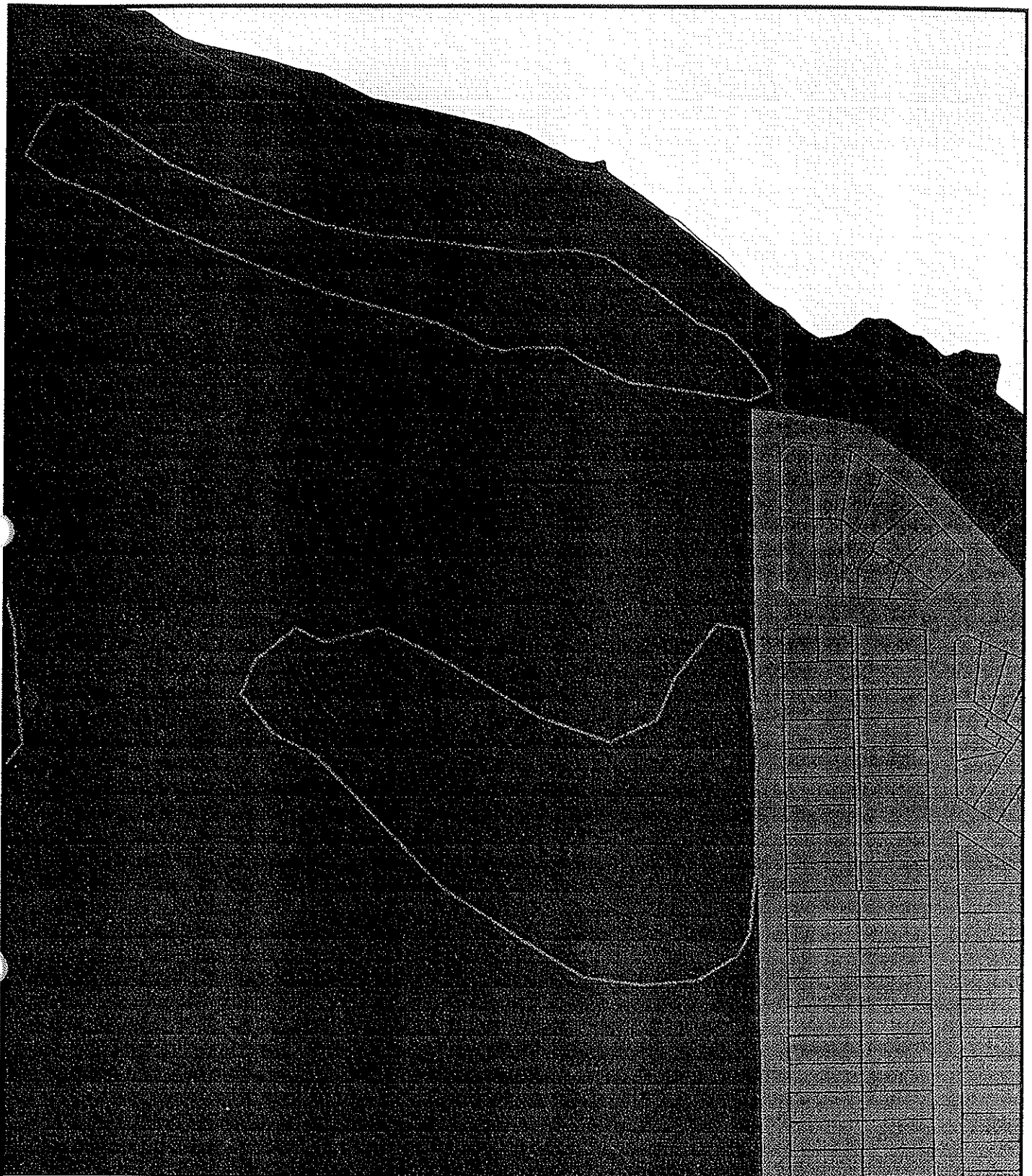
bp site 416

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







join to 331
NCT/ITA 2/16

include whole of P+R
& adjacent vegetation

MFP INTERNAL USE ONLY
 Prepared By: Andrea Zappacosta
 Prepared For:
 Map Ident: plot980910_1
 Date: 10 Sep 98
 Scale 1:3816



bp site 416

-  Bushplan sites refno 1-500 SCP BOUNDARY THEME
-  Cadastre
-  AG VEG 1998 - BOUNDARIES SCP
-  URBAN
-  WATERWAYS
-  PARKS & RECREATION

MFP INTERNAL USE ONLY

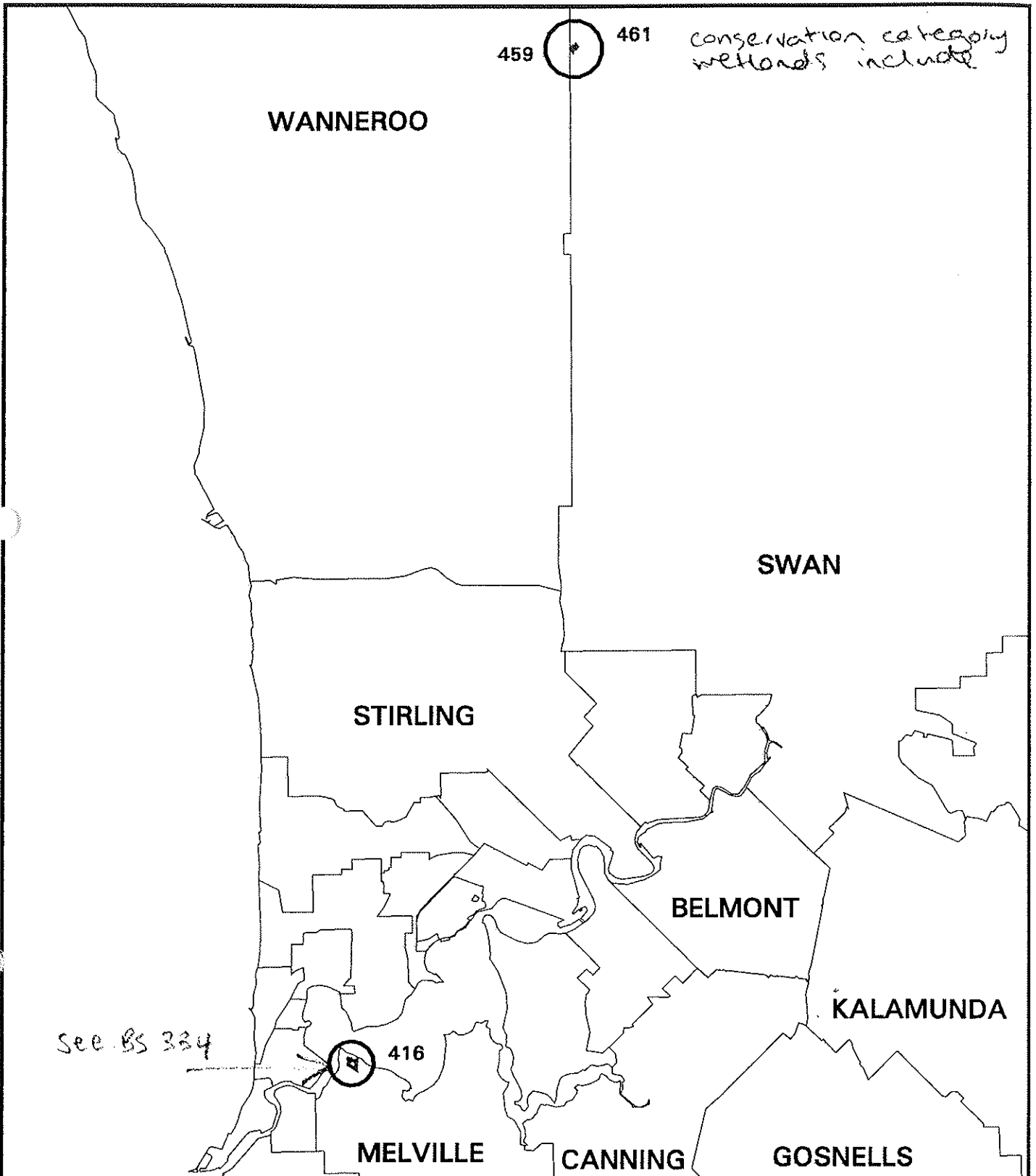
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Prepared For:

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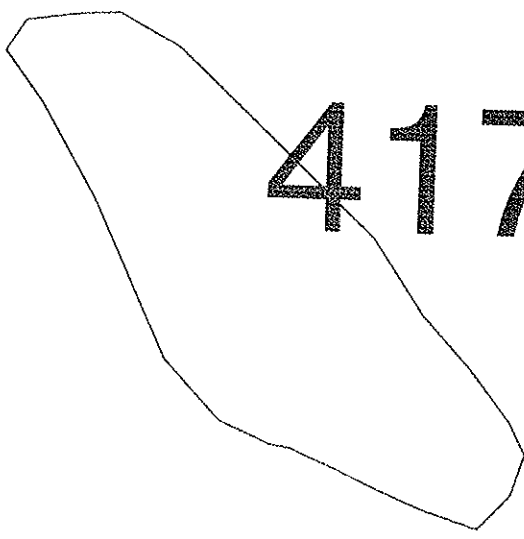


bp site 416, 459, 461

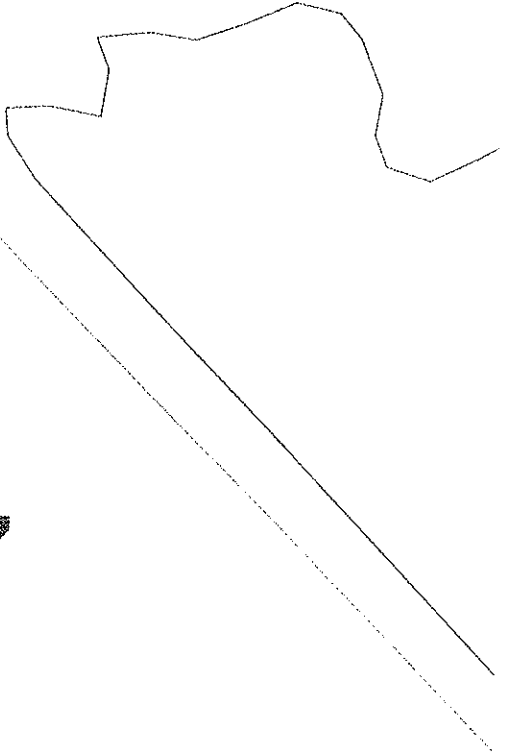
- Bushpian sites refno 1-500 SCP BOUNDARY THEME
- Local Government Areas - Metro

JA/NT
 1 Oct
 See notes above.

MFP INTERNAL USE ONLY
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 Prepared For:
 Map Ident: plot980924_1
 Date: 24 Sep 98
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417



BUSHPLAN SITES CORRECTED



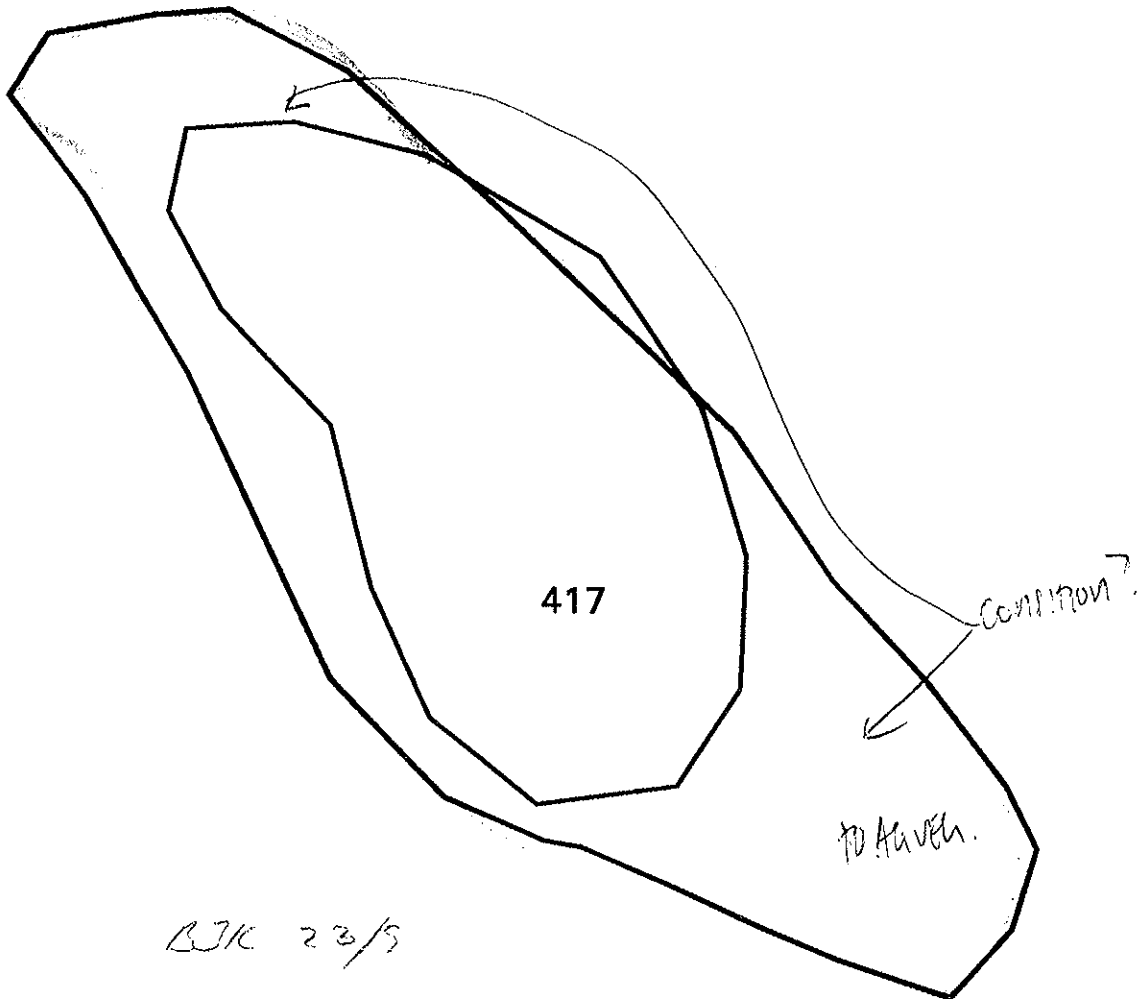
WESTERN AUSTRALIAN PLANNING COMMISSION



CUSTOMER FOCUS WESTERN AUSTRALIA

B BK/7c 21/10/78





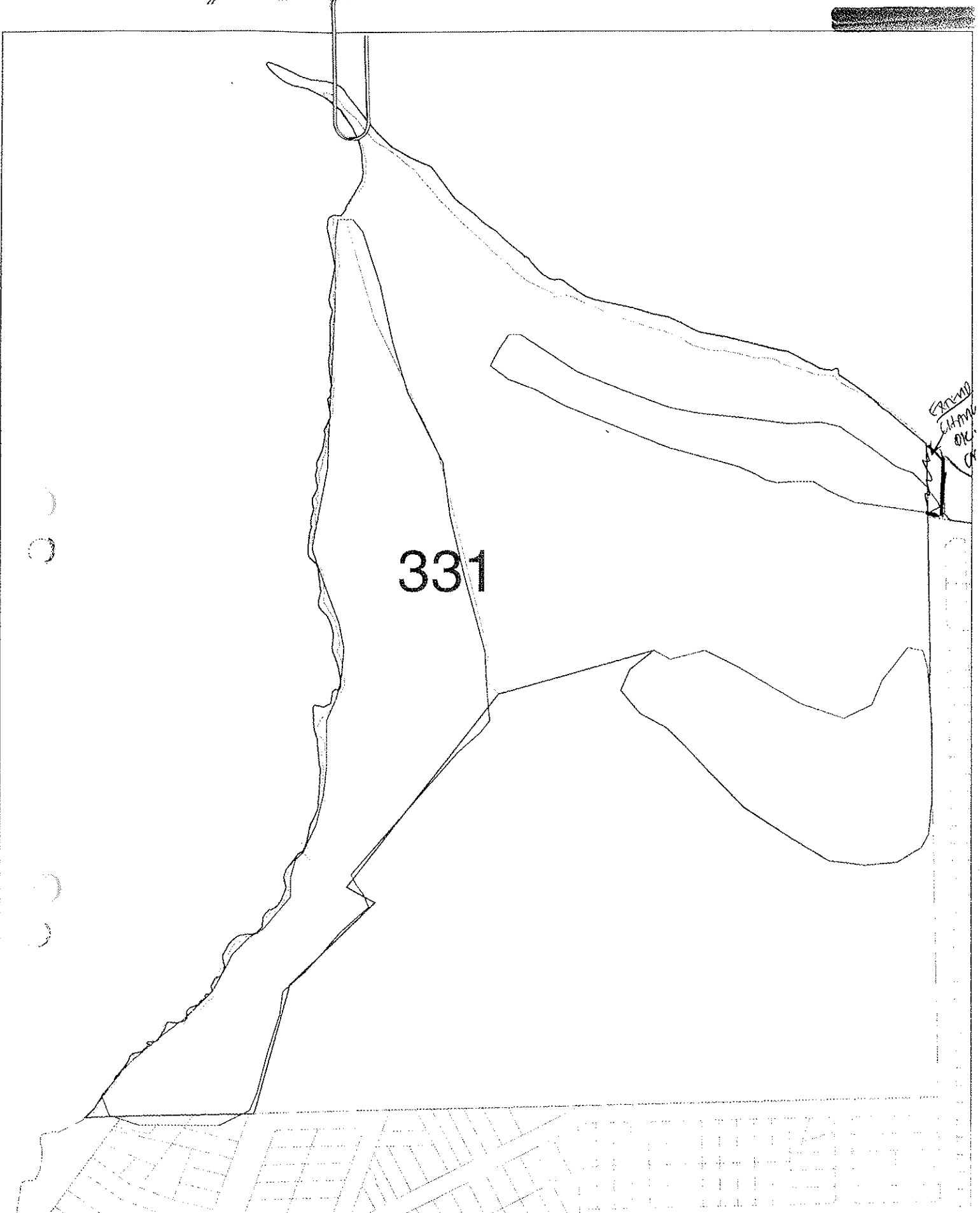
BJK 23/9

It looks like this was
 a clear inset in Pines
 and pines have been
 cleared. Condition cannot
 be determined from photos

bp site 417

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

MFP INTERNAL USE ONLY
Prepared By: Andrea Zappacosta
Prepared For:
Map Ident: plot980608_1
Date: 08 Jun 98
Scale 1:1432



