

BOORAGOON LAKE, BOORAGOON

Boundary Definition: bushland taken to zoning boundary

SECTION 1: LOCATION INFORMATION

Bush Forever Site no. 337

Area (ha): bushland 9.9 (Site also includes open water.)...

Map no. 53

Map sheet series ref. no. 2033-I NW

Other names: part of Beeliar Regional Park

Local Authorities (Suburb): City of Melville (Booragoon)

System 6 (1983): M73 Part System area bushland and part scattered native plants (canopy), all vegetation described

SECTION 2: REGIONAL INFORMATION

LANDFORMS AND SOILS

Spearwood Dunes

Sands derived from Tamala Limestone (Qts: S7) (near interface of Bassendean and Spearwood Dunes)

Wetlands (near the Spearwood/Bassendean Dune interface)

Holocene Swamp Deposits (Qhw: Msp)

VEGETATION AND FLORA

Vegetation Complexes

Bassendean Dunes

Bassendean Complex — Central and South (near interface of Bassendean Complex — Central and South and Karrakatta Complex — Central and South)

Floristic Community Types: *not sampled, type inferred

Supergroup 2: Seasonal Wetlands

*12 *Melaleuca teretifolia* and/or *Astartea* aff. *fascicularis* shrublands

WETLANDS

Wetland Types: lake

Natural Wetland Groups

Bassendean Dunes

Jandakot (B.3)

Wetland Management Objectives: Conservation (12.1ha)

Swan Coastal Plain Lakes EPP: 8.9ha

THREATENED ECOLOGICAL COMMUNITIES

Not assessed

SECTION 3: SPECIFIC SITE DETAIL

Landscape Features: open water, vegetated wetland, vegetated uplands

Vegetation and Flora: limited survey (EPA and WAWA 1990); detailed survey (Smith 1985a)

Structural Units: mapping (EPA and WAWA 1990, Smith 1985a)

Wetlands: *Eucalyptus rudis* Closed Forest; *Melaleuca raphiophylla* Low Closed Forest; *Melaleuca teretifolia* Closed Tall Scrub; *Polypogon* Closed Heath; mixed Closed Sedgeland

Scattered Native Plants: *Pteridium esculentum* Fernland

Vegetation Condition: >50% Good to Very Good, <50% Degraded, with areas of severe localised disturbance (Weston 1993)

Total Flora: 34 native taxa, 6 weed taxa (Smith 1985a) (estimated >90% of expected flora)

Significant Flora: none recorded

Fauna: multiple survey for birds (53 species) (RAOU 1996 D, 5 visits, and Smith 1985a) and limited survey for reptiles (1 species) (Smith 1985a). Significant populations of Blue-billed, Musk, and Hardhead Ducks and Dusky Moorhen. Major breeding colony of Little Pied Cormorants and rookery for four species of cormorant, Darter and White Ibis (AHC 1998 D). Significant bird species: category 3 (6) and category 4 (2)

Linkage: no adjacent bushland; part of Greenway 95 (Tingay, Alan & Associates 1998a); part of a regionally significant potential bushland/wetland linkage (Part A, Map 7)

Other Special Attributes: included in Beeliar Regional Park Proposal (DPUD 1992a)

SECTION 4: INTERNATIONAL AND NATIONAL SIGNIFICANCE

Directory of Important Wetlands in Australia, Entered in the Interim List of the Register of the National Estate

SECTION 5: SELECTION CRITERIA AND RECOMMENDATIONS

Criteria: Representation of ecological communities, General criteria for the protection of wetland, streamline and estuarine fringing vegetation and coastal vegetation, Criteria not relevant to determination of regional significance, but which may be applied when evaluating areas having similar values

Recommendation: Proposed Parks and Recreation Reservation (see Table 3, Volume I)

BOORAGOON LAKE, BOORAGOON

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SECTION 1: CADASTRAL INFORMATION

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

Bushplan Site no. 337 **Map no.** 61 **Map sheet series ref. no.** 2033-I NW

System 6 (1983): M73 Part System area bushland and part scattered native plants (canopy), all vegetation described

Other names: not known

Area (ha): total 13.3 (includes open water); bushland 9.9

Local Authorities (Suburb)

City of Melville (Booragoon)

Zoning

MRS: Urban, Other Major Highways

TPS: Landscape, Local Open Space, Public Use Reserve

Ownership Categories

State Government, Local Government

Lot/Location/Reserve numbers (Purpose),

Street name

1672, 2306 Leach Hwy; 681 Aldridge Rd

SECTION 2: REGIONAL INFORMATION

LANDFORMS AND SOILS

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Linkage: no adjacent bushland; part of a regionally significant potential bushland/wetland linkage (Volume 2A, Map 8)

Other Special Attributes: included in Beeliam Regional Park Proposal (DPUD 1992a)

SECTION 4: INTERNATIONAL AND NATIONAL SIGNIFICANCE

Not listed; Directory of Important Wetlands in Australia



SECTION 5: SELECTION CRITERIA AND RECOMMENDATIONS

Criteria: Representation of ecological communities, General criteria for the protection of wetland, streamline and estuarine fringing and coastal vegetation, Criteria not relevant to determination of conservation value, but which may be applied when evaluating areas having similar values

Opportunities and/or Constraints

Opportunities: Bushplan Site/part Bushplan Site subject to Swan Coastal Plain Lakes EPP, Swan and Canning Rivers EPP; location of conservation category wetland; under TPS Landscape Zoning and Local Open Space Zoning

Constraints: under MRS Urban Zoning, MRD regional road requirements

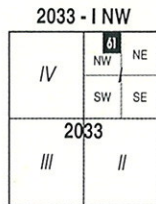
Recommendation: The care, control and management of this Bushplan Site for conservation purposes within Beeliar Regional Park is endorsed.





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



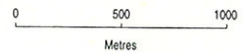
1 : 25 000 AMG Reference Grid showing Perth's Bushplan Map Sheet Breakdown

PERTH'S BUSHPLAN MAP INDEX

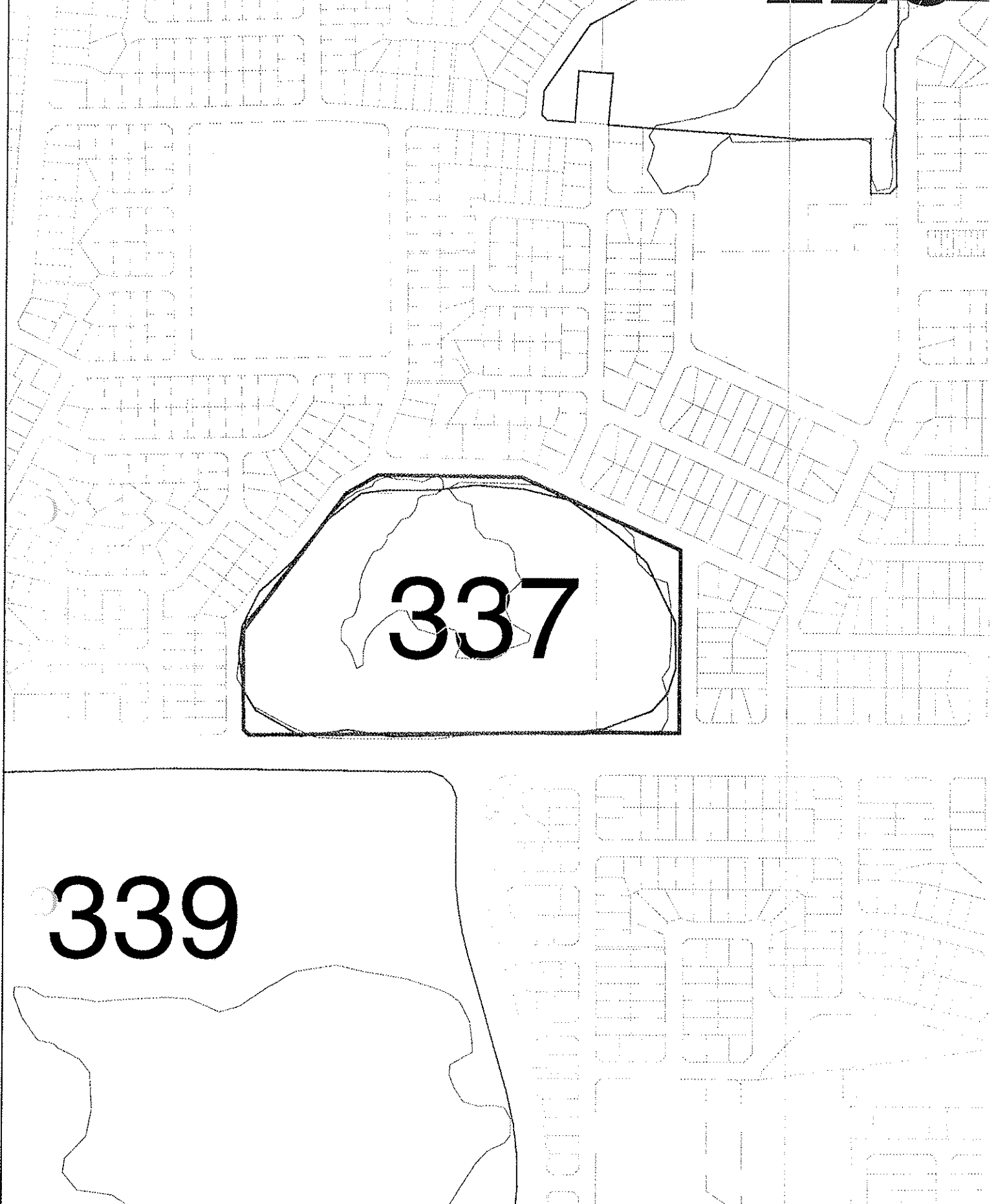
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| 99 | 100 |
| 101 | 102 |
| 103 | 104 |
| 105 | 106 |