331

Ground
416
01/10/98
OK

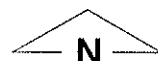
BUSHPLAN SITES CORRECTED



WESTERN
AUSTRALIAN
PLANNING
COMMISSION



B 76 25/10/98

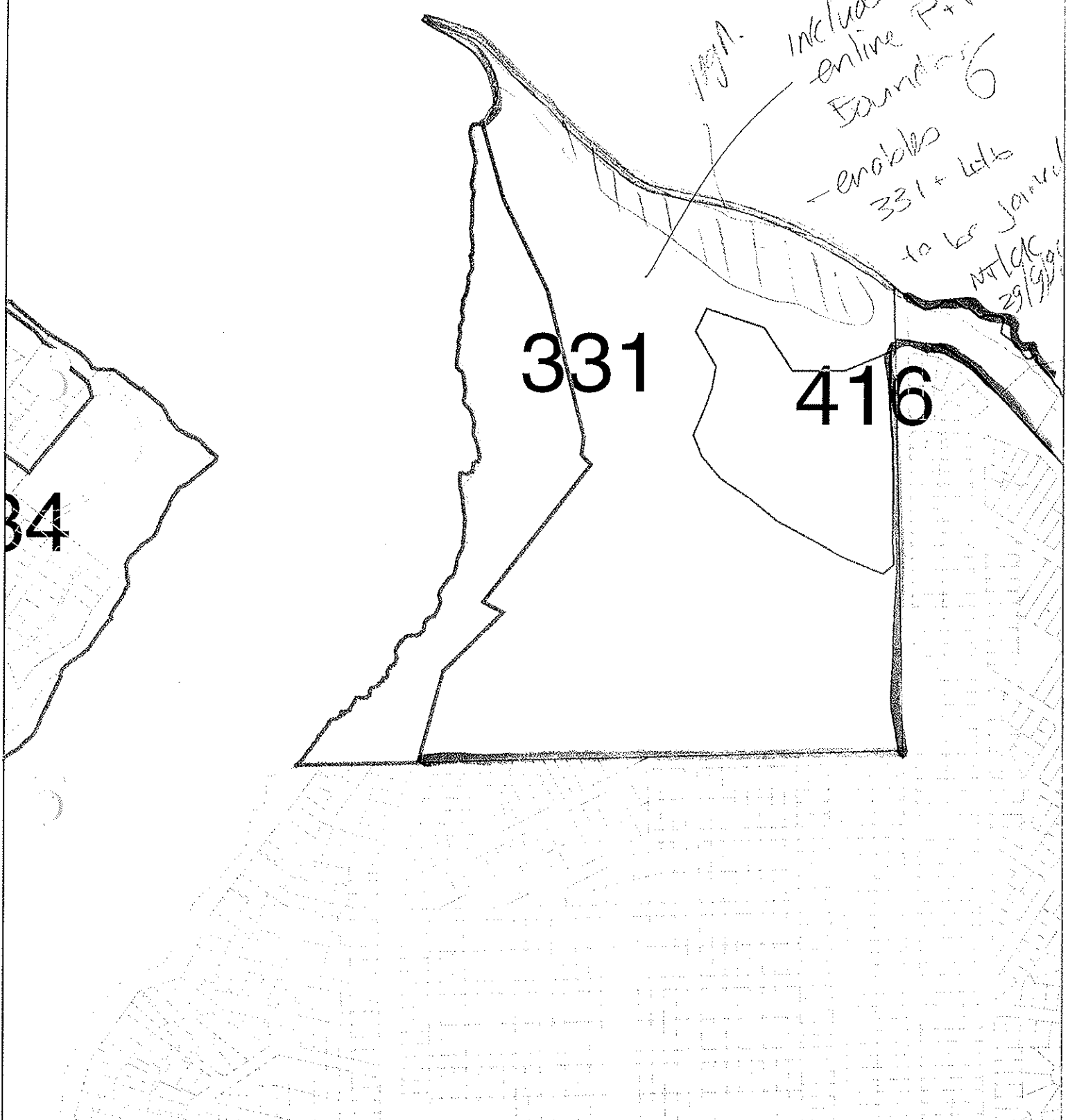


331
Grid 416
01/10/98
OK

SIGNIF. BOUNDARY CHANGE

Rec
to Golf Club

1991. include
entire P+R
Boundary
- enables
331 + 416
to be joined
M/L/C
29/9/91

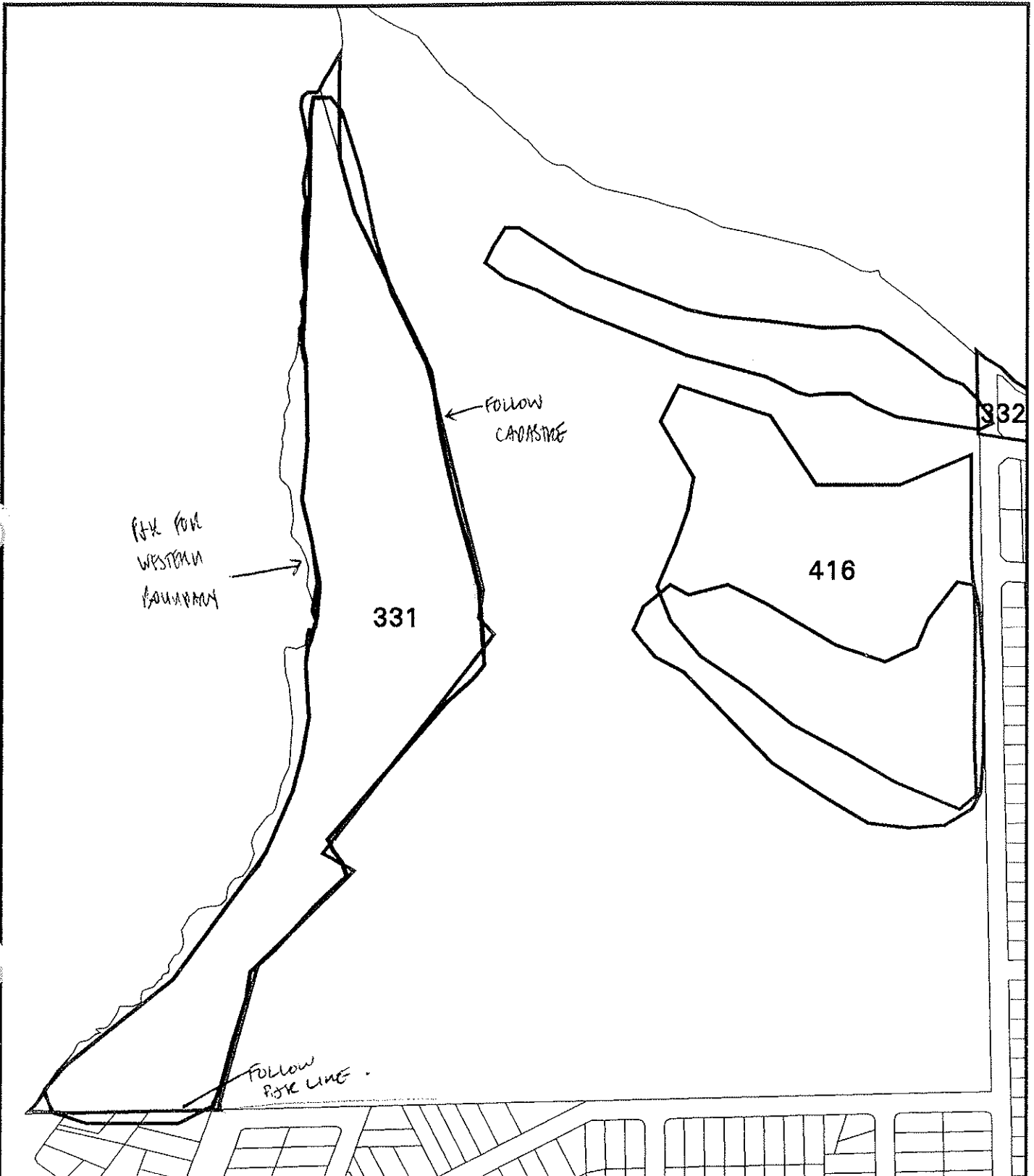


BUSHPLAN SITES CORRECTED






WESTERN
AUSTRALIAN
PLANNING
COMMISSION





bp site 331 & 416

-  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: plot980529_1
 Date: 29 May 98
 Scale 1:5616



Bush Forever Site 331: Blackwall Reach, Point Walter, Alfred Cove and Adjacent Bushland, Bicton to Applecross

- Bush Forever Sites
- Local Government Authority Boundaries
- Geomorphic Wetlands Feb04 by Evaluation
- Conservation
- Resource Enhancement
- Multiple Use
- 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
- 5 Metre, South West WA



1:7500

Datum: GDA - Projection: MGA Zone 50



Data Sources:
Cadastre DLI
Aerial Photography : Skyview DLI



Bush Forever Site 331: Blackwall Reach, Point Walter, Alfred Cove and Adjacent Bushland, Bicton to Applecross

- Bush Forever Sites
- Local Government Authority Boundaries
- Geomorphic Wetlands Feb04 by Evaluation
- Conservation
- Resource Enhancement
- Multiple Use
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 - GJKENV (Keighery 1996)
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 - SYS6ENV2 (DEP 1996 and Trudgen & Keighery 1995)
- ★ CALM Threatened Ecological Communities 2002
- Roads - Perth Metropolitan
- 5 Metre, South West WA

0 100 200 300 400 Meters



1:5000



Department of Environment

Data Sources:
Cadastral DLI
Aerial Photography : Skyview DLI

Datum: GDA - Projection: MGA Zone 50



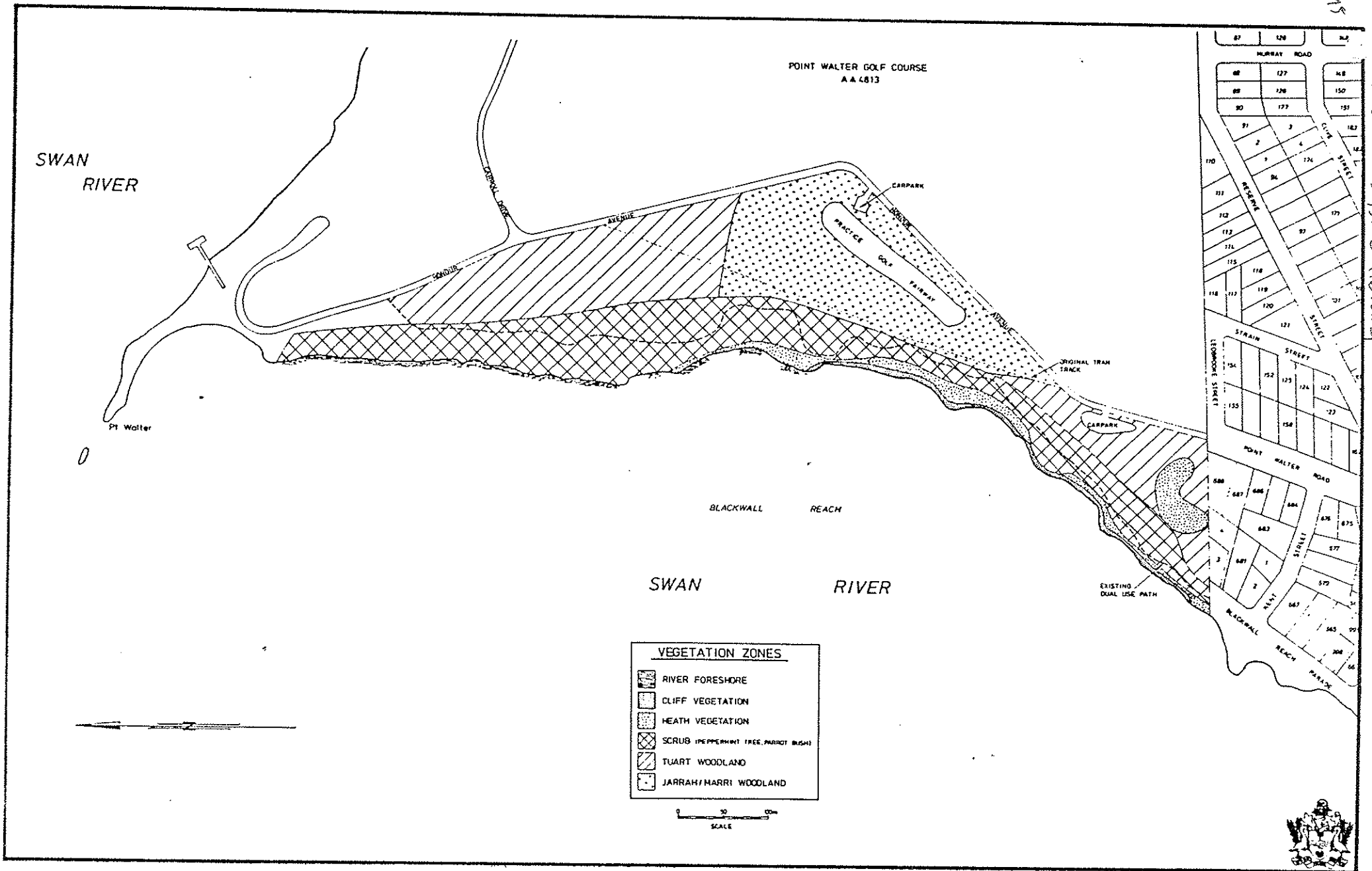
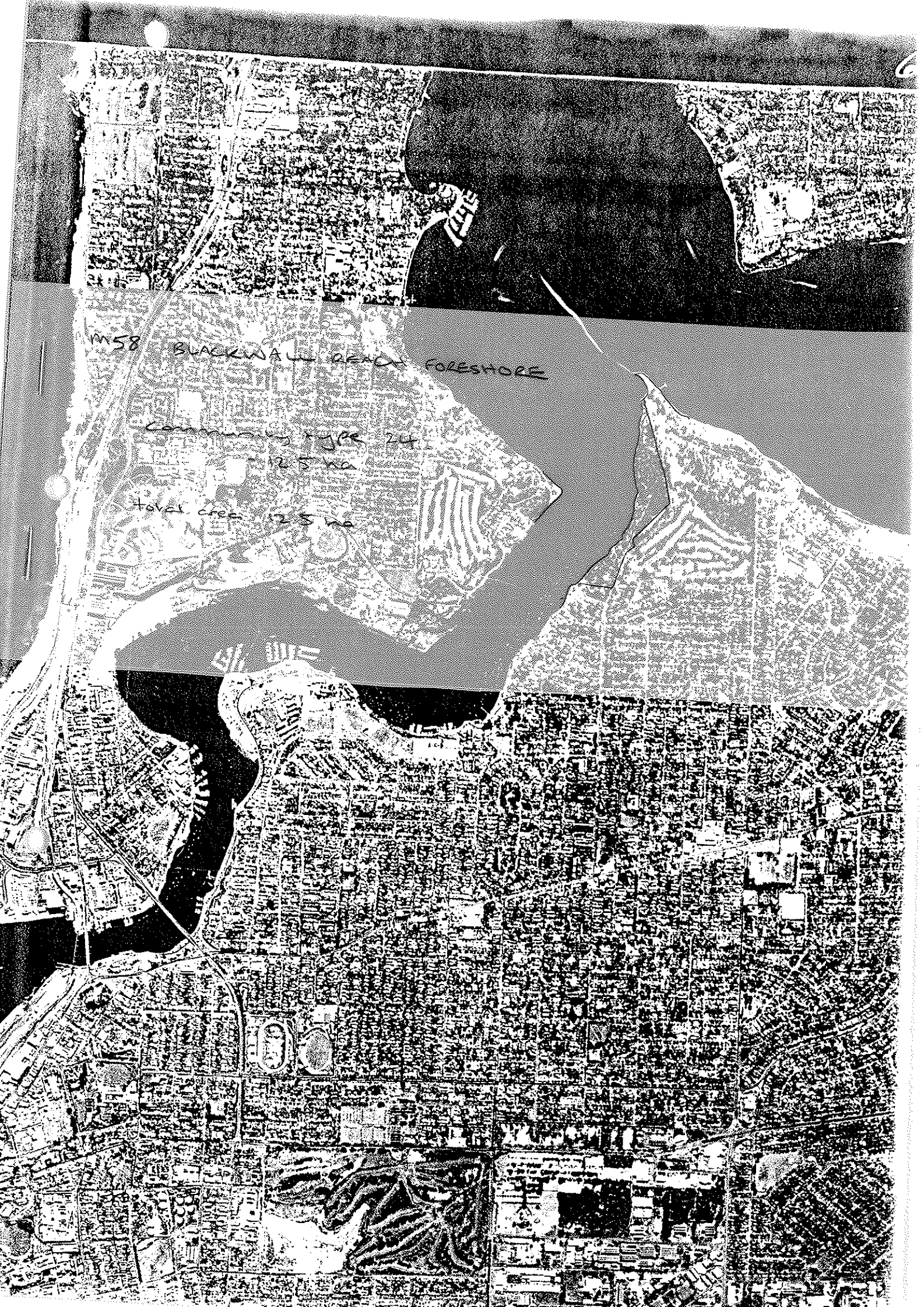


FIGURE 3 - VEGETATION ZONES



MSB

BLACKWALL REACH FORESHORE

LAWRENCE ST

HOTEL CR...

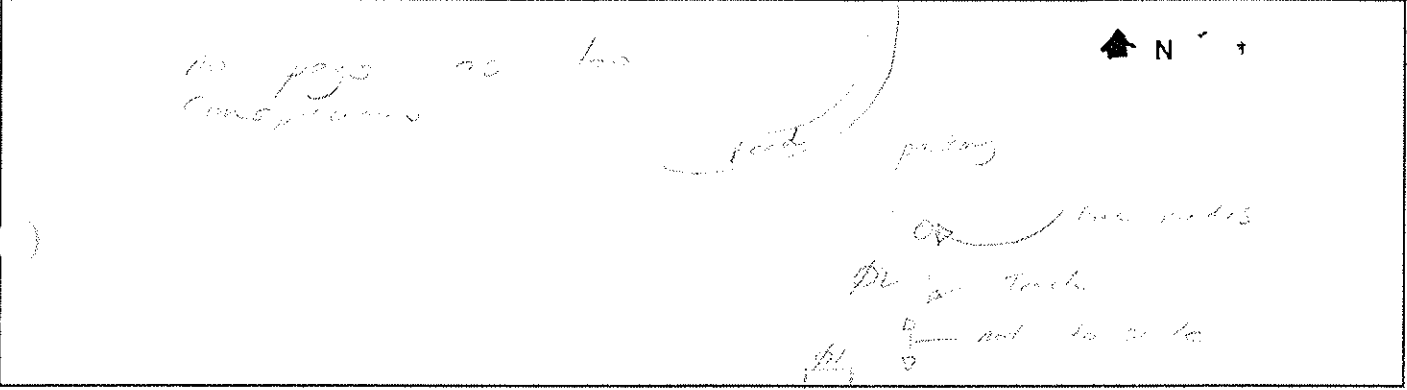
100

BUSHLAND PLANT SURVEY RECORDING SHEET 1- use pencil only

BUSHLAND AREA ALFALFA COVE SITE NUMBER ALF 01
 DATE TRIP 11/10/94 RECORDERS DJK, NT, JH
 DATE TRIP _____ RECORDERS _____
 DATE TRIP _____ RECORDERS _____
 BOTANIST _____

1. LOCATION of the QUADRAT

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



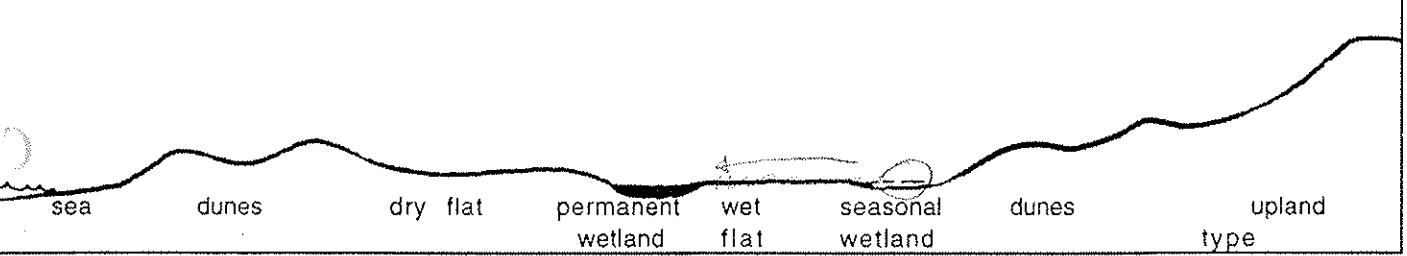
Road Location

Geographic Location Latitude 32° 01.41' S Longitude 115° 46.73' E Altitude

Reference Map 1:50,000 7m from map

Photograph Photographer's Name JA Photo No 2

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



2. SITE DATA Circle the correct response.

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

Surface Soil clay (silt) Colour grey
Exposed rock type % surface

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

Drainage well mod poor depth water 2 cm Wet all year winter/spring

Litter	<u>NA</u>	% cover	Bare Ground	<u>30</u>	% cover
Depth	cm		<u>100% cover</u>		

Env. geol. : S22

estuary








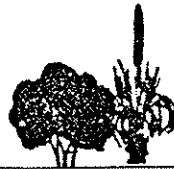






off 01

BUSHLAND PLANT SURVEY RECORDING SHEET 2 (Muir)- use pencil only

3. VEGETATION STRUCTURE AND COVER

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

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

	TREES			MALLEES	
	over 30m	15 - 30m	5 - 15m under 5m	over 8m	under 8m
LIFE FORM					
COVER CLASS (%)					
DOMINANT SPECIES					
					30m
					10m
SHRUBS			SHRUBS		
	over 2m	2m - 1.5m	1.5 - 1m	1 - 0.5m	under 0.5m
LIFE FORM					
COVER CLASS (%)					30-70%
DOMINANT SPECIES					Scrub sheath = bare ground
					2m
					1m
GRASSES	HERBS	SEDGES	over 0.5m	under 0.5m	
LIFE FORM		Very Open Herbs 		Very open Low Sedges 	
COVER CLASS (%)		2-10		2-10%	
DOMINANT SPECIES		Trichlochin monocladia		Bulbostylis diandra Ternstroemia	

4. VEGETATION CONDITION

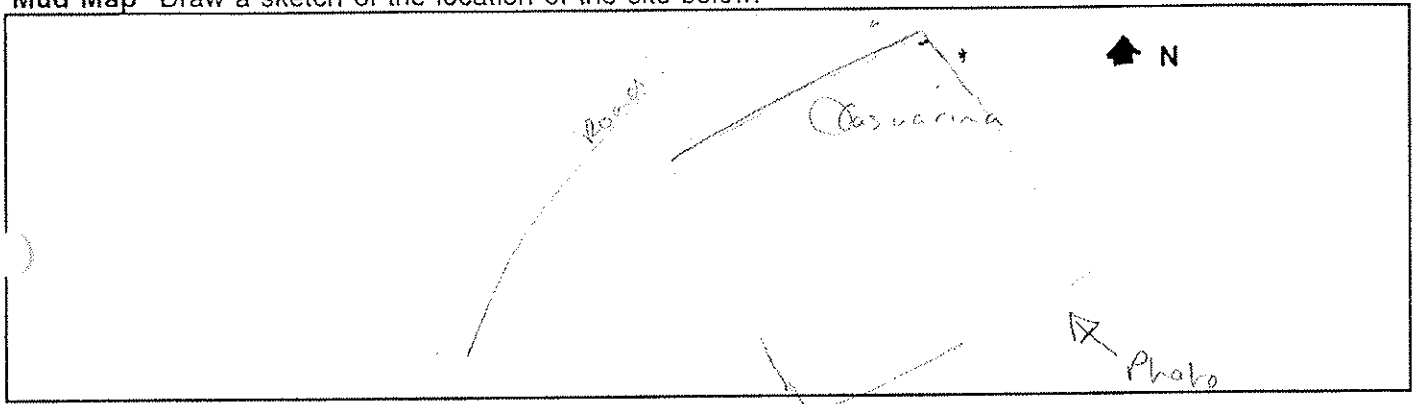
1	'PRISTINE'		COMMENTS People tracks
2	EXCELLENT	✓	
3	VERY GOOD		
4	GOOD		
5	DEGRADED		

BUSHLAND PLANT SURVEY RECORDING SHEET 1- use pencil only

BUSHLAND AREA ALPERS coll: m61 SITE NUMBER ALP 92
 DATE TRIP 11/10/94 RECORDERS B & J A. NT
 DATE TRIP _____ RECORDERS _____
 DATE TRIP _____ RECORDERS _____
 BOTANIST _____