SCALE



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



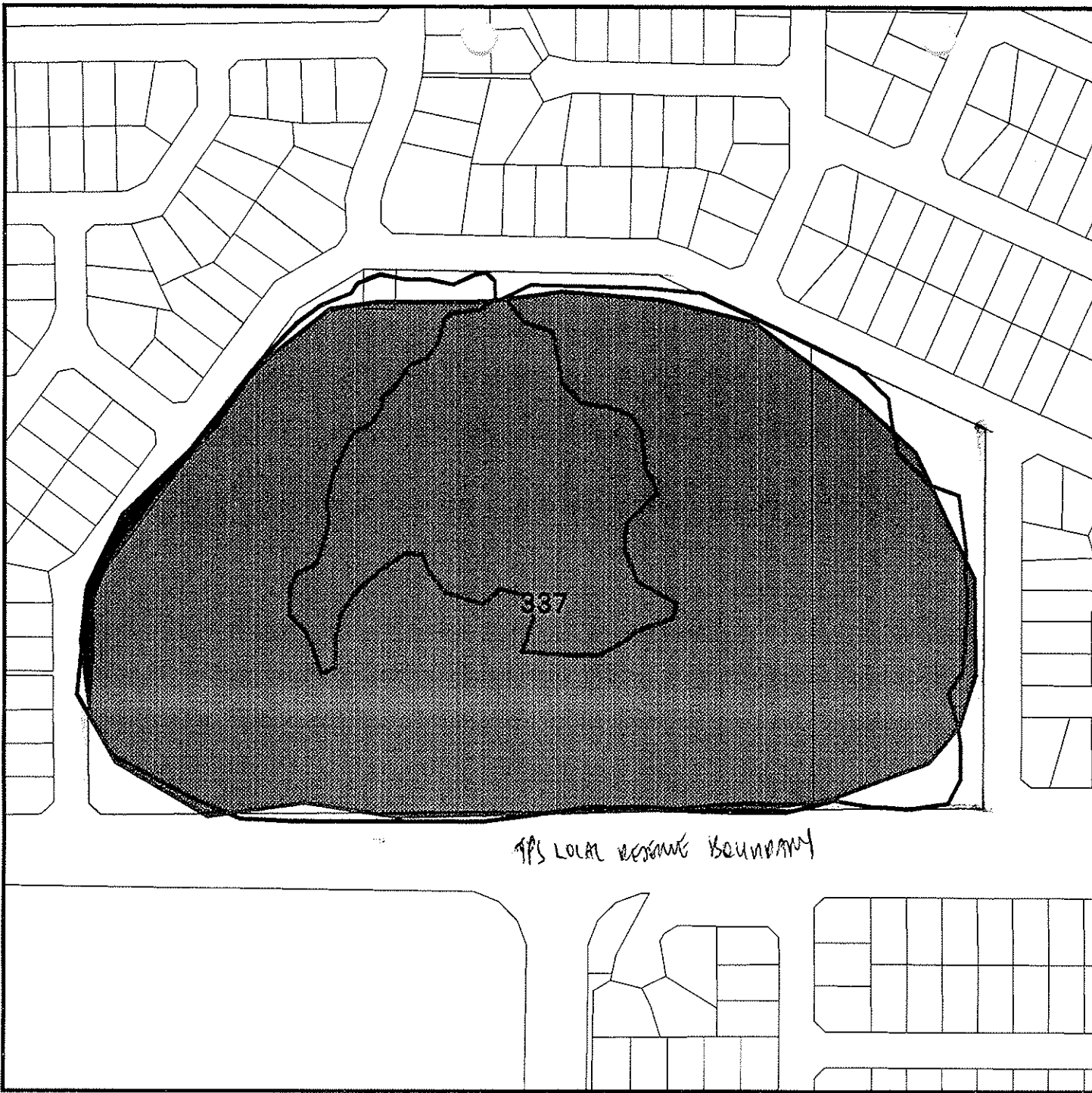
BUSHPLAN SITES CORRECTED







**WESTERN
AUSTRALIAN
PLANNING
COMMISSION**



bp site 337



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

[CHECK ON AERIAL 98.]

98 LOCAL RESERVE BOUNDARY

| |
|--------------------------------|
| MFP INTERNAL USE ONLY |
| Prepared By: Andrea Zappacosta |
| Prepared For: |
| Map Ident: plot980529_1 |
| Date: 29 May 98 |
| Scale 1: 3237 |

* NO UCCW 677

228

337

✓ CE/NT
2018

339

see 0105/10/10

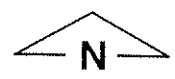
BUSHPLAN SITES CORRECTED



WESTERN
AUSTRALIAN
PLANNING
COMMISSION



CUSTOMER
FOCUS
WESTERN AUSTRALIA



228

337

✓ CC/NT
2/2/18

339

see cross file

BUSHPLAN SITES CORRECTED

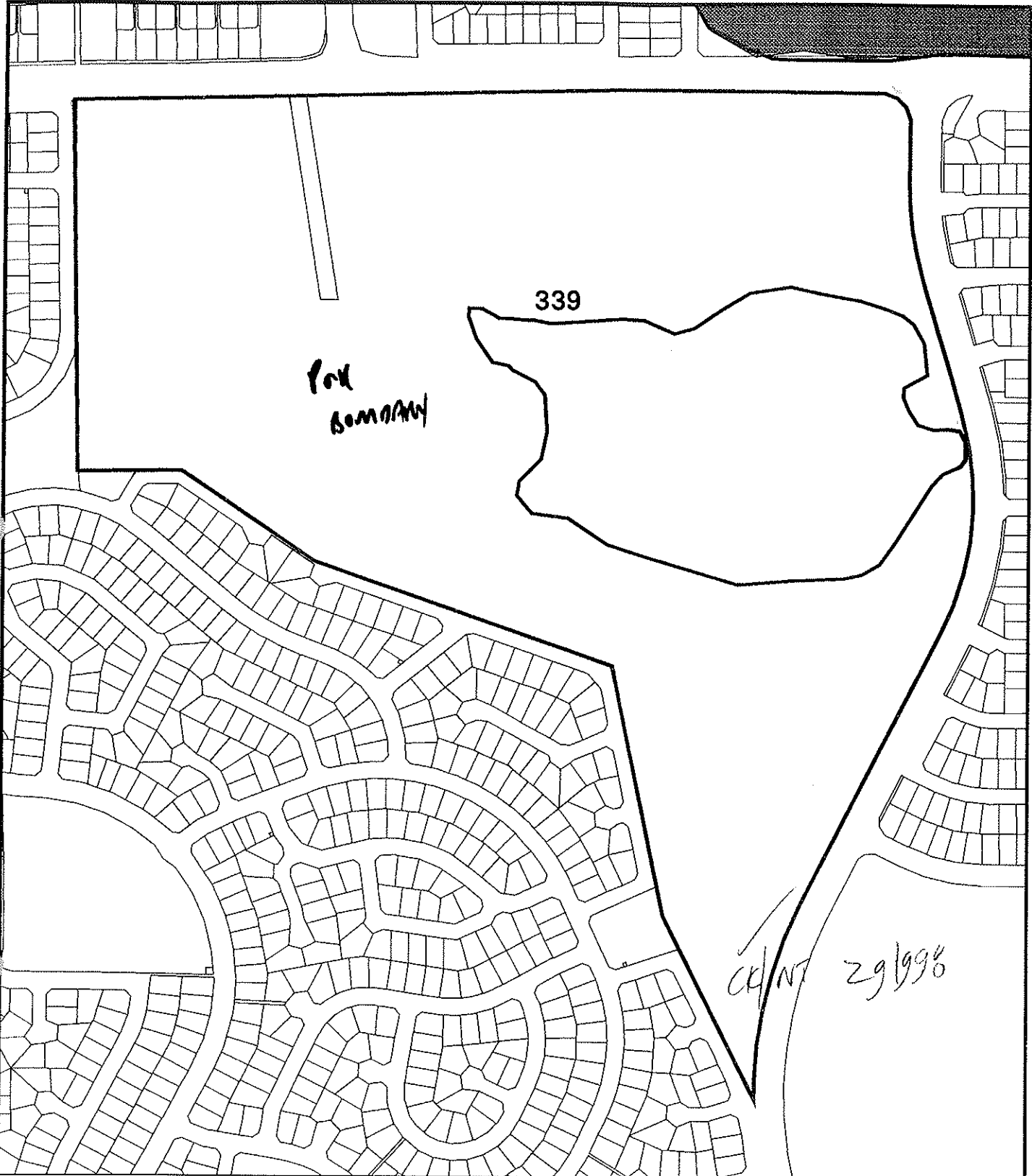


WESTERN
AUSTRALIAN
PLANNING
COMMISSION







CUSTOMER
FOCUS
WESTERN AUSTRALIA



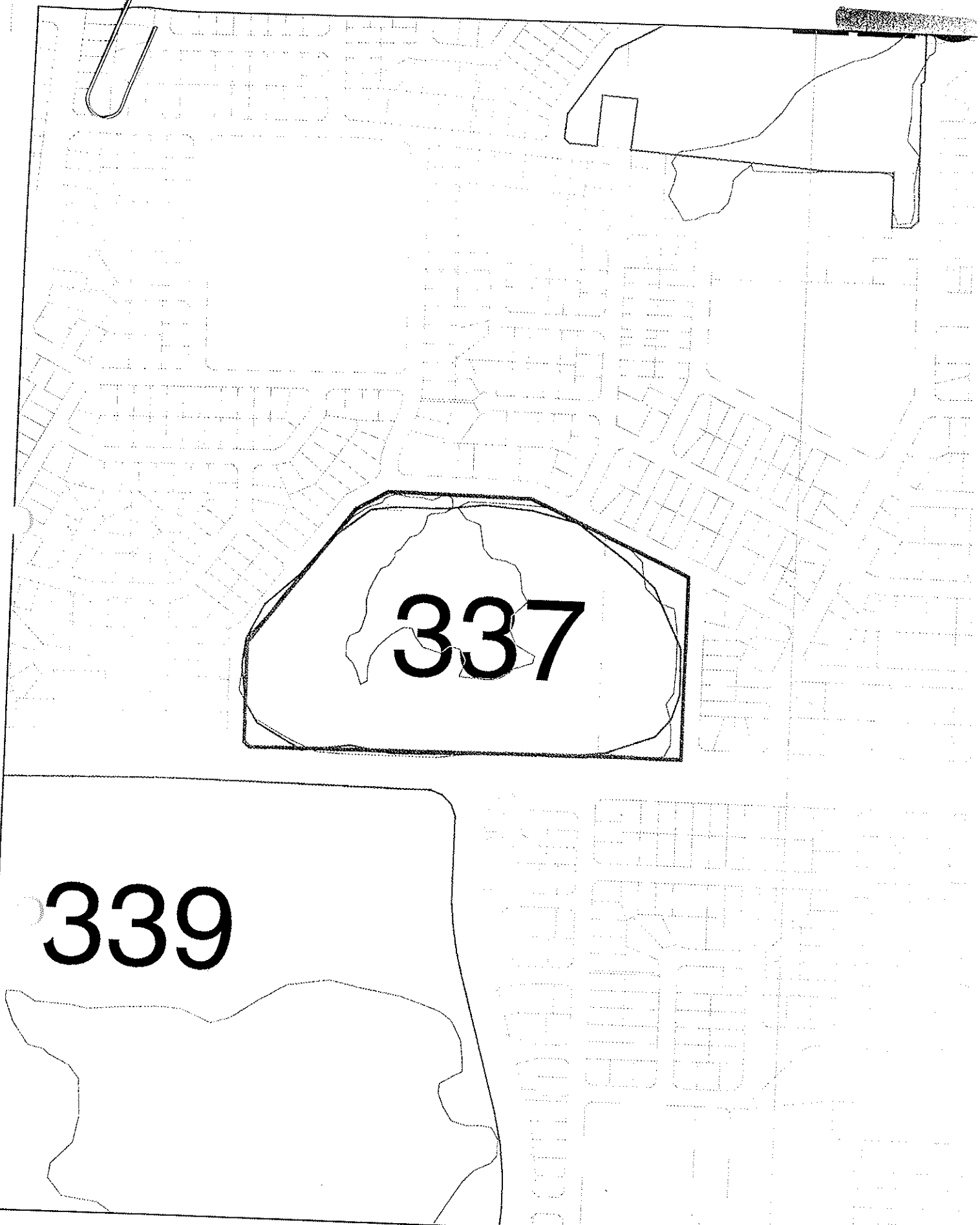


bp site 339

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

MFP INTERNAL USE ONLY
 Prepared By: Andrea Zappacosta
 Prepared For:
 Map Ident: plot980529_1
 Date: 29 May 98
 Scale 1:6376

Note. Veg. mapping inconsistent
 - some in plots correct, but
 should be recorded as veg CK 29/19/98



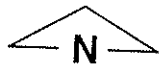
337

339

BUSHPLAN SITES CORRECTED



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AUSTRALIAN
PLANNING
COMMISSION



B 6/2 28/1/96

B) Site No. 529 Point Heathcote Foreshore, Applecross

- The Bushplan recommendation is endorsed.
- However, the existing reserve around Heathcote is likely to be substantially increased to include the escarpment of Heathcote peninsula for a parks and recreation reserve in accordance with Town Planning Scheme No. 3 Amendment No. 144 as agreed by City of Melville and Western Australian Planning Commission.
- A conservation reservation over the Heathcote peninsula escarpment only is endorsed.

C) Site No. [redacted] Yagan Wetlands and adjacent bush land Rossmoyne to Bull Creek

- This site is jointly located within the Cities of Melville and Canning.
- The proposal to amend the reserve to include conservation is supported.
- The adopted City of Melville management plan includes conservation and recreation purposes over the subject sites.
- Community Planning Scheme No. 5 includes nature conservation for the local open space both east and west of Karel Avenue.

D) Site No. 288 Blue Gum Reserve, Brentwood, Mount Pleasant

- The Bushplan recommendation is endorsed.
- However, it should be noted that Blue Gum Reserve is also used for storm water drainage.
- A new management plan will be prepared in late 1999 for this area.

E) Site No. 287 Lake Booragoon, Booragoon

- The Bushplan recommendation is endorsed.

F) Site No. [redacted] Piney Lakes Reserve

- The Bushplan recommendation is endorsed.
- The site is to be vested in the City of Melville in approximately three (3) years time.
- An interpretive centre is approved for the site.
- An environmental education centre is approved for the site.
- The bush land is proposed to be generated according to the Piney Lakes concept plan (attached).

R. A. O. U. TRACKING DATABASE

23/06/96

PARK SIGHTINGS REPORT

Page No.