1. LOCATION of the QUADRAT

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



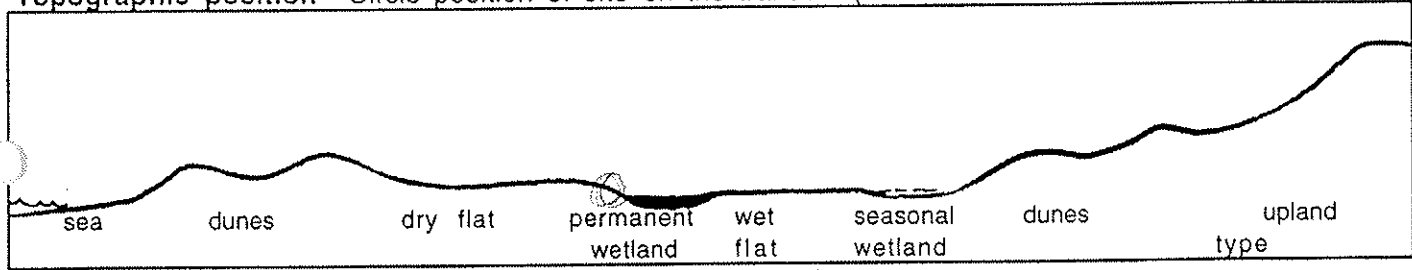
Road Location _____

Geographic Location Latitude 115°48'7" E S Longitude 32°01'52" S Altitude _____

Reference Map _____ 7m from EG map

Photograph Photographer's Name JA. Photo No 3

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



2. SITE DATA Circle the correct response.

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

Surface Soil sandy clay. Colour dark brown
Exposed rock type - % surface _____

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

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

Litter	<u>2-10'</u>	% cover	Bare Ground	% cover
	Depth <u>50</u>	cm	<u>-</u>	

Env. geol : S22 / S14

estuary
E-2






2/1/02






BUSHLAND PLANT SURVEY RECORDING SHEET 2 (Muir)- use pencil only




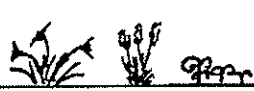
3. VEGETATION STRUCTURE AND COVER

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

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

	TREES			MALLEES	
	over 30m	15 - 30m	5 - 15m under 5m	over 8m	under 8m
LIFE FORM			 Low Forest A.		
COVER CLASS (%)			30-70%		
DOMINANT SPECIES			M. rhaphis		

	SHRUBS			SHRUBS	
	over 2m	2m - 1.5m	1.5 - 1m	1 - 0.5m	under 0.5m
LIFE FORM					
COVER CLASS (%)					
DOMINANT SPECIES					

	GRASSES	HERBS	SEDGES	
			over 0.5m	under 0.5m
LIFE FORM			 Dense Tall Sedges	
COVER CLASS (%)			over 70%	
DOMINANT SPECIES			Juncus kraussii Baumea juncea	

4. VEGETATION CONDITION

1	'PRISTINE'	COMMENTS
2	EXCELLENT	
3	VERY GOOD	
4	GOOD	
5	DEGRADED	

Swan Coastal Plain Survey - SURVEY RECORDING SHEET Please use pencil

BUSHLAND AREA: POINT WALTER

QUADRAT No. ONE VEGETATION TYPE SHRUBLAND

DATE TRIP 30-7-1993 BOTANIST GK/BK

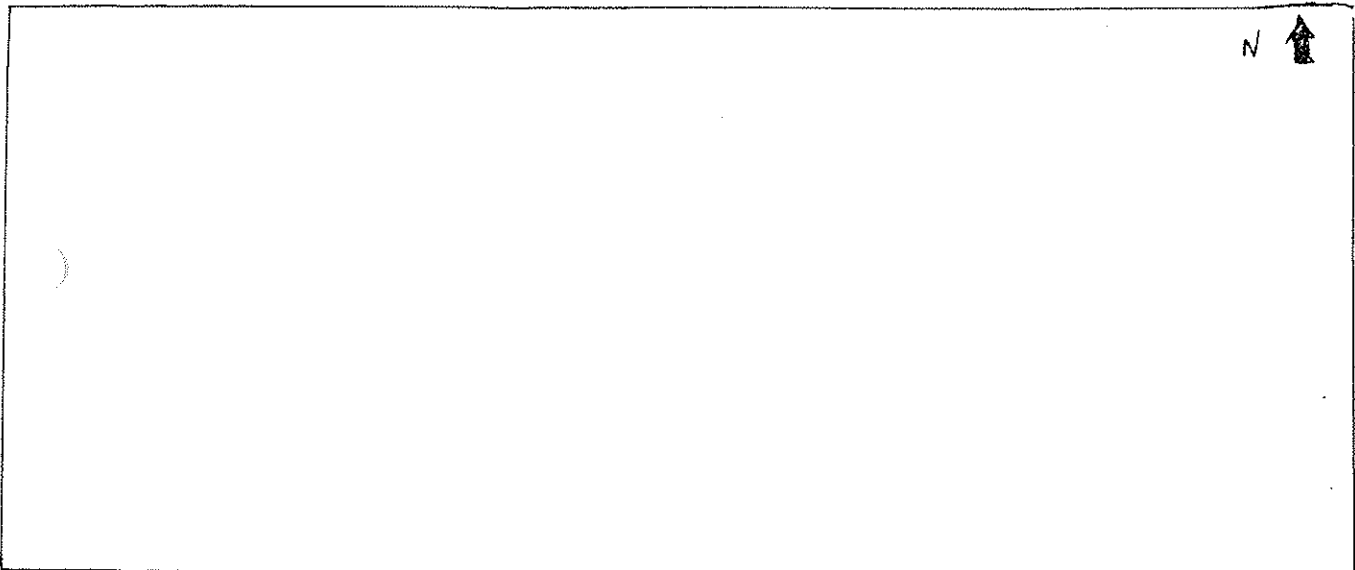
VOLUNTEERS _____

DATE TRIP _____ BOTANIST _____

VOLUNTEERS _____

1. LOCATION of the QUADRAT

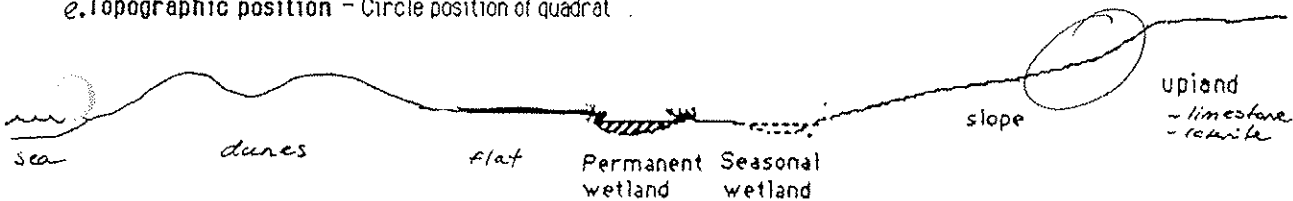
a. Mud Map Draw a sketch of the location of the quadrat



b Road Location	c. Latitude	Longitude
		Altitude

d. Photograph Photographer's name _____ Photo No _____

e. Topographic position - Circle position of quadrat



2. SITE DATA - Circle the correct response

Slope flat gentle steep

Aspect

N	NE	E	SE	S	SW	<u>W</u>	NW
---	----	---	----	---	----	----------	----

Surface soil yellow sand

Sub-surface soil limestone

Drainage well mod poor

Wet All year winter/spring

Litter (% cover) _____

% Bare ground _____

P.T.O.

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

PT WALTER





POINT WALTER - Blackwattle

3. VEGETATION STRUCTURE AND COVER. Record appropriate cover class

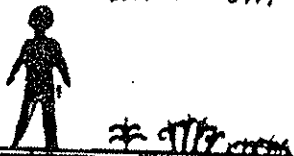
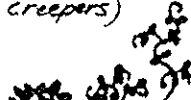
PTWALTER 01

Cover Class - percentage classes

0%	under 2%	2-10%	10-20%	20-30%	30-50%	50-70%	over 70%
----	----------	-------	--------	--------	--------	--------	----------

LIFE FORM	TREES		MALLEES		15m 10m 5m
	<p>over 15m or 5-15m</p> 	<p>Under 5m</p> 	<p>MALLEE SHRUB less than 8m</p> 	<p>MALLEE TREE 8m or more</p> 	
COVER CLASS (%)	<p>>15m</p> <p>5-15m</p>				
Dominant Species					

LIFE FORM	SHRUBS <i>use the height classes indicated</i>					SHRUBS		3m 2m 1m Height (metres)
	over 2m		2.0-1.5m	1.5-1.0m	1.0m-.5m	under .5m		
COVER CLASS (%)			50-70					
Dominant Species			Ac. rostr					
			Dry. sess					
			Mel. aceros					

LIFE FORM	BUNCH GRASSES	HERBS	SEDGES		2.0m 1.5m 1.0m .5m
	<p>under .5m</p> 	<p>under .5m (except creepers)</p> 	over .5m	under .5m	
COVER CLASS (%)	30-50	30-50			
Dominant Species	<p>Erharta calycina</p> <p>Erag. curvula</p>				

4. VEGETATION CONDITION : NO MOSSES, tracks

PRISTINE		<p>comments small amount of erosion</p>
EXCELLENT		
VERY GOOD	✓	
GOOD		
DEGRADED		

AREA INFORMATION

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

M61

Conservation Area
Nature Reserve
Reserve No
National Park
Reserve No
Local Government
Reserve No
Other
Proposed Conservation Areas
Local Government
Reserve No
Other

Conservation Area

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

AREA

Total Area	hectares
Completely Degraded	hectares
comments:	

AREA MAPPED FLORISTIC UNITS

Boundaries: System6 CALM

Units	Site (Condition)	Code	SB : ALF	Bound	Area (ha)	Area(ha)

Boundaries determined by use of

aerial photograph	Metro Regional Area run 9 S209	11/12/92
orthophoto	2033 1 NW Aug 1991	
vegetation map		
soil map		

EROSION
System 6 Area (C or M) or Update Area (Update)

Conservation Area
Nature Reserve
Reserve No
National Park
Reserve No
Local Government M58 BLACKWALL REACH FORESHORE BICTON
Reserve No A4813 CITY OF MELVILLE
Other
Proposed Conservation Areas
Local Government
Reserve No
Other

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

TOTAL AREA

Bushland Area	12.5	hectares
Completely Degraded	-	
small amount of erosion		

AREA MAPPED FLORISTIC UNITS

Units	Site (Condition)	Code G - PTWALT	Bound	Area (ha)
24	Ø (3)		B	12.5

Boundaries determined by use of

aerial photograph	Metro Street Directory m 7 5139	5/1/91
orthophoto	2033 1 NW	Aug 1991
vegetation map		
soil map		

CALM map Metro 5
MRPA

**Department of Environmental Protection System 6 Update: Site Based Flora
List M61 Aquatic Reserve, Attadale
(17 taxa, Alf 1-2, B.J. Keighery, 8/5/95)**

Asteraceae

- * *Aster subulatus*

Chenopodiaceae

- Sarcocornia quinqueflora*

Colchicaceae

- Burchardia bairdiae*

Cyperaceae

- Baumea juncea*
- Bolboschoenus caldwellii*
- Gahnia trifida*
- Isolepis cernua*
- Lepidosperma longitudinale*

Iridaceae

- * *Gladiolus undulatus*
- Patersonia occidentalis*

Juncaceae

- Juncus kraussii*

Juncaginaceae

- Triglochin mucronatum*

Myrtaceae

- Eucalyptus rudis*
- Melaleuca raphiophylla*
- Melaleuca viminea*

Poaceae

- Cynodon dactylon*

Primulaceae

- Samolus repens*

R. A. O. U. TRACKING DATABASE

23/06/96

PARK SIGHTINGS REPORT

Page No.

1

Alfred Cove N.R. (M61)

ORDER:	REF:	BIRD NAME	NO. SIGHTINGS
0007	0009	Stubble Quail	1
0019	0217	Musk Duck 3	1
0022	0203	Black Swan	13
0025	0207	Australian Shelduck	24
0032	0208	Pacific Black Duck	48
0033	0212	Australasian Shoveler 3	3
0035	0211	Grey Teal	48
0036	0210	Chestnut Teal 3	3
0039	0213	Pink-eared Duck 3	1
0040	0215	Hardhead 3	1
0041	0061	Australasian Grebe	4
0042	0062	Hoary-headed Grebe	9
0043	0060	Great Crested Grebe	5
0066	0075	Great-winged Petrel	1
0128	0101	Darter	18
0129	0100	Little Pied Cormorant	51
0131	0099	Pied Cormorant	16
0132	0097	Little Black Cormorant	40
0133	0096	Great Cormorant	48
0135	0106	Australian Pelican	53
0139	0188	White-faced Heron	33
0140	0185	Little Egret	6
0142	0189	White-necked Heron	2
0145	0187	Great Egret	29
0157	0179	Australian White Ibis	47
0158	0180	Straw-necked Ibis	1
0160	0182	Yellow-billed Spoonbill	8
0163	0241	Osprey	29
0165	0232	Black-shouldered Kite	23
0172	0226	White-bellied Sea-Eagle	3
0174	0219	Swamp Harrier	2
0175	0221	Brown Goshawk 4	1
0177	0222	Collared Sparrowhawk 4	3
0181	0225	Little Eagle 4	1
0183	0235	Australian Hobby 4	4
0186	0237	Peregrine Falcon 1	4
0187	0240	Nankeen Kestrel	17
0192	0046	Buff-banded Rail	9
0197	0050	Baillon's Crake	1
0198	0049	Australian Spotted Crake	1
0204	0058	Purple Swamphen	1
0205	0056	Dusky Moorhen 3	1
0221	0152	Black-tailed Godwit 2	2

0223	0153	Bar-tailed Godwit	2	30
0230	0159	Marsh Sandpiper	2	5
0231	0158	Common Greenshank	2	46
0234	0160	Terek Sandpiper	2	1
0235	0157	Common Sandpiper	2	10
0236	0155	Grey-tailed Tattler	2	2
0238	0129	Ruddy Turnstone	2	2
0240	0165	Great Knot	2	30
0241	0164	Red Knot	2	15
0244	0162	Red-necked Stint	2	27
0245	0965	Long-toed Stint	2	1
0248	0978	Pectoral Sandpiper	2	1
0249	0163	Sharp-tailed Sandpiper	2	20
0251	0161	Curlew Sandpiper	2	28
0265	0130	Pied Oystercatcher		45
0266	0131	Sooty Oystercatcher		2
0267	0146	Black-winged Stilt		52
0268	0147	Banded Stilt		3
0269	0148	Red-necked Avocet		25
0271	0136	Grey Plover	2	44
0275	0143	Red-capped Plover		17
0278	0141	Greater Sand Plover	2	1
0282	0144	Black-fronted Dotterel		10
0285	0135	Banded Lapwing		4
0294	0126	Pacific Gull		2
0297	0125	Silver Gull		51
0303	0112	Caspian Tern		47
0305	0115	Crested Tern		39
0313	0118	Fairy Tern		16
0316	0110	Whiskered Tern		2
0324	0957	Rock Dove		21
0326	0988	Laughing Turtle-Dove		45
0327	0989	Spotted Turtle-Dove		47
0359	0273	Galah		30
0362	0271	Little Corella		1
0366	0254	Rainbow Lorikeet		14
0366A	0255	Red-collared Lorikeet		2
0385	0289	Western Rosella	4	2
0386	0294	Australian Ringneck		47
0387	0290	Red-capped Parrot		5
0405	0337	Pallid Cuckoo		2
0408	0338	Fan-tailed Cuckoo		1
0410	0342	Horsfield's Bronze-Cuckoo		1
0411	0344	Shining Bronze-Cuckoo		1
0446	0322	Laughing Kookaburra		6
0451	0326	Sacred Kingfisher		4
0453	0329	Rainbow Bee-eater		14
0471	0532	Splendid Fairy-wren	3	9
0489	0565	Spotted Pardalote		2
0492	0976	Striated Pardalote		39
0512	0465	Weebill	3	1

0517	0463	Western Gerygone		8
0524	0476	Inland Thornbill	3	1
0528	0472	Western Thornbill	3	1
0531	0486	Yellow-rumped Thornbill	3	16
0537	0638	Red Wattlebird		45
0539	0637	Little Wattlebird	4	2
0561	0608	Singing Honeyeater		49
0583	0597	Brown Honeyeater		37
0590	0593	Tawny-crowned Honeyeater	4	1
0597	0592	Western Spinebill		1
0607	0448	White-fronted Chat		10
0644	0549	Varied Sittella	3	7
0653	0401	Rufous Whistler		13
0671	0415	Magpie-Lark		43
0673	0361	Grey Fantail		7
0676	0364	Willie Wagtail		42
0678	0424	Black-faced Cuckoo-shrike		21
0695	0702	Grey Butcherbird		6
0698	0705	Australian Magpie		39
0706	0930	Australian Raven		38
0725	0647	Richard's Pipit		48
0734	0653	Zebra Finch		1
0761	0358	White-backed Swallow		1
0763	0357	Welcome Swallow		45
0765	0359	Tree Martin		45
0772	0522	Little Grassbird		2
0775	0508	Brown Songlark		1
0781	0574	Silvereye		16

*** END OF REPORT ***

(1) 1
 (2) 17
 (3) 11
 (4) 6

SUMMARY REPORT

TOTAL BIRDS SIGHTED	:	122
TOTAL NUMBER OF CARDS	:	50

*** END OF SUMMARY ***

DEPARTMENT OF PLANNING AND URBAN DEVELOPMENT
PERTH ENVIRONMENT PROJECT : BIBLIOGRAPHY OF ENVIRONMENTAL TOPICS

PIC:
PREPARED FOR:

61

Date prepared:
04/14/94

ALFRED COVE, A WILDLIFE HABITAT. / Keeling, S. (Stephen). Western Australia. Environmental Protection Authority. -- Western Australia. Australia. Bibliographies. Government publication, state. English. 1987.

(Bulletin / Environmental Protection Authority, Perth, Western Australia, 298. Bulletin (Western Australia. Environmental Protection Authority) ; 298.)

1. BIRDS. 2. ALFRED COVE. 3. PROTECTION. 4. WETLAND ECOLOGY.
5. WETLAND CONSERVATION.
PEP TOPIC: 1. FAUNA SPECIES. 2. HYDROLOGICAL FEATURES.

ISBN: 0730916286 (pbk.).

Location(s) : ANL Nq 301.3109941 WES AUC QL693.K43 1987
<63524 WCX =JOONDALUP...Q333.7209941 BUL(SERIAL) <497685> WLB
Q333.958 <499901> WMDU M/Y/333.709941/W527/1=A/298(CP) WS:RL P
339.5 We WU 333.7209941 P1(298)...BIOL <497685> n

✓ DRAFT MANAGEMENT PROPOSAL FOR ALFRED COVE / Murdoch University

(Unpublished Report Environmental Science, Murdoch University.)

1. AQUATIC. 2. FAUNA. 3. FLORA. 4. MANAGEMENT. 5. PERTH REGION.
6. RARE. 7. SWAN. 8. VEGETATION. 9. ALFRED COVE.
PEP TOPIC: 1. FAUNA SPECIES. 2. HYDROLOGICAL FEATURES. 3. FLORA SPECIES.

Location(s) : CALM



M61 Aquatic Reserve, Attadale
 City of South Perth Management Plan

Friends Advocate Management

Other Names: *Alfred Cove*

Specific Study/studies Miscellaneous studies

Flora

Vegetation Map ① 2 3 *described*

Flora list ② 2 3 4

Significant Taxa done / suitable / doubtful

Fauna

Mammals	1	2	
Birds	1	2	<u>RAOU</u>
Reptiles and Amphibia	1	2	
Invertebrates	1	2	

Vegetation Condition Map Sites Comment

Disturbance Factors Comment Management

Swan Coastal Plain Floristic Survey

AHC: National Estate- Listed / Interim / Nominated / Notified NT (WA): Heritage Classification

Notes

Please circle the appropriate response or respond in the space provided.

Area M of Name	<u>Alfred Cove</u>		
Title	<u>Alfred Cove - A Wildlife Habitat</u> <u>EPA Bulletin 298</u>		
<input checked="" type="checkbox"/> Published / <input type="checkbox"/> Unpublished	Date	<u>1987</u>	
Author/s	<u>EPA</u>		
Location of Publication	<u>DEP</u>		
Purpose (why was the report prepared?)			
Government			
Corporate			
Community Group			
Management Plan			

Soils			
Units	mapped	described	referenced

Landscape	
Features	described referenced

Flora			
Vegetation Map			
Units	Site based (no)		
Mapped			
Veg Units	Comparable Heddle <i>et al</i>	Compared Heddle <i>et al</i>	Unit not mapped by Heddle <i>et al</i>
Flora list			
Timing	%completion	Significant Taxa	
	Trees Shrubs Herbs Sedges	Weeds	DRF CALM Priority Other

Fauna			
Timing	%completion	Significant Taxa	
	Mammals	Birds	Sched1 Sched2 Other
	Reptiles	Invertebrates	

Vegetation Condition		
Site based	Mapped	Units

Disturbance Factors			
Phytophthora	observed	Other	incidental
	tested		itemised

Notes			

Please circle the appropriate response or respond in the space provided.