1

Booragoon Lake (M73)

| ORDER: | REF: | BIRD NAME | | NO. SIGHTINGS |
|--------|------|---------------------------|---|---------------|
| 0018 | 0216 | Blue-billed Duck | 3 | 3 |
| 0019 | 0217 | Musk Duck | 3 | 4 |
| 0022 | 0203 | Black Swan | | 4 |
| 0032 | 0208 | Pacific Black Duck | | 5 |
| 0033 | 0212 | Australasian Shoveler | | 1 |
| 0035 | 0211 | Grey Teal | | 2 |
| 0039 | 0213 | Pink-eared Duck | 3 | 1 |
| 0040 | 0215 | Hardhead | 3 | 2 |
| 0041 | 0061 | Australasian Grebe | | 3 |
| 0042 | 0062 | Hoary-headed Grebe | | 2 |
| 0128 | 0101 | Darter | | 5 |
| 0129 | 0100 | Little Pied Cormorant | | 5 |
| 0132 | 0097 | Little Black Cormorant | | 5 |
| 0133 | 0096 | Great Cormorant | | 5 |
| 0135 | 0106 | Australian Pelican | | 2 |
| 0139 | 0188 | White-faced Heron | | 4 |
| 0145 | 0187 | Great Egret | | 3 |
| 0150 | 0192 | Nankeen Night Heron | | 4 |
| 0157 | 0179 | Australian White Ibis | | 5 |
| 0160 | 0182 | Yellow-billed Spoonbill | | 1 |
| 0174 | 0219 | Swamp Harrier | | 1 |
| 0204 | 0058 | Purple Swamphen | | 3 |
| 0205 | 0056 | Dusky Moorhen | 3 | 5 |
| 0208 | 0059 | Eurasian Coot | | 5 |
| 0297 | 0125 | Silver Gull | | 2 |
| 0306 | 0988 | Laughing Turtle-Dove | | 5 |
| 0327 | 0989 | Spotted Turtle-Dove | | 3 |
| 0359 | 0273 | Galah | | 1 |
| 0366 | 0254 | Rainbow Lorikeet | | 1 |
| 0386 | 0294 | Australian Ringneck | | 3 |
| 0387 | 0290 | Red-capped Parrot | | 2 |
| 0489 | 0565 | Spotted Pardalote | | 1 |
| 0492 | 0976 | Striated Pardalote | | 2 |
| 0517 | 0463 | Western Gerygone | | 2 |
| 0537 | 0638 | Red Wattlebird | | 4 |
| 0561 | 0608 | Singing Honeyeater | | 5 |
| 0583 | 0597 | Brown Honeyeater | | 4 |
| 0587 | 0631 | New Holland Honeyeater | 4 | 1 |
| 0671 | 0415 | Magpie-Lark | | 3 |
| 0673 | 0361 | Grey Fantail | | 2 |
| 0676 | 0364 | Willie Wagtail | | 5 |
| 0678 | 0424 | Black-faced Cuckoo-shrike | | 1 |
| 0698 | 0705 | Australian Magpie | | 3 |

(3) 5
(4) 1

| | | | Page No. | 2 |
|------|------|------------------------|----------|---|
| 0706 | 0930 | Australian Raven | 3 | |
| 0763 | 0357 | Melbome Swallow | 4 | |
| 0745 | 0359 | Tree Martin | 4 | |
| 0768 | 0874 | Clamorous Reed-Warbler | 1 | |
| 0781 | 0574 | Silvereye | 5 | |

*** END OF REPORT ***

SUMMARY REPORT

| | | |
|-----------------------|---|----|
| TOTAL BIRDS SIGHTED | : | 48 |
| TOTAL NUMBER OF CARDS | : | 5 |

*** END OF SUMMARY ***



LAKE

M73 Booragoon Lake

City of Melville Management Plan

Friends Advocate Management

Other Names: *Beelion Regional Park*

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 | <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

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|-------|
| Notes |
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| | | |
|---|-------------|---|
| M73 Booragoon Lake City of Melville Management Plan | | |
| M73.1 Purpose of Reserve C25318 be amended to Parkland, Public Recreation and Drsinage. | Implemented | Now Reserve for Parkland, Public Recreation and Drainage. City of Melville has a management plan. Wetlands Conservation Society has an interest in this area. |

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

| | | | |
|--|---------------------------------|-------------------|--|
| Area M 73 Name | <u>Booragoon Lake</u> | | |
| Title | <u>Management Plan</u> | | |
| <input checked="" type="checkbox"/> Published / <input type="checkbox"/> Unpublished | Date | <u>1988 April</u> | |
| Author/s | <u>Vanessa Smith Mark Smith</u> | | |
| Location of Publication | <u>Misc Libraries CALM DEP</u> | | |
| Purpose (why was the report prepared?) | <u>Management</u> | | |
| Government | <u>City of Melville</u> | | |
| Corporate | | | |
| Community Group | | | |
| Management Plan | | | |

| | | | |
|-------|--------|-----------|------------|
| Soils | | | |
| Units | mapped | described | referenced |

| | | | |
|-----------|-----------|------------|--|
| Landscape | | | |
| Features | described | referenced | |

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

| | | | |
|--------|-----------------------------|---------------|---------------------|
| Fauna | | | |
| | <u>areas (bird list OK)</u> | | |
| Timing | %completion | | Significant Taxa |
| | Mammals | <u>Birds</u> | Sched1 Sched2 Other |
| | Reptiles | Invertebrates | |

| | | |
|----------------------|--------|-------|
| Vegetation Condition | | |
| Site based | Mapped | Units |

| | | | |
|---------------------|----------|-------|------------|
| Disturbance Factors | | | |
| Phytophthora | observed | Other | incidental |
| | tested | | itemised |

| | | | |
|-------|--|--|--|
| Notes | | | |
| | | | |
| | | | |
| | | | |
| | | | |

PIC:
PREPARED FOR:

MTB

Date prepared:
04/14/94

BOORAGOON LAKE MANAGEMENT PLAN. / Smith, Vanessa, 1960-. Melville
(W.A. : Municipality). Council. -- Western Australia. Australia.
Bibliographies. Government publication, local. English. 1986.

1. LAKES. 2. BOORAGOON. 3. MANAGEMENT. 4. NATURAL AREAS.
5. MELVILLE. 6. BOORAGOON LAKE.
PEP TOPIC: 1. HYDROLOGICAL FEATURES.

Location(s) : WCU {4} Q 333.9163 SMI <005711215> WCX
=JOONDALUP...Q333.916309941 SMI copies:1 <638751> WLB Q333.9162
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DEPARTMENT OF PLANNING AND URBAN DEVELOPMENT
PERTH ENVIRONMENT PROJECT : BIBLIOGRAPHY OF ENVIRONMENTAL TOPICS

PIC:
PREPARED FOR:

Date prepared:
04/14/94

SYSTEM 6 BUSHLAND SUBMISSION FORM FOR CONSIDERATION IN THE UPDATE PROGRAMME

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

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

LOCATION, OWNERSHIP AND ZONING OF THE AREA

1. Location

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

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

a) Bordering Roads: Nenagh Grove, Waterford Ave WATERFORD

b) Nearest Corner:

c) Lot Number: 389 Street Number: RESERVE 37712

d) Town/Suburb/Location:

e) Local Council: SOUTH PERTH CITY COUNCIL

f) Site Name (if any): WATERFORD RESERVE (Foreshore)

g) Approximate size of the area (ha): 11.2399 ha

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

i) Map: 28? Streetsmart /UBD/~~Other~~ 1994

j) Map no.: 28

k) Grid Ref: K2 - L7

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

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

Future housing east of Waterford Ave.

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

Note Clontarf is owned by the Catholic Church and Centenary Park was a rubbish dump (with noxious substances in it). Seepage to the low lying areas of Clontarf may pose as a health threat if foreshore was used for housing.

Please fill out those questions that you can answer

2. Who owns the area? (If owned by the person/s making the nomination please indicate) DOLA? (Waterford Reserve)

Clontarf (Catholic Church)

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

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

After 6 phone calls I gave up. Swan River Trust didn't know! (spoke to 2 people)

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

"There is no similar foreshore vegetation elsewhere along the Swan and Canning Rivers" (System 6, Report 8, 1981)

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

The Waterford Reserve forms an integral link in a chain of wetlands along the Canning River (Fig. 2) Luke Pen 1981. All foreshores along the Swan and Canning Rivers should be A class preserves.