Area M6/ Name	<u>Alfred Cove</u>
Title	<u>Floristics of Reserves and Bushland Areas of the Park Region (System 6) Part 1</u>
Published/Unpublished	<u>Unpublished</u> Date <u>1990</u>
Author/s	<u>G. J. Kung'u</u>
Location of Publication	<u>CARM (Woodvale)</u>
Purpose (why was the report prepared?)	<u>survey</u>
Government	
Corporate	
Community Group	
Management Plan	

Soils	
Units	mapped <u>described</u> referenced

Landscape	
Features	<u>described</u> referenced

Flora	
Vegetation Map	
Units	<u>described</u> Site based (no)
Mapped	
Veg Units	Comparable Heddle <i>et al</i> Compared Heddle <i>et al</i> Unit not mapped by Heddle <i>et al</i> .
Flora list	
Timing	% completion <u>95%</u> Significant Taxa
	<u>Trees</u> <u>Shrubs</u> <u>Herbs</u> <u>Sedges</u> <u>Weeds</u> DRF CALM Priority Other

Fauna	
Timing	% completion Significant Taxa
	Mammals Birds Sched1 Sched2 Other
	Reptiles Invertebrates

Vegetation Condition	
Site based	Mapped Units

Disturbance Factors	
Phytophthora	observed Other incidental
	tested itemised

Notes	

Please circle the appropriate response or respond in the space provided.

Area M Name Alfred Cove

Author: Murdoch University

Date: 1989

Title: Draft Management Proposal for Alfred Cove

Source: Unpublished Report Environmental Science, Murdoch University

Published/Unpublished	Date
Author/s	
Location of Publication	
Purpose (why was the report prepared?)	
Government	
Corporate	
Community Group	
Management Plan	

Soils			
Units	mapped	described	referenced

Landscape		
Features	described	referenced

Flora			
Vegetation Map			
Units	Site based (no)		
Mapped			
Veg Units	Comparable Heddle <i>et al</i>	Compared Heddle <i>et al</i>	Unit not mapped by Heddle <i>et al</i>
Flora list			
Timing	%completion	Significant Taxa	
	Trees Shrubs Herbs Sedges	Weeds	DRF CALM Priority Other

Fauna			
Timing	%completion	Significant Taxa	
	Mammals	Birds	Sched1 Sched2 Other
	Reptiles	Invertebrates	

Vegetation Condition		
Site based	Mapped	Units
Disturbance Factors		
Phytophthora	observed	Other incidental
	tested	itemised

Notes

M60 Aquatic Reserve, South Perth City of South Perth Management Plan (&M61,62) <i>Robert Powell page 1.57</i>		
M60.1 Regional park recommendations be applied to this area.	Unresolved Issues	The Regional Parks Task Force Report proposes that the Swan Estuary be considered analogous to a regional park managed under Swan River Trust legislation. The Swan River Management Strategy (1988) recommends that all the foreshore reserves and waterways of the Swan Canning Rivers be treated as a single entity for the purposes of planning and management. However, areas of high conservation value may be added to CALM's existing Swan Estuary Marine Park estate.
M60.2 Area of water adjacent to Reserves C21493, C33803, and C33904 shown in Figure 128, System 6 Red Book, be declared "A" Class Reserve for Conservation of Flora and Fauna and be vested in NPNCA.	Implemented	Forms part of the Swan Estuary Marine Park managed by CALM. Milru Nature Reserve Rehabilitation Committee has an interest in this area.
M61 Aquatic Reserve, Attadale City of South Perth Management Plan		
M61.1 Regional park recommendations be applied to this area.	Unresolved Issues	The Regional Parks Task Force Report proposes that the Swan Estuary be considered analogous to a regional park managed under Swan River Trust legislation. The Swan River Management Strategy (1988) recommends that all the foreshore reserves and waterways of the Swan Canning Rivers be treated as a single entity for the purposes of planning and management. However, areas of high conservation value may be added to CALM's existing Swan Estuary Marine Park estate.
M61.2 Area of water in Point Waylen and Alfred Cove shown in Figure 129, System 6 Red Book be declared "A" Class Reserve for Conservation of Flora and Fauna, and Reserve be vested in NPNCA.	Implemented	Forms part of the Swan Estuary Marine Park managed by CALM.
M61.3 CALM to consult Swan River Management Authority and Dept of Marine and Harbours in preparation of management plan.	Unresolved Issues	To be completed through CALM's Management Plan process. No current programme for developing a management plan.
M62 Pelican Point, Crawley City of South Perth Management Plan		

PB CALM Management Plan.

LM M61 Environ. Man. Class 1968
Management Plan.

PP Aust Sig Wetlands

M62.1 Regional park recommendations be applied to this area.	Unresolved Issues	The Regional Parks Task Force Report proposes that the Swan Estuary be considered analogous to a regional park managed under Swan River Trust legislation. The Swan River Management Strategy (1988) recommends that all the foreshore reserves and waterways of the Swan Canning Rivers be treated as a single entity for the purposes of planning and management. However, areas of high conservation value may be added to CALM's existing Swan Estuary Marine Park estate.
M62.2 Purpose of Reserve A17375 be amended to Conservation of Flora and Fauna, and Recreation and be vested in NPNC.	Implemented	Forms part of the Swan Estuary Marine Park managed by CALM.
M62.3 Area of water, shown in Figure 130, System 5 Red Book be added to Reserve A17375.	Implemented	Forms part of the Swan Estuary Marine Park managed by CALM.
M62.4 CALM to consult Swan River Management Trust and Dept of Marine and Harbours in preparation of management plan.	Unresolved Issues	To be completed through CALM's Management Plan process. No current programme for developing a management plan.

DEPARTMENT OF PLANNING AND URBAN DEVELOPMENT
PERTH ENVIRONMENT PROJECT : BIBLIOGRAPHY OF ENVIRONMENTAL TOPICS

PIC:
PREPARED FOR:

M 58

Date prepared:
04/14/94

BLACKWALL REACH RESERVE DRAFT MANAGEMENT PLAN / BY VANESSA SMITH. /
Smith, Vanessa, 1960-. -- Western Australia. Australia. English.
1986.

1. NATURAL AREAS. 2. MANAGEMENT. 3. BLACKWALL REACH RESERVE.
PEP TOPIC: 1. MISCELLANEOUS.

Location(s) : WCX =JOONDALUP...Q333.7809941 SMI copies:1 <638754>
WU Q333.7815 1986 BLA...REID <638754> p



M58 Blackwall Reach Foreshore, Bicton
City of Melville management Plan

Friends

Advocate

Management

Other Names.

Specific Study/studies

Miscellaneous studies

Flora

Vegetation Map

1

2

3

Flora list

1

2

3

4

Significant Taxa

done / suitable / doubtful

Fauna

Mammals

1

2

Birds

1

2

RAOU

Reptiles and Amphibia

1

2

Invertebrates

1

2

Vegetation Condition

Map

Sites

Comment

Disturbance Factors

Comment

Management

Swan Coastal Plain Floristic Survey

AHC: National Estate- Listed / Interim / Nominated / Notified

NT (WA): Heritage Classification

Notes

Greening Melville

<p>M58 Blackwall Reach Foreshore, Bicton City of Melville mangement Plan</p>		
<p>M58.1 Regional park recommendations be applied to this area.</p>	<p>Unresolved Issues</p>	<p>The Regional Parks Task Force Report proposes that the Swan Estuary be considered analogous to a regional park managed under Swan River Trust legislation. The Swan River Management Strategy (1988) recommends that all the foreshore reserves and waterways of the Swan Canning Rivers be treated as a single entity for the purposes of planning and management. However, areas of high conservation value may be added to CALM's existing Swan Estuary Marina Park estate.</p>
<p>M58.2 Part of Reserve A4813 west of Honor Ave be excised, purpose declared as Conservation of Flora and Fauna and Reserve be vested in City of Melville.</p>	<p>Implemented</p>	<p>Excision achieved by Reserves Act 1992. Swan Location 11240 will now be reserved for 'Conservation' vested in the City of Melville.</p>
<p>M58.3 City of Melville prepare management plan in consultation with CALM.</p>	<p>Implemented</p>	<p>The local authority has a management plan. Friends of Blackwall (Greening WA) has an interest in this area.</p>

Please circle the appropriate response or respond in the space provided.

Area M 58 Name	<u>Black wall Reach</u>
Title	<u>Floristics of Reserves and Bushland Areas of the Perth Region (System 6) Part III</u>
Published	<input checked="" type="checkbox"/> published
Date	<u>March 1991</u>
Author/s	<u>G.T. Keighery</u>
Location of Publication	<u>Wildflower Society, CALM</u>
Purpose (why was the report prepared?)	<u>Flora Survey - documentation</u>
Government	
Corporate	
Community Group	<u>Wildflower Society of WA (Inc)</u>
Management Plan	

Soils	
Units	mapped <input type="checkbox"/> <input checked="" type="checkbox"/> described <input type="checkbox"/> referenced <input type="checkbox"/> <u>v. brief</u>

Landscape	
Features	<input checked="" type="checkbox"/> described <input type="checkbox"/> referenced <input type="checkbox"/> <u>v. brief</u>

Flora	
Vegetation Map	
Units	<u>8 described, brief</u> Site based (no)
Mapped	
Veg Units	Comparable Heddle <i>et al</i> Compared Heddle <i>et al</i> Unit not mapped by Heddle <i>et al</i>
Flora list	<u>listed in veg units</u>
Timing	% completion <u>95%</u>
1 Year	<input checked="" type="checkbox"/> Trees <input checked="" type="checkbox"/> Shrubs <input checked="" type="checkbox"/> Herbs <input checked="" type="checkbox"/> Sedges <input checked="" type="checkbox"/> Weeds <input type="checkbox"/> Significant Taxa <input type="checkbox"/> DRF <input type="checkbox"/> CALM Priority Other

Fauna	
Timing	% completion
	Mammals Birds Significant Taxa
	Reptiles Invertebrates Sched1 Sched2 Other

Vegetation Condition	
Site based	Mapped Units

Disturbance Factors	
Phytophthora	observed Other incidental
	tested itemised <u>Weeds</u>

Notes	

SHEET 1: System 6 - REPORT Information Search

Date 3/5/94 RH

Please circle the appropriate response or respond in the space provided.

Area M58 Name	<u>Blackwell Reaches</u>		
Title	<u>Draft Main Plan</u>		
Published/Unpublished	Date	<u>1986</u>	
Author/s			
Location of Publication			
Purpose (why was the report prepared?)			
Government			
Corporate			
Community Group			
Management Plan			

Soils			
Units	mapped	described	referenced

Landscape			
Features	described	referenced	

Flora			
Vegetation Map			
Units	Site based (no)		
Mapped			
Veg Units	Comparable Heddle <i>et al</i>	Compared Heddle <i>et al</i>	Unit not mapped by Heddle <i>et al</i>
Flora list			
Timing	%completion	Significant Taxa	
	Trees Shrubs Herbs Sedges	Weeds	DRF CALM Priority Other

Fauna	<u>Sampling period not very long (not suitable use How cited)</u>		
Timing	%completion ?	Significant Taxa	
	<u>Mammals</u>	<u>Birds</u>	Sched1 Sched2 Other
	<u>Reptiles</u>	Invertebrates	

Vegetation Condition			
Site based	Mapped	Units	
Disturbance Factors			
Phytophthora	observed	Other	incidental
	tested	itemised	

Notes			



— City of —
Melville

BS 331

Albionbury Road,
Ardross, 6153
Western Australia

PB144

P.O. Box 130
Applecross 6953

Ph: (08) 9364 0666
Fax: (08) 9364 0285

Enquires: Stuart Cramond - 9364 0684
Your Ref: Bush Plan
Our Ref: XA11/1/1

18 March 1999

ATTENTION: JULIE KENNEDY

Western Australian Planning Commission
Albert Facey House
469 Wellington Street
PERTH WA 6000

Dear Ms Kennedy

PERTH'S BUSH PLAN

I advise that Council considered the Perth's Bush Plan reports at its meeting on 16 March 1999. Council resolved that you be advised as follows:

1. That the West Australian Planning Commission be advised as follows:
 - A) Site N [redacted] Blackwall Reach, Point Walter, Alfred Cove and adjacent bush land Bicton to Applecross
- The Bushplan sites with regionally significant bush land are endorsed.
- Reserve 11240 is already a reserve for conservation.
- Tompkins Park should not be shown on map 61 as a "Bushplan site with some existing protection" as it is a developed active sports reserve.
- It should be noted that the Bourke Drive Foreshore generally between Roberts Road and Booker Street may be landscaped for future passive recreation uses. the narrow strip of riparian vegetation along this section is proposed to be re-generated.

..12

SUBMISSION NO. 173

MINISTRY FOR PLANNING
23 MAR 1999
805-2-1-32pt 12
FILE



M67
.3

BS 332
RIVERS
CANNING R

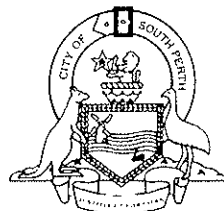
Clontarf Foreshore

Management Plan

December 1993



City of South Perth



Clontarf Foreshore

**Management Plan
December 1993**

COMMITTEE MEMBERS

Jenna Brooker (Co-ordinator)

Paul Brown

Trish Gaunt

Jesz Fleming

Tony Lee

Br Des O'Grady

Nicole Siemon

City of South Perth

Clontarf Aboriginal College Board

Environmental Protection Authority

Local Community

Swan River Trust

Trustees for the Christian Brothers

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APPENDICES

APPENDIX 1: FLORA

There are three natural vegetation complexes in the area of study:

- MS Melaleuca swamp complex (Paperbark forest)
- J Juncus complex (Reeds)
- S Sarcocornia complex (Salt-marsh)

In addition there are two introduced species associations

- T Bulrush (*Typha orientalis*)
- L Landfill species

FLORA - LOCAL NATIVE SPECIES

RECOMMENDED FOR REHABILITATION PROJECTS IN EACH COMPLEX

BOTANICAL NAME	COMMON NAME	MS	J	S	T	L
<i>Acacia saligna</i>	Coojong	*			*	*
<i>Astartea fascicularis</i>		*				
<i>Agonis linearifolia</i>		*				
<i>Atriplex sp</i>						
<i>Baumea articulata</i>	Jointed twigrush	*	*	*		
<i>Baumea juncea</i>		*				
<i>Bolboschoenus caldwellii</i>	Marsh clubrush			*		
<i>Cassytha sp</i>	Dodder	*				
<i>Casuarina obesa</i>	Salt water sheoak					*
<i>Centella cordifolia</i>		*				
<i>Epilobium billardierianum</i>						
<i>Eucalyptus rudis</i>	Flooded gum	*				
<i>Gahnia trifida</i>	Gahnia grass	*				
<i>Hardenbergia comptoniana</i>	Wild wisteria	*				
<i>Isolepis nodosus</i>	Knotted clubrush	*				
<i>Jacksonia furcellata</i>	Grey stinkwood					*
<i>Juncus kraussii</i>	Sea rush		*			
<i>Juncus pallidus</i>	Pale rush	*	*			
<i>Lepidosperma longitudinale</i>	Pithy swordedge	*				
<i>Melaleuca cuticularis</i>	Saltwater paperbark		*			
<i>Melaleuca huegelii</i>	Chenille honeymyrtle					
<i>Melaleuca preissiana</i>	Stout paperbark	*				
<i>Melaleuca raphiophylla</i>	Freshwater paperbark	*	*			
<i>Melaleuca viminea</i>			*			
<i>Oxylobium linearifolium</i>	Swan River Pea	*				

FLORA - LOCAL NATIVE SPECIES - (cont)

BOTANICAL NAME	COMMON NAME	MS	J	S	T	L
<i>Paraserianthes lophantha</i> (prev <i>Albizzia</i>)		*				
<i>Polygonum salicifolium</i>	Slender knotweed					
<i>Pteridium esculentum</i>	Bracken	*				
<i>Samolus repens</i>	Creeping brookweed	*	*			
<i>Sarcocornia sp</i>		*	*			
<i>Schoenus sp</i>		*				
<i>Sporobolus virginicus</i>	Saltwater couch	*	*	*		*
<i>Suaeda australis</i>				*		
<i>Threlkeldia diffusa</i>						
<i>Typha domingensis</i>	Bulrush	*			*	
<i>Viminaria juncea</i>	Swishbush	*				*

FLORA - INTRODUCED SPECIES

NOT RECOMMENDED FOR REVEGETATION PROJECTS

RECOMMENDED FOR PROGRESSIVE REMOVAL OR CONTROL

BOTANICAL NAME	COMMON NAME
<i>Acacia longifolia</i>	
<i>Carpobrotus edulis</i>	Pigface
<i>Chenopodium album</i>	White goosefoot
<i>Conyza albida</i>	Tall fleabane
<i>Conyza bonariensis</i>	Flaxleaf fleabane
<i>Cortaderia selloana</i>	Pampas grass
<i>Cynodon dactylon</i>	Couch grass
<i>Cyperus sp</i>	
<i>Cytisus proliferus</i>	Tree Lucerne
<i>Ehrharta calycina</i>	Veldt grass
<i>Lupinus sp</i>	Lupin
<i>Paspalum dilatatum</i>	
<i>Pennisetum clandestinum</i>	Kikuyu grass
<i>Phoenix</i>	Palm
<i>Pinus sp</i>	Pine
<i>Raphanus raphanistrum</i>	Wild radish
<i>Rumex sp</i>	Dock
<i>Salix sp</i>	Willow
<i>Taraxacum officinale</i>	Dandelion
<i>Typha orientalis</i>	Cumbungi, Bulrush
<i>Washingtonia</i>	Palm

APPENDIX 2: FAUNA

BIRDS

SCIENTIFIC NAME	COMMON NAME
PELICANS, CORMORANTS	
<i>Pelecanus conspicillatus</i>	Australian pelican
<i>Anhinga melanogaster</i>	Darter
<i>Phalacrocorax melanoleucos</i>	Little pied cormorant
<i>P.carbo</i>	Great cormorant
<i>P. sulcirostris</i>	Little black cormorant
HERONS, IBIS	
<i>Ardea novaehollandiae</i>	White faced heron
<i>Threskiornis aethiopica</i>	Sacred ibis
<i>Platalea flavipes</i>	Yellow-billed spoonbill
DUCKS, GEESE	
<i>Cygnus atratus</i>	Black swan
<i>Tadorna tadornoides</i>	Australian shelduck
<i>Anas superciliosa</i>	Pacific black duck
<i>A. gibberfrons</i>	Grey teal
<i>Melacorhynchus membranaceus</i>	Pink-eared duck
<i>Biziura lobata</i>	Musk duck
HAWKS, EAGLES, FALCONS	
<i>Elanus notatus</i>	Black-shouldered kite
CRAKES, RAILS, BROLGA, BUSTARD	
<i>Fulica atra</i>	Eurasian coot
WADERS	
<i>Charadrius melanops</i>	Black-fronted plover
<i>Himantopus himantopus</i>	Black-winged stilt
<i>Tringa nebularia</i>	Greenshank
SKUAS, GULLS, TERNS	
<i>Larus novaehollandiae</i>	Silver gull
PIGEONS, DOVES	
<i>Streptopelia chinensis</i>	Spotted turtle dove
COCKATOOS, PARROTS	
<i>Barnardius zonarius</i>	Port Lincoln ringneck

BIRDS (contd)

BUSHLARK, SWALLOWS, PIPIT	
<i>Hirundo neoxena</i>	Welcome swallow
CUCKOO-SHRIKES	
<i>Coracina novaehollandiae</i>	Black-faced cuckoo shrike
FLYCATCHERS, FANTAILS	
<i>Rhipidura leucophrys</i>	Willie wagtail
HONEYEATERS, CHATS	
<i>Anthochaera carunculata</i>	Red wattlebird
<i>Lichenostomus virescens</i>	Singing honeyeater
MAGPIES, CURRAWONG, CROWS	
<i>Gymnorhina tibicen</i>	Australian magpie

The following is the result of a survey undertaken by Belinda Brooker in May 1993. A copy of the full report is kept by Council.

FROGS	
<i>Heleioporus eyrei</i>	moaning frog
<i>Myobatrachus gouldii</i>	turtle frog
REPTILES	
<i>Cryptoblepharus plagiocephalus</i>	fence skink
<i>Hemiergus peronii quadrilineata</i>	yellow bellied skink
<i>Leiopisma trilineatum</i>	swamp skink
<i>Menetia greyii</i>	Grey's skink
MAMMALS	
<i>Felis catus</i>	cat
<i>Mus musculus</i>	house mouse
<i>Rattus rattus</i>	black rat

In addition the area is visited by dogs (and owners), and foxes frequent adjacent Waterford.

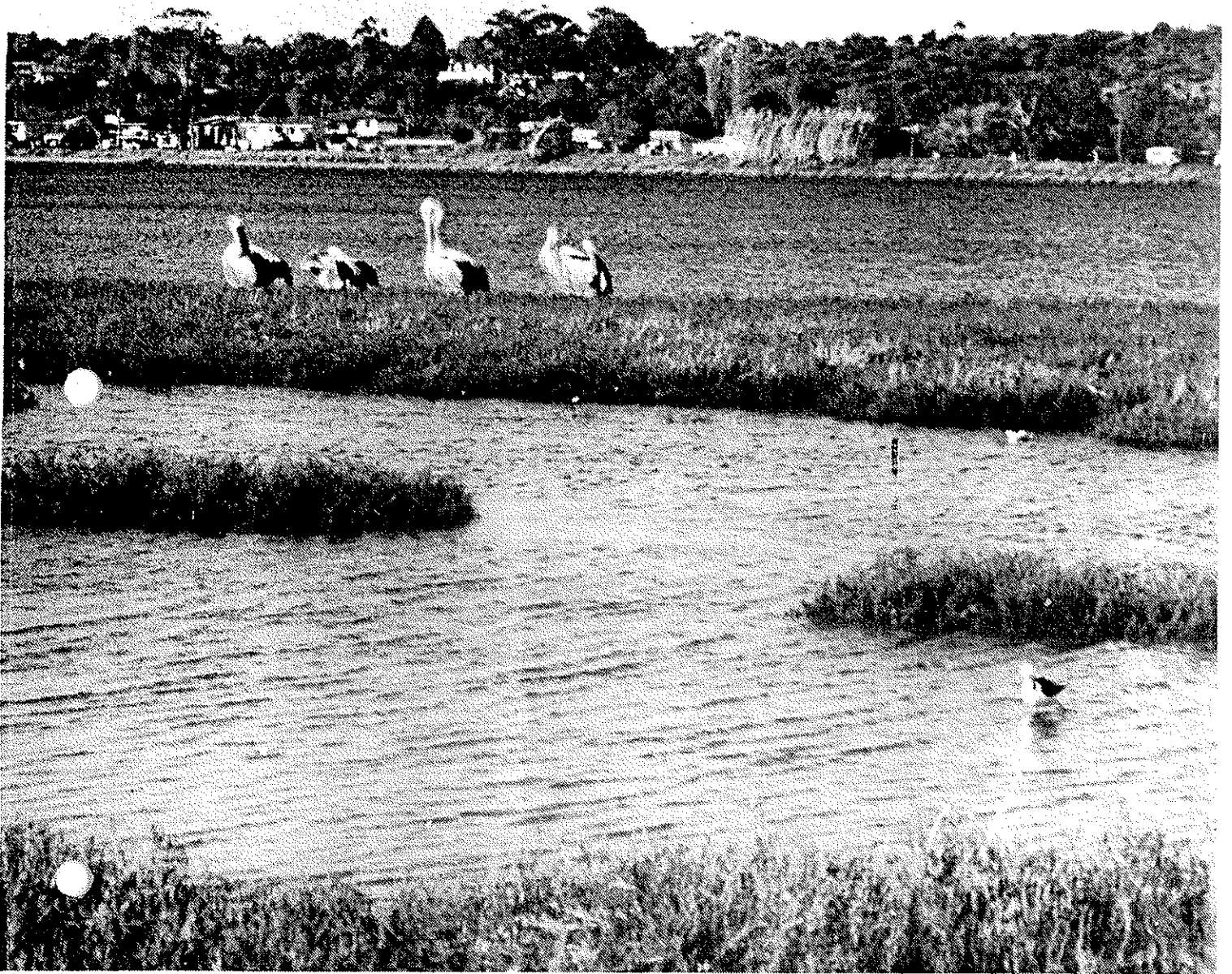
INSECTS

The following species were found:

5 snail, 3 slater, 1 millipede, 4 spider, 1 red mite, 1 earwig, 6 grasshopper, 4 cricket, 3 bug, 2 lacewing, 1 springtail, 1 damselfly, 2 cockroach, 3 praying mantid, 4 beetle, 2 fly, 4 ant and 1 bee species.

BS 332 Murdoch University
LAND IMPACTS BRANCH

IM6121



Management Proposal for Alfred Cove

Students of N319 Environmental Management
Murdoch University. July 1989

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Table 3.1: Exotic and Weed Species at Alfred Cove.

COMMON NAME	LATIN NAME	DESCRIPTION
Buffalo Grass	<i>Stenostaphrum secundatum</i>	}perennial grass, }ground creeping }
Couch Grass	<i>Cynodon dactylon</i>	
Kikuyu	<i>Pennisetum clandestinum</i>	
Paspalum	<i>Paspalum dilatatum</i>	perennial grass
Giant Reed	<i>Arundo donax</i>	
Sandplain Lupin	<i>Lupinus cosentinii</i>	tall grass
Crab Grass	<i>Digitaria sanguinalis</i>	annual herb
Pampas Grass	<i>Cortaderia selloana</i>	annual grass, ground creeping
Sour Grass	<i>Oxalis pes-capra</i>	tall hummock grass
Thistle	<i>Sonchus</i> sp	ephemeral herb
Cape Weed	<i>Artotheca calendula</i>	ephemeral herb
Pelargonium	<i>Pelargonium</i> sp..	ephemeral herb
Broadleaf Bulrush	<i>Typha orientalis</i>	perennial herb
Wild Radish	<i>Raphanus raphanistrum</i>	tall bulrush
Castor Oil Bush	<i>Ricinus communis</i>	ephemeral herb
Lily	Liliaceae family	small tree
	<i>Paraserianthes lapantha</i>	herb
Pigface	<i>Carpobrotus edulis</i>	tall shrub or small tree
Fennel	<i>Foeniculum vulgare</i>	small herb, ground creeping
Geraldton Wax	<i>Chamelaucium uncinatum</i>	perennial or biennial herb
Dock	<i>Rhumex crispus</i>	tall shrub
Hispid Stinkweed	<i>Opercularis hispidula</i>	perennial herb
Fig	<i>Ficus</i> sp.	shrub to 1m tall
Arum Lily	<i>Zantedeschia aethiopica</i>	small tree
Pepper Tree	<i>Schinus terebinthifolius</i>	herb
		small tree

3.2.4 Rare, Endangered , Geographically Restricted Or Flora Otherwise In Need Of Special Protection

No rare or endangered species were found. However, no specific field searches for rare flora were undertaken during traverses of the Alfred Cove area. *Schoenus subfascicularis* which occurs in the Schoenus Complex at Alfred Cove, is listed by Leigh *et al.* (1981) as "vulnerable". This implies that it is not presently endangered, but is at risk over a longer period through continued depletion, or occurs on sites likely to experience detrimental changes in land use.

To some extent, it can be said that the typical native vegetation of the Alfred Cove is regionally rare. Extensive areas of salt-tolerant vegetation used to grow in the lower Swan Estuary on gently sloping shores. The best remaining examples in this area are south of Pelican Point and on the Applecross-Attadale shorelines, especially at Alfred Cove. None of these, however, is pristine.

Implications of Flora for Management

Residential developments along the river adjacent to the nature reserve has provided housing developments of high value, with river and city views. These developments conflict with the need to maintain standing vegetation along the shore-line. Branch and tree lopping, vegetation clearing and suspected vegetation poisoning has occurred as a result of residents trying to optimize the views of the river and city from their homes. Increased pressure of human use on the area has increased the incidence of weeds and disturbance of the native vegetation including increased human activities in the shallow waters of Alfred Cove which disturb the slow-growing seagrasses.

3.3 Fauna

3.3.1 Aquatic Fauna

The aquatic faunal and floristic assemblage of the Swan river may be sub-divided into three regions, each with its own biota specifically adapted to the variations in the environment due to salinity fluctuations, amount of freshwater flushing, tidal influences and nutrient run-off (Chalmer et al., 1976). Estuarine ecosystems are characterised by low species diversity, though the high productivity of these systems ensures high energy flow (Rose, 1987). Studies on the assemblages and the interactions of such biotic regions of the Swan River have been completed (Chalmers et al., 1976; Wallace, 1977; Rose, 1987; Kealing, 1987).

The Alfred Cove aquatic environment is characterised by:

i) The extensive mudflat systems:
The mudflats support a large biomass (see Appendix 3, 4). Although species diversity may be low Wallace (1977) calculated that the average number of the polychaete *Capitella capitata* per square metre was approximately 40 000 individuals. Other invertebrate groups include the Mollusca (eg., *Arthritica semen*, *Sanquinolaria biradiata*) and Crustaceans (eg., *Penaeus altisulacatus*, *Melita* sp.). A list of benthic invertebrates is provided in appendix 3. Most of the species found in the mudflats are detritus/filter feeders and are motile burrowers (Rose, 1987). These species would form an integral part of the wading birds diet as well as being included in the diet of many of the fish present in the Cove's waters.

APPENDIX 2: Detailed Vegetation Descriptions

Halosarcia Complex (H)

Halosarcia Complex is a major vegetation type in the Alfred Cove which occurs as a large area about 200m north-west of Point Waylen corresponding approximately to the Department of Aviation lease. It is found in the supra-littoral zone adjacent to a *Sarcocornia* Complex (S) (see below).

Evidence from studies (Pen, 1981) suggests that this complex periodically tolerates extremely high salinities (up to twice that of seawater for the soil water) during summer, while low salinities (near that of freshwater) are necessary during winter.

Halosarcia Typical Community is strongly associated with severe mechanical disturbance and as a result there is often a marked difference in floristic composition between different stands. In fact, although the *Halosarcia* Complex is not threatened by mechanical disturbance, it does appear that degradation has occurred. *Frankenia pauciflora* may be a natural association with *Halosarcia halocnemoides* in areas of undisturbed habitat but disappears quickly and leaves *Halosarcia* Typical Community as a degraded complex.

Sarcocornia Complex (S)

The *Sarcocornia* Complex at Alfred Cove occurs along the tidal flats in the cove itself and is partly protected from the river by a narrow strip of vegetation characterised by *Juncus kraussi* and, less commonly, *Casuarina obesa* on low river bank levels. The complex rarely abuts onto the river. Also of major significance is a *Sarcocornia* community in which *Bulboschoenus caldwelli* is dominant, leading to the eventual absence of other species. *Bulboschoenus* is totally absent in the *Sarcocornia* Typical Community (S 1), possibly due to the high degree of salinity commonly associated with this community. It is, however, quite abundant in the minimum salinity *Sarcocornia-Bulboschoenus* Community (S2) which occurs in saltmarsh dissected by freshwater drains or close to freshwater drainage outlets. This association strongly supports the relationship between *Bulboschoenus* dominance and lower salinities. *Bulboschoenus* Predominant Community (S3) is totally dominated by *Bulboschoenus caldwelli* and represents the extreme success of this species in completely replacing

other characteristics species in the complex. The position of this community in Alfred Cove close to the outlet of freshwater drains, landward of *Juncus kraussii*, and its lack of prevalence prior to Alfred Cove's use as a artificial major drainage area suggest that its dominance may increase further, unless it too is displaced by an exotic invader, *Typha orientalis*.

***Juncus* Complex (J)**

The least salt-tolerant of the saltmarsh complexes is the *Juncus* Complex. This complex is found fringing the rivers and creeks of Alfred Cove. In addition, it also occurs along the narrow foreshores adjacent to the 'A' Class Recreation Reserves of Troy and Tompkin Parks, albeit less vigorously and abundantly. The *Juncus* complex can be expected to replace *Sarcocornia* where salinity decreases.

It is mainly seen as a stand of pure *Juncus kraussii*, as the *Juncus* Typical Community (J1) but can also be seen in a *Juncus-Sarcocornia* Subcommunity. This is, however, more a stage of temporal succession where the *Juncus* Complex is succeeding the *Sarcocornia* Complex, a process which is evident from Figure 3.3, than a persisting type of floristic community. A *Juncus-Melaleuca* Community can also be distinguished along the western and south western areas of Alfred Cove. This community is characterised by the presence of low *Melaleuca raphiophylla* and *Melaleuca hamulosa*. These various associations of *Juncus* may also be caused by the overall pattern of salinity differences existing as a result of artificial drainage to the area.

Fringing Woodland

The other major type of vegetation is the group of complexes which collectively are termed fringing woodland. These are introduced from the least salt-tolerant complexes to the most salt-tolerant complexes.

***Eucalyptus-Melaleuca* (River Bank) Complex (EM)**

The *Eucalyptus-Melaleuca* (River Bank) Complex occurs in freshwater conditions and is currently confined to two small pockets on the south western edge of the cove area. It may be that freshwater drainage outlets are providing suitable habitat

in which this complex can grow as it is not normally associated with estuarine conditions (Pen, 1983).

Only one community of this complex occurs in Alfred Cove Conservation Park: the *Eucalyptus-Melaleuca* Typical Community (EM3) is characterised by a relatively low number of species as a result of either:

- *Typha orientalis* displacing many of the understorey where an apparent 'Typha-invasion' has occurred, giving rise to the *Eucalyptus-Melaleuca-Typha* Subcommunity (EM3-A); or

- As a result of considerable disturbance along the river bank, giving rise to the *Eucalyptus-Melaleuca* Typical Subcommunity (EM3-B)

These two mechanisms are operating at Alfred Cove; although it could be considered that the freshwater drains are major causative factor for both.

***Melaleuca-Juncus* Complex (MJ)**

The *Melaleuca-Juncus* Complex occurs on the western outer strip of the cove itself and is separated from the river's edge by *Sarcocornia* Complex and a band of *Juncus kraussii*. The complex is less salt-tolerant than *Juncus* (Pen, 1983) and, as could be anticipated, favours the areas of the cove which are subject to freshwater flushing.

Other Complexes and Communities

***Baumea juncea* Community (B)**

Only two very small areas of this community occur in the study area; one small area separates the *Eucalyptus-Melaleuca* Complex and the other occurs between the *Sarcocornia* Complex and the *Melaleuca-Juncus* Complex. This community is usually associated with lentic water rather than flowing conditions and thus its presence along the river can be considered uncommon. Salter Point is the only other location of the community in the peripheral vegetation associated with the Swan and Canning River (Pen, 1983) and this is also a relatively stationary body of water.

Schoenus Complex

The *Schoenus* Complex occurs on the dry sandy ridge on the southern side of the Civil Aviation Authority lease. This is the highest land area within the cove and, indeed, this complex is normally occurs on the highest levels at which peripheral vegetation can establish proximity to the *Halosarcia* Complex, although no floristic similarity exists. The complex is not a strongly associated member of the overall vegetation variation and Pen (1983) believes that further investigation is warranted.

Eucalyptus rudis Woodland Community

The *Eucalyptus rudis* Woodland Community occurs on the western edge of Troy Park. This community may be the remnant of a once larger, more diverse plant community occurring on the river floodplain. Although this woodland is floristically poor in indigenous species (it contains a few *Melaleuca* sp., with *Typha orientalis*, weed and exotic species as an understorey), this area is still of importance since the *Eucalyptus rudis* trees contribute to the aesthetic attraction of the river and may provide a corridor for migratory bush birds.

Typha orientalis Community (T)

The *Typha orientalis* Community (T) is found in many parts of Alfred Cove and appears to colonize those areas subject to strong flushing by drains, although *Typha* is able to tolerate high salinities in summer. Its introduction and distribution are linked to alterations in the natural drainage system and this is supported by its swift displacement of many native species in areas close to drainage outlets.

No *Casuarina* Complexes or Communities are present with the Alfred Cove Conservation Park, although individual *Casuarina obesa* do occur. This appears to be a human modification to vegetation succession. Further discussion of this species' absence is given in Section 3.2.5.

APPENDIX 3: Benthic Invertebrate Fauna Species List
(to Genus Level)

Species

Annelida

POLYCHAETA

Capitellidae

Spionidae

Orbiniidae

Serpulidae

Mereidae

Eunicidae

Mollusca

PELECYPODA

Mytilidae

Mactridae

Tellinidae

Veneridae

Laptonidae

GASTROPODA

Nassariidae

Potamididae

(*Nudibranch sp.*)

Crustacea

Gammaridae

Corophidae

Caprellidae

Apseudidae

Sphaeromatidae

Decapoda

* adapted from Rose (1987) and Wallace (1977).

APPENDIX 4: Fish Fauna List *

(Note: the species listed here may or may not encompass all of the fish that may be commonly found in Alfred Cove.)

<u>Species</u>	<u>Feeding Type</u>	<u>Habitat Type</u>
Perth Herring (<i>Nematalosa vlaminghi</i>)	Detritous	Pelagic: in water Column
Hardyheads (<i>Amniataba mugiloides</i>)	Carnivore	Demersal: bottom of estuary
(<i>A. Clongata</i>)	Carnivore	Demersal: bottom of estuary
Southern Anchovy (<i>Engraulis australis</i>)	Carnivore	Pelagic: in water column
Gobbleguts (<i>Apogon rueppelii</i>)	Carnivore	Demersal: bottom of estuary
Gobies	Carnivore	Demersal: bottom of estuary
Sea Mullet (<i>Mugil cephalus</i>)	Detritous	Demersal: bottom of estuary
Yellow-eye Mullet (<i>Aldrichetta forsteri</i>)	Omnivore	Demersal: bottom of estuary
Cobbler (<i>Cnidoglanis macrocephalus</i>)	Carnivore	Demersal: bottom of estuary

* Adapted from Thurlow, Chambers and Klemm (1986))

**APPENDIX 5: Provisional List for Reptiles and
Amphibians - Alfred Cove**

Species		Habitat
LEPTODACTYLIDAE	Frogs	
<i>Limnodynastes dorsalis</i>		Reeds
<i>Ranidella glauerti*</i>		Reeds
HYLIDAE		
<i>Litoria adelaidensis</i>		Reeds
<i>L. moorei</i>		Reeds, Shrubs
GEKKONIDAE	Gecko's	
<i>Phyllodactylus m. marmoratus</i>		Trees
SCINCIDAE	Skinks	
<i>Cryptoblepharus plagiocephalus*</i>		Trees, Logs, Fences
<i>Egernia kingii</i>		Fringing Woodland
<i>E. napoleonis</i>		Fringing Woodland
<i>Hemiernis quadrilineata</i>		Grass in Fringing
Woodland		
<i>Leiopisma trilineatum</i>		Grass in Fringing
Woodland,		
		Reeds
<i>Menetia greyii</i>		Fringing Woodland
<i>Tiliqua r. rugosa</i>		Fringing Woodland
ELAPIDAE	Elapid Snakes	
<i>Pseudonaja a. affinis</i>		Fringing Woodland

*recorded in the area during site inspection, 29/8/88

APPENDIX 6: Bird Species Recorded - Alfred Cove
}Adapted from Kealing (1987)

Heading Key

- S = Status
- PL = Parkland
- FW = Fringing Woodland
- RS = Reeds and Sedges
- SM = Saltmarsh
- MF = Mudflats
- OW = Open Water

Status Key

- R = Rare, few sightings, ie. 1-6 birds or seen only on very few occasions
- C = Common, species may be easily observed in its regularly observed season
- U = Uncommon, may be seen occasionally
- d = Dispersal, indicates that passerines observed may be passing through (seasonal dispersal)
- R = Regular, seen most years

Activity Key

- B = Breeding known to have taken place
- B? = Breeding, unrecorded but further investigation may possibly show breeding takes place
- Hb = Has bred
- E = Avairy Escapee
- e = Extinct?
- F = Feeding
- F/h = Feeding at high tide
- A = Aerial Feeding

*Species included in Japan/Australia and/or proposed China/Australia agreements to protect migratory birds and their habitats.

<u>Species Name</u>	<u>Common Name</u>	<u>HABITAT UTILIZATION</u>						
		<u>S</u>	<u>PL</u>	<u>FW</u>	<u>RS</u>	<u>SM</u>	<u>MF</u>	<u>OW</u>
PODICIPEDIDAE	Common Name							
Podiceps cristatus	Great Crested Grebe	R						F
Poliiocephalus poliocephalus	Hoary-headed Grebe	C						F
Tachybaptus novaehollandiae	Australasian Grebe	R						F
PELECANIDAE								
Pelecanus conspicillatus	Australian Pelican	C						F
ANHINGIDAE								
Anhinga melanogaster	Darter	U						F
PHALACROCORACIDAE								
Phalacrocorax carbo	Great Cormorant	C						F
P.varius	Pied Cormorant	C						F
P. melanoleucos	Little Black Cormorant	C						F
ARDEIDAE								
Ardea pacifica	Pacific Heron	R			F	F		
A. noveahollandiae	White-faced Heron	C				F		
Ardeola ibis	Cattle Egret*	R				F		
Egretta alba	Great Egret*	R				F		
Nycticorax caledonicus	Rufus Night Heron	R			F			
PLATALEIDAE								
Threskiornis aethiopicus	Sacred Ibis	C				F		
T.spinicollis	Straw-necked Ibis	R				F		
Platalea flavipes	Yellow-billed Spoonbill	R/r				F		
ANATIDAE								
Cygnus atratus	Black Swan	C						F
Tadorna tadornoides	Australian Shelduck	C				B		F
Anas superciliosa	Pacific Black Duck	C				B		F
A. gibberfrons	Grey Teal	C						F
A. castanea	Chestnut Teal	R/r						F
A. rhynchotis	Australasian Shoveler	U						F
Aythya australis	Hardhead	R						F
Chenonetta jubata	Maned Duck	R						F
Oxyura australis	Blue-billed Duck	R						F
Biziura lobata	Musk Duck	U						F
PANDIONIDAE								
Pandion haliaetus	Osprey	U/r						F
ACCIPITRIDAE								
Elanus notatus	Black-shouldered Kite	C		F				
Haliastur sphenurus	Whistling Kite	R		F				
Accipiter fasciatus	Brown Goshawk	U		F				
A. cirrhocephalus	Collared Sparrowhawk	U		F				
Haliaeetus leucogaster	White-bellied Sea-Eagle	R						F
Hieraaetus morphmoides	Little Eagle	R		F				
Circus Aeruginosus	Marsh Harrier	R			F	F		