6. What is/are the soil type/s and colours? Bassa-dean sand - grey + peaty near river

Type: Sand/Clay/Gravel/Loam/Silt

Colour: ~~White/Grey/Brown/Orange/Yellow/Red/Black~~

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

If yes, what are they? Extremely diverse wetland including Marri (*E. calophylla*) + *E. rudis* forest + saline wetlands (changing)

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

If yes, what kind of a wetlands is it?

a) lake

b) river ✓

c) stream

d) swamp

e) estuary

f) seasonally wet ✓

g) other

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

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

10. What percentage of the area is indigenous vegetation?

11. If the area includes regions cleared of native bushland please indicate reasons for the inclusion. *But Keaney Gardens is a degraded wetland which should be included to act as a buffer zone for the foreshore area along the Canning River east to Shelley Bridge*

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

If yes, please give details of the work *Waterford Foreshore Reserve Management Plan 1987 + Oct. 1993*

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

- a) pristine ✓ *mostly (swamp)*
- b) excellent
- c) very good ✓ *very good (bushland)*
- d) good ✓
- e) degraded } *Keaney gardens.*
- f) completely degraded
- g) don't know

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

- a) Partial clearing
- b) fragmentation ✓
- c) Selective removal of species: timber cutting, wildflower picking, mowing dieback and other plant diseases
- d) Fire regime, including intensity, season and frequency
- e) 'Enrichment plantings' that is plantings of species not found in that community
- f) Weed invasion ✓ *buffer zone too narrow along bushland - kikuya, paspalum, J. pepper etc.*
- g) Animal impact: horses, foxes, rabbits, cats, dogs, camels, goats etc
- h) Soil movement, both removal and dumping
- i) Changes in water regimes; flooding, drainage and watering ✓ *increased run off*
- j) Salinity ✓ *gradually becoming less saline due to development of Waterford*
- k) Fertiliser drift and along waterways nutrient influx
- l) Mining, including that for road works

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

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

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

Do you know what they are? *"There is no similar foreshore vegetation elsewhere along the Swan and Canning Rivers" (System 6, Report 8 1981), also Luke Pen 1981*

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

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

> 60 spp. land+water birds, Southern Brown Bandicoot, Mastiff bat (+cats, foxes, rats, m tortoise, 3 frog spp., legless lizard, 7 skink spp., snakes (dugite))

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

* *Lerista lineata* (lizard) (p. 13)

If yes, please name them and indicate source of information

Err, Kate Waterford Foreshore Reserve Management Plan 1987 pp. 15-

CAN YOU TELL US A LITTLE ABOUT THE SURROUNDING AREA

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

Yes

If yes, how close are they? *Bordering - Keaney Gardens should form part of the Reserve and should be extended east along the Canning River to the Shelley Bridge to form "an integral link in a chain of wetlands along the Canning River" (Pen 1981) (Fig 2, 1987)*

Are they already conservation reserves? *No*

What is their approximate size? *~~1.2399 ha~~ 1.7520 ha + foreshore east of this location.*

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

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

Keaney Gardens are owned by the Catholic Church (Clontarf) and should become an A class reserve along with the Waterford Reserve and the foreshore areas of the Swan and Canning Rivers

Thank you for providing this submission. If you want further feedback on the outcome of submission then please leave name and address.

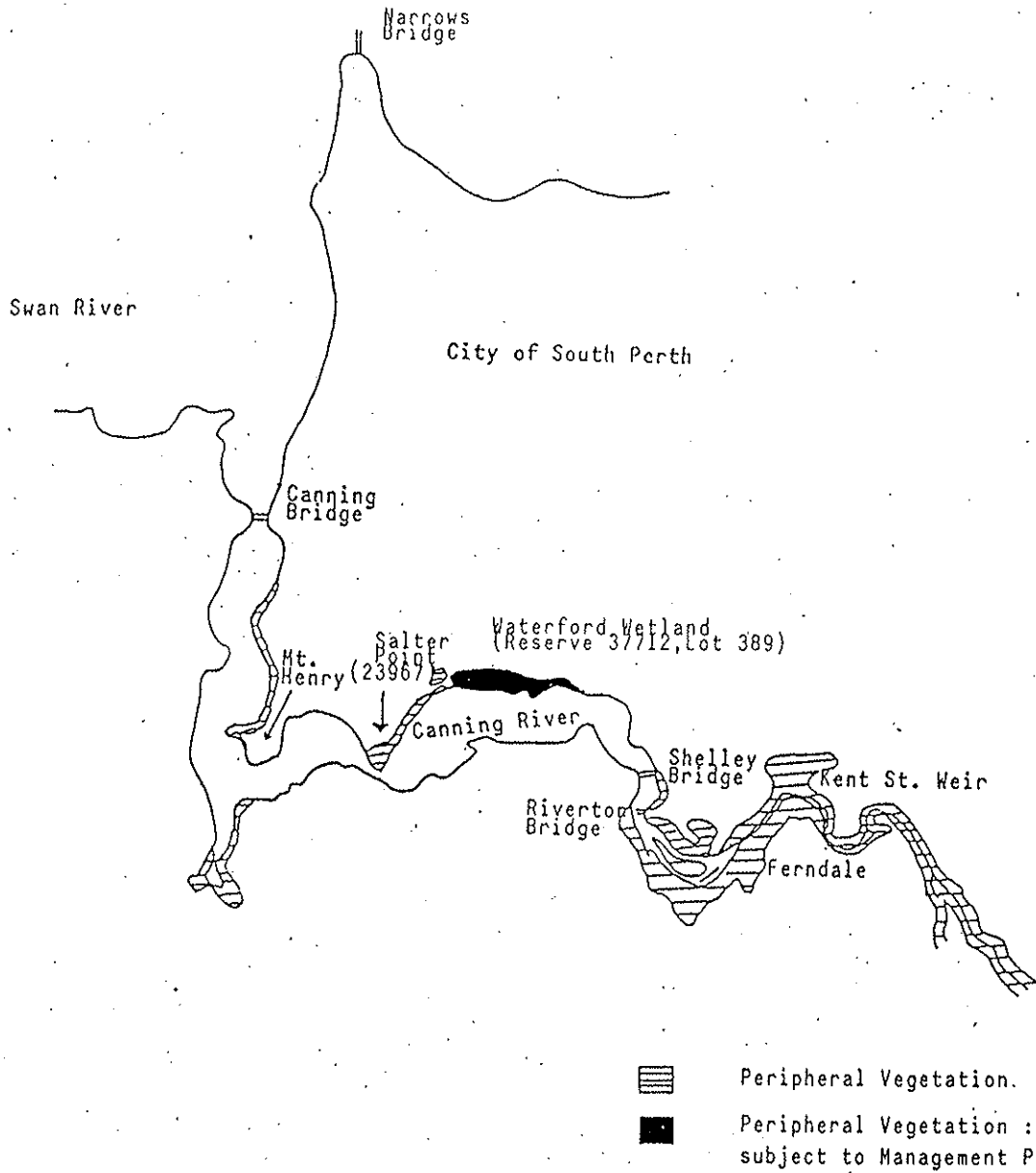
Should we need to contact you for further site identification it would be helpful to have a name and telephone contact number