Species Name	Common Name	HABITAT UTILIZATION						
		S	PL	FW	RS	SM	MF	OW
FALCONIDAE								
<i>Falco peregrinus</i>	Peregrine Falcon	R		F				
<i>F. longipennis</i>	Australian Hobby	U/r		F				
<i>F. cenchroides</i>	Australian Kestrel	C		F				
PHASIANIDAE								
Quail species		?						
RALLIDAE								
<i>Rallus philippensis</i>	Buff-banded Rail	C			B	F	F	
<i>Porzana fluminea</i>	Australian Crake	R			B	F		
<i>P. tabuensis</i>	Spotless Crake	C			B?	F		
<i>Porphyrio porphyrio</i>	Purple Swamphen	R			F	F		
<i>Fulica atra</i>	Eurasian Coot	R			F/h	F/h		
HAEMATROPODIDAE								
<i>Haematopus longirostris</i>	Pied Oystercatcher	U				F	F	
CHARADRIIDAE								
<i>Vanellus tricolor</i>	Banded Lapwing	R	F					
<i>Pluvialis squatarola</i>	Grey Plover*	C				F	F	
<i>P. dominica</i>	Lesser Golden Plover*	U/r				F	F	
<i>Erythrogonys cinctus</i>	Red-kneed Dotterel	U				F	F	
<i>Charadrius rubricollis</i>	Hooded Plover	R				F		
<i>C. leschenaultii</i>	Large Sand Plover*	R/r				F		
<i>C. ruficapillus</i>	Red-capped Plover	C				BF	F	
<i>C. melanops</i>	Black-fronted Plover	R					F	
RECURVIROSTRIDAE								
<i>Himantopus himantopus</i>	Black-winged Stilt	C				BF		
<i>Cladorhynchus leucocephalus</i>	Banded Stilt	U/r					F	
<i>Recurvirostra novaehollandiae</i>	Red-necked Avocet	C				F	F	
SCOLOPACIDAE								
<i>Arenaria interpres</i>	Ruddy Turnstone*	R					F	
<i>Numenius madagascariensis</i>	Eastern Curlew*	R				F	F	
<i>N. phaeopus</i>	Whimbrel*	R				F		
<i>Tringa glareola</i>	Wood Sandpiper*	R					F	
<i>T. brevipes</i>	Grey-tailed Tattler*	U/r					F	
<i>T. hypoleucos</i>	Common Sandpiper*	C					F	
<i>T. nebularia</i>	Greenshank*	C				F		
<i>T. stagnatilis</i>	Marsh Sandpiper*	R					F	
<i>T. terek</i>	Terek Sandpiper*	R/r					F	
<i>Limosa limosa</i>	Black-tailed Godwit*	R/r					F	
<i>L. lapponica</i>	Bar-tailed Godwit*	C					F	
<i>Calidris canutus</i>	Red Knot*	C				F	F	
<i>C. tenuirostris</i>	Great Knot*	C				F	F	
<i>C. acuminata</i>	Sharp-tailed Sandpiper*	C				F		
<i>C. melanotos</i>	Pectoral Sandpiper*	R/r				F		
<i>C. ruficollis</i>	Red-necked Stint*	C				F		

Species Name	Common Name	HABITAT UTILIZATION						
		S	PL	FW	RS	SM	MF	QW
SCOLOPACIDAE Cont'd								
<i>C. subminuta</i>	Long-toed Stint*	R				F		
<i>C. ferruginea</i>	Curlew Sandpiper*	C				F	F	
<i>C. alba</i>	Sanderling*	R/r				F	F	
<i>Limicola falcinellus</i>	Broad-billed Sandpiper*	R					F	
<i>Philomachus pugnax</i>	Ruff*	R				F	F	
LARIDAE								
<i>Larus novaehollandiae</i>	Silver Gull	C						
<i>Chlidonias hybrida</i>	Whiskered Tern	R/r						
<i>C. leucoptera</i>	White-winged Tern*	R						
<i>Gelochelidon nilotica</i>	Gull-billed Tern	R						
<i>Hydroprogne caspia</i>	Caspian Tern*	C						
<i>Sterna paradisaea</i>	Arctic Tern*	R						
<i>S. nereis</i>	Fairy Tern	C						
<i>S. bergii</i>	Crested Tern	C						
COLUMBIDAE								
<i>Columba livia</i>	Feral Pigeon	C	F	BF				
<i>Streptopelia chinensis</i>	Spotted Turtle-Dove	U	F	F				
<i>S. senegalensis</i>	Laughing Turtle-Dove	C	F	BF				
CACATUIDAE								
<i>Calyptorhynchus baudinii</i>	Whitetailed BlackCockatoo	U		F				
<i>Cacatua roseicapilla</i>	Galah	C		BF				
LORIIDAE								
<i>Trichoglossus haematodus</i>	Rainbow Lorikeet	E		F				
<i>Glossopsitta concinna</i>	Musk Lorikeet	E/e		Hb				
PLATYCERCIDAE								
<i>Melopsittacus undulatus</i>	Budgerigar	E		F				
<i>Purpureicephalus spurius</i>	Red-capped Parrot	U		F				
<i>Barnardius zonarius</i>	Port Lincoln Ringneck	C		BF				
CUCULIDAE								
<i>Cuculus pallidus</i>	Pallid Cuckoo	U/d		F				
<i>C. pyrrhophanus</i>	Fan-tailed Cuckoo	R/d		F				
APODIDAE								
<i>Apus pacificus</i>	Fork-tailed Swift*	R	A	A	A	A	A	A
ALCEDINIDAE								
<i>Dacelo novaeguinea</i>	Laughing Kookaburra	U/r		F				
<i>Halcyon sancta</i>	Sacred Kingfisher	U/d		F	F			
MEROPIIDAE								
<i>Merops ornatus</i>	Rainbow Bee-eater	C		BF				
HIRUNDINIDAE								
<i>Cheramoeca leucosternum</i>	White-baked Swallow	R	A	A	A	A	A	A
<i>Hirundo neoxena</i>	Welcome Swallow	C	AB	A	A	A	A	A
<i>Cecropis nigricans</i>	Tree Martin	C	AB	A	A	A	A	A

Species Name	Common Name	HABITAT UTILIZATION						
		S	PL	FW	RS	SM	MF	OW
MOTACILLIDAE								
<i>Anthus novaeseelandiae</i>	Richard's Pipit	C	BF					
CAMPEPHAGIDAE								
<i>Coracina novaehollandiae</i>	Black-faced Cuckoo-Shrik	U/r		BF				
<i>Lalage sueurii</i>	White-winged Triller	R/d		F				
MUSCICAPIDAE								
<i>Petroica goodenovii</i>	Red-capped Robin	R/d		F				
<i>Pachycephala rufiventris</i>	Rufous Whistler	C		BF				
<i>Rhipidura fuliginos</i>	Grey Fantail	C		F				
<i>R. leucophrys</i>	Willie Wagtail	U/r		F				
SYLVIIDAE								
<i>Acrocephalus stentoreus</i>	Clamorous Red-Warbler	R			HbF			
<i>Megalurus gramineus</i>	Little Grassbird	U		BF	F			
<i>Cinclorhampus mathewsi</i>	Rufous Songlark	R/d	F	F				
<i>C. Cruralis</i>	Brown Songlark	R/d	F	F				
ACANTHIZIDAE								
<i>Smicronis brevirostris</i>	Weebill	R		F				
<i>Acanthiza inornata</i>	Western Thornbill	R		F				
<i>A. chrysorrhoa</i>	Yellow-rumped Thornbill	C		BF				
NEOSITTIDAE								
<i>Daphoenositta chrysoptera</i>	Varied Sittella	C		BF				
CLIMACTERIDAE								
<i>climacteris rufa</i>	Rufous Treecreeper	R/d		F				
MELIPHAGIDAE								
<i>Anthochaera carunculata</i>	Red Wattlebird	C		BF				
<i>Lichenostomus virescens</i>	Singing Honeyeater	C		BF				
<i>Lichmera indistincta</i>	Brown Honeyeater	C		B?f				
EPHTIANURIDAE								
<i>Ephthianura albifrons</i>	White-fronted Chat	R/d		F				
DICAEIDAE								
<i>Dicaeum hirundinaceum</i>	Mistletoebird	U		F				
PARDALOTIDAE								
<i>Pardalotus striatus</i>	Striated Pardalote	C		B?F				
ZOSTEROPIDAE								
<i>Zosterops lateralis</i>	Silvereye	C		B?F				
GRALLINIDAE								
<i>Grallina cyanoleuca</i>	Australian Magpie-Lark	U/r		B?F				

<u>Species Name</u>	<u>Common Name</u>	<u>HABITAT UTILIZATION</u>						
		<u>S</u>	<u>PL</u>	<u>FW</u>	<u>RS</u>	<u>SM</u>	<u>MF</u>	<u>OW</u>
CRACTICIDAE								
Cracticus torquatus	Grey Butcherbird	R		F				
Gymnorhina tibicen	Australian Magpie	C	F	BF				
CORVIDAE								
Corvus coronoides	Australian Raven	C	F	BF				

APPENDIX 7: Provisional List for Mammals - Alfred Cove

PERAMELIDAE	
<i>Isoodon obesulus</i>	Southern Brown Bandicoot
PHALANGERIDAE	
<i>Trichosurus vulpecula</i>	Common Brushtail Possum
MOLOSSIDAE	
<i>Tadarida australis</i>	White-striped Mastiff-bat
<i>Mormopterus planiceps</i>	Little Mastiff-bat
VESPERTILIONIDAE	
<i>Nyctophylus major</i>	Greater Long-eared Bat
<i>N. gouldi</i>	Gould's Long-eared Bat
<i>N. geoffroyi</i>	Lesser Long-eared Bat
<i>Chalinobus gouldii</i>	Gould's Wattled Bat
<i>C. morio</i>	Chocolate Wattled Bat
<i>Falsistrellus tasmaniensis</i>	Great Pipistrelle
<i>Eptesicus regulus</i>	King River Eptesicus
MURIDAE	
<i>Hydromys chrysogaster</i>	Water-rat
<i>Rattus fuscipes</i>	Bush Rat
<i>R. rattus</i>	Black Rat*
<i>R. norvegicus</i>	Brown Rat*
<i>Mus musculus</i>	House Mouse*
CANIDAE	
<i>Canis familiaris</i>	Domestic Dog*
FELIDAE	
<i>Felis catus</i>	Feral Cat*

*Introduced species

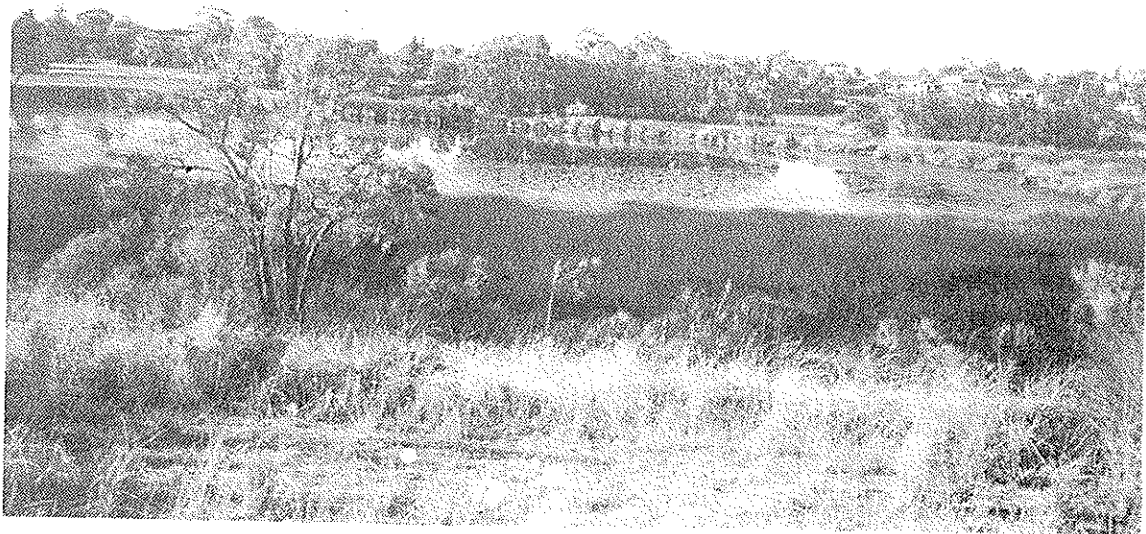
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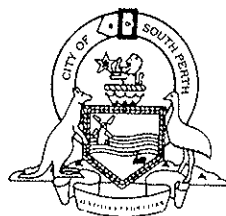
Salter Point Foreshore Reserve

Management Plan

February 1994



City of South Perth



BS 332

RIVERS

CANNING R

Salter Point Foreshore Reserve

**Management Plan
February 1994**

Committee

**Jenna Brooker (Co-ordinator)
Nora Crisp
Graeme Prentice**

**City of South Perth
Community Representatives**

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ABBREVIATIONS AND ACRONYMS

DUP	Dual Use Path
CLAG	Contiguous Local Authority Group
CB	Trustees for the Christian Brothers
CLABCOL	Clontarf Aboriginal College
DOLA	Department of Land Administration
DOT	Department of Transport (formerly Department of Marine and Harbours)
DPUD	Department of Planning and Urban Development
EPA	Environmental Protection Authority
HDWA	Health Department of Western Australia
LOS	Local Open Space
ROS	Regional Open Space
SPCC	City of South Perth
SPC	State Planning Commission
SRT	Swan River Trust

FLORA - LOCAL SPECIES (contd)

O	B	GENUS	SPECIES	COMMON NAME	Sand	Swamp	River
*	*	<i>Dasyogon</i>	<i>bromeliifolius</i>	Pineapple bush	1,2		
		<i>Dianella</i>	<i>divaricata</i>				
*		<i>Dillwynia</i>	<i>dillwynioides</i>				
*		<i>Diuris</i>	<i>sp 1</i>	Donkey orchid			
*		<i>Eremaea</i>	<i>pauciflora</i>	Orange eremaea	1		
		<i>Eucalyptus</i>	<i>rudis</i>	Flooded gum			
*		<i>Gahnia</i>	<i>trifida</i>	Coast saw sedge		5,6,8,9	
*	*	<i>Gompholobium</i>	<i>tomentosum</i>	Hairy yellow pea	1	5	
*	*	<i>Goodenia</i>	<i>filiformis</i>			6	
*		<i>Grevillea</i>	<i>obtusifolia</i>				
*		<i>Grevillea</i>	<i>sp 1</i>				
*		<i>Haemodorum</i>	<i>simplex</i>		1		
*		<i>Hardenbergia</i>	<i>comptoniana</i>	Wild wisteria		5	
*	*	<i>Hibbertia</i>	<i>hypericoides</i>	Yellow buttercup	1,2		
*	*	<i>Hovea</i>	<i>trisperma</i>	Common hovea		5	
*	*	<i>Hypocalymma</i>	<i>angustifolium</i>	White myrtle	1,3		
	*	<i>Hypocalymm</i>	<i>robustum</i>	Pink/Swan River myrtle			
		<i>Isolepis</i>	<i>marginata</i>	Coarse club rush			
*		<i>Isolepis</i>	<i>nodosa</i>	Knotted club rush			
*	*	<i>Jacksonia</i>	<i>furcellata</i>	Grey stinkwood	1	5	
*	*	<i>Jacksonia</i>	<i>sternbergiana</i>	Green stinkwood		5	
		<i>Johnsonia</i>	<i>pubescens</i>	Pipelily			
*	*	<i>Juncus</i>	<i>kraussii</i>	Sea/shore rush		3,7,8,9	
*	*	<i>Juncus</i>	<i>pallidus</i>	Pale/giant rush	1	4	
		<i>Kennedia</i>	<i>prostrata</i>	Running postman			
*	*	<i>Leschenaultia</i>	<i>floribunda</i>	Pale blue leschenaultia	1		
		<i>Lepidobolus</i>	<i>angustatum</i>	Curly leaf			
*		<i>Lepidobolus</i>	<i>sp 1</i>			8	
	*	<i>Lepidosperma</i>	<i>gracile</i>				
*		<i>Lepidosperma</i>	<i>longitudinale</i>				11,14
*	*	<i>Lepidosperma</i>	<i>sp 1</i>			8	
*		<i>Lepidosperma</i>	<i>sp 2</i>			5	
	*	<i>Leptocarpus</i>	<i>coangustatus</i>				
*		<i>Lobelia</i>	<i>alata</i>			6	11
*		<i>Loxocarya</i>	<i>fasciculata</i>		1		
*	*	<i>Loxocarya</i>	<i>flexuosa</i>	Squiggly grass	1		
*		<i>Lyginia</i>	<i>barbata</i>				
*	*	<i>Macrozamia</i>	<i>riedlei</i>	Zamia palm	1		
*	*	<i>Melaleuca</i>	<i>cuticularis</i>	Salt water paperbark		3,5,8,9	
*	*	<i>Melaleuca</i>	<i>preissiana</i>	Stout paperbark			

APPENDICES

1. FLORA

- O recorded by Orr 1986
 B recorded by Brooker 1993

Numbers and zones are as described in the 1986 Management Plan:

- Sand Bassendean associations on high ground above the lagoon;
 Swamp in north of the Reserve;
 River wetland species adjacent to the river.

FLORA - LOCAL SPECIES

O	B	GENUS	SPECIES	COMMON NAME	Sand	Swamp	River
*	*	<i>Abutilon</i>	<i>sp 1</i>		1		
*		<i>Acacia</i>	<i>cyclops</i>	Coastal wattle			
	*	<i>Acacia</i>	<i>pulchella</i>	Prickly Moses	1		
*	*	<i>Acacia</i>	<i>saligna</i>	Orange wattle			
*		<i>Acacia</i>	<i>stenoptera</i>	Narrow winged wattle		5	10
	*	<i>Acacia</i>	<i>wildenowiana</i>	Grass wattle	1		
*	*	<i>Actinostrobus</i>	<i>pyramidalis</i>	Swamp cypress	3		
*	*	<i>Adenanthos</i>	<i>cygnorum</i>	Woolly bush	1		
	*	<i>Agonis</i>	<i>linearifolia</i>				10,11,12
*	*	<i>Alexgeorgea</i>	<i>arenicola</i>		13		
*	*	<i>Allocasuarina</i>	<i>fraseriana</i>		3		
*		<i>Amyema</i>	<i>linophyllum</i>		3		
*		<i>Aotus</i>	<i>cordifolia</i>				11
*	*	<i>Astartea</i>	<i>fascicularis</i>		3		11
*	*	<i>Atriplex</i>	<i>cinerea</i>	Grey saltbush			
*	*	<i>Baumea</i>	<i>juncea</i>			5	
*		<i>Bromus</i>	<i>aff diandrus</i>				
*	*	<i>Bulboschoenus</i>	<i>caldwellii</i>				13
*	*	<i>Carpobrotus</i>	<i>virescens</i>	Pigface	13		
*		<i>Cartonema</i>	<i>philydroides</i>				
*	*	<i>Cassytha</i>	<i>racemosa</i>	Dodder laurel			10,11
*	*	<i>Casuarina</i>	<i>obesa</i>	Saltwater sheoak		3,4,8	
*		<i>Chenopodium</i>	<i>sp 1</i>			3,7	13
*		<i>Chenopodium</i>	<i>sp 2</i>			3,7	
*		<i>Comespermum</i>	<i>conferta</i>				11
*		<i>Conostylis</i>	<i>candicans</i>	White conostylis			
*		<i>Conostylis</i>	<i>sp</i>		1		
	*	<i>Crassula</i>	<i>colorata</i>	Dense stonecrop			
*	*	<i>Cyperus</i>	<i>sp 1</i>				

FLORA - INTRODUCED SPECIES

O	B	GENUS	SPECIES	COMMON NAME	ZONE
	*	Arctotheca	calendula	Cape weed	1,2
*	*	Arundo	donax	giant reed / bamboo	
*		Aster	subulatus	Bushy starwort	
*	*	Atriplex	cinerea		2
*		Avena	sativa	Common oats	
*		Briza	maxima	Blowfly grass	
*	*	Carpobrotus	edulis	Hottentot fig/Pigface	3
	*	Chamaelaucium	uncinatum	Geraldton wax	2
	*	Chenopodium	album	White goosefoot	
*		Chenopodium	sp		
*	*	Conyza	spp		8,9
	*	Cynodon	dactylon	Couch grass	
*		Cytisus	proliferus	Tree lucerne	
*		Drosanthemum	candens		2
*	*	Ehrharta	calycina	Veldtgrass	1
	*	Erythrina	caffra	Flame tree	
	*	Eucalyptus	spp		
	*	Foeniculum	vulgare	Fennel	
	*	Freesia	leichtlinii	Freesia	
	*	Fumaria	capreolata	Little tube weed	
*		Galenia	pubescens		2
*	*	Gladiolus	caryophyllaceus	Wild gladiolus	
*		Grevillea	obtusifolia		2
	*	Homeria	breyniana	Cape tulip	
*		Hypochaeris	glabra	Flat weed	
	*	Lupinus	cosentinii	Blue sandplain lupin	2
*		Melilotus	indica		
*		Oenothera	monspeliensis	Evening primrose	
	*	Osteospermum	clandestinum	Stinking Roger	1
	*	Oxalis	pes-caprae	Yellow soursob	1,2,3
*	*	Paspalum	dilatatum	Paspalum	15
	*	Paspalum	vaginatum	Salt water couch	2,3,8
	*	Pelargonium	capitatum	Rose pelargonium	
	*	Pennisetum	clandestinum	Kikuyu grass	8-15
*		Petunia	sp		
*		Polycarbon	tetraphyllum		
*		Polypogon	monspeliensis		
	*	Raphanus	raphanistrum	Wild radish	1
*	*	Ricinus	communis	Castor oil plant	10,12,15

FLORA - LOCAL SPECIES (contd)

O	B	GENUS	SPECIES	COMMON NAME	Sand	Swamp	River
*	*	<i>Melaleuca</i>	<i>rhaphiophylla</i>	Freshwater paperbark		9	11,12
*	*	<i>Melaleuca</i>	<i>viminea</i>	Mahan		3,6,8,9	
	*	<i>Mesomelaena</i>	<i>stygia</i>	Telegraph grass			
		<i>Neurachne</i>	<i>alopecuroides</i>	Foxtail mulga grass			
*	*	<i>Nuytsia</i>	<i>floribunda</i>	Christmas tree	1		
*		<i>Opercularia</i>	<i>vaginata</i>			5	
*		<i>Oxylobium</i>	<i>capitatum</i>	Bacon and eggs			11
		<i>Oxylobium</i>	<i>lineare</i>	River pea			
*	*	<i>Patersonia</i>	<i>sp 1</i>				11
*		<i>Poaceae</i>	<i>sp</i>				
	*	<i>Pterostylis</i>	<i>nana</i>	Snail orchid			
		<i>Rhagodia</i>	<i>baccata</i>	Sea berry saltbush			
*		<i>Samolus</i>	<i>aff junceus</i>			6,8	
*	*	<i>Samolus</i>	<i>repens</i>	Creeping brookweed		3,8	
*	*	<i>Samphire</i>	<i>spp</i>			3,7,8	
*		<i>Schoenus</i>	<i>sp 1</i>				11
*	*	<i>Scholtzia</i>	<i>involuta</i>				
	*	<i>Senecio</i>	<i>lautus</i>	Coastal groundsel	1,2		
		<i>Sowerbaea</i>	<i>laxiflora</i>				
*	*	<i>Sporobolus</i>	<i>virginicus</i>	Native couch			
*		<i>Suaeda</i>	<i>australis</i>			3,8,9	
		<i>Templetonia</i>	<i>retusa</i>	Cockies' tongues			
*	*	<i>Threlkeldia</i>	<i>diffusa</i>			3,8	
	*	<i>Thysanotus</i>	<i>sp</i>	Fringed lily	1		
		<i>Tricoryne</i>	<i>elatior</i>	Yellow autumn lily			
*	*	<i>Typha</i>	<i>domiginiensis</i>				13,14
*		<i>Waitzia</i>	<i>paniculata</i>		1	5	
*	*	<i>Viminaria</i>	<i>juncea</i>				10,11
*		<i>Viminaria</i>	<i>sp 1</i>		1		
*		<i>Viminaria</i>	<i>sp 2</i>		1		
	*	<i>Xanthorrhoea</i>	<i>sp</i>	Black boy	1,2		
		<i>Xanthostia</i>	<i>huegelii</i>				

2. FAUNA

REPTILE / AMPHIBIAN / MAMMAL SPECIES LIST

Records of the October 1987 survey are compared with the survey undertaken in May 1993 by Belinda Brooker. Differences may be partly due to the different time of year.

1986	1993		SPECIES	COMMON NAME
*		REPTILES	Ranidella insignifica	Froglet
*			Chelodina oblonga	Long-necked tortoise
*	*		Cryptoblepharus plagioccephalus	Fence skink
*	*		Ctenotus fallens	Striped skink
*			Hemiergis quadrilineata	Yellow-bellied skink
*			Leiopisma trilineatum	Swamp skink
*			Menetia greyii	Grey's skink
*			Lerista lineata	Lined skink
*			Lialis burtonis	Burton's legless lizard
*			Tiliqua rugosa rugosa	Bobtail
*			Varanus gouldii	Gould's Monitor
*			Pseudonaja a affinis	Dugite
	*	MAMMALS	Rattus norvegicus	Brown rat*

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FLORA - INTRODUCED SPECIES (contd)

O	B	GENUS	SPECIES	COMMON NAME	ZONE
	*	Romulea	rosea	Guildford grass	
*	*	Rumex	aff conglomeratus	Clustered dock	
*	*	Schinus	terebinthifolius	Japanese pepper	
*		Solanum	nigrum	Black berry nightshade	
*		Sonchus	oleraceus	Common sowthistle	
	*	Taraxacum	officinale	Dandelion	3
	*	Trachyandra	divaricata		
*		Trifolium	spp	Clover	2,6
	*	Tropaeolum	majus	Nasturtium	2
*	*	Typha	orientalis	Bulrush	8,9,13,14
		Urospermum	picroides	False hawkbit	
*		Ursinia	anthemoides	Yellow daisy ursinia	1
	*	Vicia	sativa	Common vetch	1,5
	*	Watsonia	bulbilifera	Bugle lily	1,3

Red-necked Avocet	<i>Recurvirostra novaehollandiae</i>	*	
Common Sandpiper	<i>Tringa hypoleucos</i>	*	
Greenshank	<i>T. nebularia</i>	*	*
GULLS AND ALLIES			
Silver Gull	<i>Larus novaehollandiae</i>	*	*
Caspian Tern	<i>Hydropropagne caspia</i>	*	*
Crested Tern	<i>Sterna bergii</i>	*	
PIGEONS AND DOVES			
Feral Pigeon	<i>Columba livia</i>	*	*
Spotted Turtle-dove	<i>Streptopelia chinensis</i>	*	*
Laughing Turtle-dove	<i>S. senegalensis</i>	*	*
PARROTS AND COCKATOOS			
White-tailed Black Cockatoo	<i>Calyptorhynchus baudinii</i>	*	*
Galah	<i>Cactua roseicapilla</i>	*	*
Port Lincoln Ringneck	<i>Barnardius zonarius</i>	*	*
Rainbow Lorikeet	<i>Trichoglossus haemotodus</i>		*
CUCKOOS AND NIGHTBIRDS			
Pallid Cuckoo	<i>Cuculus pallidus</i>	*	
Fan-tailed Cuckoo	<i>Cuculus pyrrhophanus</i>	*	
SWIFTS AND KINGFISHERS			
Laughing Kookaburra	<i>Dacelo gigas</i>	*	*
Sacred Kingfisher	<i>Halcyon sancta</i>	*	*
Rainbow Bee-eater	<i>Merops ornatus</i>	*	*
Welcome Swallow	<i>Hirundo neoxena</i>	*	*
Tree Martin	<i>Cecropis nigricans</i>	*	*
BUSHLARK, SWALLOWS, PIPIT			
Richard's Pipit	<i>Anthus novaeseelandiae</i>	*	
CUCKOO-SHRIKES			
Black-faced Cuckoo Shrike	<i>Coracina novaehollandiae</i>	*	*
White-winged Triller	<i>Lalage sueurii</i>	*1	0
ROBINS, WHISTLERS, SHRIKE THRUSHES			
Red capped Robin	<i>Petroica goodenovii</i>	*1	

3. BIRDS

BIRD SPECIES LIST 1993

The species list compiled by Jack Donohoe and Nora Crisp (1978-85) is compared with their recent observations (1993).

COMMON NAME	SCIENTIFIC NAME	1978-85	1993
GREBES			
Great Crested Grebe	<i>Podiceps cristatus</i>	*1	
Hoary-headed Grebe	<i>P. poliocephalus</i>	*	
CORMORANT AND ALLIES			
Australian Pelican	<i>Pelicanus conspicillatus</i>	*	*
Darter	<i>Anhinga melanogaster</i>	*	*
Great Cormorant	<i>Phalacrocorax carbo</i>	*	
Little Black Cormorant	<i>P. sulcirostris</i>	*	*
Little Pied Cormorant	<i>P. melanoleucos</i>	*	*
HERON AND IBIS			
Pacific Heron	<i>Ardea pacifica</i>	*	
White-faced Heron	<i>A. novaehollandiae</i>	*	*
Great Egret	<i>Egretta alba</i>	*	*
Rufous Night Heron	<i>Nycticorax caledonicus</i>	*	
Sacred Ibis	<i>Threskiornis aethiopica</i>	*	*
Yellow-billed Spoonbill	<i>Matalea flavipes</i>		*
DUCKS AND ALLIES			
Black Swan	<i>Cygnus atratus</i>	*	*
Pacific Black Duck	<i>Anas superciliosa</i>	*	*
Mallard (Domestic duck)	<i>A. platyrhynchos</i>	*	
Grey Teal	<i>A. gibberifrons</i>	*	
HAWKS AND ALLIES			
Osprey	<i>Pandion haliaetus</i>	*	*
Black-shouldered Kite	<i>Elanus notatus</i>	*	*
Whistling Kite	<i>Haliastur sphenurus</i>	*	
Brown Goshawk	<i>Accipiter fasciatus</i>	*	
Australian Kestrel	<i>F. cenchroides</i>	*	*
CRAKES, RAILS AND ALLIES			
Buff-banded Rail	<i>Rallus philipensis</i>	*	*
Dusky Moorhen	<i>Gallinula tenebrosa</i>	*	*
Eurasian Coot	<i>Fulica atra</i>	*	*
WADERS			
Black-fronted Plover	<i>C. melanops</i>	*	
Black-winged stilt	<i>Himantopus himantopus</i>	*	*

Management Plan

For

Point Walter Bushland

Prepared by the members of :

Greening Western Australia Point Walter Group

May 1994

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Acknowledgements

The following people have been involved in the preparation of this Management Plan For The Point Walter Bushland:

Rusty Christensen
Thelma Edwards
Barbara Farmer
Mary Hale
Elsie Lombardo
Alec Main
Brian Moyle
Margaret Pieroni
Jean Stanton
Ken Watson

Summary

The Greening Western Australia Point Walter Group was formed in 1984 and has been actively involved in revegetation of the Point Walter bushland. In 1988 the group won the Community Section of the John Tonkin Greening Australia Award.

There has never been an overall plan for the management of this magnificent piece of bushland and in recent years this has hampered the group's activities.

A series of recommendations have been put together so the bushland at Point Walter can be enjoyed for generations to come. These will complement the other features at Point Walter adding to its attraction and enjoyment for people who visit the area.

Management Plan For Point Walter Bushland

February 1994

1.0 Introduction

Greening Western Australia Point Walter Group was founded ten years ago and at the time was known as Melville Greening Australia. The City of Melville suggested that the group could manage the bushland at Point Walter and work has been going on ever since. During the years there have been some outstanding successes and also some setbacks to the regeneration of the bushland. Members have also surveyed the flora and learned much about the ecology of the area.

The first visible success was elimination of the large dense patches of lupins (see photos appendix four). The slope west of the track in section 5 (see map page 12) was planted and what was a grass and weed filled area is now well covered with indigenous shrubs and small trees (see Photos). In 1988 the Point Walter project won the Community Section John Tonkin Greening Australia Award.

The group has normally planned about six to nine months ahead and it has now recognised that some longer term aims are needed. It has worked with The City of Melville and its staff on an informal basis but there is a real need to improve communication between each other and work within an agreed set of objectives. It was for these reasons the management plan was put together.

2.0 The Landscape

The Point Walter Reserve consists of three main habitats which explains the large diversity of flora. They are : The limestone ridge outcropping in several points on the lower slope, deep yellow sand above which supports a population of *Banksia prionotes* and smokebush (*Conospermum triplinervium*) both of which are rare, if not absent elsewhere south of the river in the Perth region and higher mixed jarrah / marri woodland. In less disturbed areas there are several orchid species including a rare group of albino *Caladenia latifolia* and several populations of the red spider orchid *Caladenia arenicola*.

Point Walter is very important from a botanical history point of view and has a vital heritage value. Early botanists first collected *Dryandra lindleyana* (previously *D nivea*) and *Conostylis candicans* here and possibly also the tall *Dryandra* which is a form of *D sessilis* and is unnamed at present. (*D aff sessilis*)

A "Priority One" species, *Cryptandra glabrata* was collected at Point Walter in 1839 in "sandy woods". This is probably extinct here as it has not been seen since. However specific surveys have not been carried out and several "presumed extinct" have been re-discovered in recent years in Western Australia.

3.0 Community Involvement

The number of members of the Greening Point Walter Group has never been great. It has numbered up to ten at any one time and several foundation members are still active. Over the years more than fifty people have been involved. There has also been assistance with replanting from local schools and community groups such as Brownies, Guides and Scouts.

The great driving force behind the group for many years was Barbara Kernot. The knowledge and expertise gained by members of Greening Point Walter while working in the bushland, augmented by participation in the A.P.A.C.E. Bushland Management introductory course, we believe, is extremely important, together with help and co-operation of the staff the City of Melville in order to conserve this part of our natural heritage.

4.0 Concept Plan

Neither the Group nor the City have had an overall management plan for the Point Walter bushland. Planning at best has been nine months ahead and has been somewhat ad hoc. This document is an attempt to change that situation and also incorporate the lessons learnt in that time and facilitate better communication between interested parties. It has been produced by members of the Greening Point Walter Group.

The Point Walter Bushland has been split up into six areas. These are based on the way the site is intersected by paths and roads as well as taking into account the soil and plant communities.

Some over-all on going recommendations for the bushland are :

4.1.1 Weeding to follow the "Bradley method" and A.P.A.C.E. course guidelines.

4.1.2 Regular surveillance of the area controlled to control littering, the dumping of garden refuse and above all, the deliberate setting of fires.

4.1.3 Installation and maintenance of appropriate fencing around the perimeter of the area where it is necessary to define the edge of the bushland and deter vehicles and mowers. This is to avoid the destruction of plants and spread of grasses and other weeds.

4.1.4 A spraying program to control veldt grass and other similar species which become fire hazards in summer.

4.1.5 Removal of species not indigenous to the area. All plantings to be of plants grown from seed collected in the area where ever possible.

4.1.6 Control or ideally elimination of rabbits and foxes.

4.1.7 No facilities such as rubbish bins, picnic areas or play grounds should be placed in the bushland.

4.1.8 Any construction work (paths etc.) should be done in such a way to avoid soil disturbance. No soil should be brought into the bushland.

5.0 Management Areas

When it first started The Point Walter Group realised it would not be able to cover the whole area. Work started in areas of most need at the time e.g. pulling lupins. The management areas then evolved with the different projects undertaken. They have been found to be satisfactory way of managing the area. The areas are shown on a map on page 12.

5.1 Area One

This area has been degraded in the past by aggressive grasses encroaching on the bushland from the eastern edge. It was burned in 1984 and again in 1992. It was the worst affected area for lupins and the open area below the carpark in Carroll Avenue is badly affected by couch grass. Immediately in front of the carpark in what should be the "show piece" of the reserve at present is a weed infested slope used by people to dump rubbish and garden refuse all too often. Hours of work have been expended on this site, weeding and planting and nurturing small shrubs and herbaceous plants indigenous to the bushland. During that time destruction has occurred by the spreading of sand containing weed seeds, fire, the digging of a trench for electric cables (Spring 1993) and mowing inside the log barrier.

Opposite the carpark below the fence around the Sport and Recreation Camp is a slope, bare except for weeds which will be difficult to manage unless similar work is undertaken within the camp grounds. Some weeding and planting of the slope has been carried out by members of the Point Walter Group.

The carpark affords good views of the river and small to medium shrubs only are recommended for replanting.

Recommendations

5.1.1 An urgent program should be under taken to improve the area immediately in front of the car park. An improved appearance, it is hoped, would deter rubbish dumpers and arrangements should be made to have the rubbish cleared more

regularly. To avoid further soil disturbance the laying of a weed mat is suggested. This should be done in early autumn and replanting can be done into the mat.

5.1.2 Appropriate fencing be placed around the edge of the bushland at the base of the slope on the extreme north and east. Grass to be sprayed with a selective herbicide such as Fusilade.®

5.1.3 Re-planting of indigenous species and removal of weeds when and where their abundance becomes an obstacle to natural regeneration and reintroduced plants.

5.1.4 The slope across the road to be sprayed for weed grasses, hand weeded to control flat weeds and re-planted. Seedlings of *Dryandra aff sessilis* which emerged after the 1992 fire among the plants to the east and west of the bare area could be transplanted in autumn.

5.1.5 The open grassed area below the carpark towards the north-east to be sprayed to control the couch grass and densely planted with quick growing species such as *Dryandra aff sessilis*, *Acacia saligna* etc. to avoid re-infestation of couch which resents competition for light.

5.1.6 *Allocasuarina fraseriana* and jarrah, *Eucalyptus marginata* from seed gathered at the site to be planted in open areas to suppress weeds and (in the case of the former) encourage regeneration of natural under storey plants.

5.1.7 Selectively remove the non indigenous plants like the *Calothamnus quadrifidus* which, since the fire is becoming a weed species.

5.2 Area Two

This area is a fairly undisturbed area containing a diverse and rich flora, especially small shrubs and herbaceous species. The orange banksia and tree smoke bush *Conospermum triplinervium* are more prevalent in this area as well below the brick path in area 3. After the fires in January 1992 many smoke bushes were killed. They re-sprouted only to die from lack of water. However, several seedlings, a rare occurrence, have been located and are being monitored.

Recommendations

5.2.1 Removal by hand of pelargonium.

5.2.2 Removal of non indigenous species such as *Banksia speciosa*. The original plants were killed by the fire but one has produced seedlings.

5.2.3 Spraying of veld grass and similar species at the appropriate time. Hand weeding and wiping with herbicide of bulb species at flowering and other appropriate measures to control weeds with minimum disturbance to small plants recovering and germinating after fire

5.2.4 Repair and maintain the log steps on the footpath from the carpark with minimal soil disturbance. The steps also need to be kept clear of vegetation.

5.2.5 Planting of species such as *Conostylis candidans* alongside the brick path to discourage weeds and stabilise the soil.

5.3 Area Three

At the top of the slope, below the brick path the vegetation is generally good except for the weeds alongside the path. On the lower slope there are outcrops of limestone and some parts are degraded. Attempts to replant this with species such as *Templetonia retusa* were not successful.

Recommendations

5.3.1 Hand weeding as appropriate . Removal of pelargonium.

5.3.2 Spray veld grass and similar species at the appropriate time.

5.4 Area Four

This part of the bushland has been severely degraded. The lower slope has been re-vegetated successfully by the Greening Point Walter Group. The re-alignment of Carroll Avenue has left a bare grassed area which will take time to re vegetate.

Recommendations

5.4.1 Appropriate fencing needs to be installed from the dual use path at the western end in a southerly direction through to area six and up to the tennis courts. This is to delineate the future and existing bush boundary and avoid the mowing of new plants and encourage pedestrians to keep to the paths.

5.4.2 Spraying of the grass at the appropriate time and re planting with large trees such as those in area 6. *Allocasuarina fraseriana*, *Eucalyptus marginata* (jarrah) and *E calophylla* (marri), *Banksia attenuata*. Marri in particular, is fast growing and a good tree cover is necessary to encourage the spread of ground cover species naturally and to protect future plantings of understorey.

5.5 Area Five

This area has been re vegetated with mixed success. Olive trees have become weeds infesting the lower edge.

Recommendations

5.5.1 Continue weed control and planting programme.

5.5.2 Remove all but original olive trees particularly those among the limestone outcrops and replant with a remnant vegetation species such as *Templetonia retusa*.

5.5.3 Control oxalis on the slope below the path. Weed mat may be appropriate or wiping with Roundup®

5.5.4 A new set of formed steps is needed on the track which has been made from the dual use path down to Honour Avenue (see map).

5.6 Area Six

This area contains the least disturbed and probably most species rich habitat. It is an important area linking to areas four and five. It was originally cut off by the road. There is an abundance of regenerating and re-sprouting plants after a recent fire and orchids occur here. As this is the best piece of bushland in the Point Walter Group's area the active members have been concentrating in this area in accordance with "Bradley Principle" methods. This is particularly so in view of the limited number of active members who are involved in any weeding program. Pelargonium has been eliminated and hand weeding has very significantly improved the status of the bush. There is also evidence of rabbits in the area indicating the importance of general recommendation 4.1.6.

Recommendations

5.6.1 Hand weeding to continue as sensitively as possible following A.P.A.C.E. course guidelines. This to eliminate veldt grass and African love grass.

5.6.2 Appropriate fencing is needed to avoid disturbance to re growth in good areas and newly planted shrubs in open areas.(see recommendation 5.4.1)

5.6.3 Remove rubbish and block vehicular access. As outlined in recommendation 5.4.1.

5.6.4 Spray the grass between the Camp fence and Carroll Avenue only and re-vegetate the disturbed area near the road. Care is needed to avoid damaging the orchids.

5.6.5 Discontinue mowing programme in the traffic island. Grass could be sprayed and mulched and low growing species planted.

6.0 Implementation Programme

6.1 The plan should be submitted to The City of Melville for approval and adoption.

6.2 The City of Melville and the Greening Western Australia Point Walter Group should agree a list of tasks in order of priority for each to undertake.

6.3 The fencing program should commence as soon as possible and before spring so the seedlings are not mown or destroyed by traffic.

6.4 With the limited resources it is not practical for the volunteers to attempt to cover all the areas. Most members are concentrating on area six. The other area which should be regenerated is the area one but this will most likely need some assistance from the council.

6.5 The Greening Point Walter Group will appoint a Liaison Officer. That person would meet regularly with the City of Melville Environmental Officer on a regular basis and other officers as appropriate.

6.6 For at least the next two years a co-ordinated weed spraying programme will need to be drawn up with joint consultation. Any contractors will need to be properly supervised. The cost of this can come from the Point Walter parks budget. It will require a change in the priority given to different jobs.

6.7 Collection of seed needs to be undertaken each year so revegetation can take place by direct seeding methods. This can either be a Point Walter Group or joint project with Council staff. The members would welcome the Councils offer to grow seedlings at the nursery.

6.8 There is a need to increase the number of active members in the group. An updated promotional brochure should be prepared and a poster for display in areas such as the City libraries.

7.0 Finance

Implementation of the plan will require the preparation of a budget. Most of the expenditure could probably be met with a reallocation of resources currently being spent in the area. A relatively small amount would be needed for once off expenditure on log barriers and the like.