This information will be treated as ~~confidential~~

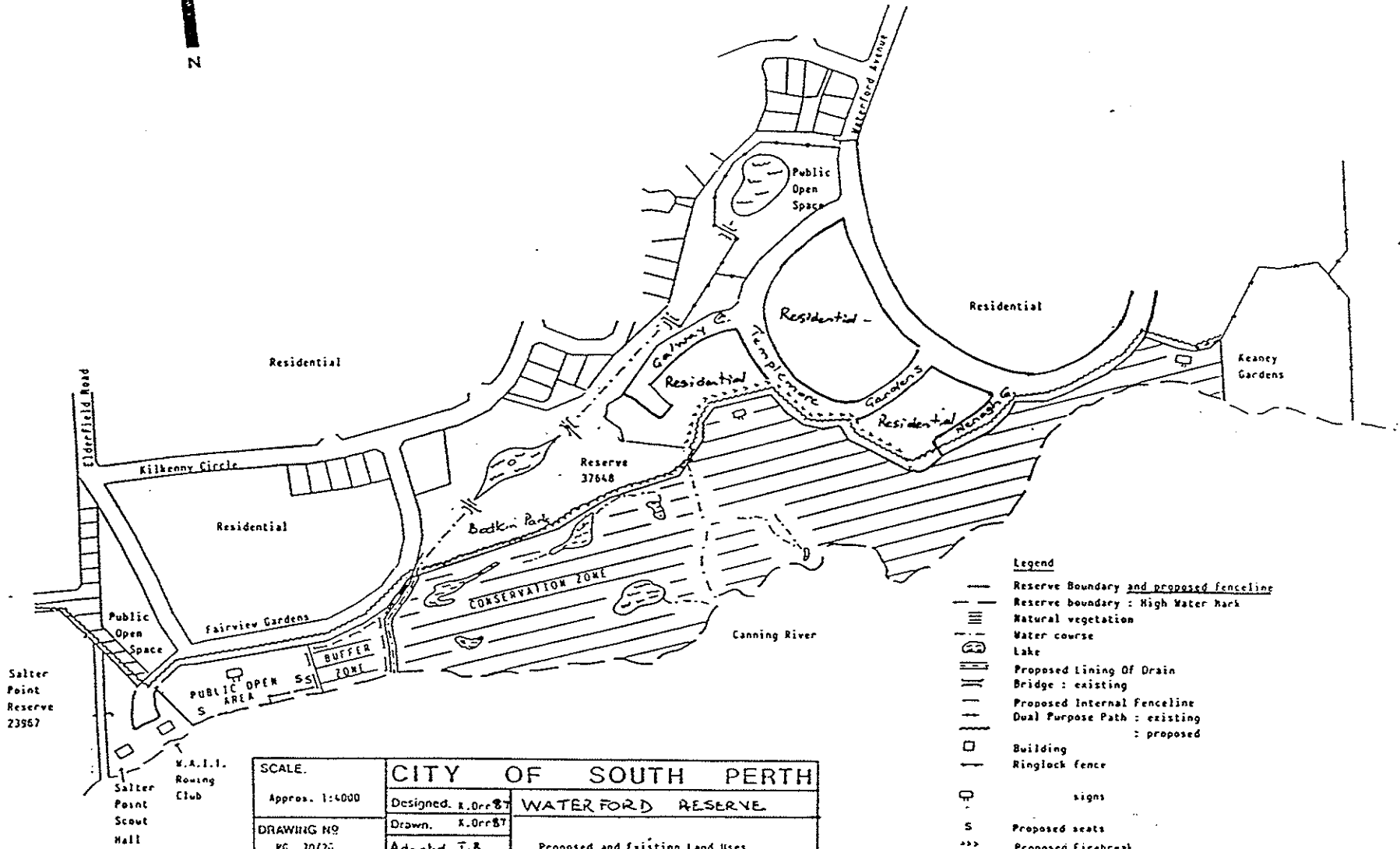
Name: (Please Print) Andrew G THOMSON

Address: 28 Tralee Way WATERFORD 6152

Daytime telephone number: (09) 450 3424

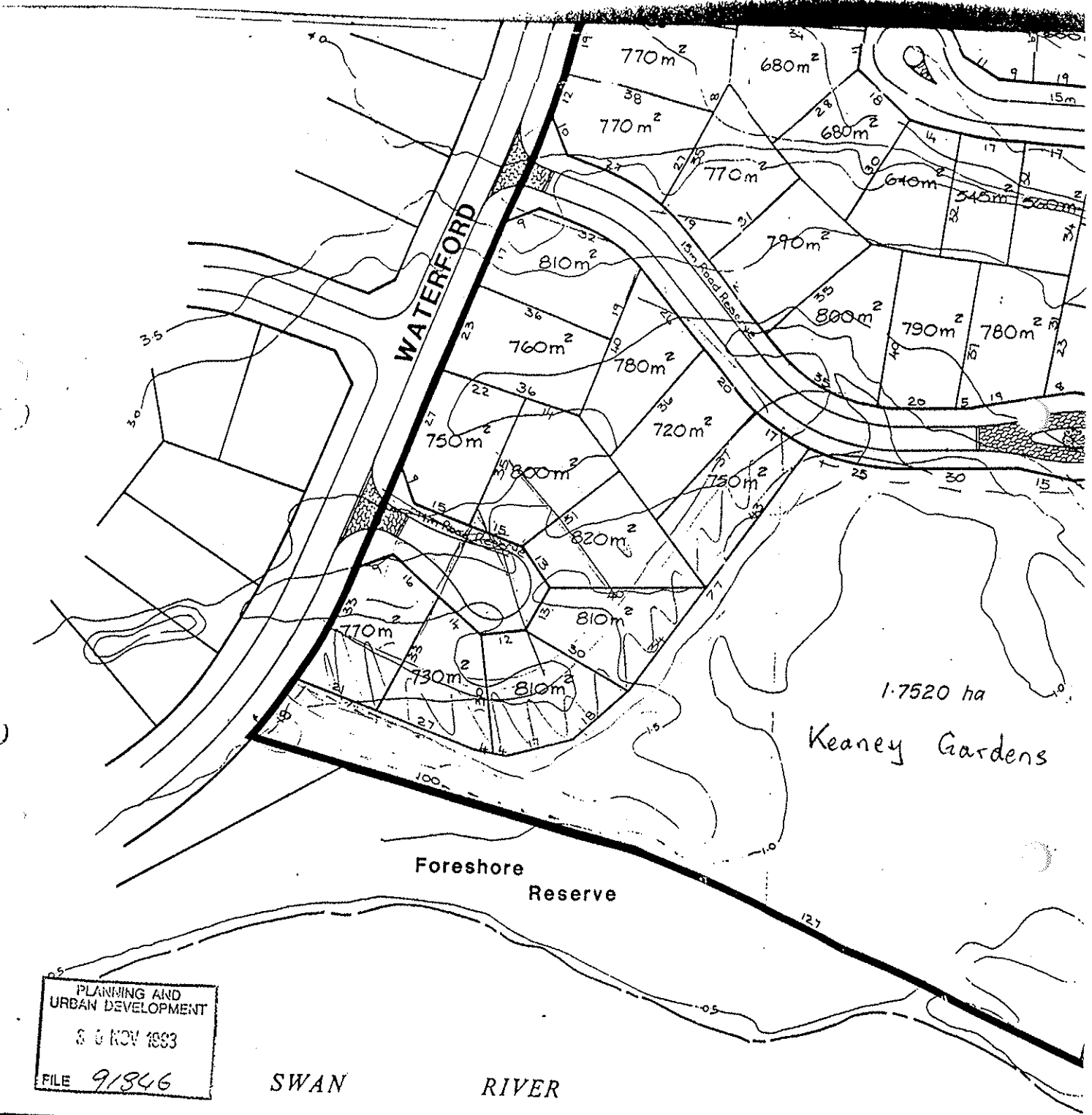


| | | | |
|------------------|-----------|----------------------------|---|
| SCALE. | | CITY OF SOUTH PERTH | |
| Approx. 1:75 000 | | | |
| DRAWING NO. | Designed. | L.Pen | Figure 2 : Peripheral Vegetation along the Canning River (Pen 1981) |
| | Drawn. | K.Orr | |
| | Checked. | G.R.S. | |
| | Date. | 5.6.1986 | |
| PG 70/28 | | | |



- Legend**
- Reserve Boundary and proposed fenceline
 - Reserve boundary: High Water mark
 - Natural vegetation
 - Water course
 - Lake
 - Proposed Lining Of Drain
 - Bridge: existing
 - Proposed Internal Fenceline
 - Dual Purpose Path: existing
 - : proposed
 - Building
 - Ringlock fence
 - signs
 - Proposed seats
 - Proposed firebreak

| | | | |
|----------------|--|---------------------|---------------------------------|
| SCALE. | | CITY OF SOUTH PERTH | |
| Approx. 1:4000 | | Designed. K.Orr 87 | WATERFORD RESERVE |
| DRAWING NO | | Drawn. K.Orr 87 | Proposed and Existing Land Uses |
| PG. 70/26 | | Adapted J.B. | |
| | | 1993 | |



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7.1 Invertebrates

Of the four lakes studied by Van Alphen (1983), Booragoon Lake had the lowest diversity of Zooplankton. Van Alphen attributed the lower species diversity to a lack of aquatic plants, between which many invertebrates are found.

The most dominant was the Copepod Calamoecia lucaci, which occurred in consistently high numbers. They also dominate in lakes in the Northern Swan Coastal Plain, (Hembree and George, 1978). Booragoon Lake also had the lowest diversity in Insecta and Crustaceae. The lake is host to some truly aquatic species i.e. those without life cycle supply, for example the fish Gambusia affinis. Van Al found quite high numbers of Gambusia in the lake.

Over the years Gambusia, carp, marron and cunac have been added to the lake (Gambusia to help reduce the midge problems). The effect of these organisms today, except for the Gambusia, is not known.

Van Alphen found that Booragoon Lake, with its low salinity fluctuations and lack of aquatic vegetation, has an overall very stable species composition with no large fluctuations of numbers of species.

PLANTS OF BOORAGOON LAKE

DENNSTAEDTIACEAE

Pteridium aquilinum

COMMON LAKE

Bracken fern

ZAMIACEAE

Macrozamia riedlei

zamia palm family

POACEAE - Grass Family

Cynodon dactylon *

couch grass

Erhata calycina *

veld grass

Pennisetum clandestinum *

kikuyu grass

Stenotaphrum secundatum *

buffalo grass

CYPERACEAE - Sedges Family

Cyperus rotundus (?)

Cyperus tenuiflorus

Lepidosperma longitudinale

COMMELINACEAE

Commelina sp.

JUNCAEAE - Reed Family

Juncus pallidus

LILIACEAE - Lily Family

| | |
|----------------------|-------------|
| Burchardia umbellata | milk maids |
| Dianella revoluta | flax lily |
| Tricoryne elatior | yellow lily |

XANTHORRHOEACEAE - Grass Tree Family

| | |
|-----------------------|----------|
| Xanthorrhoea preissii | blackboy |
|-----------------------|----------|

HAEMODORACEAE - Kangaroo Paw Family

| | |
|---------------------|-----------|
| Haemodorum spicatum | bloodroot |
|---------------------|-----------|

PROTEACEAE - Banksia Family

| | |
|--------------------|------------------|
| Banksia attenuata | slender banksia |
| Banksia littoralis | swamp banksia |
| Banksia menziesii | Menzies' banksia |

SANTALACEAE

| | |
|--------------------|--|
| Exocarpus sparteus | |
|--------------------|--|

LORANTHACEAE - Mistletoe Family

| | |
|--------------------|----------------|
| Nuytsia floribunda | christmas tree |
|--------------------|----------------|

POLYGONACEAE - Buckwheat Family

| | |
|------------------------|--|
| Polygonum hydropiper * | |
|------------------------|--|

AIZOACEAE - Pigface Family

Carpobrotus edulis * pig face

BRASSICACEAE - Cabbage Family

Raphanus raphanistrum * wild radish

MIMOSACEAE - Wattle Family

Acacia pulchella prickly moses

Acacia saligna

FABACEAE - Pea Family

Hardenbergia comptoniana native wisteria

Jacksonia furcellata

Jacksonia sternbergiana stinkwood

Kennedia prostrata running postman

GERANIACEAE

Pelargonium capitatum * wild geranium

Pelargonium domesticum *

Pelargonium x domesticum *

DODONAEA sp.

THYMELAEACEAE - Banjine Family

Pimelea rosea rose 'Banjine'

MYRTACEAE - Myrtle Family

Myrtaceae sp

Astartea fascicularis

Eucalyptus rudis

flooded gum

Melaleuca preissiana

Melaleuca raphiophylla

freshwater paperbark

Melaleuca teretifolia

APIACEAE - Carrot Family

Centella cordifolia

EPACRIDACEAE - Australian Heath Family

Leucopogon propinquus

LOBELIACEAE - Lobelia Family

Lobelia alata

angled lobe

ASTERACEAE - Daisy Family

Hypochoeris glabra (?) *

smooth cats

* exotic species

APPENDIX II

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BIRDS OF BOORAGOON LAKE:

Grebes (PODICIPEDIDAE)

Australasian Grebe

Podiceps novaehollandiae

Pelicans (PELECANIDAE)

Australian Pelican

Pelecanus conspicillatus

Darters (ANHINGDAE)

*Darter

Anhinga rufa

Cormorants (PHALACROCORACIDEA)

*Great Black Cormorant

Phalacrocorax carbo

*Little Black Cormorant

Phalacrocorax sulcirostris

*Pied Cormorant

Phalacrocorax varius

*Little Pied Cormorant

Phalacrocorax melanoleucos

Hérons (ARDEIDAE)

White-faced Heron

Ardea novaehollandiae

Great Egret

Egretta alba

Rufous Night Heron

Nycticorax caledonicus

Ibis/Spoonbills (THRESKIORNITHIDAE)

| | |
|-------------------------|--------------------------|
| *Sacred Ibis | Threskiornis molucca |
| Straw-necked Ibis | Threskiornis spinicollis |
| Yellow-billed Spoonbill | Platalea falvipes |

Swan/Ducks (ANATIDAE)

| | |
|---------------------|---------------------|
| Black Swan | Cygnus atratus |
| Australian Shelduck | Tadorna tadornoides |
| Pacific Black Duck | Anas superciliosa |
| Grey Teal | Anas gibberifrons |
| Hard Head Duck | Aythya australis |
| Blue-billed Duck | Oxyura australis |
| Musk Duck | Biziura lobata |
| Maned Duck | Chenonetta jubata |
| Mallard | (Domestic Duck) |

Raptors, Harriers (ACCIPITRIDAE)

| | |
|---------------|--------------------|
| Marsh Harrier | Circus aeruginosus |
|---------------|--------------------|

Falcons (FALCONIDAE)

| | |
|--------------|----------------|
| Brown Falcon | Falco berigora |
|--------------|----------------|

Rails (RALLIDAE)

| | |
|------------------|---------------------|
| *Dusky Moorhen | Gallinula tenebrosa |
| *Purple Swamphen | Porphyrio porphyrio |
| *Eurasian Coot | |

Pigeons/Doves (COLUMBIDAE)

Spotted Turtle dove

Streptopelia chinensis

Laughing Turtle dove

Streptopelia senegalensis

Cockatoos/Parrots (PSITTACIDAE)

Galah

Cacatua roseicapilla

Port Lincoln Ringneck

Barnardius zonarius

Red-capped Parrot

Purpureicephalus spurius

Kingfishers (ALCEDINIDAE)

Sacred Kingfisher

Halcyon sancta

Laughing Kookaburra

Dacelo gigas

Bee-eaters (MEROPIIDAE)

Rainbow Bee-eater

Merops ornatus

Swallows (HIRUNDINIDAE)

Welcome Swallow

Hirundo neoxena

Tree Martin

Petrochelidon nigricans

Cuckoo-Shrikes (CAMPEPHAGIDAE)

Black-faced Cuckoo Shrike

Coracina novaehollandiae

Thornbills/Warblers (ACANTHIZIDAE)

| | |
|-------------------------|------------------------------|
| Inland Thornbill | <i>Acanthiza apicalis</i> |
| Yellow-rumped Thornbill | <i>Acanthiza chrysorrhoa</i> |
| Western Gerygone | <i>Gerygone fusca</i> |

Flycatchers (MUSCICAPIDAE)

| | |
|-----------------|---------------------------------|
| Rufous Whistler | <i>Pachycephala rufiventris</i> |
|-----------------|---------------------------------|

Fantails (RHIPIDURIDAE)

| | |
|----------------|-----------------------------|
| Grey Fantail | <i>Rhipidura fuliginosa</i> |
| Willie Wagtail | <i>Rhipidura leucophrys</i> |

Pardalotes (PARDALOTIDAE)

| | |
|--------------------|-----------------------------|
| Striated Pardalote | <i>Paradalotus striatus</i> |
|--------------------|-----------------------------|

White Eyes (ZOSTEROPIDAE)

| | |
|------------|----------------------------|
| Silver Eye | <i>Zosterops literalis</i> |
|------------|----------------------------|

Honeyeaters (MELIPHAGIDAE)

| | |
|------------------------|-------------------------------------|
| Little Wattle Bird | <i>Anthochaera chrysoptera</i> |
| Red Wattle Bird | <i>Anthochaera carunculata</i> |
| Singing Honeyeater | <i>Meliphaga virescens</i> |
| Brown Honeyeater | <i>Lichmera indistincta</i> |
| New Holland Honeyeater | <i>Phylidonyris novaehollandiae</i> |

Butcherbirds (CRACTICIDAE)

Grey Butcherbird

Cracticus torquatus

Australian Magpie

Gymnorhina tibicen

Crows (CORVIDAE)