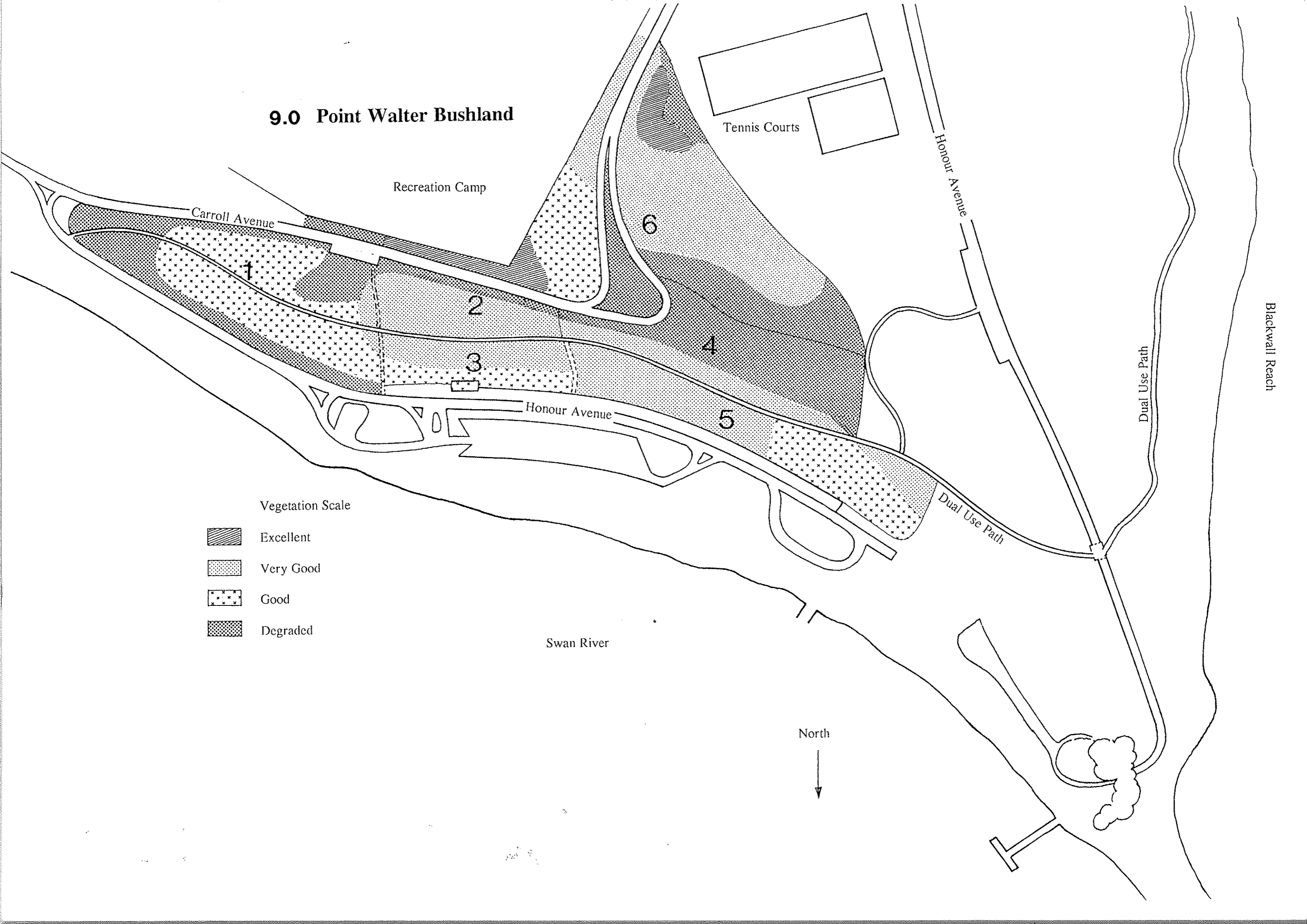
In addition a submission could be made for a grant from "Save The Bush" funding or Greening Western Australia although this could significantly delay progress.

The Point Walter Group has a small bank account. This has been used in the past for such things as purchase of seedlings, promotional materials and postage. The funds came from The City of Melville, Melville Rotary Club and Greening W.A.

8.0 Review

A formal review of the operation of the plan should be undertaken two years after its adoption and implementation.

9.0 Point Walter Bushland



Vegetation Scale

- Excellent
- Very Good
- Good
- Degraded

Tennis Courts

Recreation Camp

Carroll Avenue

Honour Avenue

Honour Avenue

Dual Use Path

Dual Use Path

Blackwall Reach

Swan River

North

References

Bradley J 1988 *Bringing Back the Bush* Lansdowne Press

Ecoscope 1993 *East Fremantle Foreshore Landscape Study*

Bennet E. M. 1988 *The Bushland Plants of Kings Park Western Australia* Scott Four Colour Print.

Hussey B.M.J. 1993 *Managing Your Bushland* Department Of Conservation And Land Management

Appendices

Appendix One: Vegetation Condition Scale

Appendix Two: Flora List

Appendix Three: Common Bird Species In The Area

Appendix Four: Photographs Of The Area

Appendix One: Vegetation Condition Scale

(Used on the map of
The Point Walter Bushland Page 12)

E = Excellent

Vegetation structure is intact, disturbance affecting individual species and weeds are non aggressive species.

For example damage to trees caused by fire, the presence of non-aggressive weeds and occasional vehicle tracks

VG = Very Good

Vegetation structure altered, obvious signs of disturbance.

For example disturbance to vegetation structure caused by repeated fires, the presence of some more aggressive weeds, logging and grazing.

G = Good

Vegetation structure significantly altered by very obvious signs of multiple disturbance. Retains basic vegetation structure or ability to regenerate it.

For example disturbance to vegetation structure caused by very frequent fires, the presence of some very aggressive weeds at high density, partial clearing and grazing.

D = Degraded

Basic vegetation structure severely impacted by disturbance. Scope for regeneration but not to a state approaching good condition without intensive management.

For example disturbance to vegetation structure caused by very frequent fires, the presence of very aggressive weeds , partial clearing and grazing.

Source : Keighery B. (1993). Draft Disturbance and Vegetation Condition, from *Plant Community Survey for the Community* by Keighery B. for The Wildflower Society of Western Australia (Inc.)

Appendix Two: Flora List

Indigenous Plants of the Point Walter Bushland

	Area
Amaranthaceae	
Ptilotus polystachys	1,2,3,4,5
Anthericaceae	
Caesia parviflora	5,6
Corynotheca micrantha	6
Laxmannia squarrosa	6
Lomandra caespitosa	5,6
L. micrantha	5,6
L. nigricans	5,6
Sowerbaea laxiflora	1,2,3,4,5,6
Thysonotus arenarius	1,2,3,4,5,6
T. sparteus	3,4,5,6
Tricoryne elatior	1,2,3, 5
Casuarinaceae	
Allocasuarina fraseriana	1,2,3,4,5,6
A. humilis	6
Colchicaceae	
Burchardia umbellata	1,2,3,4,5,6
Cyperaceae	
mesomelaena stygia	2,3, 5,6
lepidosperma sp.	3, 5,6
Dasypogonaceae	
Acanthocarpus preissii	3, 5
Dilleniaceae	
Hibbertia hypericoides	6
H. heugelii	6
H. vaginata	6
Droseraceae	
Drosera stolonifera	6
D. erythrorhiza	5,6
Epacridaceae	
Astroloma pallidum	6
Conostephium pendulum	6
Leucopogon propinquus	6

Fabaceae	Area
Daviesia triflora	6
Gompholobium aristatum	6
G. tomentosum	2,3, 5
Hardenbergia comptoniana	1,2,3,4,5,6
Isotropis cuneifolia	1,2,3, 5,6
Jacksonia sternbergiana	5,6
J. furcellata	2
Kennedia prostrata	1,2,3, 5,6
Templetonia retusa	5
Goodeniaceae	
Lechenaultia linarioides	1,2,3 5
Scaevola canescens	1,2,3 5,6
Haemodoraceae	
Conostylis candicans	1,2,3,4,5
Haemodorum laxum	6
Lobeliaceae	
Lobelia tenuior	5
Mimosaceae	
Acacia puchella	1,2,3, 5
A. cochlearis * (not indigenous form)	5
Acacia cyclops *(not indigenous form)	1
A. saligna	1,2,3,4,5,6
A. willdenowiana	6
Myrtaceae	
Agonis flexuosa	1,2,3,4,5,6
Calothamnus quadrifidus *	1 5
Eucalyptus marginata	1,2 6
E. calophylla	1,2 4 6
E. gomphocephala *	3 5
Hypocalymma angustifolium *	4,5
H. robustum	4,5
Melaleuca acerosa *	3 5
M. huegelii *	3 5
M. scabra *	3
Orchidaceae	
Caladenia arenicola	6
C. latifolia	6
C. flava	6
Diuris corymbosa	6
Pterostylis vittata var vittata	6

Phormiaceae		
Dianella divaricata		1,2,3, 5,6
Poaceae		
Neurachne alopecuroidea		6
Proteaceae		
Banksia attenuata		3,4 6
B. grandis		3
B. menziesii		6
B. prionotes		1,2,3,4,5
Conospermum triplinervium		1, 3
Dryandra lindeyana		3 6
D. aff sessilis		1,2,3,4,5,6
Grevillea thelemannianna *		5
Hakea prostrata		1,2,3,4,5,6
H. trifurcata *		4,5
Petrophile linearis		1,2,3,4,5,6
P. macrostachya		6
Restionaceae		
Loxocarya flexuosa		6
Thymelaeaceae		
Pimelea rosea		6
Xanthorrhoeaceae		
Xanthorrhoea preissii		1,2,3,4,5,6
Zamiaceae		
Macrozamia riedlei		1,2,3,4,5,6
Violaceae		
Hybanthus calycinus		1

Weeds of Point Walter Bushland (incomplete)

Amaryllidaceae		Area
Narcissus fazetta	Jonquil	6
Asteraceae		
Arctotheca calendula	Cape weed	1,2,3,4,5,6
Hypochaeris glabra	Flat weed	1,2,3,4,5,6
Conyza sp.	Fleabane	1,2,3,4,5,6
Ursina anthemoides		1,2,3,4,5,6

Caryophyllaceae

Petrothagia velutina		1,2,3,4,5,6
Silene gallica		1,2,3,4,5,6

Fabaceae

Lupinus consentinii		1,2,3,4,5,6
Trifolium angustifolium		

Geraniaceae

Pelargonium capitatum		1,2,3,4,5,6
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Oleaceae

Olea europaea	Olive	4,5
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Orchidaceae

Monodenea bracteata		1,2,3,4,5,6
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Oxalidaceae

Oxalis pes-caprae		1,2,3,4,5,6
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Poaceae

Avena fatua	Wild oats	1,2,3,4,5,6
Briza maxima		1,2,3,4,5,6
Bromus rubens		
Cynodon dactylon	Couch grass	1,2,3,4,5,6
Ehrharta calycina	Veldt grass	1,2,3,4,5,6
Eragrostis curvula	African love grass	6
Lagurus ovatus	Hares tail grass	1,2,3,4,5,6
Lolium Perenne	Rye grass	6
Rhynchelytrum repens	Red natal grass	1,2,3,4,5,6

Appendix Three: Common Bird Species In The Area

Australian Pelican
Australian Pippit
Pied Cormorant
Little Pied Cormorant
Little black Cormorant
Black-shouldered Kite
Australian Kestrel
Silver Gull
Spotted Turtle Dove
Laughing Turtle Dove
Galah
Port Lincon Ringneck
Laughing Kookaburra
Rainbow Bee-eater
Red-capped Parrot
Welcome Swallow
Tree Martin
Black-faced Cuckoo-shrike
Willie Wagtail
Red Wattlebird
Singing Honeyeater
Brown Honeyeater
Silvereye
Australian Magpie-lark
Australian magpie
Australian Raven

Bird names follow the Royal Australasian Ornithologists Union's (RAOU) recommended list of Common English names.

Appendix Four: Photographs Of The Area



Pulling Lupins 1984



Primary School Children Planting 1989



Replanted Slope 1988

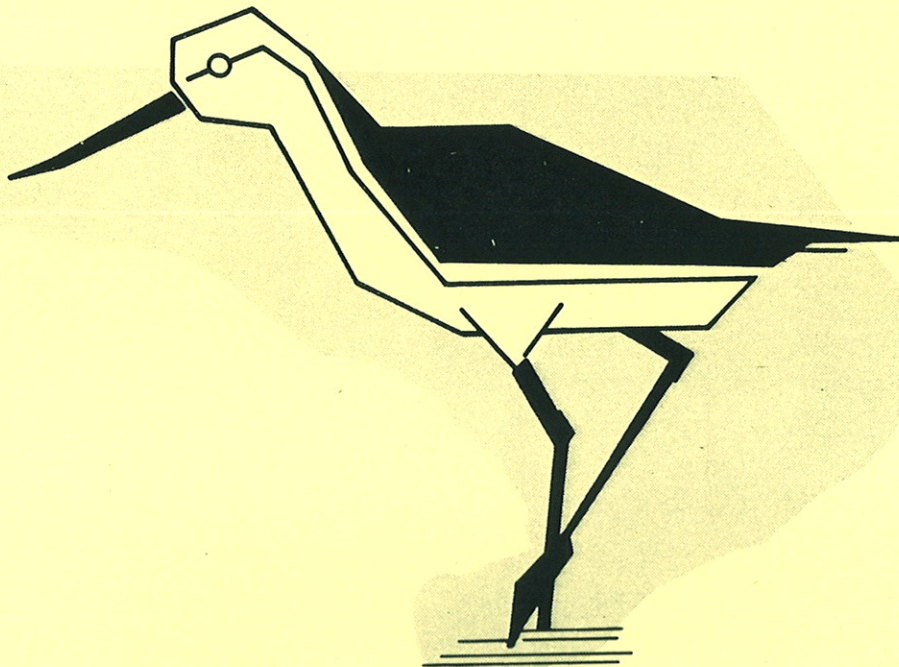


Same Area 1994

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ALFRED COVE — A WILDLIFE HABITAT



**Full document
available
on request**

Environmental Protection Authority
Perth, Western Australia
Bulletin 298 April 1987

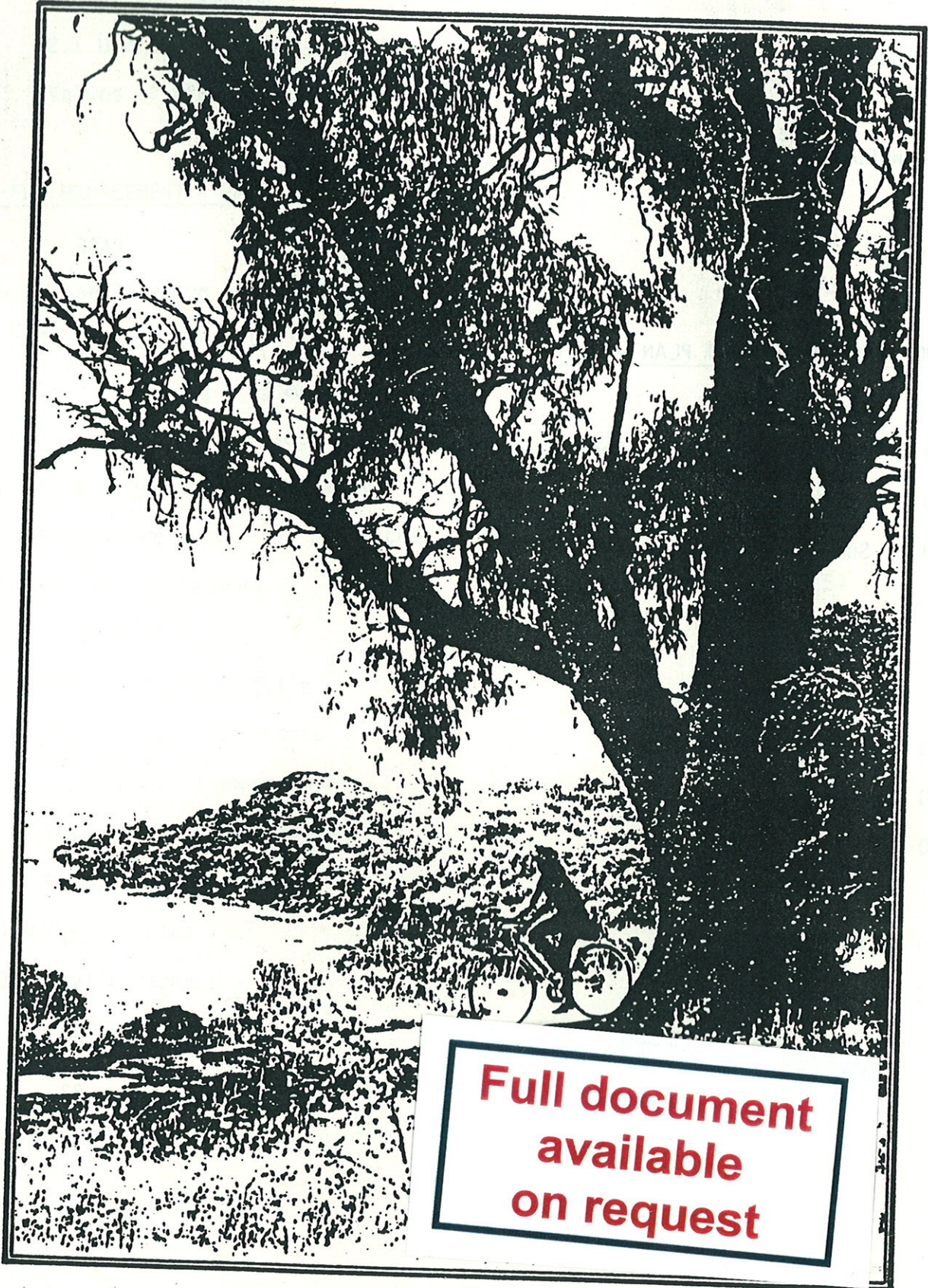
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BS 331 Rivers
CITY OF MELVILLE

BLACKWALL REACH RESERVE



**Full document
available
on request**

MANAGEMENT PLAN

402, 331
(2011) 140

Milyu

Floristics of System Six Reserves and Bushland.
Part 1: Alfred Cove, Pelican Point and Milyu Nature Reserves

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Abstract

The terrestrial flora of three small reserves fringing the Swan River Estuary is documented. All the reserves are comparatively species poor: Alfred Cove Nature Reserve; 178 species, Pelican Point Nature Reserve; 111 species and Milyu Nature Reserve; 73 species. The largest reserve Alfred Cove contains populations of the following restricted or geographically interesting flora, *Burchardia bairdii*, *Gyrostemon ramulosus*, and *Tribonanthes ? violacea*.

Naturalised plants are common on all these relatively disturbed reserves. Many of these species have entered the reserves through dumping of garden refuse or deliberate plantings. Two new weed records for Western Australia, *Casuarina glauca* and *Populus nigra* cv "Italica" were located during the survey.

INTRODUCTION

The three reserves documented here occur along the edge of the Swan River Estuary and have been reserved primarily to protect waterbird habitat (Keeling 1987). General vegetation maps for the whole waterway can be found in Penn (1983a & b). No complete flora list is available for any of the reserves.

MATERIALS AND METHODS

All reserves were visited every month during 1988/89, and plants present recorded during extensive foot traverse. All plant species present were listed under the landforms/vegetation present. Voucher collections are deposited in PERTH.

Occurrences of all vascular plant taxa recorded for each reserve and the landform/vegetation units they occur in are listed in Table 1

DISCUSSION

Vegetation

Alfred Cove has had several vegetation maps prepared for the area by Penn, 1983 and 1987 and Anon, 1989. Anon, 1989 maps 15 vegetation complexes, including mown lawns and bare ground. No vegetation maps exist for Milyu or Pelican Point.

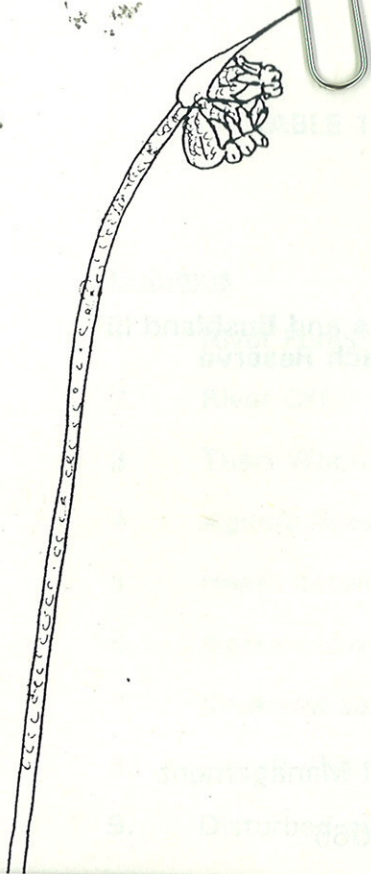
In all cases each reserve has

- a fringing woodland usually highly degraded (almost absent at Milyu),
- closed sedgeland (generally of *Juncus kraussii*, but also composed of *Carex divisa* at Pelican Point)
- low dunes backing an open muddy beach, with large drains crossing these communities (these discharge areas have created a *Typha* sedgeland at Alfred Cove).

Alfred Cove contains an extensive area of samphire s^l has a marshland with a closed community of succulent small brackish lake.

**Full document
available
on request**

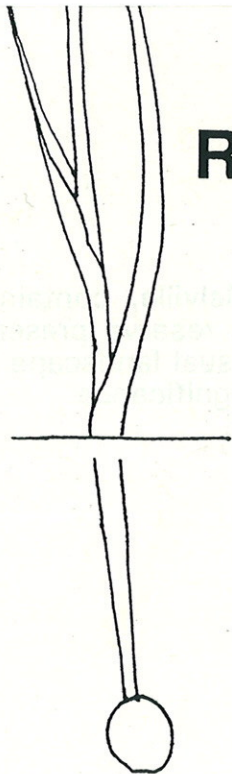
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**Full document
available
on request**

FLORISTICS of
RESERVES and BUSHLAND AREAS
of the **PERTH REGION** (System 6)
Parts II-IV

G.J. Keighery and B.J. Keighery
Wildflower Society of Western Australia (Inc.)



Incorporating
• Gibson et al 1994
• Greenway with F. Walker 6p. '94
• Smithe + Smithe 1986

PERIPHERAL VEGETATION of the Swan and Canning Estuaries 1981

**Full document
available
on request**



Department of Conservation & Environment
Western Australia

Bulletin 113
July, 1983



Swan River
Management Authority

SWAN ESTUARY MARINE PARK AND ADJACENT NATURE RESERVES DRAFT MANAGEMENT PLAN

1996

**Full document
available
on request**

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