Australian Raven

Corvus coronoides

*breed at the Lake

SPECIES IN BRACKEN FERN SCRUB

| | |
|--------------------------|----------------------|
| Acacia pulchella | prickly moses |
| Acacia saligna | |
| Burchardia umbellata | milkmaid |
| Carpobrotus edulis | pig face |
| Dianella revoluta | flax lilly |
| Eucalyptus marginata | jarrah |
| Eucalyptus rudis | flooded gum |
| Heamodorum spicatum | blood root |
| Hardenbergia comptoniana | wild wisteria |
| Jacksonia furcellata | |
| Kennedia prostrata | running postman |
| Lobelia alata | |
| Leucopogon propinquus | |
| Macrozamia reidleyi | zamia palm |
| Melaleuca raphiophylla | freshwater paperbark |
| Melaleuca sp. | |
| Nuytsia floribunda | christmas tree |
| Pelargonium capitatum | |
| Pimelea rosea | Rose "Banjine" |
| Tricoryne elatior | |
| Xanthorrhoea preisii | black boy |

ALGAE (From van Alphen 1983)

CHLOROPHYTA

- * Volvox
- Dictyosphaerium
- Mougeotia
- Spirogyra
- Zygnema
- * Oedogonium
- Ulothrix
- Cladophora

CHRYSOPHYTA

- Tribonema
- Vaucheria

CYANOPHYTA

- Anabaena
- Merismopedium
- Lyngbya
- Oscillatoria

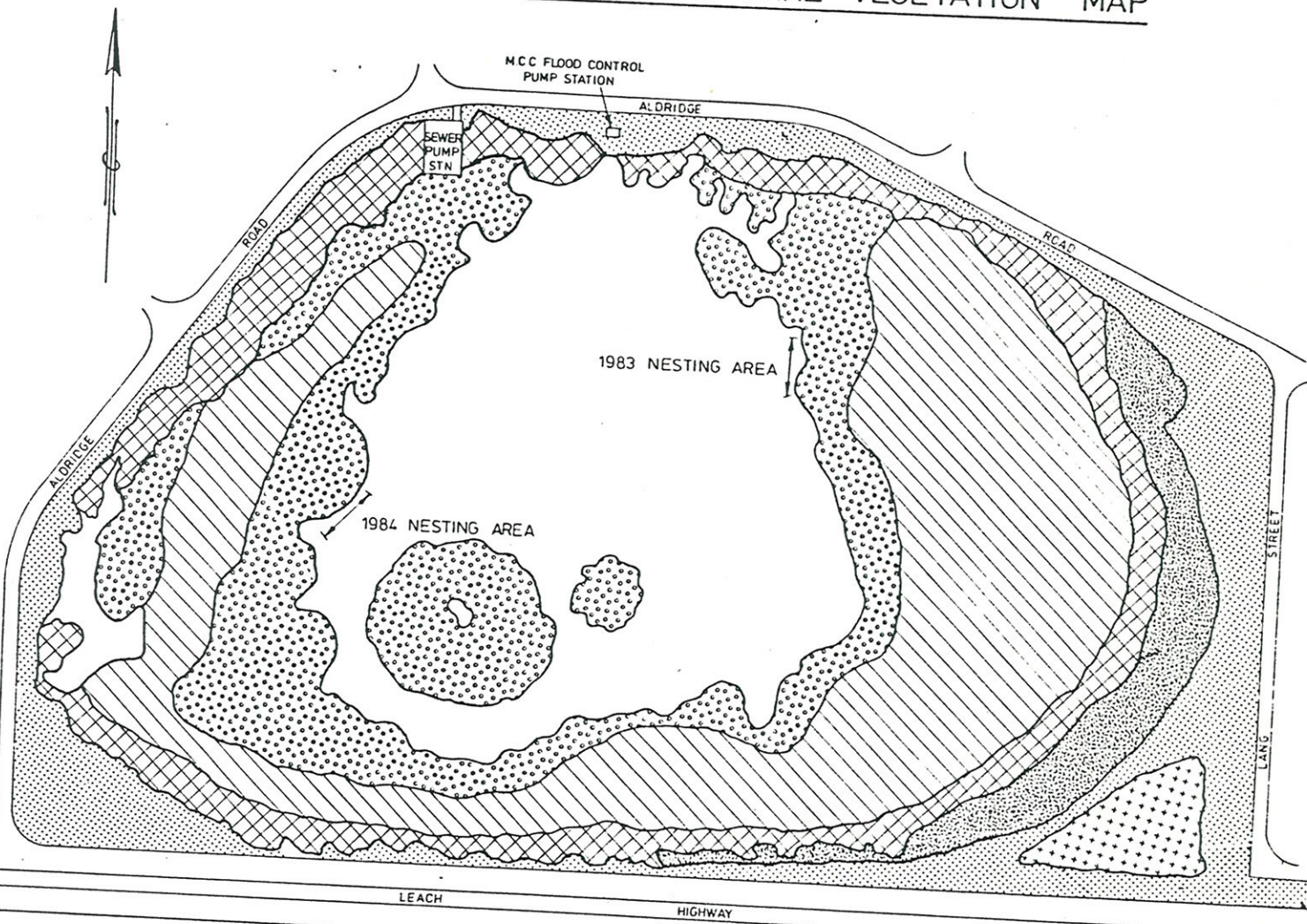
EUCLLENOPHYTA

- Euglena

* The most abundant

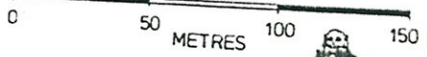
APPENDIX V
BOORAGOON LAKE VEGETATION MAP

From: Vanessa Smith 1985 Draft Management Plan Booragoon Lake.
 18/4/95. 173.1 Syst 6 library



LEGEND

- OPEN WATER
- GRASSED AREA
- PLANTED SHRUBS
- BRACKEN FERN SCRUB
- MELALEUCA teretifolia
- FRESH WATER PAPERBARK (MELALEUCA raphiophylla)
- FLOODED GUM & FRESHWATER PAPERBARK (EUCALYPTUS rudis & MELALEUCA raphiophylla)



| AMENDMENTS | | | DRAWN | AUTH'D | DATE | DESIGNED | V SMITH | JAN 84 | RECOMMENDED |
|------------|--|--|-------|--------|------|----------|------------------------------|---------|---------------|
| | | | | | | DRAWN | V SMITH | JAN 84 | APPROVED |
| | | | | | | TRACE | S. SPENCER | JAN 84 | CITY ENGINEER |
| | | | | | | CHECKED | <i>Handwritten signature</i> | 27-1-84 | DATE |

CITY OF MELVILLE

VEGETATION MAP - BOORAGOON LAKE

FILE No. _____

9.2.8 FAUNA

There is little published information. Van Delft (1988) provides notes about Bluegum Lake as a bird observation site. The Royal Australasian Ornithologists Union has a considerable amount of data on waterbirds in this area.

9.2.9 MANAGEMENT ISSUES

The lake is managed by the City of Melville to serve as a landscape feature. Water levels are controlled by pumping from Booragoon Lake and then using excess water to irrigate a recreation area. The lake is aerated by a spray system in an effort to oxygenate the waters to reduce algal blooms and noxious odours.

There is need to consider the priorities of water use in the Brentwood-Applecross area where groundwater extraction may be exceeding inflow due to heavy extraction by private bores. The Perth Urban Water Balance Study (1987) made a detailed study of the water balance of the Applecross peninsula in the course of its broad investigation of the groundwater resources of the metropolitan region.

9.2.10 REFERENCES

Aplin, T E H, (1976), Report of the Algae Odour Control Working Group. Department of Conservation and Environment.

Gozzard, J R (1983), Fremantle Park Metropolitan Region, Environmental Study, Western Australia.

Van Delft, R (1988), 'Birding sites in Western Australia', Australia Press, Nedlands.

Water Authority of Western Australia, Perth Urban Water Balance study, Volume 1 - Findings. Water Authority of Western Australia, Leederville, WA.

Full document available on request

9.3 BOORAGOON LAKE

BS337

NO VFC MAP

9.3.1 GENERAL INFORMATION

LOCAL AUTHORITY: City of Melville

MRS ZONE: Urban

RESERVE NUMBER: 25318

PURPOSE: Public Recreation and Drainage

MANAGEMENT: City of Melville

SYSTEM 6 RECOMMENDATION: M73

WAC CLASSIFICATION: LE.f.sm.p.sc.

DRAINAGE: Local Authority Drains, recharged with bore water - excess to Bluegum Lake

ROADWORKS: Leach Highway

9.3.2 PHYSIOGRAPHY AND GEOLOGICAL SETTING

Booragoon Lake is bounded by the 12 m AHD contour, close to the interface between the Bassendean landform and the Karrakatta landform. Coring carried out by Carbon, Bartle and Murray (Carbon pers comm) showed that organic